Foundational Laboratory Analysis Seminar Notes 2021 www.ScienceBasedNutrition.com

Van D. Merkle
DC, DCBCN, DABCI, CCN

Mission Possible

I implore you to take up this cause, to make this your mission to save lives, to take responsibility, to care…to do whatever it takes. You have the legal authority granted by your Doctor of Chiropractic degree. Don't count or rely on the medical community, for it is too busy and is controlled by what the insurance dictates. You will be better. You have to be, because it is necessary. You will do what is right and be honest. When you do this, you will truly be a doctor – one that makes a real difference and saves lives. It is up to you. Can your patients count on you? If not you…WHO?

Van D. Merkle

From: J AXXXXXX [mailto:]
Sent: Friday, October 03, 2008 4:59 PM
To: Pam
Subject: Joan S.

I am very sad to inform you that my mom, Joan S.died on August 17th. We had been optimistic as the tumors in her lung did not increase in size from February through the first of June. However, the next CT Scan taken at the end of July when she was admitted to the emergency room showed they had doubled in size in less than two months. The hospice doctor said that that type of acceleration in lung cancer is not unusual, but it shocked us. She passed three weeks later.

Nonetheless, I want to thank you for all you did for her, but most importantly, for giving us hope after the oncologist told her the prognosis. I believe she had a higher quality of life with more energy because of the supplements she was taking. Most of all, we had four-plus months of wonderful times together, times spent with optimism in our hearts rather than horrible dread. It made all the difference in the world.

Bless you all as you continue your work to promote health and prevent cancer from occurring in the first place.

Best regards,
Jill AXXXXXX

Can you get all the nutrients you need from food? (Chemical Farming)

USDA nutrient data from 1975 and 1997 has revealed a disturbing trend:

- Average calcium levels in 12 fresh vegetables have declined **27%**
- Iron levels have dropped **37%**
- Vitamin A levels, **21%**
- Vitamin C levels, **30%**

British nutrient data from 1930 and 1980 indicate reductions of essential minerals in both fruits and vegetables:

- Average calcium content declined **19%**
- Iron, **22%**
- Potassium **14%** in the 20 vegetables compared.

WOW CASE 12-10-2001

- Patient Lisa B: primary dx of Rh arthritis
- In less than 2 months on her "program" she is off all drugs: Embrel, Methotrexate, Celebrex, Darvacet, Percodan, Vicodin, Norflex, Lasix

Newsweek
July 3, 2000

Radical Reduction: the benefits of stomach stapling for teenagers

Health and medicine explained. *By Amanda Schaffer*

Posted Tuesday, Aug. 22, 2006, at 7:27 AM ET

Last month, the already grim prognosis for heavy kids took a turn for the even worse. A study of more than 100,000 women, published in the *Annals of Internal Medicine*, found that those who were overweight at age 18 were more likely to die prematurely in middle age. And research published in the *Journal of the American Medical Association* showed that people who develop type 2 diabetes—a condition associated with obesity—before the age of 20, as opposed to later, are at greater risk of end-stage kidney disease and death before the age of 55. Obesity at any age is associated with health woes like sleep apnea, fatty liver disease, atherosclerosis, loss of vision, and some types of cancer, in addition to diabetes. But when these conditions appear in the young obese, the long-term ramifications are just scary.

How about a radical solution—stomach stapling for teenagers? It may sound crazy and desperate, but several major children's hospitals, including Cincinnati Children's Hospital Medical Center, Texas Children's Hospital, and Lucile Packard Children's Hospital at Stanford, have started offering obesity surgery in recent years. *Nightline* recently followed a 16-year-old Texas girl who underwent stomach stapling and lost 129 pounds in six months, down from a starting weight of 368.

Radical Reduction…cont.

- To be sure, obesity surgery is a risky proposition. One small study, published earlier this year in the *Journal of Pediatric Surgery*, found that roughly 40 percent of kids who underwent gastric bypass experienced some kind of complication, such as intestinal leakage, dumping syndrome, bowel obstruction, wound infection, or a nutritional deficiency. (A similar complication rate has been found in adults.) Nutritional deficiencies, especially of calcium, iron, vitamin B-1 and vitamin B-12, may occur partly because patients are eating less and partly because the operation bypasses a portion of the digestive tract that efficiently absorbs many vitamins and minerals.
- The potential for deficiencies means that patients must adhere to strict guidelines. All patients must eat more lean, high-quality protein; exercise; and take vitamins and minerals for the rest of their lives. Teenage girls must take additional calcium and iron.

S. Xxxxxxx

1st Test: 10/17/2001

2nd Test: 10/17/2003

Gastric bypass 2 years ago

LOST 40 LBS

Test Description Date:	Current Result 10/17/2003	Current Rating	Prior Result 10/17/2001	Delta	Healthy	Clinical	Units
Glucose	105.00	hi	315.00		84.10 - 100.01	65.00 - 109.00	mg/dL
Hemoglobin A1C (Gly-Hgb)	5.40	Opt	9.20		4.61 - 5.40	4.50 - 5.70	%
Uric Acid	7.80	hi	6.70		4.10 - 6.00	2.40 - 8.20	mg/dL
BUN (Blood Urea Nitrogen)	11.00	lo	8.00		13.10 - 18.00	5.00 - 26.00	mg/dL
Creatinine	0.70	Opt	0.70		0.61 - 0.90	0.50 - 1.50	mg/dL
BUN / Creatinine Ratio	15.00	Opt	11.00		13.10 - 20.00	8.00 - 27.00	ratio
Sodium	143.00	Opt	140.00		140.10 - 144.00	135.00 - 148.00	meq/dL
Potassium	3.90	lo	4.60		3.91 - 4.60	3.50 - 5.50	meq/dL
Chloride	106.00	hi	102.00		100.10 - 106.00	96.00 - 109.00	meq/dL
Magnesium	2.10	lo	2.40		2.21 - 2.50	1.60 - 2.60	mg/dL
Calcium	9.60	lo	9.70		9.71 - 10.10	8.50 - 10.60	mg/dL
Phosphorus	4.10	hi	2.50		3.41 - 4.00	2.50 - 4.50	mg/dL
Calcium/Albumin Ratio	2.28	Opt	2.31		2.10 - 2.50	2.03 - 2.71	ratio
Total Protein	6.50	lo	7.20		7.11 - 7.61	6.00 - 8.50	gm/dL
Albumin	4.20	Opt	4.20		4.10 - 4.51	3.50 - 5.50	gm/dL
Globulin	2.30	lo	3.00		2.81 - 3.51	1.50 - 4.50	gm/dL
A/G Ratio	1.80	hi	1.40		1.22 - 1.60	1.10 - 2.50	ratio
Total Bilirubin	0.60	Opt	0.40		0.39 - 0.93	0.10 - 1.20	mg/dL
Alkaline Phosphatase 25-150	67.00	Opt	112.00		66.00 - 108.00	25.00 - 150.00	IU/L
LDH	131.00	Opt	233.00		120.10 - 160.00	100.00 - 250.00	mu/mL
SGOT (AST)	15.00	lo	22.00		18.10 - 26.00	6.00 - 40.00	mu/mL
SGPT (ALT)	18.00	lo	44.00		18.10 - 26.00	6.00 - 40.00	mu/mL
GGT	11.00	Opt	30.00		10.10 - 36.00	6.00 - 65.00	mu/mL
Serum Iron	93.00	Opt	78.00		85.10 - 120.00	35.00 - 155.00	mcg/dL
Ferritin	80.00	Opt	129.00		30.10 - 218.30	22.00 - 322.00	ng/mL
Cholesterol	126.00	lo	148.00		150.10 - 180.00	100.00 - 199.00	mg/dL
Triglyceride	81.00	Opt	135.00		80.10 - 115.00	10.00 - 199.00	mg/dL
HDL Cholesterol	56.00	Opt	34.00		55.10 - 120.00	40.00 - 150.00	mg/dL
LDL Cholesterol	53.00	Opt	87.00		50.10 - 75.10	6.00 - 99.10	mg/dL
VLDL Cholesterol	16.00	Opt	27.00		5.10 - 20.10	4.10 - 40.10	mg/dL
Total Cholesterol / HDL Ratio	2.20	Opt	4.30		0.00 - 4.00	0.00 - 5.00	ratio
T4 Thyroxine	8.40	Opt	9.30		7.10 - 9.00	4.50 - 12.00	mcg/dL
T3 Uptake	32.00	Opt	30.00		29.10 - 35.10	24.00 - 39.00	%
T7 Free Thyroxine Index	2.60	lo	2.70		2.61 - 3.60	1.20 - 4.90	
White Blood Count	4.20	lo	7.00		5.10 - 8.00	4.00 - 10.50	k/cumm
Red Blood Count	4.21	lo	4.35		4.51 - 5.50	3.80 - 5.60	m/cumm
Hemoglobin	13.20	lo	13.30		13.91 - 15.00	11.50 - 17.00	gm/dL
Hematocrit	37.50	lo	37.80		39.51 - 47.00	34.00 - 50.00	%
MCV	89.00	Opt	87.00		85.10 - 97.00	80.00 - 98.00	cu.m
MCH	31.20	Opt	30.60		28.10 - 32.00	27.00 - 34.00	pg
MCHC	35.10	hi	35.30		33.10 - 34.99	32.00 - 36.00	%
Platelets	175.00	lo	279.00		175.10 - 250.00	140.00 - 415.00	k/cumm
Polys (SEGS-PMNS)	55.00	lo	60.00		55.10 - 65.00	40.00 - 74.00	%
Lymphocytes	36.00	Opt	28.00		25.10 - 40.00	14.00 - 46.00	%
Monocytes	6.00	Opt	8.00		5.10 - 7.10	4.90 - 13.00	%
Eosinophils	2.00	Opt	3.00		0.00 - 4.00	0.00 - 7.00	%
Basophils	1.00	hi	1.00		0.00 - 0.00	0.00 - 3.00	%
ESR (Erythrocyte Sed Rate)	2.00	Opt	9.00		0.00 - 8.00	0.00 - 30.00	mm/HR
CRP C-Reactive Protein	0.40	hi	6.20		0.00 - 0.00	0.00 - 4.90	mg/L
Creatine Kinase	26.00	Opt	106.00		50.50 - 150.00	24.00 - 204.00	u/l

Death Risk Drops After Bariatric Surgery in Obese Patients

by Kristen Monaco, Staff Writer, MedPage Today August 06, 2019

- **But gastric bypass, sleeve gastrectomy had higher risk for late adverse GI events**
- Bariatric surgery was associated with an extended lifespan in patients with obesity, but also carried a higher risk of at least one hospital admission for late adverse events, according to a French study.
- In a cohort study of nearly 9,000 bariatric surgery patients, those who underwent gastric bypass surgery had a 36% reduced morality risk compared with matched controls with obesity who did not undergo surgery (hazard ratio 0.64, 95% CI 0.52-0.78), reported Jérémie Thereaux, MD, of the Caisse Nationale d'Assurance Maladie in Paris, and colleagues.
- During the nearly 7-year follow-up period, patients who opted for sleeve gastrectomy saw a 62% reduced risk for mortality versus those who didn't undergo surgery (HR 0.38, 95% CI 0.29-0.50), they stated in the *Lancet Diabetes & Endocrinology*.
- However, prolonged mortality associated with bariatric surgery also came with some additional medical risks. Compared with matched controls, patients who underwent gastric bypass surgery saw a higher incidence of a few gastrointestinal (GI)-related outcomes:
- Invasive GI surgery or endoscopy: incidence rate ratio 2.4 (95% CI 2.1-2.7)
- GI disorders not leading to invasive procedures: IRR 1.9 (95% CI 1.7-2.1)
- Nutritional disorders: IRR 4.9 (95% CI 3.8-6.4)
- Those who had undergone a previous bariatric surgery procedure within 4 years prior were excluded.
- **"They will have to comply with multidisciplinary careful lifelong follow-up given the risk of late adverse events."**

Mercury Compound Found In Fish Damages Pancreatic Cells

ScienceDaily (Sep. 29, 2006) — Researchers in Taiwan say they have established for the first time that the mercury compound present as a contaminant in some seafood can damage insulin-producing cells in the pancreas.

- In their experiments, Shing-Hwa Liu and colleagues exposed cell cultures of insulin-producing beta cells to methylmercury. They used concentrations of methylmercury at about the same levels as people would consume in fish under the U. S. Food and Drug Administration's recommended limits.

Previous studies have shown that methylmercury is toxic to various cells. Liu and colleagues now have added pancreatic beta cells to that list.

- "Altogether, our data clearly indicate that methylmercury-induced oxidative stress causes pancreatic beta-cell apoptosis (programmed cell death) and dysfunction," they said in a report scheduled for the Aug. 21 issue of the ACS journal, Chemical Research in Toxicology.

Liu added in an interview: "Although there was lack of a firm clinical basis, some cellular and animal studies implied that methylmercury may have [the] ability to injury the pancreatic beta cells. The present study supplied the direct evidence of basic research that methylmercury-induced oxidative stress causes pancreatic beta cell apoptosis and dysfunction. Further research is needed on whether methylmercury exposure increases the risk of diabetes in humans."

Induced hyperglycemia protects rats against mercuric chloride nephrotoxicity****

Taiwan Yi Xue Hui Za Zhi. 1989 Apr;88(4):366-9.

Shyh TP, Shieh SD, Shieh SM.

Abstract

- Male Sprague-Dawley rats made diabetic (n = 20) by injection of streptozotocin 65 mg/kg and weight matched controls (n = 19) were divided into unilaterally nephrectomized and intact groups prior to challenge with HgCl2 (3 mg/kg). Diabetic rats (D2, n = 9) did not show a rise in serum creatinine concentration (0.56 +/- 0.10 vs 0.48 +/- 0.10 mg/dl) after HgCl2 challenge, while control rats (C2, n = 10) had a significant (p less than 0.001) rise in serum creatinine levels (0.40 +/- 0.14 vs 2.60 +/- 0.42 mg/dl). Uninephrectomized rats (D1, n = 11) did not alter the protection afforded by diabetes (creatinine 0.69 +/- 0.14 vs 0.67 +/- 0.13 mg/dl), but control uninephrectomized rats (C1, n = 9) had a substantial rise (p less than 0.001) in serum creatinine (0.51 +/- 0.13 vs 3.81 +/- 0.72 mg/dl). We conclude that induced hyperglycemia protects rats against mercuric chloride toxicity.

Induced Hyperglycemia Protects Against Mercury Nephrotoxicit___ ASAIO Journal

Cadmium and mercury-induced hyperglycemia in the fresh water crab,

***Oziotelphusa senex senex*: Involvement of neuroendocrine system**

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Abstract

The effect of exposure to sub lethal concentrations of cadmium chloride and mercuric chloride on hemolymph glucose levels of the freshwater crab, *Oziotelphusa senex senex*, was studied. **Intact crabs exposed to cadmium or mercury exhibited a significant hyperglycemia compared to controls,** but no significant differences in hemolymph glucose level were detected among the eyestalkless crabs after exposure to metals, suggesting that the effect of metals could be on the sinus gland in the eyestalks, increasing secretion of the hyperglycemic hormone. To test this hypothesis, eyestalks were collected from control and metal exposed crabs, and tested for hyperglycemic effect and also for the hyperglycemic hormone levels. The levels of hyperglycemic hormone and the hyperglycemic effect were significantly low in the eyestalks collected from metal exposed crabs when compared with eyestalks from control crabs. These results strongly suggest that metals act, at least in part, by triggering the secretion of hyperglycemic hormone from the eyestalk.

Another Article in ScienceDirect - Ecotoxicology and Environmental Safety Cadmium and mercury-induced hyperglycemia in the fresh water crab, Oziotelphusa senex senex Involvement of neuroendocrine system

Insulin Resistance:

- State in which the body does not respond to the action of insulin hormone although enough insulin is produced.
- This occurs often in people with type 2 diabetes.

Symptoms of Hyperglycemia

Symptoms:

- Thirst
- Fatigue
- Blurry vision
- Rapid weight loss
- Frequent trips to the bathroom
- Nausea
- Feeling faint

- Having an infection or being sick or under stress can also make the blood sugar too high
- If the patient is not sick and does not have ketones in their urine, going for a slow walk or some other easy exercise may lower the blood sugar.

Symptoms of Hypoglycemia

Caused by taking too much insulin, missing a meal, caffeine, soda, typical American diet, delaying a meal, exercising too much, or drinking too much alcohol. Sometimes medicines you take for other health problems can cause blood sugar to drop.

Symptoms:

- Shakiness
- Unhappy
- Mixed up
- Hungry
- Fatigue
- Sweat a lot
- Headaches
- Very confused
- Sleepy
- Irritable
- May pass out or have a seizure.

Type 1 Diabetes

- Occurs equally among males and females
- More common in whites than in nonwhites.

Causes of Diabetes Type 1

- Viruses
- Auto-immune disease
- Drugs: steroids, antibiotics etc.
- Vaccinations

Diabetes

- An estimated 16 million people in the United States have diabetes mellitus
- About half of these people do not know they have diabetes and are not under care for the disorder.
- Each year, about 798,000 people are diagnosed with diabetes.
- 5th or 6th leading causes of death and disability in the United States...more than 193,140 deaths in 1996.
- One of the most common chronic disorders in children in the United States. About 123,000 children and teenagers age 19 and younger have diabetes.
- 24,000 persons with diabetes lose their sight each year. In the United States, diabetic retinopathy is the leading cause of blindness in adults under age 65.

Diabetic Kidney Disease

- The most common cause of kidney failure in the United States.
- The greatest threat to life in adults with Type 1 Diabetes.
- After having diabetes for 15 years, one-third of people with type 1 diabetes develop kidney disease.
- Diabetes damages the small blood vessels in the kidneys, impairing their ability to filter impurities from blood for excretion in the urine.
- Persons with kidney damage must have a kidney transplant or rely on dialysis to cleanse their blood.

Diabetic Neuropathy

- Can cause pain and loss of feeling in the feet, legs, and fingertips.
- Can also affect the parts of the nervous system that control blood pressure, heart rate, digestion, and sexual function.
- Is a major contributing factor in foot and leg amputations among people with diabetes.

Pg. 66

Diabetes...Long-term Complications

- Blindness
- Heart disease
- Strokes
- Kidney failure
- Amputations
- Nerve damage
- Uncontrolled diabetes can complicate pregnancy
- Birth defects are more common in babies born to women with diabetes.
- Don't forget about impotence

Study Links Cancer & Diabetes

- ASSOCIATED PRESS *DDN* 1-12-05
- CHICAGO—a study of more than 1 million South Koreans suggests diabetes can raise the risk of developing and dying from several types of cancer, including digestive-tract tumors.
- Diabetes is often linked to obesity and obesity is known to increase the risk of cancer. Yet few of the study participants were overweight, so the researchers think high blood sugar levels- another hallmark of diabetes- also might be involved.
- The highest risks for developing cancer and dying from it were found in people with the highest blood sugar levels, the South Korean researchers found. The study appeared in *Journal of the American Medical Association*.
- Researchers analyzed data on 1.29 million South Korean men and women ages 30-95. About 5 percent of the participants had diabetes. A total of 26,473 participants died of cancer during follow-up.
- Participants with diabetes were roughly 30 percent more likely than those without to develop and die from cancer.

WHAT'S WRONG WITH HUGH?

Oral Diabetes Agents Appear to:

Oral diabetes agents are not insulin "pills" but powdered, compressed medications that appear to:

- Affect the insulin-making ability of the beta cells of the pancreas
- Stimulate the forming of receptor sites on the cells
- Correct some post-receptor defects on the insides of the cells
- Effect production of glucose by the liver (hepatic glucose production).

Metformin (Glucophage)

Increases the muscles' ability to use insulin, **decreases glucose production in the liver**, does not promote weight gain, **somewhat** reduces levels of triglycerides and other fats such as LDL or "bad" cholesterol in the blood, and may decrease the absorption of glucose from the intestine. **All these effects usually result in lower blood sugar**. Side effects may include loss of appetite, nausea, and diarrhea. Metformin is available in 500-mg and 850-mg tablets with a maximum dosage of 2,550-mg per day. **Contraindications** for metformin include patients with Type 1 diabetes; **those at risk for cardiovascular disease; those with kidney or liver disease**; serum creatinine levels greater than 1.4 (for men) and 1.5 (for women); those who use alcohol excessively; and children and pregnant women. The use of metformin with any of these can result in serious and potentially fatal side effects such as lactic acidosis. It can be used with oral hypoglycemic agents, acarbose, troglitazone, or insulin.

Metformin (Glucophage) cont.

- Works by suppressing the liver's glucose production and increasing the sensitivity of the cells to insulin.
- Risks: impaired liver and kidney function causing lactic acid buildup in the blood which can be fatal.
- ***This drug can increase your chances of dying from cardiovascular problems by two-and-a-half times.***

Acarbose Drugs (Precose)

- Function: Slows carbohydrate digestion in the small intestine by blocking enzymes that naturally break down the carbohydrates
- Risks: poor digestion, cramps, gas, diarrhea, linked to cancer of kidney in lab rats.

Lantus (Insulin Glargine) 07-01-2009 MedWatch

- Audience - Diabetes healthcare professionals, patients
- FDA notified healthcare professionals and patients that it is aware of four recently-published observational
- studies that looked at the use of Lantus (insulin glargine) and possible risk for cancer in patients with diabetes.
- Three of the four studies suggest an increased risk for cancer associated with use of Lantus.
- FDA is currently reviewing many sources of safety data for Lantus, including these newly published observational studies, data from all completed controlled clinical trials, and information about ongoing controlled clinical trials, to better understand the risk, if any, for cancer associated with use of Lantus. Discussions are also ongoing between FDA and the manufacturer of Lantus as to whether any additional studies evaluating the safety and efficacy of this drug will need to be performed. FDA will communicate the results on its ongoing review to the public, as appropriate, as our review continues.
- The FDA encourages both healthcare professionals and patients to report side effects from the use of insulin glargine to the FDA's MedWatch Adverse Event Reporting Program at www.fda.gov/medwatch/report.htm.
- Read the complete MedWatch Safety summary, including a link to the Early Communication and supporting documents, at:
- http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm170089.htm

Higher Risk for Mortality with Intensive Diabetes Treatment

Online: Medscape Family Medicine 10-23-2008 Charles Vega MD

- Effects of Intensive Glucose Lowering in Type 2 Diabetes
- The Action to Control Cardiovascular Risk in Diabetes Study Group
  Better glycemic control has been linked with better type 2 diabetes outcomes. Therefore, it would seem logical that a diabetes treatment strategy with a focus on lower glycated hemoglobin levels would improve patients' prognosis. However, results of the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial suggest otherwise, to the point that the trial was stopped prematurely.
- More recent research has questioned whether glycated hemoglobin levels may predict the risk for macrovascular disease at all. In another trial of intensive therapy for type 2 diabetes, multiple factors were demonstrated to promote a higher risk for macrovascular disease, including duration of diabetes, [illegible] between glycated hemoglobin [illegible] ious meta-analysis, which demonstra[illegible]
- Intensive [illegible] one analysis of the Diabetes C[illegible] olubile intercellular adhesion [illegible] ases is soluble tumor necrosis fa[illegible] ivity C-reactive protein levels com[illegible]
- Randomiz[illegible] y groups. The mean age of participant[illegible] re black and Hispanic, respective[illegible] el was 8.3%.
- A safety co[illegible] tee recommended discontinu[illegible]
- Given the [illegible] serves scrutiny.[8] Metformin [illegible] hich were used in 91.7% of the intensive treatment group and 58.3% of the standard treatment group. That the intensive treatment group experienced greater weight gain (a known side effect of treatment with thiazolidinediones) during the trial potentially highlights a discrepancy in between the 2 groups. However, it must be noted that participants in the intensive treatment group were also more likely to receive all classes of antidiabetes medications compared with the standard treatment group.
- One strength of the ACCORD trial is its real-world setting. The study had few exclusion criteria for participation and allowed multiple forms of diabetes treatment. However, clinicians should keep in mind that the glycemic control targets in the trial were lower than current recommendations from the American Diabetes Association, and the study focused on patients with significant cardiovascular risk factors in addition to diabetes.[10] There is strong evidence that glycemic control to less aggressive levels improves diabetes outcomes, and clinicians and patients should continue to try to achieve glycated hemoglobin levels of 7% or below. Meanwhile, continued follow-up of patients in the ACCORD trial, all of whom now receive standard therapy for diabetes, will help to determine which factors promoted the increased risk for death associated with intensive diabetes treatment.

Intensively targeting blood sugar to near-normal levels in adults with type 2 diabetes at very high risk for heart attack and stroke…

The most significant result of the ACCORD study, that intensive glycemic control was associated with a higher rate of overall mortality, is not intuitive, and the possible reasons behind this result are intriguing.

- *N Engl J Med.* 2008;358:2545-2559

Physicians Pay Attention: You Aren't Testing Your Patients Adequately for Kidney Disease!

Posted 03/17/2008 MedScape Herman Hurwitz, MD, FCAP*******

- Chronic kidney disease, or CKD, is a life-threatening condition that affects more than 1 in 9 adults in the United States.[1] The consequences of inadequately treated CKD are cardiovascular disease and its comorbidities -- heart attack and stroke -- as well as renal failure. A recent *Quest Diagnostics Health Trends* Report suggests that patients most at risk for CKD -- specifically, those with diabetes or hypertension[2] -- are not being effectively monitored.
- Our analysis, developed in partnership with the National Kidney Foundation, found that a stunning 60% of patients with diabetes and kidney disease did not receive a test for urine microalbumin during a 12-month period. 90% of patients who had hypertension and kidney disease also did not receive the test.
- That's my opinion. I'm Dr. Herman Hurwitz, Senior Medical Director, Quest Diagnostics Mid Atlantic business unit-Philadelphia Campus.

The Silent Kidney Disease Epidemic

- More than 26 million Americans over age 20 suffer chronic kidney disease, which represents 13% of the adult population!22
- Diabetes and poorly controlled blood pressure are the leading causes of kidney failure, meaning this epidemic is largely preventable with early detection.28
- Annual blood chemistry tests and regular blood pressure checks can identify deteriorating kidney function early

The Silent Kidney Disease Epidemic

- End-stage renal disease is the name for kidney failure so advanced that it cannot be reversed. End-stage renal disease means that kidney function is so poor that the patient cannot be kept alive without aggressive and often only partially effective treatment.
- There are 336,000 Americans receiving chronic dialysis treatment right now.22 Another 136,000 Americans are surviving with a kidney transplant.22 These treatments can induce serous side effects that shorten the patient's life span. The annual cost of dialysis alone is about $70,000, most of which is borne by Medicare (which is facing near-term insolvency).29

The Silent Kidney Disease Epidemic

- The National Kidney Foundation estimates that more than 67,000 Americans die of kidney failure each year,
- Kidney failure is so devastating to aging individuals because it causes startlingly high levels of homocysteine and C-reactive protein, greater incidences of anemia, and a host of other complications.

The Silent Kidney Disease Epidemic and FDA banning Pyridoxamine B6

- The FDA is seeking to ban pyridoxamine, which has been demonstrated to significantly delay the progression of kidney disease.11-13
- Pyridoxamine has been shown to slow the elevation of creatinine, a blood marker of kidney function by 68%.24 These data indicate that many of those destined to perish from kidney disease will be dying prematurely because of the FDA's draconian actions to keep pyridoxamine away from the public.

Kidney Failure -17% function left

- 6-2-2015 51y/o Male 5'9" 218 lbs
- Rapid kidney failure, fistula installed in preparation for imminent dialysis
- 6-23-2015 report from patient that kidney function is now 21%
- 4% improvement in just 3 weeks!!!

Insulin Not Preventive

- The Trial:
  - The new Diabetes Prevention Trial -- type 1 diabetes, sponsored by NIDDK, **identifies relatives at risk for developing type 1 diabetes and treats them with low doses of insulin or with oral insulin-like agents in the hope of preventing type 1 diabetes**. Similar research is carried out at other medical centers throughout the world.
- The Result:
  - The theory that small injections of insulin might help prevent the development of type-1 (juvenile onset) diabetes failed.
  - With or Without insulin, groups developed diabetes at similar rates. NEJM, May 30, 2002
  - **My questions: Did other problems develop due to the insulin? Was the severity or progression of diabetes different in these two groups?**
  - **RARELY DO WE GET THE WHOLE STORY.**

Insulin Side Effects

- Some adverse effects of insulin injections are a higher risk for hypoglycemia, significant weight gain leading to adverse effects on blood pressure and cholesterol levels, hypokalemia, lipodystrophy, hypersensitivity, and increased insulin antibody production.
- **Common side effects from insulin injections include allergic reaction such as itching or hives, acne, swelling in the face or hands, tingling or swelling in the throat or mouth, tightness in the chest, breathing trouble; seizures, fainting, and red, itchy, or swollen skin where the injection was given.**

Diabetes: Symptoms

- NO SYMPTOMS in the early stages
- increased thirst
- increased urination
- change in urine
- fatigue
- vision problems: frequent prescription changes
- poor healing
- edema
- neuropathy

DCBCN: www.CBCN.us

- **Board Certified is the highest degree that can be had for a doctor.**
  - **People look for Board certified neurologist, Board Certified Plastic Surgeon and Board Certified Chiropractic Clinical Nutritionist**
- **Masters degree is for teaching**
- **Ph.D is for research**
- **Current 300 hour Nutrition Diplomate Programs**
- **Texas Chiropractic College**
- Each is a stand alone class on a specific topic and can be used as part of recertification hours for DCBCNs

GLUCOSE AND HEMOGLOBIN A1C

READING BLOOD TESTS

Focus on Elements: Glucose

Clinical range: 65-99mg/dL. **Healthy range:** 70-90mg/dL.
These values may be less for infants to 2 years of age.
CRITICAL RANGE: less than 40mg/dL and over 450mg/dL.

DECREASED in:
- Hypoglycemia
- Hypothyroidism
- Early diabetes
- Neuroglycopenia (lack of glucose to brain)
- Insulinomas (pancreatic islet cell tumors)
- Pancreatitis
- Hepatitis
- Glucagon deficiency
- Liver disease
- Cancer
- Addison's disease (adrenal insufficiency)
- Hypopituitarism (deficiency of ACTH or growth hormone)
- Hypothalamic lesions
- Malabsorption
- Starvation/fasting
- Alcoholics
- Amino acid defects
- Fatty acid metabolism defects
- Carnitine deficiencies

Drugs:
- Insulin
- Oral hypoglycemic drugs
- Alcohol
- Salicylates
- Quinine
- Haloperidol

Nutrients to consider:
- Chromium Picolinate, Zinc, Vanadium (check hair level), Diabetic or Hypoglycemic diet

INCREASED in:
- Poor carbohydrate metabolism
- Diabetes type I and II
- Nonfasting specimen
- Stress
- Myocardial infarct
- Brain damage
- CVA
- Convulsions
- Cushing's disease
- Acromegaly and gigantism (with insulin-resistant diabetes, Hypopituitarism later)
- Tumors
- Liver disease
- Pancreatitis
- Vitamin B1 deficiency
- Hypervitaminosis A

Drugs:
- Alcohol
- Estrogens
- Corticosteroids
- Phenytoin
- Propranolol
- Thiazide
- Diuretics
- Corticoids
- Oral contraceptives
- Thyroid hormone
- Progestins
- Anti-inflammatory drugs (Indomethacin)
- Diuretic and Antihypertensive drugs (Thiazides, Furosemide, Clonidine)
- Neuroactive drugs (Phenothiazines, Tricyclics, Lithium carbonate, Haloperidol)

INCREASED in continued:
- Adrenergic agonists (Isoniazid, Heparin, Cimetidine, Nicotinic acid)
- Many drugs

Nutrients to consider:
- Chromium; Zinc; Vanadium (check hair level); Diabetic or hypoglycemic diet depending on level of glucose.

Focus on Elements: **Glycohemoglobin A1-C**

A low value may precede diabetes due to hyperinsulinism.
Clinical range 3.4-6.7% **Healthy range** 4.0-5.4%.
CRITICAL VALUE: over 10.1%.

The level of glycosylated hemoglobin correlates very well with a person's recent overall blood sugar levels. Hemoglobin A1c will tell what the diabetic's blood sugar levels have been running for the past 2-3 months.

DECREASED in:
- Hemolytic anemias
- Congenital diseases
- Blood loss: acute or chronic
- Pregnancy
- Kidney disease with or without Hemodialysis

INCREASED in:
- Poor glucose control
- Retinopathy
- Diabetes mellitus
- Diabetic neuropathy
- Pregnancy
- Iron deficiency anemia
- Splenectomy
- Increased serum triglycerides
- Alcohol
- Albuminuria
- Hemochromatosis

Environmental:
- Lead toxicity

Vitamin D and Insulin Resistance

- American Journal of Clinical Nutrition, Vol. 79, No. 5, 820-825, May 2004
  © 2004 American Society for Clinical Nutrition
  ORIGINAL RESEARCH COMMUNICATION
- Hypovitaminosis D is associated with insulin resistance and ß cell dysfunction1,2,3
- Conclusions: The data show a positive correlation of 25(OH)D concentration with insulin sensitivity and a negative effect of hypovitaminosis D on ß cell function.
- Subjects with hypovitaminosis D are at higher risk of insulin resistance and the metabolic syndrome.

Diabetic Dietary Considerations/ Low Carb Diets

- No fruit juice.
- Eat only one fruit and at least 4 fresh vegetables per day.
- Eat snack every hour and half to 2 hours...eat by the clock.

Low Carb Guidelines

- Initially, you will be on a protein/veggie diet. Avoid all breads, crackers, pasta, rice, and/or other grains even if they are whole grain, until further notice.
- When possible, use organic produce and meats. Most of the time, we can control our exposure to the pesticides on produce and the hormones in meats. It is better for your health if you can eliminate your exposure to these chemicals.

Category 1 (Low Carb Guidelines)

All Diabetics on Insulin or Oral Medication start with Category 1

Most Desirable Protein Sources

Almond Butter	Beef	Cashew Butter
Chicken	Eggs	Mackerel, fresh
Nuts (all)	Peanut Butter	Seeds (all)
Salmon, fresh	Tuna, fresh	Turkey

Category 1 Hgb A1C >8 UA Glucose >500mg/dl

Category 1- Fruits: Fresh or Frozen. (Most Desirable Fruit with lowest carbohydrate content) Choose one per day. One cup equals one serving.

Cantaloupe Rhubarb Strawberries Watermelon

Category 1 Diet

Category 1 Vegetables: Fresh or Frozen
Most Desirable Vegetables with lowest carbohydrate content

Asparagus*	Avocado	Bean sprouts
Beans, string	Beet greens	Broccoli
Brussels Sprouts	Cabbage*	Carrots
Cauliflower*	Celery	Chard, Swiss
Collards	Cucumber	Dandelion Greens
Eggplant	Endive	Kale
Kohlrabi	Leeks	Lettuce
Mushrooms	Mustard Greens	Okra
Onions	Parsley	Peppers, any
Pimento	Pumpkin	Radishes
Rutabagas	Sauerkraut*	Spinach
Squash	Tomatoes	Turnips
Water Cress		

*Have these only once or twice per week if you have been directed to do so as a result of a low thyroid.

Category 2 Diet

Category 2 Hgb A1C 6-8 UA Glucose 50-500mg/dl

Category 2- Vegetables: Fresh or Frozen (higher carbohydrate content) For a change, twice weekly, you can choose one vegetable from this list.

Artichokes	Beans, dried	Beans, kidney
Beans, Lima	Corn	Hominy
Parsnips	Peas, green	Potato, sweet
Potato, white	Rice	Yams

Category 2- Fruits: Fresh or Frozen (Less Desirable Fruit with higher carbohydrate content) As your glucose becomes more regulated, more choices may be made from this list when Dr. Merkle has given permission based upon test results.

Apple	Apricots	Betty Lou Smackers	Blackberries	Cranberries
Currants	Grapes	Gooseberries	Grapefruit	Guava
Melons	Lemons	Limes	Oranges	Papayas
Peaches	Plums	Raspberries	Tangerines	

Category 3 Diet

Category 3 Hgb A1C <6 UA Glucose <50mg/dl

Category 3- Fruits: Fresh or Frozen (Least Desirable Fruit with highest carbohydrate content) Use these only when your glucose had normalized and Dr. Merkle has given permission to choose from this list based upon test results.

Bananas	Blueberries	Cherries	Figs	Kumquats
Loganberries	Mangoes	Mulberries	Pears	Pineapple
Pomegranates	Prunes			

Note: All vegetables should be eaten raw or lightly blanched or steamed (cook until color is vibrant). If you have digestive problems, it is advised that you always blanch or steam your vegetables before eating.

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9
Glucose	low	VLOW	LOW						
Hg A1C	Op	Op	high						

	Conditions	Considerations
Case 1	Hypoglycemia **Nutrients:** Chromium Picolinate	Liver
Case 2	Hyperinsulinsim / Danger **Nutrients:** Chromium Picolinate; Vanadium, EPA / DHA	Liver, Meds, Insulin, Glucophage, etc.
Case 3	Hyperinsulinism / Prediabetic **Nutrients:** Chromium Picolinate; Vanadium, EPA / DHA	Liver, Meds, Insulin, Glucophage, etc
Case 4		

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Test 9
Glucose	low	VLOW	LOW	high	HIGH	high	LOW	VHigh	Op
Hg A1C	Op	Op	high	Op	Op	HIGH	HIGH	VHigh	HIGH

	Conditions	Considerations
Case 6	Diabetes **Nutrients:** Chromium Picolinate, Vanadium, EPA / DHA, Glucoril	Liver, Pancreas, Cholesterol
Case 7	Diabetes **Nutrients:** Chromium Picolinate, Vanadium, EPA / DHA, Glucoril	Probably on Meds, Poorly Controlled Diabetes
Case 8	Diabetes **Nutrients:** Chromium Picolinate, Vanadium, EPA / DHA, Glucoril, Niacinamide, Vit C, Vit E, Magnesium, Zinc	Liver, Pancreas, EVERYTHING
Case 9	Diabetes **Nutrients:** Chromium Picolinate, Vanadium, EPA / DHA, Glucoril	Liver

Diabetes: REVIEW

What is the primary regulator of glucose?

LIVER

When the primary regulator dysfunctions and the glucose goes high then low within a couple of hour, this is called:

HYPOGLYCEMIA

When the glucose goes too high in the blood, this gland is activated:

PANCREAS

This gland will produce what hormone when the glucose is too high:

INSULIN

Diabetes: REVIEW

What forces glucose into the cells? **Insulin**
What allows glucose to enter the cells? **Exercise/need**
A dysfunctioning liver, poor diet/ nutrition and excess insulin production causing the glucose to go very low is called this: **Hyperinsulinism**
When the glucose is high and the cells no longer respond to insulin, this condition is now called: **SYNDROME X**
Why does SYNDROME X occur?
Where does all the glucose go when a person is on diabetic medication and insulin?
What are the long term effects of use of insulin?

Pediatric News
The Leading Independent Newspaper for the Pediatrician
September 2004 • Volume 38 • Number 9

ADA's Proposed HbA_{1c} Goals for Kids Draw Fire

Many Diabetologists say the new numbers are 'going to set families up for failure.'

KEYSTONE, COLO.—Proposed new American Diabetes Association glycosylated hemoglobin goals for children have come under strong criticism from some prominent pediatric endocrinologists.
This is the first time that the ADA has set glycosylated hemoglobin treatment goals for children. And although the group's final report won't be finished until later this year, the proposed numbers the ADA is circulating for comment by diabetologists—"**an HbA_{1c} level of less than 7.5% in 6- to 11-year-olds and less than 7.0% in 12- to 20-year-olds—are just too stringent**," Dr. H. Peter Chase said at a conference on management of diabetes in youth.
"**This is coming at a time when *less than a third of kids* are making it below 8.0%. It's the feeling of many of us that this is just going to set families up for failure**," said Dr. Chase, professor of pediatrics at the University of Colorado, Denver.
Dr. Chase noted that in three recent European series totaling close to 9,000 diabetic children as well as in a 300-patient series from Harvard's Joslin Diabetes Center in Boston, the mean HbA_1 level was 8.6%-9.0%. Only 30%-32% of children in the four studies had an HbA_{1c} level below 8.0%.
"Something to keep in mind: Once we have all these new guidelines, can you really implement them effectively in your patients, or are you just going to write them on a piece of paper with both patient and caregiver not paying much attention to them?" said Dr. Satish K. Garg, professor of medicine and pediatrics at the university.
Dr. Chase said he fully agrees with ADA officials on the need to reduce HbA_1 levels in the pediatric diabetes population as a whole. **He has suggested a target of less than *8.0% as more realistic*. It's achievable with the help of improved, next-generation continuous glucose monitoring systems, greater use of insulin pens and other convenience-enhancing devices, and the newer insulin analogs.**
[What about dietary changes?]

Case: AM2655
Type 1 Diabetic since 1996

- Presented in September 2003.
- Very compliant and well controlled diabetic
- Primary concerns were allergies and diabetes.
- Other symptoms: excessive hunger, poor memory/concentration
- She was nursing her 3rd born child when she came into our office and wanted to make sure she was passing on good nutrition to her child while maintaining good nutrition for herself.
- She was taking insulin (Humalog) and also on an insulin pump.
  - The insulin seemed to be keeping the blood sugar levels under control.
- C-Peptide has been zero since 1996.

C-Peptide…direct from Labcorp.com

Reference Interval:
- 1.1-4.4 ng/mL (Note: Reference interval is for fasting patients.)

Use:
- The principal use of C-peptide is in the evaluation of hypoglycemia. Patients with insulin-secreting neoplasms have high levels of both C-peptide and endogenous insulin; in contrast, patients with factitious hypoglycemia will have low C-peptide levels in the presence of elevated (exogenous) serum insulin. C-peptide is also useful in evaluating residual beta-cell function in insulin-dependent diabetics, many of whom have antibodies that interfere with insulin assays. Glucagon-stimulated C-peptide concentration has been shown to be a good discriminator between insulin-requiring and noninsulin-requiring diabetic patients. The diagnosis of islet cell tumor is supported by elevation of C-peptide when plasma glucose is low.

Limitations:
- C-peptide levels are increased with renal failure. (C-peptide is normally excreted by the kidneys.) Instances of insulinoma have been described in which proinsulin was increased but insulin and C-peptide were not.

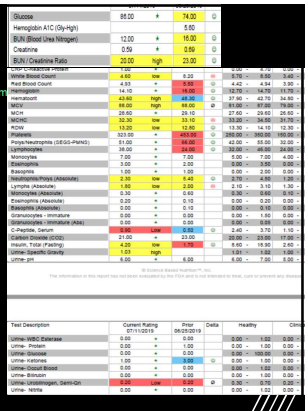
11y/o female with abdominal pains

Developing Type 1 diabetes, days from needing insulin.

Ticket: 58536
Complaints: XXXXX has been having on/off stomach pain for a week. Urgent care tested her for strep and she doesn't have it. Would any of these findings suggest bad enough infection like appendicitis?

After full testing" C-Peptide improved from 0.50 it 0.90 in 2 weeks!!!

SBN member: *"She is feeling great!! Also, insulin antibodies were negative."*



Glucose	86.00	+	74.00		
Hemoglobin A1C (Gly-High)			5.60		
BUN (Blood Urea Nitrogen)	12.00	+	16.00		
Creatinine	0.59	+	0.69		
BUN / Creatinine Ratio	20.00	high	23.00		

White Blood Count	4.60	low	6.20		5.70 - 8.00	3.40	
Red Blood Count	4.63	+	3.93		4.42 - 4.94	3.92	
Hemoglobin	14.10	+	16.00		12.70 - 14.70	13.70	
Hematocrit	43.60	high	48.30		37.60 - 42.70	34.80	
MCV	88.00	high	88.00		81.00 - 87.00	79.00	
MCH	28.60	+	29.10		27.60 - 29.60	26.60	
MCHC	32.30	low	33.10		33.20 - 34.80	33.70	
RDW	13.20	low	12.80		13.30 - 14.10	12.30	
Platelets	323.00	+	453.00		285.00 - 365.00	350.00	
Polys/Neutrophils (SEG-PMN2)	51.00	+	46.00		42.00 - 65.00	32.00	
Lymphocytes	38.00	+	34.00		22.00 - 45.00	54.00	
Monocytes	7.00	+	7.00		5.00 - 7.00	4.00	
Eosinophils	3.00	+	2.00		0.00 - 3.00	0.00	
Basophils	1.00	+	1.00		0.00 - 2.00	0.00	
Neutrophils/Polys (Absolute)	3.30	low	5.40		2.70 - 4.80	1.30	
Lymphs (Absolute)	1.80	low	2.00		2.10 - 3.10	1.30	
Monocytes (Absolute)	0.30	+	0.60		0.30 - 0.80	0.10	
Eosinophils (Absolute)	0.20	+	0.10		0.00 - 0.20	0.00	
Basophils (Absolute)	0.00	+	0.10		0.00 - 0.10	0.00	
Granulocytes - Immature	0.00	+	0.00		0.00 - 1.80	0.00	
Granulocytes - Immature (Abs)	0.00	+	0.00		0.00 - 0.06	0.00	
C-Peptide, Serum	0.50	Low	0.90		2.40 - 3.70	1.10	
Carbon Dioxide, (CO2)	21.00	+	23.00		20.00 - 29.00	17.00	
Insulin, Total (Fasting)	4.20	low	3.70		8.60 - 16.90	2.60	
Urine- Specific Gravity	1.03	high			1.01 - 1.02	1.00	
Urine- pH	6.00	+	6.00		6.00 - 7.00	5.00	

Test Description	Current Rating 07/11/2018		Prior 06/26/2018	Delta	Healthy	Clinic
Urine- WBC Esterase	0.00	+	0.00		0.00 - 1.02	0.00
Urine- Protein	0.00	+	1.00		0.00 - 1.00	0.00
Urine- Glucose	0.00	+	0.00		0.00 - 100.00	0.00
Urine- Ketones	1.00	+	3.00		0.00 - 1.00	0.00
Urine- Occult Blood	0.00	+	0.00		0.00 - 1.02	0.00
Urine- Bilirubin	0.00	+	0.00		0.00 - 1.00	0.00
Urine- Urobilinogen, Semi-Qn	0.20	Low	0.20		0.30 - 0.70	0.20
Urine- Nitrite	0.00	+	0.00		0.00 - 1.02	0.00

Insulin Auto Antibodies

- High Insulin Auto antibodies precede Type 1 diabetes, commonly referred to as insulin-dependent diabetes (IDDM)
- Insulin Auto antibodies cause pancreatic beta-cell destruction that leads to an absolute insulin deficiency.
- The clinical onset of diabetes does not occur until 80% to 90% of pancreatic beta cells have been destroyed.
- Prior to clinical onset, type 1 diabetes is often characterized by circulating autoantibodies against a variety of islet cell antigens, including glutamic acid decarboxylase (GAD), tyrosine phosphatase (IA_2), and insulin.
- The autoimmune destruction of the insulin-producing pancreatic beta cells is thought to be the primary cause of type 1 diabetes.
- $91.76 TEST NUMBER 141598 CPT CODE 86337

IA_2 Antibodies (ICA512 Auto antibodies or Tyrosine Phosphatase Auto antibodies)

- IA_2 Antibodies - The presence of these autoantibodies provides early evidence of autoimmune disease activity
- IA2 Antibodies measurement can be useful in assisting the physician with the prediction, diagnosis, and management of patients with diabetes.
- Autoantibodies to IA_2, a tyrosine phosphatase-like protein, are found in 50% to 75% of type 1 diabetics at and prior to disease onset.
- These autoantibodies are generally more prevalent in younger onset patients.
- The risk of diabetes is increased with the presence of each additional autoantibody.
- The positive predictive value of the IA_2 antibody test is enhanced when measured in conjunction with antibodies to GAD and insulin.

- $140.00 TEST NUMBER 141531 CPT CODE 86341

GAD-65
Glutamic acid decarboxylase (GAD_{65})

- GAD-65 (Glutamic acid decarboxylase (GAD_{65})) is an enzyme that is produced primarily by pancreatic islet cells.
- A number of recent studies indicate that patients with Type 1 insulin-dependent diabetes mellitus (IDDM) often have antibodies to GAD_{65}.
- The presence of GAD_{65} autoantibodies has been shown to be a strong predictive marker for the eventual onset of IDDM.
- Measurement of GAD_{65} antibody can also be of use in distinguishing insulin-dependent from noninsulin-dependent diabetics when the clinical history is ambiguous.
- GAD_{65} autoantibodies are often markedly elevated in patients with the stiff-person syndrome (also referred to as stiff-man syndrome), a condition that is associated with fluctuating stiffness and paroxysmal spasms of the trunk and legs.
- $178.50 TEST NUMBER 143008 CPT CODE 83519

Beta-hydroxybutyrate (BHB)-***
a test to determine diabetic ketoacidosis

- For those with type 1 diabetes, as well as type 2 diabetes, testing for this ketone is critical.
- Ketones are not harmful in small levels, however, high levels of beta-hydroxybutyrate can be dangerous. For those following the newest trend, the keto diet, certain levels of ketones are desirable (between 0.5-3 mmol/L). However, for those with diabetes, **these levels** must be monitored as high levels **could be deadly**.
- Diabetic Keto Acidosis (DKA) can occur with diabetes, high glucose, being sick, pregnant, infections or a variety of other conditions.
- The urine dipstick does not measure beta-hydroxybutyrate, the most abundant of the physiological ketone bodies;
- The dipstick reagent only reacts with ketones: acetoacetate and acetone. This would indicate a need for a BHB blood test especially for children and adults with positive dipstick ketones.
- Serum BHB increases in response to fasting, but should not exceed 0.4 mmol/L following an overnight fast (up to 12 hours).
- Twenty four-hour fasting tests should not be performed in patients <2 years of age.

Beta-hydroxybutyrate (BHB)-
a test to determine diabetic ketoacidosis

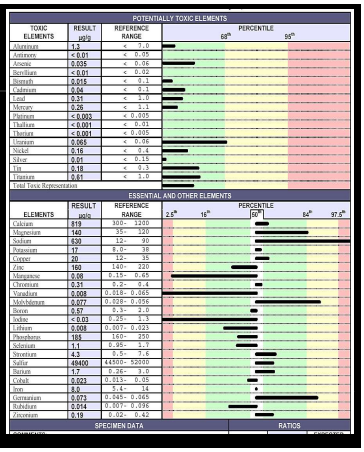
- **It has been shown in humans that the serum glucose concentration does not correlate well with the blood ketone concentration.**
- The reason for this is that the rates of glucose and ketone production and utilization are not the same at different stages of the DKA. Therefore, severe ketosis can be missed if it is not investigated until severe hyperglycemia is also present.

- Shekih-Ali M, Karon BS, Basu A, et al. Can serum β-hydroxybutyrate be used to diagnose diabetic ketoacidosis. Diabetes Care. 2008;31:643–647. [PubMed] [Google Scholar]
- Van de Maele I, Rogier N, Damniet S. Retrospective study of owner's perception on home monitoring of blood glucose in diabetic dogs and cats. Can Vet J. 2005;46:718–723. [PMC free article] [PubMed] [Google Scholar]
- Tietz Textbook of Clinical Chemistry. Edited by CA Burtis, ER Ashwood. Philadelphia, WB Saunders Co. 1999
- Vassault A, Bonnefont JP, Specola N, et al: Lactate, pyruvate, and ketone bodies. In Techniques in Diagnostic Human Biochemical Genetics - A Laboratory Manual. Edited by F Hommes. New York, Wiley-Liss, 1991
- Bonnefont JP, Specola NB, Vassault A, et al: The fasting test in paediatrics: application to the diagnosis of pathological hypo- and hyperketotic states. Eur J Pediatr 1990;150:80-85

Case: AM22655
Test Results / Nutritional Recommendations

- Hypercholesterolemia: MLK (fish oils)
- Kidney involvement: Beta Carotene, Vit C
- Low Minerals: Calcium MCHC, Magnesium Glycinate, Spectramin Chelate
- Gastro/Intestinal dysfunction: Betaine HCL
- Low Functioning Thyroid: Energenics, Norwegian Kelp
- Anemia: Iron Peptonate, Sublingual B12
- Possible infection and/or inflammation: Vitamin C, Lauricidin

Case: AM22655
Hair Analysis
Sept 2003



POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT ug/g	REFERENCE RANGE
Aluminum	1.3	< 7.0
Antimony	< 0.01	< 0.05
Arsenic	0.035	< 0.06
Beryllium	< 0.01	< 0.02
Bismuth	0.015	< 0.1
Cadmium	0.04	< 0.3
Lead	0.31	< 3.0
Mercury	0.26	< 1.1
Platinum	< 0.003	< 0.005
Thallium	< 0.001	< 0.01
Thorium	< 0.001	< 0.005
Uranium	0.065	< 0.06
Nickel	0.16	< 0.4
Silver	0.01	< 0.15
Tin	0.18	< 0.3
Titanium	0.01	< 1.0

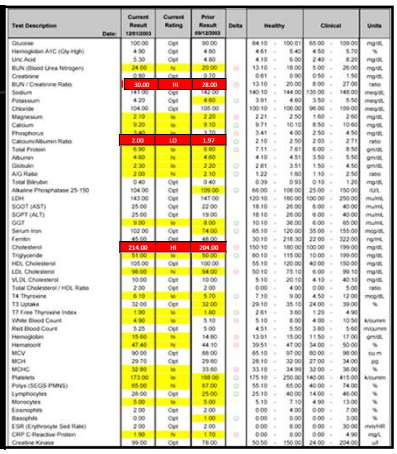
Total Toxic Representation

ESSENTIAL AND OTHER ELEMENTS

ELEMENTS	RESULT ug/g	REFERENCE RANGE
Calcium	819	300- 1100
Magnesium	140	35- 120
Sodium	630	12- 90
Potassium	17	8.0- 38
Copper	20	12- 35
Zinc	160	140- 220
Manganese	0.08	0.15- 0.65
Chromium	0.31	0.2- 0.4
Vanadium	0.008	0.010- 0.065
Molybdenum	0.077	0.020- 0.056
Boron	0.57	0.3- 2.0
Iodine	< 0.03	0.25- 1.3
Lithium	0.008	0.007- 0.023
Phosphorus	185	160- 250
Selenium	1.1	0.95- 1.7
Strontium	4.3	0.5- 7.6
Sulfur	49400	44500- 52000
Barium	1.7	0.26- 3.0
Cobalt	0.023	0.013- 0.05
Iron	8.0	5.4- 14
Germanium	0.073	0.045- 0.065
Rubidium	0.014	0.007- 0.096
Zirconium	0.19	0.02- 0.42

SPECIMEN DATA | RATIOS

Case: AM22655
Blood Analysis
Comparison Sept 2003 to Dec 2003



Test Description	Current Result 12/01/2003	Current Rating	Prior Result 09/12/2003	Delta	Healthy	Clinical	Units
Glucose	100.00	Opt	90.00		84.10 - 100.01	65.00 - 109.00	mg/dL
Hemoglobin A1C (Gly-Hgb)	4.90	Opt	4.80		4.61 - 5.40	4.50 - 5.70	%
Uric Acid	5.30	Opt	4.60		4.10 - 6.00	2.40 - 8.20	mg/dL
BUN (Blood Urea Nitrogen)	24.00	hi	20.00		13.10 - 18.00	5.00 - 26.00	mg/dL
Creatinine	0.80	Opt	0.70		0.61 - 0.90	0.50 - 1.50	mg/dL
BUN / Creatinine Ratio	30.00	HI	28.00		13.10 - 20.00	8.00 - 27.00	ratio
Sodium	141.00	Opt	142.00		140.10 - 144.00	135.00 - 145.00	meq/dL
Potassium	4.20	Opt	4.60		3.91 - 4.60	3.50 - 5.50	meq/dL
Chloride	104.00	Opt	105.00		100.10 - 106.00	96.00 - 109.00	meq/dL
Magnesium	2.10	lo	2.20		2.21 - 2.50	1.60 - 2.60	mg/dL
Calcium	9.20	lo	9.30		9.71 - 10.10	8.50 - 10.60	mg/dL
Phosphorus	3.80	lo	3.20		3.41 - 4.00	2.50 - 4.50	mg/dL
Calcium/Albumin Ratio	2.00	LO	1.97		2.10 - 2.50	2.03 - 2.71	ratio
Total Protein	6.90	lo	6.80		7.11 - 7.61	6.00 - 8.50	gm/dL
Albumin	4.60	hi	4.60		4.10 - 4.51	3.50 - 5.50	gm/dL
Globulin	2.30	lo	2.20		2.81 - 3.51	1.50 - 4.50	gm/dL
A/G Ratio	2.00	hi	2.10		1.22 - 1.60	1.10 - 2.50	ratio
Total Bilirubin	0.40	Opt	0.40		0.39 - 0.93	0.10 - 1.20	mg/dL
Alkaline Phosphatase 25-150	104.00	Opt	109.00		66.00 - 106.00	25.00 - 150.00	IU/L
LDH	143.00	Opt	147.00		120.10 - 160.00	100.00 - 250.00	mu/mL
SGOT (AST)	25.00	Opt	22.00		18.10 - 26.00	6.00 - 40.00	mu/mL
SGPT (ALT)	25.00	Opt	19.00		18.10 - 26.00	6.00 - 40.00	mu/mL
GGT	9.00	lo	8.00		10.10 - 36.00	6.00 - 65.00	mu/mL
Serum Iron	102.00	Opt	74.00		85.10 - 120.00	35.00 - 155.00	mcg/dL
Ferritin	67.00	Opt	68.00		30.10 - 216.30	22.00 - 322.00	ng/mL
Cholesterol	214.00	HI	204.00		150.10 - 180.00	100.00 - 199.00	mg/dL
Triglyceride	51.00	lo	50.00		80.10 - 115.00	10.00 - 199.00	mg/dL
HDL Cholesterol	105.00	Opt	100.00		55.10 - 120.00	40.00 - 150.00	mg/dL
LDL Cholesterol	96.00	hi	94.00		50.10 - 75.10	6.00 - 99.10	mg/dL
VLDL Cholesterol	10.00	Opt	10.00		5.10 - 20.10	4.10 - 40.10	mg/dL
Total Cholesterol / HDL Ratio	2.00	Opt	2.00		0.00 - 4.00	0.00 - 5.00	ratio
T4 Thyroxine	6.10	lo	5.70		7.10 - 9.00	4.50 - 12.00	mcg/dL
T3 Uptake	32.00	Opt	32.00		29.10 - 35.10	24.00 - 39.00	%
T7 Free Thyroxine Index	1.90	lo	1.80		2.61 - 3.80	1.20 - 4.90	
White Blood Count	4.90	lo	5.10		5.10 - 8.00	4.00 - 10.50	k/cumm
Red Blood Count	5.25	Opt	5.00		4.51 - 5.50	3.80 - 5.80	m/cumm
Hemoglobin	15.60	hi	14.80		13.91 - 15.00	11.50 - 17.00	gm/dL
Hematocrit	47.40	hi	44.10		39.51 - 47.00	34.00 - 50.00	%
MCV	90.00	Opt	88.00		85.10 - 97.00	80.00 - 98.00	cu m
MCH	29.70	Opt	29.60		28.10 - 32.00	27.00 - 34.00	pg
MCHC	32.80	lo	33.60		33.10 - 34.90	32.00 - 36.00	%
Platelets	173.00	lo	168.00		175.10 - 250.00	140.00 - 415.00	k/cumm
Polys (SEGS-PMNS)	65.00	hi	67.00		50.10 - 65.00	40.00 - 74.00	%
Lymphocytes	28.00	Opt	25.00		25.10 - 40.00	14.00 - 46.00	%
Monocytes	5.00	lo	5.00		5.10 - 7.10	4.90 - 13.00	%
Eosinophils	2.00	Opt	2.00		0.00 - 4.00	0.00 - 7.00	%
Basophils	0.00	Opt	1.00		0.00 - 0.00	0.00 - 3.00	%
ESR (Erythrocyte Sed Rate)	2.00	Opt	2.00		0.00 - 8.00	0.00 - 30.00	mm/HR
CRP C-Reactive Protein	1.90	hi	1.70		0.00 - 0.00	0.00 - 4.90	mg/L
Creatine Kinase	99.00	Opt	78.00		50.50 - 150.00	24.00 - 204.00	u/l

Case: AM22655
Type 1 Diabetic since 1996

- Within two months she had decreased her insulin by 1/10 to 1/8.
- 2-23-2004 Overall 25% less insulin
- 2-27-2004- now at the lowest level she had been at for several years and it appears that the trend is decreasing
- 3-4-2005 email… "This value is the lowest I've had in all of the past 4 years. **If the trend continues, I will reach a zero insulin value in about 2 years.** Wishful Thinking!"

Case: AM22655
Jelly Bean-like Bumps

4-29-2004 "Dr. Merkle: Another interesting development is that I have had jelly bean-like bumps under the skin of my underarm for years that have been swollen. Every doctor that I have ever asked just said it was a plugged duct and I should change my deodorant. I tried many different things but nothing worked. So for the last 2-3 years I've given up and kept everything the same."

Case: AM22655
Jelly Bean-like Bumps

- "A couple weeks ago I noticed that they are completely gone (unswollen). In my curiosity, I looked into what this swollen thing was and found that there are lymph nodes corresponding to my previous bumps. **In my reading I have notice that fibrous breast tissue has been treated with iodine with a high success rate. Lymph nodes are also present in the breast so are these connected? Also, the lymph system is the one that goes out of whack and makes the antibodies that destroyed my pancreas cells. Coincidence?"**
- "Have you seen any info on studies of iodine supplementation and the immune system?"

Case: AM22655
Thyroid and Grave's disease

- The TSH was 10, which was done in April of 2004 by her endocrinologist. He diagnosed Graves disease. I recommended she take Iodine and for her to read: *The Safe and Effective Implementation of Orthoiodo supplementation In Medical Practice* by Guy E. Abraham MD, a former Professor of obstetrics, Gynecology and Endocrinology at the UCLA School of Medicine"
- This and other articles concerning thyroid and iodine are found at www.Optimox.com

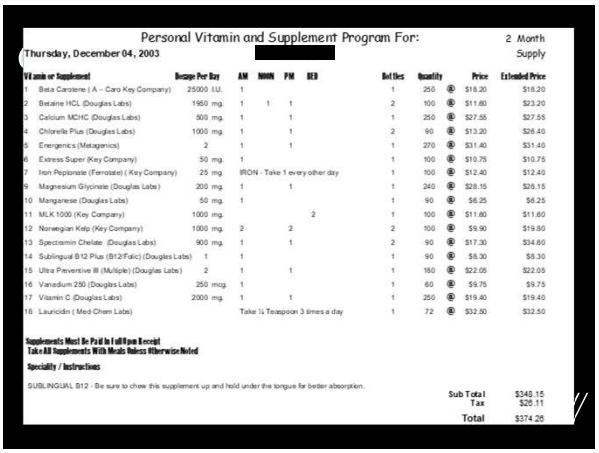
Thyroid Improvement

----- Original Message -----
From: AM22655; To: Van Merkle Sent: Wednesday, June 02, 2004 4:09 PM
Subject: Change in Thyroid Test Results
Hello-
I just had an appointment with my Endocrinologist and got my lab results from last week (5/26/04).
They are the following:
Hemoglobin A1C 6.0 Ref. 4.4-6.1
T4free 1.01 Ref 0.80-1.80
TSH 2.88 Ref 0.4-5.5
T3free 190 Ref 230-420
So by the looks of it, I'm approaching hypothyroid again. He has completely ruled out Grave's disease.
Enjoy the day! 6-2-2004

Dear AM22655,
Glad to hear about the Grave's disease, you are doing well.
Exercise is my choice for maintaining the thyroid level and improving the immune system.
I think you are doing quite well. Dr. Merkle

Case: AM22655
I think I'll be off insulin very soon....

- "I put a call into my endocrinologist so that he's aware of the situation. I'm also hoping to get another C Peptide test done to see if there is any changes. I am noticing a difference in my low blood sugar readings where I haven't gone below 64 in the past couple of days. It appears that my body is responding to the low and dumping glucose into my system because I have seen a rise in glucose after getting into the mid 60's. So I started reducing my insulin when ever I get to the 60's and found that most of the time it doesn't make much of a difference.
- So if I stay on this course, I'll be off insulin in a few days. :) Enjoy the day!! AM22655"



Personal Vitamin and Supplement Program For: [redacted] 2 Month Supply

Thursday, December 04, 2003

	Vitamin or Supplement	Dosage Per Day	AM	NOON	PM	BED	Bottles	Quantity	Price	Extended Price
1	Beta Carotene (A - Caro Key Company)	25000 I.U.	1				1	250	$18.20	$18.20
2	Betaine HCL (Douglas Labs)	1950 mg.	1	1	1		2	100	$11.60	$23.20
3	Calcium MCHC (Douglas Labs)	500 mg.	1		1		1	250	$27.55	$27.55
4	Chlorella Plus (Douglas Labs)	1000 mg.	1		1		2	90	$13.20	$26.40
5	Energenics (Metagenics)	2	1		1		1	270	$31.40	$31.40
6	Extress Super (Key Company)	50 mg.	1				1	100	$10.75	$10.75
7	Iron Peptonate (Ferrotate) (Key Company)	25 mg	IRON - Take 1 every other day				1	100	$12.40	$12.40
9	Magnesium Glycinate (Douglas Labs)	200 mg.	1		1		1	240	$28.15	$28.15
10	Manganese (Douglas Labs)	50 mg.	1				1	90	$6.25	$6.25
11	MLK 1000 (Key Company)	1000 mg.				2	1	100	$11.60	$11.60
12	Norwegian Kelp (Key Company)	1000 mg.	2		2		2	100	$9.90	$19.80
13	Spectromin Chelate (Douglas Labs)	900 mg.	1		1		2	90	$17.30	$34.60
14	Sublingual B12 Plus (B12/Folic) (Douglas Labs)	1	1				1	90	$8.30	$8.30
15	Ultra Preventive III (Multiple) (Douglas Labs)	2	1		1		1	180	$22.05	$22.05
16	Vanadium 250 (Douglas Labs)	250 mcg.	1				1	60	$9.75	$9.75
17	Vitamin C (Douglas Labs)	2000 mg.	1		1		1	250	$19.40	$19.40
18	Lauricidin (Med-Chem Labs)		Take ½ Teaspoon 3 times a day				1	72	$32.50	$32.50

Supplements Must Be Paid in Full Upon Receipt
Take All Supplements With Meals Unless Otherwise Noted

Specialty / Instructions

SUBLINGUAL B12 - Be sure to chew this supplement up and hold under the tongue for better absorption.

Sub Total $348.15
Tax $26.11
Total $374.26

Case: AM22655 Results

Prior to treatment (**9-2003**):
- Daily average insulin usage **24 units/day**

Current level with **6 months following Dr. Merkle's advise**:
- Daily average insulin usage **12 units/day**
- As of April 2006, she is at 11-12 units/day
  - Along with everything else on the SBN program she has added tyrosine PCA-Rx for heavy metal detox.
- Complicating factors: Nursing, thyroid problems, toxic elements (uranium), low minerals (iodine, vanadium, manganese), chronic infection

HEART DISEASE

9 in 10 Will Develop Hypertension

- The lifetime risk for the development of high BP is 90%
- 60% will receive medication
- "This public health burden will likely increase as the US population ages in the near future.
- Hypertension: greater than 140/90
  JAMA 2002:287(8).

First sign of heart disease...sudden death.

- The vast majority of diabetic patients develop heart disease, and **80% of them die of heart disease. But 1/3 of people who have diabetes don't know it.**
- *DDN* 2-2002: Recommended that people get more frequent urinalysis to detect kidney disease and diabetes.

New Cholesterol Standards

- Will triple the number of people taking cholesterol drugs from 13.5 million to 36 million people.
- Americans needing to make lifestyle changes will now number 65 million, up from 52 million.
- *Reader's Digest* August 2002

Statins in America

One in four Americans over the age of 45 take a statin

- Adverse effects:
  - muscle problems
  - nerve damage in hands and feet
  - immune depression
  - pancreas and liver dysfunction
  - sexual dysfunction
  - cataracts
  - memory loss
  - increased risk of cancer

Statin Drugs lead to Diabetes

- Researchers looked at five different clinical trials that together examined more than 32,000 people. They found that the higher the dosage of statin drugs being taken, the greater the diabetes risk.
- "In a pooled analysis of data from 5 statin trials, intensive-dose statin therapy was associated with an increased risk of new-onset diabetes compared with moderate-dose statin therapy."
- Journal of the American Medical Association June 22, 2011; 305(24): 2556-2564

Statin Drugs Accelerate Cardiovascular Disease: Coronary Calcification by More than 50 Percent

One in four Americans over the age of 45 take a statin

Adverse effects of statin drugs include muscle problems, nerve damage in hands and feet, immune depression, pancreas and liver dysfunction, sexual dysfunction, cataracts, memory loss, and an increased risk of cancer

A new study shows that statin use is associated with a 52 percent increased prevalence and extent of calcified coronary plaque compared to non-users. *Atherosclerosis August 24, 2012*

The authors concluded that:
"More frequent statin use is associated with accelerated coronary artery calcification in T2DM patients with advanced atherosclerosis."

Statins Inhibit Vitamin K2 and Stimulate Hardening of the Arteries

- OSLO, NORWAY and METUCHEN, NJ – (May 19, 2015) A new paper published in the March issue of Expert Review Clinical Pharmacology states that statins may act as "mitochondrial toxins" with negative effects on the heart and blood vessels not only via the depletion of coenzyme Q10 (CoQ10), but also by inhibiting "the synthesis of vitamin K2, the cofactor for matrix Gla-protein activation, which in turn protects arteries from calcification."
- Vitamin K2 plays a critical role in the activation of matrix Gla protein (MGP), which inhibits soft tissue and cardiovascular calcification. MGP is present in bone, blood vessel, lung, heart, and kidney soft tissues. MGP binds calcium and protects blood vessels from calcification, but only when in its active form, which requires adequate intakes of vitamin K2. **Unfortunately, statins inhibit vitamin K2 synthesis in the body, thereby accelerating coronary artery calcification, an important marker of the progress of atherosclerosis, according to researchers.**
- "This new paper speaks directly to statins interrupting the mechanism of action by which vitamin K2 inhibits calcification," said Hogne Vik, NattoPharma CEO. "Conversely, research clearly demonstrates that increasing dietary vitamin K2, specifically vitamin K2 as menaquinone-7, can improve vitamin K2 levels in the blood and tissues, thus promoting cardiovascular health."
- Supporting Vik's statement, a new study, "Menaquinone-7 Supplementation Improves Arterial Stiffness in Healthy Postmenopausal Women," published in the journal Thrombosis and Haemostasis, demonstrated the positive impact of MenaQ7® brand Vitamin K2 as MK-7 (menaquinone-7) on cardiovascular health through its improvement of arterial flexibility. This study is significant because it is an interventional study with a vitamin K2 dietary supplement, MenaQ7, confirming what previous population-based studies have shown: a positive correlation of vitamin K2 consumption from dietary sources attributes to less arterial calcification and reduced risk of coronary heart disease.
- Researchers at the R&D Group VitaK of Maastricht University in the Netherlands monitored 244 healthy post-menopausal women for three years using pulse wave velocity and ultrasound techniques. The participants, aged 55-65 years, were randomly assigned to take 180 mcg of MenaQ7 daily for three years, or placebo capsules. Results confirmed that MenaQ7 Vitamin K2 not only inhibited age-related stiffening of the artery walls, but also made an unprecedented statistically significant improvement of vascular elasticity.
- The cardiovascular study appears in the May 2015 issue of Thrombosis and Haemostasis. To review online, visit the online archive of Thrombosis and Haemostasis

US doctors urge wider use of cholesterol drugs

By MARILYNN MARCHIONE— Nov. 12, 2013 9:26 PM EST

- The guidelines, issued Tuesday, Nov. 12, 2013 by the American Heart Association and American College of Cardiology, are a big change.
- The nation's first new guidelines in a decade for preventing heart attacks and strokes call for twice as many Americans — one-third of all adults — to consider taking cholesterol-lowering statin drugs.
- The guidelines, issued Tuesday by the American Heart Association and American College of Cardiology, are a big change. They offer doctors a new formula for estimating a patient's risk that includes many factors besides a high cholesterol level, the main focus now. The formula includes age, gender, race and factors such as whether someone smokes.
- …under the new advice, one-third of U.S. adults — 44 percent of men and 22 percent of women — would meet the threshold to consider taking a statin. Under the current guidelines, statins are recommended for only about 15 percent of adults.

Diagnosing Heart Failure

- Before one is diagnosed with heart failure, he/she may think that being tired and short of breath is just a sign of growing older or being "out of condition."
- Shortness of breath (dyspnea)
- Difficulty breathing when lying down
- Swelling of the legs, ankles, and feet (edema)
- General fatigue and weakness
- Mild confusion

Focus on Elements: Total Cholesterol

Clinical Range 140-200mg/dl **Healthy Range** 150-180mg/dl

DECREASED in:
Malnutrition
Malabsorption
Hyperthyroidism
Myeloma
Polycythemia
Cancers
Leukemia
Severe liver disease
Thalassemia
Chronic anemia
Infection
Inflammation

Drugs: Cortisone; ACTH

Nutrients to consider:
EPA/DHA, GLA, check liver function.

INCREASED in:
Hypercholesterolemia
Secondary hyperlipoproteinemias ie: kidney disease
Hypothyroid
Cirrhosis
Diabetes mellitus
Biliary obstruction: stone, carcinoma etc
Kidney disease
Pancreatic disease
Pregnancy
Fasting

Drugs:
Progestins
Anabolic steroids
Corticosteroids
Diuretics
Cholesterol lowering drugs

Nutrients to consider:
EPA/DHA, Garlic, GLA, Fatty Acids, Check Liver Function

Focus on Elements: Triglycerides

Clinical range 45-180mg/dL **Healthy range** 80-125mg.dl
95% of tissue storage fat is triglycerides.

DECREASED in:
Proteinemia
Malnutrition
Recent weight loss
Vigorous exercise

Drugs:
Vitamin C
Alpha1 receptor blockers
Phenformin
Clofibrate
Asparaginase
Progestins
Metformin
Aminosalicylic acid

Nutrients to consider:
chromium, vanadium

INCREASED in:
High coronary risk with a low HDL cholesterol
Family trait
Liver disease
Kidney disease
Hypothyroidism
Diabetes mellitus
Alcoholism
Gout
Pancreatitis
Acute myocardial infarction
Acute illness (cold, flu etc.)
Pregnancy
Obesity

Drugs:
Oral contraceptives
Estrogens
Beta-blockers
Hydrochlorothiazide
Anabolic steroids
Corticosteroids
Thiazide
Diuretics
Amiodarone
Interferon

Nutrients to consider:
chromium, vanadium and a low carbohydrate diet

Focus on Elements: HDL Cholesterol

Clinical range 35-65mg/dL **Healthy range** >60mg/dL.
HDL below is considered at risk for heart attack.

DECREASED in:
Sedentary lifestyle
Obesity
Smokers
Diabetes mellitus
Uremia
Stress
Illness
Myocardial infarction
Stroke
Trauma
Starvation
Hypothyroidism
Hyperthyroidism
High triglycerides
Liver disease
Kidney disease
Anemias
Cancer
Family traits

Drugs:
Thiazides
Beta blocking drugs
Anabolic steroids
Progestin
Antihypertensives
Neomycin
Phenothiazine
Probucol

Nutrients: Niacin, Chromium, Exercise

INCREASED in:
Vigorous exercise
Appropriate diet
Moderate alcohol
Insulin treatment
Family traits
Vitamins
Phytosterols
Tocotrienols
Arginine
Antioxidant vitamins

Drugs:
Estrogens
Birth control pills
Clofibrated
Atromid-S

The importance of Triglycerides and HDL

HDL is closely related to triglycerides.

It appears common for people with high triglycerides to have low HDL's, and these same people also tend to have high levels of clotting factors in their blood stream, which is unhealthy in protecting against heart disease.

Therefore, in adults, the triglyceride/HDL "good" cholesterol ratio should be below 2.
- 2 or less is considered ideal
- 4 is considered to be high
- 6 much too high

HDL is protective against heart disease.
- Hence, the lower the ratio, the better!

The lower the triglycerides, or the higher the HDL, the smaller the ratio becomes.

It is believed that the triglyceride/HDL Ratio is one of the most important predictors of heart disease.

The importance of Triglycerides and HDL Continued

A Harvard-lead study author reported:

"High triglycerides alone increased the risk of heart attack nearly three-fold."

People with the highest ratio of triglycerides to HDL – the "good" cholesterol – had 16 times the risk of heart attack as those with the lowest ratio of triglycerides to HDL in the study of 340 heart attack patients and 340 of their healthy, same age counterparts.

The citation also stated that the ratio of triglycerides to HDL was the strongest predictor of a heart attack, even more accurate than the LDL/HDL ratio.

- Gaziano JM, Hennekens CH, O'Donnell CJ, Breslow JL, Buring JE. Fasting triglycerides, high-density lipoprotein, and risk of myocardial infarction. Circulation. 1997 Oct 21;96(8):2520-5.

Niacin better than Statins

- "Niacin is far more powerful than statin drugs (Zocor, Lescol, Lipitor, Mevacor, Pravachol) in raising HDL Cholesterol. DDN 8-19-2002

Vitamin C Better than Statins

- A review of nine different studies indicates adults who regularly take vitamin C pills providing greater than 700 milligrams per day will experience a 25% drop in their risk for coronary heart disease.
- Major outcomes in moderately hypercholesterolemic, hypertensive patients randomized to pravastatin vs. usual care: the antihypertensive and lipid-lowering treatment to prevent heart attack trial (ALLHAT-LLT). JAMA. 2002;288(23)2998-3007.
- Studies have demonstrated that statins administered to individuals with risk factors for coronary heart disease (CHD) reduce CHD events. However, many of these studies were too small to assess all-cause mortality or outcomes in important subgroups. Pravastatin did not reduce either all-cause mortality or CHD significantly when compared with usual care in older participants.
  - Knekt P, Ritz J, Pereira MA etal. *Antioxidants vitamins and coronary heart disease risk; a pooled analysis of 9 cohorts. The American Journal of Clinical Nutrition.* 2004;80(6):1508-1520.

Focus on Elements: LDL Cholesterol

Clinical range 50- 130mg/dL **Healthy range** 55-110mg/dL.
Critical range > 160mg/dL
Note: A low LDL cholesterol can prevent Heart Attacks.

DECREASED in:
Family traits
Severe illness
Proteinemia

Drugs:
Oral estrogen therapy

INCREASED in:
Family traits
Diabetes mellitus
Hypothyroidism
Kidney disease
High saturated and hydrogenated fat diet
Pregnancy
Multiple Myeloma
Cancer
Anorexia nervosa

Drugs:
Anabolic steroids
Antihypertensive drugs
Beta-blockers
Progestin
Carbamazepine

Nutrients to consider: EPA/DHA, Chromium, Garlic

High LDL helps FIGHT infection

- Populations with inverse association with cholesterol and mortality.
  - Chronic kidney disease
  - Congestive heart failure
  - COPD
  - Geriatrics
  - Cancer survivors
    - Archives of Medical Science 2007 3,4A:S74-S80
      - December 2007

The Benefits of High Cholesterol

By Uffe Ravnskov, MD, PhD
From the Westin A Price Foundation Wise Traditions 8-2009

- **Benefits of LDL**
- LDL may not only bind and inactivate dangerous bacterial toxins; it seems to have a direct beneficial influence on the immune system also, possibly explaining the observed relationship between low cholesterol and various chronic diseases.

VLDL Cholesterol

Clinical range 5-40mg/dL **Healthy range** 10-20mg/dL

Review and consider "Triglyceride" study. Triglycerides are not soluble in blood and are transported as VLDL.

The Benefits of High Cholesterol

By Uffe Ravnskov, MD, PhD
From the Westin A Price Foundation Wise Traditions 8-2009

- People with high cholesterol live the longest emerges clearly from many scientific papers. Consider the finding of Dr. Harlan Krumholz of the Department of Cardiovascular Medicine at Yale University, who reported in 1994 that old people with low cholesterol died twice as often from a heart attack as did old people with a high cholesterol.1
- Now consider that more than 90 % of all cardiovascular disease is seen in people above age 60 also and that almost all studies have found that high cholesterol is not a risk factor for women.2 This means that high cholesterol is only a risk factor for less than 5 % of those who die from a heart attack.
- Six of the studies found that total mortality was *inversely* associated with either total or LDL-cholesterol, or both. This means that it is actually much better to have high than to have low cholesterol if you want to live to be very old.

The Benefits of High Cholesterol

By Uffe Ravnskov, MD, PhD
From the Westin A Price Foundation Wise Traditions 8-2009

Cholesterol and Chronic Heart Failure

- Researchers at several German and British university hospitals found that the risk of dying for patients with chronic heart failure was strongly and inversely associated with total cholesterol, LDL-cholesterol and also triglycerides; those with high lipid values lived much longer than those with low values.11,12
- Other researchers have made similar observations. The largest study has been performed by Professor Gregg C. Fonorow and his team at the UCLA Department of Medicine and Cardiomyopathy Center in Los Angeles.13 The study, led by Dr. Tamara Horwich, included more than a thousand patients with severe heart failure. After five years 62 percent of the patients with cholesterol below 129 mg/l had died, but only half as many of the patients with cholesterol above 223 mg/l.

The Benefits of High Cholesterol

By Uffe Ravnskov, MD, PhD
From the Westin A Price Foundation Wise Traditions 8-2009

"High cholesterol is associated with longevity in old people. It is difficult to explain away the fact that during the period of life in which most cardiovascular disease occurs and from which most people die (and most of us die from cardiovascular disease), high cholesterol occurs most often in people with the lowest mortality. How is it possible that high cholesterol is harmful to the artery walls and causes fatal coronary heart disease, the commonest cause of death, if those whose cholesterol is the highest, live longer than those whose cholesterol is low?"

The Benefits of High Cholesterol, By Uffe Ravnskov, MD, PhD
From the Westin A Price Foundation Wise Traditions 8-2009

References

1. Krumholz HM and others. Lack of association between cholesterol and coronary heart disease mortality and morbidity and all-cause mortality in persons older than 70 years. *Journal of the American Medical Association* 272, 1335-1340, 1990.
2. Ravnskov U. High cholesterol may protect against infections and atherosclerosis. *Quarterly Journal of Medicine*96, 927-934, 2003.
3. Jacobs D and others. Report of the conference on low blood cholesterol: Mortality associations. *Circulation*86, 1046-1060, 1992.
4. Iribarren C and others. Serum total cholesterol and risk of hospitalization, and death from respiratory disease. *International Journal of Epidemiology*26, 1191–1202, 1997.
5. Iribarren C and others. Cohort study of serum total cholesterol and in-hospital incidence of infectious diseases. *Epidemiology and Infection* 121, 335–347, 1998.
6. Claxton AJ and others. Association between serum total cholesterol and HIV infection in a high-risk cohort of young men. *Journal of acquired immune deficiency syndromes and human retrovirology* 17, 51–57, 1998.
7. Nealton JD, Wentworth DN. Low serum cholesterol and risk of death from AIDS. *AIDS* 11, 929–930, 1997.
8. Rauchhaus M and others. Plasma cytokine parameters and mortality in patients with chronic heart failure. *Circulation* 102, 3060-3067, 2000.
9. Neibauer J and others. Endotoxin and immune activation in chronic heart failure. *Lancet* 353, 1838-1842, 1999.
10. Vredevoe DL and others. Skin test anergy in advanced heart failure secondary to either ischemic or idiopathic dilated cardiomyopathy. *American Journal of Cardiology*82, 323-328, 1998.
11. Rauchhaus M, Coats AJ, Anker SD. The endotoxin-lipoprotein hypothesis. *Lancet* 356, 930–933, 2000.
12. Rauchhaus M and others. The relationship between cholesterol and survival in patients with chronic heart failure. *Journal of the American College of Cardiology*42, 1933-1940, 2003.
13. Horwich TB and others. Low serum total cholesterol is associated with marked increase in mortality in advanced heart failure. *Journal of Cardiac Failure*8, 216-224, 2002.
14. Elias ER and others. Clinical effects of cholesterol supplementation in six patients with the Smith-Lemli-Opitz syndrome (SLOS). *American Journal of Medical Genetics*68, 305–310, 1997.
15. Bhakdi S and others. Binding and partial inactivation of Staphylococcus aureus a-toxin by human plasma low density lipoprotein. *Journal of Biological Chemistry* 258, 5899-5904, 1983.
16. Flegal WA and others. Inhibition of endotoxin-induced activation of human monocytes by human lipoproteins. *Infection and Immunity* 57 , 2237-2245, 1989.
17. Wolnstock CW and others. Low density lipoproteins inhibit endotoxin activation of monocytes. *Arteriosclerosis and Thrombosis* 12, 341-347, 1992.
18. Muldoon MF and others. Immune system differences in men with hypo- or hypercholesterolemia. *Clinical Immunology and Immunopathology*84, 145-149, 1997.
19. Feingold KR and others. Role for circulating lipoproteins in protection from endotoxin toxicity. *Infection and Immunity*63, 2041-2046, 1995.
20. Netea MG and others. Low-density lipoprotein receptor-deficient mice are protected against lethal endotoxaemia and severe gram-negative infections. *Journal of Clinical Investigation*97, 1366-1372, 1996.
21. Harris HW, Gosnell JE, Kumwenda ZL. The lipemia of sepsis: triglyceride-rich lipoproteins as agents of innate immunity. *Journal of Endotoxin Research*6, 421-430, 2001.
22. Netea MG and others. Hyperlipoproteinemia enhances susceptibility to acute disseminated Candida albicans infection in low-density-lipoprotein-receptor-deficient mice. *Infection and Immunity*65, 2663-2667, 1997.
23. Ross R, Glomset JA. The pathogenesis of atherosclerosis. *New England Journal of Medicine* 295, 369-377, 1976.
24. Ross R. The pathogenesis of atherosclerosis and update. *New England Journal of Medicine* 314, 488-500, 1986.
25. Klotz O, Manning MF. Fatty streaks in the intima of arteries. *Journal of Pathology and Bacteriology* 16, 211-220, 1911.
26. At least 200 reviews about the role of infections in atherosclerosis and cardiovascular disease have been published; here are a few of them: a) Grayston JT, Kuo CC, Campbell LA, Benditt EP. Chlamydia pneumoniae strain TWAR and atherosclerosis. *European Heart Journal* Suppl K, 68-71, 1993. b) Melnick JL, Adam E, Debakey ME. Cytomegalovirus and atherosclerosis. *European Heart Journal* Suppl K, 30-38, 1993. c) Nicholson AC, Hajjar DP. Herpesviruses in atherosclerosis and thrombosis. Etiologic agents or ubiquitous bystanders? *Arteriosclerosis Thrombosis and Vascular Biology* 18, 339-348, 1998. d) Ismail A, Khasawi H, Olson H. The role of infection in atherosclerosis and coronary artery disease. A new therapeutic target. *Heart Disease* 1, 233-240, 1999. e) Kuvin JT, Kimmelstiel MD. Infectious causes of atherosclerosis. f.) Kalayoglu MV, Libby P, Byrne GI. *Chlamydia pneumoniae* as an emerging risk factor in cardiovascular disease. *Journal of the American Medical Association* 288, 2724-2731, 2002.
27. Grau AJ and others. Recent bacterial and viral infection is a risk factor for cerebrovascular ischemia. *Neurology*50, 196-203, 1998.
28. Mattila KJ. Viral and bacterial infections in patients with acute myocardial infarction. *Journal of Internal Medicine* 225, 293-296, 1989.
29. The successful trials: a) Gurfinkel E. Lancet 350, 404-407, 1997. b) Gupta S and others. Circulation 96, 404-407, 1997. c) Muhlestein JB and others. Circulation 102, 1755-1760, 2000. d) Stone APM and others. *Circulation* 106, 1219-1223, 2002. e) Wiesli P and others. *Circulation* 105, 2646-2652, 2002. f) Sander O and others. *Circulation* 106, 2428-2433, 2002.
30. The unsuccessful trials: a) Anderson JL and others. *Circulation* 99, 1540-1547, 1999. b) Leowattana W and others. *Journal of the Medical Association of Thailand* 84 (Suppl 3), S669-S675, 2001. c) Cercek B and others. *Lancet* 361, 809-813, 2003. d) O'Connor CM and others. *Journal of the American Medical Association* 290, 1459-1466, 2003.
31. Gieffers J and others. *Chlamydia pneumoniae* infection in circulating human monocytes is refractory to antibiotic treatment. *Circulation* 104, 351-356, 2001
32. Gurfinkel EP and others. *Circulation* 105, 2143-2147, 2002.

About the Author

Dr. Ravnskov is the author of The Cholesterol Myths and chairman of The International Network of Cholesterol Skeptics (thincs.org).

B-Type Natriuretic Peptide (BNP)

- This 32-amino-acid polypeptide is secreted by the ventricles of the heart in response to excessive stretching of heart muscle cells in the ventricles. BNP is elevated in left ventricular dysfunction and correlates with both the severity of symptoms and the prognosis in congestive heart failure. BNP is a useful marker of cardiovascular risk, even in people with no clinical evidence of cardiovascular disease. The levels of BNP predict the risk of heart failure, first cardiovascular events, atrial fibrillation, and stroke or transient ischemic attack.

BNP: This Blood Test Predicts Death, Even When Everything Else Looks "Great"

- Ronald Grisanti D.C., D.A.B.C.O., D.A.C.B.N., M.S.
- **25% increase in death if the BNP is elevated one year after a heart attack.** And don't forget a BNP persistently **over 80 pg/mL can be an important indicator of when a more invasive approach is needed such as bypass surgery.**
- In fact, a **BNP twice the normal range can indicate a quadruple risk of death** in folks who don't even have symptoms.
- There is no other test that has the ability to have this crystal ball power of determining your chances of succumbing to heart failure even if you have no symptoms.
- As a brief explanation, BNP is a neuro-hormone made in and released from the heart ventricle. The ventricles of the heart make up the biggest part of the heart muscle that squeezes blood through all the rest of the body.
- When the ventricles are under too much tension or the work load on the ventricles is too much the BNP goes up. Basically, if the heart is working overtime to function, the BNP is made in larger quantities to help rescue the heart. The key thing to remember is the BNP will commonly increase long before you have any signs or symptoms that you have any trouble. This is one reason to make sure you keep your blood pressure well within normal levels because it reduces stress on the ventricles
- On the other hand knowledgeable "research" cardiologists over ten years ago published in the Journal of the American Medical Association stated the **BNP test "was a stronger biomarker for cardiovascular disease and death than the C-Reactive Protein.**
- One of the reasons you have not heard more about this test is because there is no drug the pharmaceutical has to treat the elevated BNP.
- **BNP has provided information about the risk of dying than no other test can, yet it has been persistently ignored.**
- The leading cardiology journal says, "Serial determinations of BNP levels during outpatient follow-up after acute coronary syndrome predicts the risk of death or new congestive heart failure.
- **How to treat an elevated BNP**
- The solution is taking **real vitamin E which includes four tocopherols and four tocotrienols (alpha, beta, gamma, and delta).**
- It turns out that the **tocotrienols** is a precursor to natriuretic hormone and is an essential part of what the body uses to make BNP to help heal the heart.
- **gamma tocotrienols can lower BNP.**

BNP: References

- Weidemann A, et al, Hypoxia, via stabilization of the hypoxiainducible factor HIF-1a, is a direct and sufficient stimulus for brain-type natriuretic peptide induction, Biochem J, 409:233-42, 2008 (predicts before symptoms, also useful for cancer hypoxia as well as heart)
- Lorgis L, et al, High levels of N-terminal pro B-type natriuretic peptide are associated with ST resolution failure after reperfusion for acute myocardial infarction, Q J Med, 100:211-16, 2007 (better predictor than ejection fraction, level over 900 means EKG ST damage not resolved, hypoxia leads to CHF)
- James SK, et al, N-terminal pro-brain natriuretic peptide and other risk markers for the separate prediction of mortality and subsequent myocardial infarction in patients with unstable coronary artery disease: a Global Utilization of Strategies To Open Occluded Arteries (GUSTO)-IV substudy, Circulation 108:275-81, 2003
- Tapanainen JM, et al, Natriuretic peptides as predictors of non-sudden and sudden cardiac death after acute myocardial infarction in the beta-blocking era, J Am Coll Cardiol 43; 5:757-63, 2004

Omland T, et al, B-type natriuretic peptide and long-term survival in patients with stable coronary artery disease, Am J Cardiol, 95:24-8, 2005

- Morita E, et al, Increased plasma levels of brain natriuretic peptide in patients with acute myocardial infarction, Circulation, 88:82-91, 1993
- Morrow DA, NACB Writing Group, National Academy of Clinical Biochemistry laboratory medicine practice guidelines: clinical characteristics and utilization of biochemical markers in acute coronary syndromes, Circulation 115: e356-75, 2007
- Omland T, et al, N-terminal pro-B-type type natriuretic peptide and longterm mortality in acute coronary syndromes, Circulation 106:2913-8, 2002
- Morrow DA, Prognostic value of serial B-type natriuretic peptide testing during follow-up of patients with unstable coronary artery disease, J Am Med Assoc 294:2866-71, 2005
- Richards M, et al, Comparison of B-type natriuretic peptides for assessment of cardiac function and prognosis in stable ischemic heart disease, J Am Coll Cardiol, 47:52-60, 2006
- Richards AM, et al, B-type natriuretic peptides and ejection fraction for prognosis after myocardial infarction, Circulation 107:2786-92, 2003
- Kragelund C, et al, N-terminal pro--B-type natriuretic peptide and long-term mortality in stable coronary heart disease, New Engl J Med 352:666-75, 2005
- Kistorp C, et al, N-terminal pro-brain natriuretic peptide, C-reactive protein, and urinary albumin levels as predictors of mortality and cardiovascular events in older adults, J Am Med Assoc, 293:1609-16, 2005
- Harma N, et al, Rapid ventricular induction of brain natriuretic peptide gene expression and experimental acute myocardial infarction, Circulation 92:1558- 64, 1995
- Saito H, et al, Gamma-tocotrienol, a vitamin E homolog, is a natriuretic hormone precursor, J Lipid Res, 44;8:1530-5, 2003 (a decade ago!)
- Hattori A, et al, Production of LLU-a following an oral administration of gamma-tocotrienols to rats, Biol Pharm Bull 23; 11:1395-7, 2000
- Parker RA, et al, Tocotrienols regulate cholesterol production in mammalian cells by post-transcriptional suppression of 3-hydroxy3- methyl glutaryl coenzyme A reductase, J Biolog Chem 268; 15:11230-8, 1993 (2 decades ago!)
- Inokuchi H, et al, Anti-angiogenic activity of tocotrienols, Biosci Biotechnol Biochem 67:7:1623-27, 2003
- Wan Nazaimoon WM, et al, Tocotrienols-rich diet decreases advanced glycosylation end products in non-diabetic rats and improves glycemic control in streptozotocin-induced diabetic rats, Malaysian J Pathol 24; 2:77-82, 2002
- Sylvester PW, et al, Role of GTP-binding proteins in reversing the anti-proliferative effects of tocotrienols in preneoplastic mammary epithelial cells, Asia Pacific J Clin Nutr 11 (suppl 7): S452-9, 2002
- Steiner M., Vitamin E: more than an antioxidant, Clin Cardiol 16 (4 suppl 1): 116-8, 1993
- Newaz MA, et al, Effect of gamma tocotrienols on blood pressure, lipid peroxidation and total antioxidant status in spontaneously hypertensive rats (SHR), Clin Exper Hypert (New York) 21; 8:1297-1313, 1999
- Nakagawa K, et al, DNA chip analysis of comprehensive food function: inhibition of angiogenesis and telomerase activity with unsaturated vitamin E, tocotrienol, BioFactors 21; 1-4:5-10, 2004
- Ohrvall M, et al, Gamma, but not alpha, tocopherol levels in serum are reduced in coronary heart disease patients J Intern Med, 239:111-7, 1996
- Uto-Kondo H, et al., Gamma tocopherol accelerated sodium excretion in a dose dependent manner in rats with a high sodium intake, J Clin Biochem Nutr 41: 211-17, Nov 2007
- Uto H, et al, Gamma-tocopherol enhances sodium excretion as a natriuretic hormone precursor, J Nutr Sci Vitaminology 50:277-82, 2004
- Kantoci D, et al, Endogenous natriuretic factors 6: the stereochemistry of a natriuretic gamma tocopherol metabolite LLU-a, J Pharmacol Exper Therap 282:648-56, 1997
- Murray EED, et al, Endogenous natriuretic factors 7: Biospecificity of a natriuretic gamma tocopherol metabolite LLU-a, J Pharmacol Exper Therap 282 657-62, 1997

BNP: Age-Based Ranges
Apex Clinical Laboratories, Inc

- Males:
  - <45 yrs 0-125 Pm/ml
  - 45-54 0-138
  - 55-64 0-177
  - 65-74 0-229
  - **75+ 0-852**

- SBN range: healthy 0-40
- Labcorp clinical range 0-100

BNP: patient heading to congestive heart failure and kidney disease.

The patient 57 y/o male, first presented 8-31-2009, diagnosed with kidney disease associated with diabetes.

He travels and half heartedly followed his program and didn't get retested as recommended.

He called me in February 22, 2010 with complaints of water retention/swelling of the ankles that would come and go. At times it would be real bad but then the next day it would be better. His MD prescribed HCTZ to reduce the fluid. The MD did not do any testing other than a Blood pressure.

I recommended he do a complete SBN panel with Vitamin D and the BNP.

I called him immediately and basically told him he is a walking disaster just waiting for something to happen, either kidney disease/failure or heart attack.

Test Description Date:	Current Result 02/23/2010	Current Rating	Prior Result 08/31/2009	Delta
Glucose	239.00	HI	171.00	
Hemoglobin A1C (Gly-Hgh)	9.60	HI	12.80	
Uric Acid	7.10	hi	7.00	
BUN (Blood Urea Nitrogen)	27.00	HI	29.00	
Creatinine	2.06	HI	2.01	
GFR EST (Glomerular Filtratation R	33.00	LO	34.00	
BUN / Creatinine Ratio	13.00	lo	14.00	
Sodium	137.00	lo	138.00	
Vitamin D 25-Hydroxy	43.20	lo	24.60	
B-type Natriuretic Peptide	1498.50	HI		

Pt. W.V. 102 y/o female 124lbs
18 yrs as patient, presented on 11-9-2010 with unusual fatigue and swelling in the ankles

Date	BNP	INR	Creat	GFR	UA Protein	
11-9-2010	1,865		1.52	31	500	+3 ankles
12-14-2010	2,060		1.43	34	300+	
12-27-2010	2,815	1.00*	1.45	33	300+	+2 ankles
1-10-2011	2,501	1.10**	1.46	33	100+	
1-24-2011	1,620	1.00	1.38	35		
3-7-2011		1,142	1.00	1.35	36	
3-28-2011	1,298	1.00#	1.49	32	50+	+1 ankles
4-29-2011	845	1.00#	1.46	29		

*Pt started taking 2 baby aspirin; **Pt has stated taking 3 baby aspirin
#Pt on 1 baby aspirin/day

1-12-2011 Patient feels better has a little more energy and still no pain of any kind, just tired and wants to go back to work…playing organ every Sunday.

She also wonders when she can start driving again.

Troponin I (Cardiac) an Isoenzyme

- Certain subtypes of troponin (cardiac troponin I and T) are very sensitive and specific indicators of damage to the heart muscle (myocardium). They are measured in the blood to differentiate between unstable angina and myocardial infarction (heart attack) in patients with chest pain. A patient who had suffered from a myocardial infarction would have an area of damaged heart muscle and so would have elevated cardiac troponin levels in the blood.[1]
- Elevated blood levels of other commonly used biomarkers such as CK-MB are not specific for cardiac injury because these markers are present at low levels in other tissue types throughout the body. **cTnI is found only in cardiac tissue and, therefore, blood levels are elevated only as a result of cardiac injury.** The National Academy of Biochemistry has proposed myoglobin and cTnI used in conjunction as the ideal markers for the diagnosis of AMI.
- Although the cTnI assay has been proven to be a valuable diagnostic tool, assay results must always be interpreted in conjunction with other test results such as the ECG or imaging studies and with the patient history and symptoms. In addition, physicians should not rely on a single measurement of any cardiac biomarker; serial measurements are recommended for an accurate diagnosis.
- **Patients without ST-elevations but with positive troponin results have increased risk of death or myocardial infarction**
- When interpreting the results of cTnI assays it is important to remember that, although cTnI is **100% specific for cardiac injury and damage, it is not 100% specific for AMI.**
- Cardiac:
  - Cardiac amyloidosis
  - Cardiac contusion
  - Cardiac surgery and heart transplant
  - Defibrillation
  - Closure of atrial septal defects
  - Coronary vasospasm
  - Heart failure
  - Hypertrophic cardiomyopathy
  - Myocarditis
  - Percutaneous coronary intervention
  - Radiofrequency ablation
  - Supraventricular tachycardia
- Drug-induced cardiotoxicity is common to all classes of therapeutic drugs. It is essential that cardiotoxicity is detected with a high degree of sensitivity and specificity. The newly developed troponins are especially useful in this context
- Cardiac-specific troponin I levels to predict the risk of mortality in patients with acute coronary syndromes. N Engl J Med 1996;335:1342-9.

INR : International Normalized Ratio, INR/PT-used mostly to monitor Plavix or Coumadin dosing

Kerry Prewitt, M.D., FACC
Robert I. Hamby, M.D., FACC, FACP

- The INR ratio helps physicians monitor patients taking anticoagulant medications
- The INR is a method of expressing the results of a prothrombin time (PT) blood test.
- The INR is based on an international standard that automatically corrects for variations between labs. Thus, using the INR, the PT measurement from one lab can be compared to a PT measurement from any other lab in the world, even if they use different methods to measure PT. The resulting measurement is often referred to as the INR/PT.
- The INR/PT was developed specifically for patients who are taking *warfarin*, an anticoagulant that inhibits the formation of blood clots. Warfarin is prescribed to patients who are at elevated risk of a blood clot causing a heart attack or stroke.
- The INR/PT test is administered routinely to monitor the blood level of the medication, which must kept within a very narrow range to be effective while lessening risk of uncontrolled bleeding.
- The INR/PT test may not be effective in patients with liver disease or patients suffering from antiphospholipid syndrome. Similarly, patients who are being given *heparin*, another anticoagulant given intravenously during surgery or at the initiation of anticoagulation therapy, may not benefit from the test since heparin does not prolong the PT.

INR : International Normalized Ratio, INR/PT-

Kerry Prewitt, M.D., FACC
Robert I. Hamby, M.D., FACC, FACP

- Aside from some changes in certain medications that may be ordered by one's physician, no special preparations are necessary for this test. A healthy person will have an INR of 1.0. However, patients taking anticoagulants to reduce the risk of blood clots may be advised to maintain an INR between 2.0 and 3.5. A higher number indicated greater anti-coagulation. Conditions that may warrant a higher-than-normal INR include atrial fibrillation, artificial heart valves, and thrombophlebitis (e.g., *deep vein thrombosis*, superficial vein thrombosis). Superficial vein thrombosis is usually not treated with warfarin.

High Blood Pressure

- 25% of the adult population in the US have high blood pressure.
- Decreasing the BP from 160/90 to 140/80 decreased the risk of heart disease more than 30%.
- Deficiencies of the following nutrients cause or contribute to high BP:
  - Potassium
  - Calcium
  - Magnesium
  - Omega-3 (fish oil or Flaxseed oil)
  - Garlic
  - Hawthorn extract
  - CoQ-10
  - Valerian root.

Hydrochlorothiazide: diuretic with lots of side effects

- Constipation; diarrhea; dizziness; lightheadedness (especially when sitting up or standing); loss of appetite; nausea; temporary blurred vision.
- Severe allergic reactions (rash; hives; itching; difficulty breathing; tightness in the chest; swelling of the mouth, face, lips, or tongue); confusion; dark urine; decreased urination; fainting; fast or irregular heartbeat; fever, chills, or persistent sore throat; increased thirst; joint pain, swelling, warmth, or redness (especially of the big toe joint); mental or mood changes; muscle pain or cramps; numbness or tingling; red, swollen, blistered, or peeling skin; seizures; severe or persistent dizziness; severe or persistent nausea or stomach pain; shortness of breath; unusual bruising or bleeding; unusual drowsiness, restlessness, tiredness, or weakness; unusually dry mouth; vomiting; yellowing of the eyes or skin. Metabolic effects: Raises cholesterol, Raises uric acid, Hyperglycemia, Low serum, Magnesium, Hyponatremia, Hypercalcemia, Metabolic alkalosis, Increase VLDL ~ 50%, May decrease insulin secretion, Increases BUN and Creatinine –kidney disease, Increases triglycerides, Increases gall stone formation, Thrombocytopenia, Hemolytic anemia.
- http://www.drugs.com/sfx/hydrochlorothiazide-side-effects.html#ixzz0qY0nhV6Z

Lay Lecture: BP and Pulse

- Who lives the longest? How long do you want to live?
- #1 cause of death
- What are the effects of aging? Preventable? Delayable?
- Plaques/ blood clots/ inflammation
- Medical treatments: surgery, drugs, transplant
- Circulation: transporting oxygen and nutrients
- What do these mean? How do they change with age?
  - Blood Pressure
  - Pulse:

60	86,400	
65	93,600	+7,200
70	100,800	+14,400
75	108,000	+21,600
80	115,200	+28,800
55	79,200	-7,200

- Nutrients: what should you take: basics Vit C, E, Beta Carotene, CoQ10, Magnesium, selenium, carnitine
- How do you know what you really need?

Heart Rate Reduction and Longer Life

- Humans, with a mean heart rate of 70 b.p.m. and a life expectancy of 80 years, are an exception to the relationship between heart rate and life expectancy shown in mammals, as their life expectancy is higher than that predicted by their heart rate. It has been estimated that a decrease in heart rate from 70 to 60 b.p.m. would further increase life expectancy from 80 to 93.3 years in humans.17
- **Heart rate reduction reduces myocardial energy expenditure**
  Adenosine triphosphate (ATP) is the primary source of energy in the heart and is used for electrical excitation, contraction, relaxation, and recovery of the resting electrochemical gradients across membranes.
- The heart may suddenly increase its output up to six-fold, thus requiring a huge amount of energy, unlike other tissues, it only stores low quantities of ATP, just sufficient to support a few beats. However, the low ATP levels in the heart are counterbalanced by a higher level of creatine phosphate which permits availability of ATP from the adenosine diphosphate, through a phosphorylation reaction catalyzed by creatine kinase.23
- In the heart, ATP is synthesized in the mitochondria from a variety of aerobic substrates.24 At rest, ATP is also generated from fatty acid ß-oxidation (60–70%) and carbohydrate catabolism (30%) including exogenous glucose and lactate catabolism. Amino acids and ketone bodies are utilized as substrates, however, less frequently.

- Oxford Journals
- European Heart Journal Supplements
- Volume 7, Suppl H
- Pp. H16-H21
- eurheartjsupp.oxfordjournals.org/cgi/content/full/7/suppl_H/H16

Jean C Stage 4 Liver Carcinoma In Just 1 Month: DON'T STOP!

3-4-2010 email;

Dr Merkle, The latest tests for Jean C, stage 4 liver carcinoma patient, are entered and report ordered. Would you give your advice as to any additional suggestions. She is feeling excellent and power walking 2 miles a day. Her oncologist is pleasantly surprised how well she is looking and feeling at this time.

Thanks for your time,
Dr. Gary Jxxxxxx

Test Description	Data:	03/04/2010		02/08/2010	Delta
Alk. Phosphatase 25-630		106.00	Opt	130.00	
Creatine Kinase					
LDH		892.00	HI	1,662.00	
SGOT (AST)		30.00	hi	29.00	
SGPT (ALT)		23.00	Opt	32.00	
GGT		36.00	Opt	49.00	
Serum Iron					
ESR-Erythrocyte Sed Rate, Westerg		36.00	HI	67.00	

Nutrients for the Heart

- CoQ-10 300 mg/day
- Vitamin C 3,000 mg/day
- Vitamin E 800 IU/day
- Selenium 30 mcg/day
- Magnesium 300 mg/day
- L-Carnitine 1,500 mg/day

Vitamin E

- Reduced All Death by 27%
- Reduced Heart Disease by 41%
- Reduced Cancer by 22%
- *-National Institute of Health*

- **JUST ONE VITAMIN!**

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Total Protein

- A depletion of plasma protein causes rapid mitosis of the hepatic cells and actual growth of the liver to a larger size until the plasma concentration returns to normal. A most important function of the liver is to synthesize certain amino acids, other important chemical compounds and so-called nonessential amino acids.
- To maintain more important functions and amino acids the body will break down muscle and other nonessential tissue from which the liver will manufacture these more important nutrients.
- There are over 100,000 proteins in the human body.

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Lay Lecture: BP and Pulse

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- #1 cause of death
- What are the effects of aging? Preventable? Delayable?
- Plaques/ blood clots/ inflammation
- Medical treatments: surgery, drugs, transplant
- Circulation: transporting oxygen and nutrients
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- Oxford Journals
- European Heart Journal Supplements

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Focus on Elements: Alkaline Phosphatase

Clinical Range: 40-120 IU/L Healthy range: 60-80 IU/L

Use: An enzyme which normally originates from liver and bone. As a tumor marker. Only three laboratory markers were consistently abnormal, in screening for metastatic carcinoma of breast, prior to clinical detectability of metastases: these were alkaline phosphatase, GGT and CEA. Alk Phos is elevated in 85% of skeletal metastases.

DECREASED in:
Excess vit D
Hypothyroidism
Pernicious anemia (deficient in B12 and folic acid)
Anemia
Celiac disease
Malnutrition
Scurvy
Zinc deficiency
Magnesium deficiency
Vitamin C deficiency

Drugs:
Estrogen
Corticosteroids
Trifluoperazine
Clofibrate
Azathioprine
Antilipemics: Atromid, Colestid, Lipitor, Lescol, Zocor, Mevacor, Naspan, Pravachol and Baycol
Azathioprine drugs – drugs to treat hemolytic anemias, systemic lupus erythematosus, rheumatoid arthritis and leukemias

Nutrients to consider:
Vit C, magnesium, Zinc, potassium

INCREASED in:
primarily bone and liver disease and
Biliary duct obstruction
Degenerative joint disease
Nonfasting test
Bone growth
Healing fracture
Polymyalgia Rheumatica
Chronic fatigue syndrome
Fibromyalgia
Liver cancer
Bone cancer
Osteoporosis
Acromegaly
Osteogenic sarcoma
Primary or Metastatic liver tumor
Bone metastases
Leukemia
Myeloma
Osteomalacia
Rickets
Hypervitaminosis D
Celiac sprue due to vitamin D
Malabsorption
Paget's disease
Hyperthyroidism
Hyperparathyroidism
Alcoholics
Biliary obstruction
Cirrhosis
Gilbert's syndrome (genetic trait)
Fanconi syndrome (genetic ; hyperphosphatasemia, idiopathic)

INCREASED in continued:
Pancreatitis
Cancer of pancreas
Cystic fibrosis
Hepatitis
Fatty liver
Diabetes mellitus
Bacterial infections
Viral infections
Pulmonary infarct (1-3 weeks ; after embolism)
Tumors
Peptic ulcer
Intestinal obstruction or ulcer
Steatorrhea
Malabsorption
Ulcerative colitis
Gallbladder obstruction
Biliary obstruction
Gall stones
Inflamed gallbladder
Gastrointestinal problems
Prostate cancer when infiltrates bone
Hodgkin's disease
TB
Infectious mononucleosis
Cytomegalovirus
Congestive heart failure

INCREASED in continued:
Drugs:
Estrogens
Birth control drugs
Methyltestosterone
Phenothiazines
Oral hypoglycemic drugs
Many common and uncommon drugs elevate alkaline phosphatase up to tenfold
Chlorpropamide
Phenobarbital
Phenytoin
Antibiotics
Erythromycin

Nutrients to consider:
Vit D, Lipogen, vit C, pantothenic acid

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Aspartate Aminotransferase AST (SGOT)

Clinical 10-35 IU/L Healthy 18-26 IU/L

DECREASED in:
Uremia
Vitamin B6 deficiency
Metronidazole
Trifluoperazine
Diabetic ketoacidosis
Severe liver disease
Severe kidney disease
Azotemia: a very high BUN and Creatinine
Nutrients to consider: B-Complex, Milk Thistle and B6

INCREASED in:
Hypothyroid
Viral hepatitis
Heart failure
Cirrhosis
Biliary obstruction
Gall stones
Cancer
eclampsia
Myocardial infarction
Pancreatitis
Intestinal infarction
Radiation
Pulmonary infarction
Cerebral infarction
Renal infarction
Burns
Heat exhaustion
Anemia
Chronic alcohol ingestion
Alcoholism
Hepatitis
Cirrhosis
Alcohol
acetaminophen
Viral hepatitis
Hemochromatosis
Gall bladder disease
Reye's syndrome
Infectious mononucleosis
Dystrophy
Dermatomyositis
Muscle diseases

INCREASED in continued:
Trichinosis
Polymyositis
Fibromyalgia
Myositis
Gangrene
Duchenne's muscular dystrophy
Myocardial infarction
Congestive heart failure
Legionnaires' disease
Typhoid fever
Salmonella
typhosa

Environmental:
Radiation
Toxic mushrooms
Lead poisoning
Carbon tetrachloride poisoning

Drugs:
Heparin therapy
Salicylates
Opiates
Tetracycline
Thorazine
Isoniazid
Phenolthiazines
Erythromycin
Progesterone
Anabolic androgenic steroids
Halothane
Methyldopa

INCREASED in continued:
Opiates
Indomethacin

Nutrients to consider: the same as the AST therapy and Pancreatic enzymes and digestive enzymes

Order:
Lauricidin
Vit C
Lipogen
Beta Carotene

104

Alanine Aminotransferase ALT (SGPT)***

Clinical: 10-40 IU/L **Healthy** 20-28 IU/L

DECREASED in:
Urinary infection
Cancer
Malnutrition
Pregnancy
Alcoholic liver disease

Drugs:
Birth control pills
Estrogens
Progestin

Nutrients to consider: Vit B complex, milk thistle extract, Methionine if sulfur is low on hair analysis, choline and inositol if AST (SGOT) is low.

INCREASED in:
Obesity
Biliary obstruction
Cirrhosis
Hepatitis
Reyes' syndrome
Diabetic acidosis (Glucose over 300)
Leukemia
Congestive heart failure
Pancreatitis
Thrombotic Thrombocytopenic Purpura
Wilson's disease

Environmental:
Parasites
Amebiasis possibly Entamoeba histolytica

Drugs:
Acetaminophen
Alcohol
Narcotics
Heroin
Cholinergics
Codeine
Meperidine (Demerol)
Morphine (heroin)
Antihypertensives
Guanethidine analogs
Hydralazine
Erythromycin
Isoniazid

INCREASED in continued:

Nutrients to consider:
acidophilus if on antibiotics, antronex, liver glandular, Methionine if sulfur is low in the hair analysis, beta carotene, vit c, Lauricidin, choline, inositol

Order:
Lauricidin
Vit C
Lipogen
Beta Carotene

Gamma Glutamyl Transferase (GGT) 105

Clinical 5-65 IU/L **Healthy 10-35 IU/L.**

Use: To differentiate liver from bone disease: GGT is not affected by bone like ALP. Unlike AST, GGT is not elevated in skeletal muscle disease. As a tumor marker only three laboratory markers were consistently abnormal, in screening for metastatic carcinoma of breast, prior to clinical detectability of metastases: these were alkaline phosphatase, GGT and CEA.

DECREASED in:
Hypothyroidism
Chronic idiopathic pancreatitis

INCREASED in:
Alcoholics: can be over 3.5 times upper limit
Fatty liver disease
Gall bladder disease
Pancreatitis
Obesity
Renal disease
Cardiac disease
Postoperative state
Cancer
Metastatic carcinoma of liver
Malignant melanoma
Breast, Lung
Kidney
Acute myocardial infarction within 2-4 days
Acute hepatitis
Cholestasis >6 times upper limit
Chronic active hepatitis >7 times upper limit
Cirrhosis >10-20 times upper limit
Obstructive jaundice >5 to 50 times upper limit
Liver metastases >14 times upper limit
Systemic lupus erythematosus
Hyperthyroidism
Epilepsy
Diabetes mellitus
Severe trauma
Post radiation therapy

INCREASED in continued:

Drugs:
Barbiturates
Dilantin (phenytoin)
Antidepressants
Acetaminophen

Nutrients to consider: Beta Carotene, Vit C , Liver glandular, Antronex, Methionine

Order:
Lauricidin
Vit C
Lipogen
Beta Carotene

Dr. (MD) no longer wants to do liver transplant. :) (in just 2 months)

- Paul KXXX- (SBN member)
- replied on *12/4/18* at *2:33 PM*
- New info.
- Dr. no longer wants to do liver transplant. :)
- Since starting SBN (October 2018), His quality of life has increased significantly. Had a good Thanksgiving. Thank you! He was losing wt, now he is gaining so MD is happy about that.

Uric Acid 105

Clinical range 2.5-8.2 **Healthy range 4.0-6.0**

Excess uric acid can crystallize in joints and causes painful inflammation and severe arthritic symptoms. It is not clear what makes the uric acid precipitate in the joints, but it is not simply because there is too much present. Some patients can have chronically elevated uric acid levels with no other gout symptoms.

DECREASED in:
Caffeine, Tea
High intake of vit C
Possible inappropriate secretion of ADH (antidiuretic hormone) of the posterior pituitary.
Low intake of protein
Kidney disease
Malignant neoplasms

Environmental: Lead poisoning

Drugs:
Aspirin
Antibiotics
Corticosteroids
Theophylline (antiasthmatic drug)
Allopurinol
Probenecid Salicylate
Cinchophen
Corticotrophin
Coumarin
Furosemide (Lasix)
Ethacrynic acid
Thiazide
Diuretics
Acetohexamide
Indomethacin
Barbiturates

Nutrients to consider: Magnesium, B6 and pancreatic enzymes, Protein

INCREASED in:
GOUT: All meats, fish, poultry, and peanuts contain small amounts of purines.
Fructose in processed food
Alcohol
Arteriosclerosis
Hypertension
High triglycerides
Exercise and lactic acid
Weight loss, dieting and fasting
Diabetes
Renal failure
Psoriasis
High protein diet
Hypothyroidism
Hypoparathyroidism
Primary Hyperparathyroidism
Polycystic kidneys
Von Gierke's disease
Maple syrup urine disease
Sarcoidosis
Beryllliosis
Leukemia
Multiple myeloma
Polycythemia
Lymphoma, especially post irradiation
Cancers
Chemotherapy
Anemias
Resolving pneumonia
Toxemia of pregnancy

INCREASED in continued:

Environmental:
Methyl alcohol
Ammonia
Carbon monoxide
Lead poisoning
Mercury poisoning

Drugs:
Aspirin
Antibiotics
Cytotoxic drugs: Methotrexate,busulfan, vincristine,, Azathioprine
Prednisone
Thiazides
Diuretics
Furosemide
Mercurials
Mitomycin C
L-dopa
Phenytoin sodium
Methyldopa
Ascorbic acid

Nutrients to consider:
Pantothenic acid, cherries, Vit C
Turmeric, ginger, bioflavinoids

Uric Acid, High Fructose and Liver Disease Mercola 11-11-2015 106

- By "stimulating the 'hedonic pathway' of the brain both directly and indirectly," Dr. Lustig noted, "fructose creates habituation, and possibly dependence; also paralleling ethanol."
- **How Excess Fructose Directly Contributes to NAFLD** (Non Alcohol Fatty Liver Disease)
- Writing in the journal *Hepatobiliary Surgery and Nutrition*, researchers noted that the rapid rise in NAFLD prevalence supports the role of environmental factors.

  (HFCS) in soda is associated with NAFLD, while the study also concluded "ingested carbohydrates are… more likely to directly contribute to NAFLD than dietary fat intake."[6]
- The fat-forming and pro-inflammatory effects of fructose appear to be due to transient ATP (the chemical storage form of energy) depletion, according to the study. This, in turn, leads to uric acid formation.
- **Fructose increases uric acid through a complex process that causes cells to burn up their ATP rapidly, leading to "cell shock" and increased cell death.**
- After eating excessive amounts of fructose, cells become starved of energy and enter a state of shock, just as if they have lost their blood supply.
- Cells that are depleted of energy become inflamed and more susceptible to damage from oxidative stress. Fat cells actually become "sickly," bloating up with excessive amounts of fat.

Uric Acid, High Fructose and Liver Disease Mercola 11-11-2015 106

- Massive cellular die-off leads to increased uric acid levels. Uric acid is a normal waste product found in your blood. It functions both as an antioxidant and as a pro-oxidant once inside your cells.
- So, if your uric acid levels are too high, it tends to increase to harmful levels inside your cells as well, where it acts as a pro-oxidant. According to Dr. Richard Johnson, who conducted years of research on the role of fructose in obesity uric acid appears to take on a lead role in creating health problems when it reaches levels in your body of 5.5 mg per dl or higher.
- **High uric acid is associated with an increased risk for developing high blood pressure, as well as diabetes, obesity, and kidney disease. The ideal range for uric acid lies between 3 to 5.5 mg per dl.**
- The connection between fructose consumption and increased uric acid is so reliable that a uric acid level taken from your blood can actually be used as a marker for fructose toxicity. I now recommend that a uric acid level be a routine part of your blood screening.
- **One Sugary Drink Daily Increases Your Risk of NAFLD**
- Sugary beverages, including not only soda but also fruit juice, lemonade, fruit punch, and the like, are a major source of fructose in the US diet.

Uric Acid, High Fructose and Liver Disease Mercola 11-11-2015 106

New research from Tufts University revealed this could be putting your health at risk, as those who consumed at least one sugary drink daily had a higher risk of liver damage and NAFLD.[5]

- Sugary drinks are likely one major factor in why even *children* are developing NAFLD at alarming rates. The longer you have NAFLD, the more likely it is to progress into more serious disease like liver fibrosis (accumulation of abnormal fibrous tissue), cirrhosis (accumulation of scar tissue), and NASH.
- In fact, the *Hepatobiliary Surgery and Nutrition* study linked HFCS consumption to the severity of fibrosis in patients with NAFLD.[7] Therefore, it's very concerning that children are developing this so early in their lives. The following facts about pediatric NAFLD are disturbing:[8]
- **Nearly 10 percent of US children have NAFLD**
- This includes 1 percent of 2- to 4-year-olds and 17 percent of 15- to 19-year-olds
- Approximately 38 percent of obese children have NAFLD
- Children with NAFLD are at particular risk of complications and poor prognosis, including the need for a **liver transplant in adulthood**

Amid Obesity Epidemic, Liver Cancer Deaths Surge by Ian Ingram, Deputy Managing Editor, MedPage Today July 17, 2018

The death rate for liver cancer increased by 43% since 2000, a new report from the CDC indicated, with fingers pointing to the obesity epidemic as the main root cause.

For adults 25 and over, mortality from liver cancer rose from 7.2 to 10.3 per 100,000 from 2000 to 2016, according to Jiaquan Xu, MD, of the CDC's National Center for Health Statistics in Hyattsville, Maryland, even as overall cancer mortality rates in the U.S. have dropped.

"Liver cancer (including intrahepatic bile duct cancer) was the ninth leading cause of cancer death in 2000 and rose to sixth in 2016," wrote Xu in an NCHS Data Brief.

Among men, the age-adjusted death rate increased from 10.5 to 15.0 per 100,000 during this time period (a 43% rise); among women, the death rate increased from 4.5 to 6.3 per 100,000 (a 40% rise).

But while death rates increased for white (48%), black (43%), and Hispanic (27%) adults, the mortality rate among Asians and Pacific Islanders decreased by 22%.

Adults ages 45 to 54 saw a 20% drop in liver cancer death from 2012 to 2016 (from 5.5 to 4.4 per 100,000), while those ages 55 to 64 had stable rates from 2013 to 2016.

Commenting on the report, Ghassan Abou-Alfa, MD, a medical oncologist at Memorial Sloan Kettering Cancer Center in New York City, cited non-alcoholic associated steatohepatitis (NASH) due to obesity and diabetes as the most important risk factor for hepatocellular carcinoma (HCC) in the U.S. today. "Unfortunately, the obesity epidemic is ongoing and is increasing, with a forecasted rate between 40% and 50% by 2030," he said.

Glyphosate (Round UP) Is Causing Fatty Liver Disease

Written by Dr. Joseph Mercola Fact Checked
•May 28, 2019

- People with a more severe form of nonalcoholic fatty liver disease (NAFLD) called nonalcoholic steatohepatitis, or NASH, had significantly higher residues of glyphosate in their urine
- That exposure to glyphosate may lead to more severe forms of liver disease is concerning, since those with NASH are at increased risk of liver cirrhosis, liver cancer and higher liver-related and non-liver-related mortality
- **Two-thirds of the total volume of glyphosate applied in the U.S. from 1974 to 2014 was applied in the last 10 years[1] — a time during which rates of NAFLD also increased.**
- **Glyphosate Exposure Linked to Advanced Liver Disease in Humans**
- **Animal Studies Show Low-Level Exposure to Roundup Damages the Liver**
- **Choline Deficiency Also Linked to Fatty Liver Disease**
- **Verdicts in Glyphosate Trials Side With Victims, Awarding Billions in Damages**
- In August 2018, a jury ruled in favor of plaintiff Dewayne Johnson, Non-Hodgkin lymphoma. **Monsanto paid: $78 million.**
- **Bayer to pay more than $80 million** to Edwin Hardeman, Roundup was responsible for his cancer diagnosis.[23]
- Alva and Alberta Pilliod, who claimed they both developed Non-Hodgkin lymphoma after regular use of Roundup. **Bayer to pay $2 billion**[24]
- **At least 13,400 lawsuits are still looming** from people who claim exposure to Roundup herbicide caused them health problems, including cancer.

Bilirubin

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Clinical range 0.2-1.2 mg/dL **Healthy range 0.5-0.7mg/dL**

A major end-product of hemoglobin decomposition. RBC's rupture = hemoglobin is released and split into globin and heme. Heme = free bilirubin in the plasma, blood, interstitial fluids. Free bilirubin is absorbed into hepatic cells and is combined with glucuronic acid, sulfate and other chemicals to form conjugated bilirubin. A small portion of conjugated bilirubin returns to plasma, but most of the conjugated bilirubin is excreted by the hepatic cells directly into the bile ducts.

Two types of jaundice.
1. Hemolytic Jaundice: Excess Red blood cell destruction, the liver cannot excrete the Free Bilirubin quickly enough.
2. Obstructive Jaundice: Obstruction of the bile ducts or by damage to the liver cells. The rate of RBC is normal but the Conjugated bilirubin from the liver cells cannot get into the intestines.

DECREASED in:
Caffeine

Drugs:
Barbiturates
Anemia

INCREASED in:
Think gall bladder first
Hepatitis A
Pancreatic cancer possible with bilirubin at 12-25
Pulmonary embolism may elevate bilirubin after 4 days
Myocardial infarction may elevate bilirubin after 4 days
Liver disease
Fasting
Pancreatic disease
Jaundice over 2.4mg/dL
High doses of vit C and/or vit A

INCREASED in continued:
High doses of nicotinic acid
Gilbert's disease (familial benign high bilirubin with normal AST & ALT and urinalysis)
Hodgkin's disease
Sickle cell disease
Alcoholism
Anemia
Wilson's disease
Chronic congenital hemolytic anemia
Bacteremia (with bilirubin up to 10)
Toxic shock syndrome
Malaria

Drugs:
Cholinergics: (Most of these drugs cause direct effects, others cause effects in combination with other drugs)
Tensilon
Prostigmin
Camptosar
Cognex
Mestinon
Levsin
Robinul
Salagen

INCREASED in continued:
Urecholine
Adneton
Aphrodyne
Cytospaz
Zemuron
Transderm
Humorsol
Risperdal
Pilopine
Isopto Carpine/Carbachol
Protopam Chloride
Effexor
Luvox
Quinidex
Donnatal
Cardioquin
Petro
Zoloft
Neurontin
Parafon Forte
Norcuron
Clozaril
Singulair
Ovide
Nicotrol
Zyprexa

INCREASED in continued:
Quinidine
Gluconate
Axid
Ergamisol
Tracium Inj
Nuromax Inj
Nimbex Inj
Mivacron Inj
Propine
Ocufen
Betagan
Acular Ophthalmic Sol
Dextran
Theophylline
Acetaminophen

Nutrients to consider:
B-6 Pyridoxine
HCL/betaine, vit C, EPA/DHA, Gall Bladder procedure

The Liver: 500 chemical functions

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- Makes proteins
- Stores vitamins iron, minerals and sugars
- Regulates fat stores
- Controls production and excretion of cholesterol
- Regulates blood clotting
- Produces bile for proper digestion of fats
- Purify blood by neutralizing and destroying poisonous substances
- Metabolizes alcohol and other drugs
- Maintaining hormone balance
- Produces immune factors
- Removes bacteria for the blood
- Regenerates its own damaged tissue

Email from Patient

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From: Alan O
Sent: Friday,
To: Pam
Subject: My health

Dear Dr. Merkle:

I want right ahead into the program you told me do the catagory 2 program. I had to go to the hospital today for a chemical burn. I asked to be weighed. I knew I had lost weight but to my surprise... I started out around 460ish now of today I weigh 370(actually the scale said 369.2). I feel AWESOME. I am taking my supplements of which I can afford. Thank you so much and GOD bless you--I have struggled for years with this weight. I feel like a new man. My blood pressure is around 125/85 and I have enjoying walking 2 to 3 miles a day now. I am sending you a most resistant picture of me(about three weeks old)

Your Friend Alan L. O

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Primary Symptoms:

1. Reflux/Hiatal Hernia
2. Indigestion in 2 hours or more after meals
3. Belching and burping after eating
4. Indigestion

46 y/o male 5'10" 135 lbs

3-4-2010

Todd: This is one very sick guy. I'd refer this one out for a second opinion. This looks like some sort of Leukemia. One of the worst I've seen. They might filter some of the white blood cells out.
VAN

Alk. Phosphatase 25-330	66.00	Opt
Creatine Kinase	35.00	lo
LDH	1174.00	HI
SGOT (AST)	36.00	hi
SGPT (ALT)	22.00	Opt
GGT	21.00	lo
Serum Iron	106.00	Opt
Ferritin	817.00	HI
Total Cholesterol	184.00	hi
Triglyceride	163.00	HI
HDL Cholesterol	36.00	LO
VLDL Cholesterol	33.00	hi
LDL Cholesterol	115.00	HI
Total Cholesterol / HDL Ratio	5.10	HI
TSH	2.10	Opt
T4 Thyroxine	9.70	hi
T3 Uptake	29.00	Opt
T7 Free Thyroxine Index (FTI)	2.80	Opt
CRP C-Reactive Protein	1.70	hi
White Blood Count	237.30	HI
Red Blood Count	3.83	LO
Hemoglobin	12.10	lo
Hematocrit	36.10	lo
MCV	94.00	Opt
MCH	31.60	Opt
MCHC	33.50	Opt
RDW	17.50	HI
Platelets	356.00	hi
Polys/Neutrophils (SEGS-PMNS)	31.00	LO
Lymphocytes	13.00	LO
Monocytes	2.00	LO
Eosinophils	2.00	Opt
Basophils	1.00	Opt
Neutrophils/Polys (Absolute)	73.60	HI
Lymphs (Absolute)	30.80	HI
Monocytes (Absolute)	4.70	HI
Eosinophils (Absolute)	4.70	HI
Basophils (Absolute)	2.40	HI
ESR-Erythrocyte Sed Rate, Westerg	7.00	hi

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Email with SBN provider

- SBN provider: March 4, 2010: **He looks fine, and his only significant complaint is acid reflux.** I did some research, and saw that the only leukemia that causes ALL the white cells to go up (in adults) is CML…and that there is a drug available (Glivec) that has an ~ 90% 5year survival rate. //en.wikipedia.org/wiki/Chronic_myelogenous_leukemia
- His previous CBC, nine months ago, showed some "elevated WBC's, probably just a infection".
- Interestingly, he was a little reluctant to do the lab work initially, partly because I told him that a significant cause of his reflux was probably stemming from nerve irritation in his thoracic spine. Needless to say, he and his wife are now very glad that I insisted on running the blood work. He is also getting chiro. care 3x/wk, and had his first nearly complete relief from his typical reflux symptoms in 6 months, after just three adjustments.

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CML continued:

March 5, 2010

Todd,
I reviewed your previous email letter again and see that with Glivec he has a 90% 5 year survival rate. The question I want to know is what is the 10 year survival rate? SURVIVAL is the key term, which could mean drooling in agony and misery for 5 years but he didn't die.
What is the rate or return of the CML with medical treatment?
You have a lot more to offer and are truly his Last Best Hope for a long and happy life. I'd do all the testing possible: hair, DMSA etc. as soon as he can to get his system as healthy as possible.

Sincerely,
Van

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CML cont:

Email: 3-09-2010 Van,

Thank you for helping prepare me to handle a patient like this. I fully expect to start fielding all manner of (relatively) exotic pathologies from this day forward.

In a review of the things that could of caused this (ionizing radiation, benzene, etc.), he revealed to me that he did numerous 14-hour flights, twice a week for several years. I'm thinking that could be enough rads to express CML. Especially given the data I've seen that suggests that the "diagnostic" (chromosomal translocation) bcr-abl gene is present in one out of every 2 or 3 people, while the clinical neoplastic changes only occur in one in a hundred thousand. This is one of the classic epigenetically-expressed diseases that expose the big lie of genetic determinism.

The big trial that follows all the CML patients who are planning on taking Gleevec forever ($70K/year), has gone on for eight years now, with 90+% remission, which is an eternity to oncologists. But the drug company's own "prescribing information" declares that imatinib causes kidney cancer in rats, and heart failure in (some) humans. A study in Europe (where financial imperatives reward less use of overpriced pharmaceuticals) has shown that 46% of CML patients (in complete metabolic remission for at least 2 years), have maintained remission after CESSATION of imatinib (for at least twelve months).

I reassured my patient that a man who has caught this dysfunction early on, who takes much better care of himself than most of the average, sick, nutrient-deficient, toxin-overloaded people that are represented in all the current studies, stands a decent chance of putting this thing back into some kind of conservatively managed, permanent remission.

Best, Todd Bxxxxxxx, DC

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Hepatitis A

- Disease of **filth**: oral contact with feces of infected people
- Often no symptoms
- Older people affected more than younger
- Before age 5 symptoms are rare
- Incubation period is one month (can be infected for one month and only then begin to have symptoms
- Common symptoms: fever, loss of appetite, nausea, vomiting, stomachaches, dark urine, and jaundice
- Symptoms 2-6 months
- No cure
- Vaccination is recommended for travelers. Sewage workers, food, health care workers and daycare workers should not be routinely vaccinated.(?) Under 2 years of age cannot be vaccinated
- Immunoglobulin can be given after infection to ameliorate symptoms NOTE: antibodies indicate immunity

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Hepatitis A

- Mild, self-limiting disease in 4-8 weeks with no treatment.
- Pediatrics: "Most HAV infections in young children are asymptomatic… Clinical hepatitis occurs in fewer than 10 percent of infected children."
- NIH: "Most people who have hepatitis A get well on their own after a few weeks."
- 90% of children have no symptoms

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Hepatitis A

- Most cases are found in Third World areas, outside the US.
- Why is the U.S. the only country in the world which recommends the vaccine on a mass scale?
  - CDC recommends vaccination for all children between 12 months and 12 years of age
  - CDC recommends vaccination for travel south of the US and just about everywhere overseas.

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Hepatitis: Inflammation of liver

- If the liver is functioning poorly, so is almost everything else in the body.
- Common signs: Rashes, eczema, aches and pains, and other organ failures
- Increased risk of liver cancer

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Hepatitis B: Blood borne transmission

- Incubation 45-180 days.
- **Not all infected people get symptoms**
- **Most get sick, recover and have immunity from then on.**
- Symptoms: loss of appetite, tiredness, muscle and joint pain, stomachaches, diarrhea and vomiting, jaundice.
- A large number develop chronic infections **(WHY?)**
- 200,000 new cases of HBV, 20,000 remain chronically infected
- 1.25 million Americans now have chronic HBV
- 5,000 die each year from this liver disease and the liver cancer HBV caused
- most common in drug users and sexually active 20-39 year olds, also **be aware of tattoos**, ear piercing, acupuncture, needles
- Vaccine is available: its effectiveness is questionable, side effects can be more serious than the hepatitis B.
- **NOTE: antibodies indicate immunity**
- Medically the goal is to vaccinate everyone under 18 years of age.

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Hepatitis C: the nasty one

- The most common blood borne infection in the USA
- 4 million: most are unaware they are chronically infected
- The most frequent reason for liver transplants
- Medical expenses more than $600 million per year
- Blood borne: drugs, tattoos, piercings, blood transfusions (most before 1992), transplants, accidental needle sticks
- Can be sexually transmitted
- Without/before drugs: 80% of infected people never get rid of it, but **20% do get rid of it! NEJM**
- **50% of children are completely cleared in 20 years NEJM**
- 70% have chronic liver disease leading to liver cancer and death
- 40% of all liver disease in USA is HCV

111

Medical Tx of HCV

- TX: Interferon and Ribavirin-poor results and severe side effects: fatigue, hair loss, low blood count, confusion, depression, psychiatric problems, thyroid disease, seizures, acute heart & **kidney failure**, eye & lung problems, hearing loss, blood infection, serious anemia, birth defects
- Latest 'new' treatment: Pegasys and Peg-Interon (Long acting interferon) are once a week injections combined with ribavirin.
- **Six months** after the 48-week treatment stopped 56% of patients had eliminated all traces of the virus.
  - same side effects as Interferon and Ribavirin
  - Research funded by Roche, the Swiss pharmaceutical company that is developing Pegasys and a new brand of ribavirin DDN 9-24-2002

111

Hepatitis C: signs

- flulike symptoms-malaise, chills, fever, indigestion, loss of appetite, diarrhea
- pain at upper right side of abdomen beneath rib cage
- stomach bloating
- pain in the joints
- mood disturbances, mental fatigue
- frequent or continuous headaches
- exhaustion, and poor sleep patterns
- bad reactions to alcohol or fatty food
- fluid retention or puffy face
- itchy skin
- lymph node swelling
- frequent urinatioin
- blood sugar disorders
- irregular menses, lower libido, menopausal symptoms
- chest pains
- dizziness or vision problems
- numbess in the extremities
- **good reasons to do a comprehensive blood test!**

Hepatitis C Stats

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DDN 10-27-2005

- 200,000 Ohioans
- $30,000- cost of drugs
  - harsh side effects of drug treatment
- $340,000- cost of liver transplant

Hepatitis C: Treatment

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- HCV RNA, Interferon, Ribavirin
- Expensive
- Not highly effective
- Only sometimes efficacious
- Many serious side effects

Hepatitis C Cases Soar Due to Drug Use- USA Today 5-8-2015

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"We're in the midst of a national epidemic." and the rising infection rates "staggering".

- John Ward, CDC3.2 million Americans have Hepatitis C

Newly approved drug- Sovaldi, cures hepatitis C in 90% of patients- cost $84,000.00 for a 12 week treatment.

The increased is due drug use and the prescription injected painkiller called Opana.

Hepatitis C Viral Load.

https://www.webmd.com/hepatitis/hepatitis-c-viral-load#1

- **High viral load**: more than 800,000 IU/mL.
- If your viral count is high at the start, it can be hard or impossible for your treatment to completely get rid of the virus.
- Some researchers consider high levels anything above 400,000 IU/mL.
- **Low viral load**: This is a count below 800,000 IU/mL. Your odds that treatment will make all or most of your HCV go away are better than with a high viral load.
- **Undetectable viral load**: This doesn't necessarily mean you have no viruses. Undetectable levels can differ, depending on how precise your test is, the lab you use, and how it handled the blood sample. You still may have viruses, but too few for the tests to pick up.

Hepatitis C Viral Load.

https://www.webmd.com/hepatitis/hepatitis-c-viral-load#1

- Two newer tests -- transcription-mediated amplification (TMA) and polymerase chain reaction (PCR) -- can measure as few as 5-10 IU/mL. A third one, called branched-chain DNA (bDNA), may miss viral loads below 615 IU/mL.
- **Sustained virological response**: no trace of HCV in your blood 12 weeks after you stop treatment. It's also called a viral cure.
- It means your disease is in remission and your hep C is no longer active. Your liver may start to heal, and your chances for liver failure and liver cancer may drop.
- To confirm, you may need to repeat the test or take a qualitative test that checks if you're negative for any trace of viral genetic material.

It's Official! Curing

Pharmaceutical companies are developing new drugs in only two therapeutic areas these days -- cancer and rare diseases.
by Milton Packer MD April 18, 2018 MedPage 4-19-2018

Most new drugs for cancer and rare diseases are being priced above $400,000 a year per patient. Some at $1 million per treatment. And prices continue to soar.
The analyst asks: "Is curing patients a sustainable business model?"
According to an article by Tae Kim on *CNBC*, Goldman Sachs issued a report (by Salveen Richter): drug developers might want to think twice about making drugs that were too effective. Richter's report, entitled "The Genome Revolution," was issued on April 10 and says:

"such treatments offer a very different outlook with regard to recurring revenue versus chronic therapies with sustained cash flow.

Now it seems that curing people isn't profitable enough.

Just imagine a company has a new drug that can cure a disease in >90% of patients with one dose.
- The obvious suggestion: Could you possibly make the drug a bit less effective, so that people would need to continue to take it on an ongoing basis, so you would be able to generate more money?
- Or could we propose that you charge $1 million for a course of treatment?

Early this year, Spark Therapeutics introduced its new drug (Luxturna) for a rare form of blindness. It promises a cure with a single dose. The price tag is $425,000 per eye. That means $850,000 for a cure.

- The Goldman Sachs report cites the example of Gilead Sciences (ticker symbol GILD), which gained approval for its novel hepatitis C treatment Sovaldi in 2013, followed by Harvoni less than a year later.
- Their introduction was a landmark event: a near-certain cure for hepatitis C in 12 weeks. When Harvoni was introduced, a 12-week course in the U.S. cost $94,500. Interestingly, in India, the same 12-week course of treatment cost only $900. (I assume that the company was still making a profit on its sales in India.)
- **In her report, Ms. Richter notes that U.S. sales for the hepatitis C treatments peaked at $12.5 billion in 2015, but have been falling ever since.** Goldman estimates the U.S. sales for these treatments will be less than $4 billion this year. Ms. Richter laments this development.
- She writes: **"GILD is a case in point, where the success of its hepatitis C franchise has gradually exhausted the available pool of treatable patients," the analyst wrote. "In the case of infectious diseases such as hepatitis C, curing existing patients also decreases the number of carriers able to transmit the virus to new patients, thus the incident pool also declines."**
- "[Gilead]'s rapid rise and fall of its hepatitis C franchise highlights one of the dynamics of an effective drug that permanently cures a disease, resulting in a gradual exhaustion of the prevalent pool of patients," the analyst wrote. "... diseases such as common cancers -- where the 'incident pool remains stable' -- are less risky for business."

- **Want to make money? Develop drugs that cure nothing, but yet promote long-term use and dependency, and shorten life. Bankers and payers will love it.**
- **We have those drugs already. They're called opiates.**
- 04.18.2018
- **— Spring Texan**
- Thanks. I share your anger. It's insane that pharma is still mouthing stuff about "value-based pricing" (meaning, if we save your life, no price is too extortionate regardless of what our costs are) and patting itself on the back.

- 04.18.2018
- **— tbran10**
- Let's talk basics. The allopathic medicine model focuses on treating the symptoms of disease states add nauseam.
- TWO Trillion dollars are spent annually treating the symptoms. Seniors consume 50% of the Rx drugs per year. That's 225 BILLION dollars worth.
- It's not space science. It's common sense that we have a toxic food lifestyle in the US impacting the majority of Americans.
- USDA knows it and NIH denies it.
- The US spends about 50% more per capita on healthcare than any other country and we don't have longevity in life. In fact life span in the US has flattened. Isn't it time we have a honest public discussion on our sickcare system.

Cure for Hepatitis B Pushed
Disease affecting 257 million people needs better treatment

by Ed Susman, Contributing Writer, MedPage Today April 10, 2019

VIENNA – The International Liver Conference kicked off here today with a push to find a cure – not just maintenance treatment – for the one quarter billion people living with hepatitis B virus (HBV) infection, but researchers said that finding a cure could be elusive, and it certainly won't come quickly.
"I think we are still at least 3 years away from starting a Phase III clinical trial that would probably include a combination therapy," said Massimo Levrero, PhD, a member of the governing body of the International Coalition to Eliminate HBV (ICE-HBV) and director of the Cancer Research Centre of Lyon in France.
Levrero, one of several participants in a press conference at the start of the 5-day annual meeting of the European Association for the Study of the Liver, told *MedPage Today* that there are numerous drug treatment candidates being tested to attack various structures of the virus, but he compared HBV to HIV rather than hepatitis C virus – for which an 8-week **functional cure** is now available.
"Hepatitis B is very different than hepatitis C, and it is very difficult to eradicate, as is HIV," he said.
While HIV eradication is very rare – with only two known and verified cures worldwide, hepatitis B has been cured by various methods – but in less than 10% of cases, said Peter Revill, PhD, senior medical scientist at the Victorian Infectious Diseases Reference Laboratory in Melbourne, Australia. At the press conference, Revill suggested that as many as one million people in the world have been cured of hepatitis B – but there are an estimated 257 million people living with hepatitis B infection.

Hepatitis C: Etiology

- The bodies immune system attacks virus in two ways. One by producing antibodies that destroy the virus as in HVA and HVB.
- The HVC virus has the ability to alter it "appearance", essentially changing its form every time the immune system devises a response to it. **It may be that, as with HIV, even more new and resistant strains begin to develop when drugs are used to attack HCV**
- Thus, since the antibodies can't figure a way to kill the virus. The body sends cyto-toxic (Killer) T lymphocytes to destroy the liver cells that the virus has attacked.
- There is a lot of liver and it is good at regenerating itself, however, eventually—sometimes after many years—fibrosis and further inflammation progress to cirrhosis.
- **In fact, the virus may be less significant than the immune system response that it provokes.** Some people with high viral loads have very little damage.

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Hepatitis to Cirrhosis

- Lymphocytes, while attacking the virus, also harm the liver.
- Causing scarring, called fibrosis
- When scarring is severe enough to impede blood flow, this is called Cirrhosis
- Blood backs up into other organs and tissues and serous fluid leaks into the peritoneal cavity, this is called ascites.

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Dismissed by specialist

- Patient E, with Hepatitis C for 5+years.
- Started her SBN program and in 3 months her 'viral load' was back to normal.
- Her MD was upset that she didn't do the Interferon and dismissed her as an uncooperative patient.
- She told me that the MD seemed upset that she improved so much without the drugs.

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Hepatitis B and C Screening

- Hepatitis Profile VIII (Hep. B and C Profile) is a test that tests, evaluates, and stages the patient with HBV and HCV.
- The Hepatitis Panel, Acute would be a screening for ABC.
- The Hepatitis C Antibody EIA-2 test is a good screening test for Hepatitis C Virus infection.
  - When this test is positive it can indicate chronic Hepatitis, recovered or recent acute hepatitis C. This can be a false positive, if there are no symptoms, low-risk behavior and a normal SGPT (ALT) level then the diagnosis of HCV can be supported or confirmed by the recombinant immunoblot assay (RIBA) or tests for HCV RNA.
- The Hepatitis QuantaSure is really only done if a patient is a known positive for Hep. C.
- Hepatitis C Virus (HCV) QuantaSure ™ Plus, Quantitative, by TaqMan ™ PCR Test number 550033 CPT code 87522 This will measure the number of copies of Hep C virus in HCV positive patients.

The HBV quantitative real-time PCR assay has a quantitative range of 10 to 1,000,000,000 IU/mL.

- An **HBV viral load** of greater than 2,000 IU/mL indicates that the **virus** is active and has the potential to cause damage to the liver.
- If the **HBV viral load** is above these numbers, treatment is considered necessary.
-
- Instead of writing 100,000 copies/mL, labs may report it as one to the fifth power or 105 or 5 log. In mathematical jargon, a "log" equals a number multiplied by 10. If you have a viral load of 105 copies/mL, it is actually, 10 X 10 X 10 X 10 X 10 or 100,000. When you read a medical report that describes a patient with a high viral load as having HBV DNA that is greater than 100,000 copies/mL, it may be written HBV DNA > 5 log copies/mL or 105 copies/mL.
- Every log rise or fall is equivalent to a ten-fold increase or decrease. A change from 10 to 100 is a 1-log increase; a change from 1,000,000 to 10,000 is a 2-log decrease. Someone with a viral load of 300,000 copies/mL who experiences a one-log decrease achieves a viral load of 30,000 copies/mL. When someone is treated, doctors monitor HBV DNA levels carefully.
- A one- or two-log decrease in viral load means an antiviral is working. A one- or two-log increase means an antiviral has stopped working and that viral resistance has developed.
- An undetectable viral load (which means fewer HBV DNA than a lab's equipment can identify) generally is lower than about 300 copies/mL. •Moderate levels of HBV DNA begin at about 10,000 to copies/mL. •High levels of HBV DNA can exceed 100,000 copies/mL.
- It is not unusual for someone with the hepatitis B "e" antigen (HBeAg) to have millions of HBV DNA

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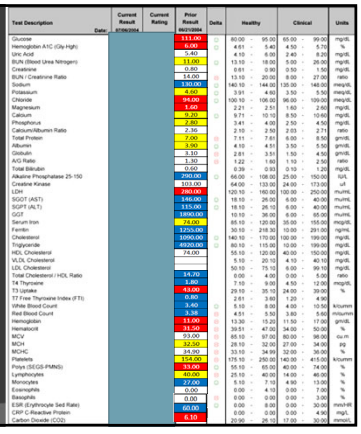
Leslie's Test
June 21 and July 6, 2004



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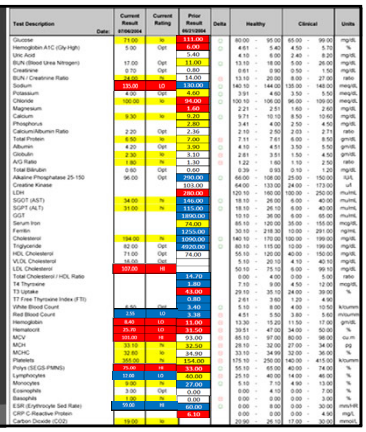

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Leslie's Medications

- Ambien
- Effexor
- Gemfibrozil
- Lisinopril
- Loratadine
- Ranitidine
- Toprol
- Tylenol
- Warfarin Sodium
- Welchol
- Xalatan

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Leslie's Supplement List

- **FOR 2 WEEKS:**
- Greens First 2/day
- Glutagenics 3 tsp./day
- RM-10 9/day
- Liver 6/day
- Lauricidin 1/2 tsp. 4 times a day,
- Vitamin C Powder 2 tsp./day
- Acidophilus 2/day,
- Sublingual B12 6/day
- CO Q 10 2/day
- **In two weeks retest the SGOT, SGPT, GGT, CBC and ESR**

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Leslie's Complete Supplement List Post Retest

- Bio-Dophulis 2
- Calcium MCHC 3
- Chlorella 4
- Co-Q-Melt 2
- Glutagenics 3 tsps
- Liver 6
- Mag Malate 3
- Spectramin Chelate 2
- Pwdr Vitamin C 2 tsp.
- Greens First 2
- Sublingual B12 Plus 6
- Ultra Preventive 2
- RM-10 9
- Lauricidin 4

SBN member JW: 8-2019
Pt: female 62yr/o; 5'3", 206lbs

- Presenting symptoms:
- 1. Osteoporosis M81.0
- 2. Irritable Bowel Syndrome K58.9
- 3. Anxiety Disorder F41.9
- 4. Obesity E66.9

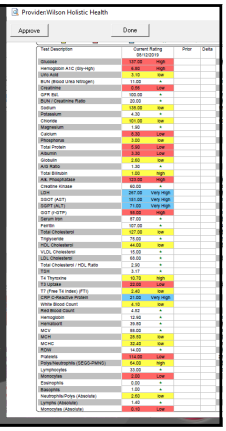
- Medications:
  - Alprazolam – Insomnia
  - Atenolol – hypertension
  - Gabapentin – antiepileptic
  - Hydroxyzine - anxiety
  - Lidocaine – pain
  - Lomotil - diarrhea
  - Metformin HCL – diabetes
  - Methocarbamol - pain
  - Naprosyn - pain
  - Trazodone -antidepressant

SBN member JW: 8-2019
Pt: female 62yr/o; 5'3", 206lbs

JW on 9/25/19 at 2:28 PM HELP !!
My first patient with SBN!! This patient is going seriously downhill fast. She has non-alcoholic fatty liver disease (cirrhosis). They just took 2 liters of fluid off her abdomen. Medically they aren't doing much but giving her more drugs. In addition to the TEN listed on her report she's also taking albuterol , duvonex, cholecalciferol, temovate, romosuzumab, lidex, furosemide, nizoral, omepazole, aldactone, valtrex, reclast (some of these are topicals). I think the Rx are killing her... literally. I don't think any one body can handle 21 different drugs. I put her on the SBN/Merkle supplements. After one day she got severe diarrhea and had to quit. She's nauseated and has no appetite. I have her drinking carrot/greens juices.
Questions: Are any of those drugs 'necessary' or helpful? I am considering taking her off most (she is the significant other of my nephew so I have a little bit more latitude with her than a regular patient).
Which of the SBN supplements would be most critical to support her liver and I'll try to introduce them gradually? Any other recommendations.

Van Merkle replied on *9/26/19 at 11:31 AM*
heart to heart with the patient: she is not going to live long. I would only have her take the bp drug. Anxiety, depression, insomnia, drugs: she has more serious problems and these drugs are bad. I'd also stop the metformin: very bad for gi, liver etc. not worried about diabetes, the cat 1 diet will fix that. In fact, I'd have her do the Fresh Start Diet for 7-10 days, along with those vitamins only during that time.
I would bet that the drugs are shutting the liver down too and that this can be reversed if the patient is willing to try this for 2 weeks. can she tolerate being 'depressed and anxious' for 2 weeks?

JW replied on 12/4/19 at 12:39 PM
When you said "heart to heart with the patient: she is not going to live long" you knew what you were talking about. We only had a couple of days on the intensive you recommended and then had to put her in the hospital. She was in one of our best local hospitals for 3-4 weeks, out to a rehab hospital for one week and then in and out of the U of M hospital until she went in a couple of weeks ago for a liver transplant. She died on the operating table two hours into the surgery with a blood clot to the heart, apparently not an uncommon thing with liver transplants.
Thank you for your assistance and consulting on this case. I am just sorry we didn't get to her a year earlier.



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Press On

- Nothing in this world can take the place of persistence.
- Talent will not: nothing is more common than unsuccessful people with talent.
- Genius will not: unrewarded genius is almost a proverb.
- Education will not: the world is full of educated derelicts.
- Persistence and determination alone are omnipotent.

- Calvin Coolidge

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Hepatitis Recommendations

- Strict diet: semi vegan, organic, low glycemic diet
- Treat the whole body
- Vitamins for the liver, dosage based on severity and chronicity:
  - Vitamin C
  - Beta Carotene
  - Liver glandular
  - Lauricidin
  - Specialty products: RM 10; Immuni T, etc

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Thiamine (B1) in the Tx of Chronic Hepatitis B

- Thiamine may be antiviral.
- May slow or reverse liver damage
- Correlation exists between thiamine deficient populations and the prevalence of Chronic HBV.
- During thiamine administration Aminotransferase levels dropped substantially.
- When the thiamine was removed from the patients, Aminotransferase levels rose again.
- Thiamine and lipoic acid are coenzymes for the decarboxylation of pyruvate and the oxidation of alpha keto-glutamic acid.
  - **The study was small but is there any harm in using Thiamine?**
  - *The American Journal of Gastroenterology* March 2001; 96: 864-868

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JH23694 Test 6-25-2004

22 year old weight lifter.

Diagnosed with Lupus and told to prepare for a liver or kidney transplant in 10 years. ANA was negative

Advil, Coumadin, Plaquenil, Prednisone

Even on these drugs he felt no better.

Test Description	Current Result Date: 06/25/2004	Current Rating	Prior Result	Delta	Healthy	Clinical	Units
Glucose	91.00	Opt			80.00 - 95.00	65.00 - 99.00	mg/dL
Hemoglobin A1C (Gly-Hgb)	5.50	Hi			4.61 - 5.40	4.50 - 5.70	%
Uric Acid	8.50	HI			4.10 - 6.00	2.40 - 8.20	mg/dL
BUN (Blood Urea Nitrogen)	14.00	Hi			13.10 - 18.00	5.00 - 26.00	mg/dL
Creatinine	1.00	Hi			0.61 - 0.90	0.50 - 1.50	mg/dL
BUN / Creatinine Ratio	12.00	lo			13.10 - 20.00	6.00 - 27.00	ratio
Sodium	138.00	lo			142.10 - 144.00	135.00 - 148.00	mEq/L
Potassium	4.50	Opt			3.91 - 4.60	3.50 - 5.50	mEq/L
Chloride	98.00	lo			100.10 - 106.00	96.00 - 109.00	mEq/L
Magnesium	1.70	lo			2.21 - 2.51	1.60 - 2.60	mg/dL
Calcium	9.30	lo			9.71 - 10.10	8.50 - 10.60	mg/dL
Phosphorus	3.60	Opt			3.41 - 4.00	2.50 - 4.50	mg/dL
Calcium/Albumin Ratio	2.10	Hi			2.10 - 2.50	2.03 - 2.71	ratio
Total Protein	6.60	lo			7.11 - 7.61	6.00 - 8.50	gm/dL
Albumin	3.60	lo			4.10 - 4.51	3.50 - 5.50	gm/dL
Globulin	3.00	Opt			2.81 - 3.51	1.50 - 4.50	gm/dL
A/G Ratio	1.20	lo			1.22 - 1.60	1.10 - 2.50	ratio
Total Bilirubin	0.90	Opt			0.39 - 0.93	0.10 - 1.20	mg/dL
Alkaline Phosphatase 25-150	73.00	Opt			66.00 - 198.00	25.00 - 150.00	IU/L
Creatine Kinase	340.00	HI			64.00 - 133.00	24.00 - 173.00	u/l
LDH	1134.00	HI			520.10 - 160.00	100.00 - 250.00	mu/mL
SGOT (AST)	30.00	hi			18.10 - 26.00	6.00 - 40.00	mu/mL
SGPT (ALT)	22.00	Opt			18.10 - 26.00	6.00 - 40.00	mu/mL
GGT	12.00	lo			10.10 - 36.00	6.00 - 65.00	mu/mL
Serum Iron	83.00	lo			85.10 - 120.00	35.00 - 155.00	mcg/dL
Ferritin	59.00	Opt			30.10 - 218.30	10.00 - 291.00	ng/mL
Cholesterol	197.00	hi			142.10 - 170.00	100.00 - 199.00	mg/dL
Triglyceride	182.00	hi			80.10 - 115.00	10.00 - 199.00	mg/dL
HDL Cholesterol	40.00	LO			55.10 - 120.00	40.00 - 150.00	mg/dL
VLDL Cholesterol	[illegible]	[illegible]			5.10 - 20.10	4.10 - 40.10	mg/dL
LDL Cholesterol	125.00	HI			50.10 - 75.10	6.00 - 99.10	mg/dL
Total Cholesterol / HDL Ratio	4.50	hi			0.00 - 4.00	0.00 - 5.00	ratio
T4 Thyroxine	8.50	Opt			7.10 - 9.00	4.50 - 12.00	mcg/dL
T3 Uptake	34.00	Opt			29.10 - 35.10	24.00 - 39.00	%
T7 Free Thyroxine Index (FTI)	2.60	Opt			2.61 - 3.50	1.20 - 4.90	
White Blood Count	3.60	LO			5.10 - 8.00	4.00 - 10.50	K/cumm
Red Blood Count	4.11	lo			4.51 - 5.50	3.80 - 5.60	m/cumm
Hemoglobin	14.60	Opt			13.30 - 15.20	11.50 - 17.00	gm/dL
Hematocrit	47.60	Opt			39.51 - 47.00	34.00 - 50.00	%
MCV	103.00	HI			85.10 - 97.00	80.00 - 98.00	cu m
MCH	35.50	HI			28.10 - 32.00	27.00 - 34.00	pg
MCHC	34.20	Opt			33.10 - 34.99	32.00 - 36.00	%
Platelets	232.00	Opt			175.10 - 250.00	140.00 - 415.00	K/cumm
Polys (SEGS-PMNS)	64.00	Opt			55.10 - 65.00	40.00 - 74.00	%
Lymphocytes	21.00	lo			25.10 - 40.00	14.00 - 46.00	%
Monocytes	12.00	hi			5.10 - 7.10	4.90 - 13.00	%
Eosinophils	2.00	Opt			0.00 - 4.10	0.00 - 7.00	%
Basophils	1.00	hi			0.00 - 0.00	0.00 - 3.00	%
ESR (Erythrocyte Sed Rate)	18.00	hi			0.00 - 8.00	0.00 - 30.00	mm/HR
CRP (C-Reactive Protein)	1.30	hi			0.00 - 0.00	0.00 - 4.80	mg/L

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JH23694 Supplement List

Betaine HCL	3	Marine Fish Oil	2
Bio-Dophilus	1	Pantothenic Acid	2
Calcium MCHC	3	Seacure	3
Chlorella	3	Spectramin Chelate	2
Co-Q-Melt	3	Sublingual B12 Plus	4
EDTA	3	Ultra Preventive III	2
L-Carnitine	1	Vitamin C	4
Magnesium	1	Lauricidin	6
		Iron	1 every other day

High Cholesterol of 621, High Triglycerides of 766 *****

- Patient RB 5623, a 52 year old woman, presented on 1/22/97:
  - Irritable Bowel Syndrome, Tension Headaches,
  - Gained 50 lbs. In The Last Three Years
  - Had Four Biopsies on Both Breasts Which Were Benign
  - Sinus and Ear Infections, Gets Hives Frequently
- **Within two months on the program:**
  - Cholesterol improved from **621 down to 198**
  - Triglycerides went from **766 down to 199**
  - Feels much better
  - Everything has greatly improved
  - Thyroid is back to functioning normally
  - Weight **Loss: 20 lbs**.
  - Is off of all her prescription drugs (4), including Synthroid
  - Hot flashes are much improved

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Causes of Gallstones

- Too much hydrogenated fat
- Too much absorption of water
- Dehydration, trying to save the water
- Inflammatory process
- Frequent consumption of fatty foods
- Fried foods
- Smoked foods
- Large meals
- Decreased vegetable consumption
- Increased sugar intake (soft drinks and sweets)
- Low fiber diet
- Gallbladder infections
- An inherited tendency to form gallstones.
- Pregnancy
- Obesity
- Conditions that cause increased red blood cell breakdown, which may be inherited or acquired. An example of such a condition is sickle cell anemia.

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Symptoms of GB disease

- Abdominal pain
  - Severe
  - Located on the right upper quadrant or in the upper middle of the abdomen (epigastric)
  - May subside over 12 to 18 hours in uncomplicated cases
  - Recurrent with similar pain in past
  - Occurs within minutes following meals
  - During deep inspiration
  - Radiating to back or below the right shoulder blade (right scapular area)
  - Worsened after eating or drinking greasy (high fat) foods or fluids
- Abdominal fullness, gaseous
- Fever
- Nausea
- Vomiting
- Jaundice, yellow color of the skin
- Heartburn
- Chills and shaking
- Chest pain under the breastbone

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Gallbladder

- Blood flow from the portal vein through the liver sinusoids: 1000 ml/minute
- Total secretion of bile each day: 800-1000 ml
- Maximum volume of the gallbladder: 40-70 ml
- Bile normally concentrated: 5 fold to maximum of 12 fold

Textbook of Medical Physiology 5th Edition

Gallbladder

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- For the Gall Bladder to empty: Sphincter of Oddi must relax and the gall bladder must contract causing the bile to actually "Squirt out".
- When fat is not in the meal, the gallbladder empties poorly.
  - Normally the gallbladder empties completely in about one hour.
    - Textbook of Medical Physiology 5th Edition

Bile

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- Bile: bile salts, bilirubin, cholesterol, lecithin and electrolytes. Water and most of the electrolytes are reabsorbed.
- Bile salts two important functions:
  - Emulsify/detergent function to break fat globules in to minute sizes.
  - Help in the absorption of fatty acids, monoglycerides, cholesterol and other lipids from the intestinal tract.
- 94% of bile salts are reabsorbed by the intestinal mucosa in the distal ileum and re-circulated into the bile. Studies show as much as 18 times re-circulated.

Textbook of Medical Physiology 5th Edition

Bile

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- Without proper bile salts, up to 40% of lipids are lost into the stools, and the person often develops a metabolic deficit due to this nutrient loss.
- In the absence of bile salts, vitamins A, D, E and K are poorly absorbed.

Textbook of Medical Physiology 5th Edition

Deficiency or supplementation of Vit K is associated with:

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- Results in serious impairment of blood coagulation
- Cancer
- Celiac disease
- Crohn's disease
- Inflammation
- Myopathy
- Osteoporosis
- Pain
- Nausea and vomiting of pregnancy with Vit C deficiency
- Rheumatoid arthritis

Deficiency or supplementation of Vitamin A is associated with:

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- Est. 1 million people develop Vit A deficiency each year
- 20% of pop. gets <70% of RDA
- Commonly inadequate in elderly
- Acne rosacea
- Acne vulgaris
- Dry Hair
- Fatigue
- Growth Impairment
- Insomnia
- Hyperkeratosis
- Infections
- Night blindness
- Weight Loss
- Xerophthalmia
- Xerosis
- Breast disease
- Cancer
- Cataracts
- Cervical dysplasia
- Infections
- Peptic ulcers
- Psoriasis
- AIDS
- Sickle cell Anemia
- Candidiasis
- Celiac disease
- Crohn's disease
- Diabetes mellitus
- Eczema
- Glaucoma
- Gout
- Hepatitis
- Hypertension
- Lupus
- Kidney stones
- Immunodepression infect.
- Inner ear dysfunction
- Macular degeneration
- Menorrhagia
- Muscle cramps
- Myopathy
- Periodontal disease
- Peripheral vascular disease
- PMS
- Psoriasis
- Ulcerative colitis
- Ulcers
- Skin ulcers
- Wound healing
- Sexual dysfunction
- Liver dysfunction
- Diminished taste
- Diminished olfactory sense

Deficiency or supplementation of Vit D is associated with:

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- Atherosclerosis
- Bronchial asthma
- Cancer
- Capillary fragility
- Cardiac arrhythmias
- Cataract
- Epilepsy
- Hypertension immunodepression
- Heart disease
- Inner ear dysfunction
- Multiple sclerosis
- Muscle cramps
- Osteoporosis
- Periodontal disease
- Psoriasis
- Ulcerative colitis

Deficiency or supplementation of Vit E is associated with:

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Acne
Acne vulgaris
Allergy
Anemia
Atherosclerosis
Auto-immune disorders
Benign breast disease
Capillary fragility
Cardiac arrhythmias
Cardiomyopathy
Cervical dysplasia
Dysmenorrhea
Eczema Edema
Epilepsy Hepatitis
Gall bladder disease
Herpes simplex
Herpes zoster
Hyperestrogenism
Immunodepression
Fibro cystic breast dis.
PMS
Lupus
Macular degeneration
Multiple sclerosis
Myopathy
Neuralgia
Neuropathy
Neuromuscular deg.
Pain
Periodontal disease
Peripheral vascular dis.
Pregnancy related illness
Raynaud's syndrome
Restless legs
Rheumatism
Scleroderma
Seborrheic dermatitis
Ulcerative colitis
Ulcers (skin)
Vasculitis
Ulcers(duodenal & gastric)
Wound healing
Breast disease
Cancer
Cataracts
Diabetes
Epilepsy
Gallstones
Heart disease
Herpes simplex
Infection
Inflammatory bowel disease
Inner ear dysfunction
Menopausal symptoms
Menstrual cramps
Muscle cramps
Osteoarthritis
Parkinson's disease
Peptic ulcers
Premenstrual tension

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OVER 600,000 PEOPLE IN THE US HAD THEIR GALL BLADDERS REMOVED LAST YEAR

The operations and hospitalization cost more than $5 billion a year, and the problem is the most common and costly digestive disease requiring hospitalization, according to the National Institutes of Health.

Gallstones

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- Gallstone disease effects 10-20% of the population in the United States
- Gall bladder disease is a common ailment affecting an estimated 20 million Americans. Most gallstones seen in the United States are composed of cholesterol or cholesterol mixtures
- Although gallstones are common, only 30% of patients ever develop symptoms

Gallbladder and Fats

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- Fats liquid at room temperature resulted in a significantly greater contraction of the gallbladder than solid fats. Almost 50% greater contraction.
  - *Nutritio Dieta* 2:219-22,1960
- The incidence of gallstones may be higher when fats come from polyunsaturates and transfatty acids than from saturated fats and cholesterol.
  - *N Engl J Med* 288 (1):24-27, 1973

Vitamin deficiencies associated with gallstones:

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- Vitamin C, Vitamin E, Choline, Taurine
- Several studies show a correlation of gallbladder dysfunction and gastric hypo secretion.
- Nearly all of my patients with gall bladder problems take Betaine HCL .

Gallbladder Recommendations

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- **HEAT**
- **BETAINE HCL**
- **ADJUSTMENTS**
- BLOOD TESTING
- Vegetarians have half the risk of forming gallstones compared with meat eaters. Vegetarians often eat fewer calories and less cholesterol. They also tend to weigh less than meat eaters which may reduce their risk.
- Constipation has been linked to gallstones. When constipation is successfully resolved, it appears to reduce the risk of gallstone formation.

Providing Hope...

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- Patient with non small cell lung carcinoma (Pretty rare)... No hope.
- He had started our program and is feeling better. He is not coughing and spitting up and has more energy.
- **Eight months on His Program the scans showed no sign of cancer.** His Oncologist said this is impossible, his MD said it is miraculous.
- …He died 6 months later.

Praying for Miracles

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- It is OK to Pray for Miracles
- But sometimes God provides opportunities…and you have to do your part
- The Miracle is already inside of you
- Maybe another miracle brought you here…

Cholesterol

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- Precursor of the bile acids and the sex hormones
- Cell membranes
- Used in seminal fluid and vaginal lubrication
- Essential part of nerve-fiber structure
- Manufactured primarily in the liver (all tissues of the body except the brain can make it), cholesterol is present in almost all cells and is particularly high in the liver, brain and nervous tissue, and the blood.
- Transported by lipoproteins.

Mevacor

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- **Testosterone response to HCG was slightly but not significantly** reduced after treatment with lovastatin 40 mg daily for 16 weeks in 21 men. The effects of HMG-CoA reductase inhibitors on male fertility have not been studied in adequate numbers of male patients. The effects, if any, on the pituitary-gonadal axis in premenopausal women are unknown. optic nerve degeneration in dogs treated for 14 weeks...
- CNS vascular lesions, characterized by perivascular hemorrhage and edema, necrosis of small vessels, were seen in dogs
- Similar optic nerve and CNS vascular lesions have been observed with other drugs of this class.
- Cataracts were seen in dogs treated for 11 and 28 weeks at 180 mg/kg/day and 1 year at 60 mg/kg/day.
- *Carcinogenesis, Mutagenesis, Impairment of Fertility*
- In a 24-month carcinogenicity study in rats, there was a positive dose response relationship for hepatocellular carcinogenicity in males at drug exposures between 2-7 times that of human exposure at 80 mg/day (doses in rats were 5, 30 and 180 mg/kg/day).

Mevacor continued

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- An increased incidence of **thyroid neoplasms** in rats appears to be a response that has been seen with other HMG-CoA reductase inhibitors.
- A chemically similar drug in this class was administered to mice for 72 weeks at 25, 100, and 400 mg/kg body weight, which resulted in mean serum drug levels approximately 3, 15, and 33 times higher than the mean human serum drug concentration (as total inhibitory activity) after a 40 mg oral dose**. Liver carcinomas** were significantly increased in high dose females and mid- and high dose males, with a maximum incidence of 90 percent in males. The incidence of **adenomas of the liver** was significantly increased in mid- and high dose females. Drug treatment also significantly increased the incidence of **lung adenomas** in mid- and high dose males and females. Adenomas of the Harderian gland (a gland of the eye of rodents) were significantly higher in high dose mice than in controls.

Mevacor continued

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- ***Hypersensitivity Reactions:*** An apparent hypersensitivity syndrome has been reported rarely which has included one or more of the following features: anaphylaxis, angioedema, lupus erythematous-like syndrome, polymyalgia rheumatica, vasculitis, purpura, thrombocytopenia, leukopenia, hemolytic anemia, positive ANA, ESR increase, eosinophilia, arthritis, arthralgia, urticaria, asthenia, photosensitivity, fever, chills, flushing, malaise, dyspnea, toxic epidermal necrolysis, erythema multiforme, including Stevens-Johnson syndrome.
- ***Gastrointestinal:*** pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver; and rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting.
- ***Skin:*** alopecia, pruritus. A variety of skin changes (e.g., nodules, discoloration, dryness of skin/mucous membranes, changes to hair/nails) have been reported.
- ***Reproductive*****:** **gynecomastia,** loss of libido, **erectile dysfunction**.
- ***Eye:*** **progression of cataracts** (lens opacities), ophthalmoplegia.
- ***Laboratory Abnormalities:*** elevated transaminases, alkaline phosphatase, (gamma)-glutamyl transpeptidase, and bilirubin; thyroid function abnormalities.

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Lipitor: side effects

- Lipitor (lipid or cholesterol lowering drug) causes liver dysfunction; **SGOT and SGPT three times the upper limit of normal; CPK values greater than 10 times the normal limit.** Adrenal failure, diffused muscle pain; **muscle tenderness; weakness; malaise**; fever; myopathy or muscle disease if used with certain other drugs (these drugs include: antacid (maylox), dioxin, erythromycin, and oral contraceptives).
- Long term use in laboratory studies of two years indicated an **increase in liver cancer**. Should not be used in pregnant women. Other adverse reactions include: edema (part or whole of the body), digestive problems, gastritis, colitis, vomiting, ulcers, bleeding gums, bleeding ulcers, hepatitis, pancreatitis, gall bladder disease, asthma, decreased libido, leg cramps, vercitis, monocytis, itching, alopecia, dry skin, acne, cystitis, hemoturia, kidney stone, breast tenderness, various hemorrhage, loss of taste, palpitations, migraines, arrhythmia, gout
- Nutrients Depleted: Co-Enzyme Q-10

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Pravochol: side effects

- Pravochol: (for high cholesterol) Warnings: chest pain; rash; nausea and vomiting;
- Diarrhea; abdominal pain; constipation; flatulence; heartburn; fatigue; localized pain; myalgia; headaches; dizziness; urinary abnormality; rhinitis; cough; memory loss; insomnia; depression; anxiety; arthralgia; flushing; pancreatitis; hepatitis; cirrhosis; anorexia; alopecia; loss of libido; erectile dysfunction; progression of cataracts
- Nutrients Depleted: Coenzyme Q10

Are 'Vaccine Skeptics' Responsible for Flu Deaths? Some experts say anti-vaccine lobby took over messaging about flu vaccine

by Molly Walker, Staff Writer, MedPage Today February 17, 2018

- For months, speculation swirled around this year's flu season, and the apparent lack of efficacy of the vaccine in Australia earlier in the year, but did all that skepticism contribute to flu deaths in the U.S.?
- The CDC's most recent flu data indicates that as [additional 37 children](#) died from influenza-related causes, and the portion of pneumonia and influenza-associated mortality hovers near 10%, far above the epidemic threshold for this particular week. Recently released flu vaccine efficacy data indicated that only a little over a quarter of pediatric deaths were in vaccinated children.
- In commenting on [this data](#), Peter Hotez, MD, PhD, dean of the National School of Tropical Medicine at Baylor College of Medicine in Houston, told *MedPage Today* that in general, the public health community was not sufficiently visible in the media about the importance of getting vaccinated, and thus allowed anti-vaxcine activists to take over the messaging.
- "The public health community did not adequately articulate how the current flu vaccine could still save your life," Hotez said. "This current flu epidemic may turn out to be the first major example of how the antivaccine lobby in America was effective in dissuading people not to get vaccinated, and may be responsible for hundreds or more American deaths."
- Peter Palese, PhD, chair of the Department of Microbiology at Icahn School of Medicine at Mount Sinai in New York City, was unequivocal in his response: "I fully agree with the statement that the antivaxxers are responsible for the needless deaths of many [unvaccinated] people," he said.
- Public health messaging has improved over the years, noted Stephen Morse, PhD, director of the Infectious Disease Epidemiology Certificate Program of Columbia University Mailman School of Public Health in New York City, but is still often ineffectual, because "strong communications are needed to counter" the "overwhelming appeal to emotion" of anti-vaccine advocates, while "still being honest and accurate."
- "For flu, even 20% protection can prevent many cases and save many lives directly and indirectly," Morse explained. "The dangers of flu and other diseases we try to prevent by vaccines pale by comparison with the risk portrayals by vaccine opponents, but those disease risks and prevention benefits are real and often very meaningful. We often haven't conveyed that well."
- But not all experts were in agreement. Robert Field, PhD, MPH, JD, professor of health management and policy at Drexel University in Philadelphia, said that the public health community "is only as strong as the tools it has available.
- "This year's epidemic should serve as a reminder of the importance of public health," he said. "The epidemic might have been even worse if the vaccine had not been available. And vaccines remain our most effective tool in fighting future outbreaks."
- John Sinnott, MD, chair of the Department of Internal Medicine at the Morsani School of Medicine at the University of South Florida in Tampa, said that he did not think that the anti-vaccine lobby did this, or if they did, "it was not very noticeable -- I would think they would use the information next year."
- Morse suggested that perhaps there is much that the public health community might learn from the approach of anti-tobacco organizations, such as the Truth Initiative, when talking about the dangers of not getting vaccinated: "We act as if the value of a vaccine, and the dangers of the disease, are generally understood, but they need to be shown clearly and perhaps even dramatically."
- last updated 02.16.2018

Are 'Vaccine Skeptics' Responsible for Flu Deaths?

02.17.2018

Dr. CC,

I support appropriate vaccination, but I feel it is irresponsible to label patients exercising their decision for informed consent as being responsible for deaths. Clearly, we as a medical profession, have done a poor job of educating the public and gaining their trust and trying to badger them into compliance only increases the distrust they have in medicine. I have to say I even had to rethink my support of the flu vaccine when I learned that the efficacy numbers used were misleading to the public. Most assume that "20% efficacy" means 1 in 5 people would be protected from the flu - as do many of my fellow physicians. It took a colleague of mine to point out that it is a 'relative' risk reduction, which means you actual are only reducing the typical estimated 4% risk a person has each year, down to 3.2%. **In other words out of 100 vaccinated people, 1 person (0.8%) would be protected from the flu if all 100 were vaccinated.**

What is more disheartening, and something patients are becoming increasingly aware of, is the fact that the 'flu deaths' reported are actually "flu-associated" illnesses which includes pneumonia of all causes. Van: this doctor laments that fact that the public is becoming aware that many 'flu deaths' are not really deaths caused by the flu, no wonder people are becoming for skeptical especially when the facts do come out.

Are 'Vaccine Skeptics' Responsible for Flu Deaths? by Molly Walker, Staff Writer, MedPage Today February 17, 2018

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Do Statins Work? 02-2008

- On Jan. 14, 2008 when Merck and Schering-Plough (SGP) revealed results of a trial in which one popular cholesterol-lowering drug, a statin, was fortified by another, Zetia, which operates by a different mechanism. The combination did succeed in forcing down patients' cholesterol further than with just the statin alone. But even with two years of treatment, the further reductions brought no health benefit.
- In Pfizer's own Lipitor newspaper ad. **the dramatic 36% figure has an asterisk**. Read the smaller type. It says: "That means in a large clinical study, 3% of patients taking a sugar pill or placebo had a heart attack compared to 2% of patients taking Lipitor."
- **DOING THE MATH**
- The numbers in that sentence mean that for every 100 people in the trial, which lasted 3 ½ years, three people on placebos and two people on Lipitor had heart attacks.
- ***Now do some simple math**
- The difference credited to the drug? One fewer heart attack per 100 people. So to spare one person a heart attack, 100 people had to take Lipitor for more than three years. The other 99 got no measurable benefit. Or to put it in terms of a little-known but useful statistic, the number needed to treat (or NNT) for one person to benefit is 100.

Statins Shown to Extend Life by Mere Days

Analysis by Dr. Joseph Mercola Fact Checked September 11, 2019

- A 2015 systematic review of statin trials found that in primary prevention trials, the median postponement of death was just 3.2 days. In secondary prevention trials, death was postponed 4.1 days
- Tactics used in statin studies to exaggerate benefits include excluding unsuccessful trials, cherry-picking data, ignoring the most important outcome — an increase in life expectancy — and using a statistical tool called relative risk reduction to amplify trivial effects
- If you look at absolute risk, statin drugs benefit just 1% of the treated participants. Out of 100 people treated with statins for five years, one person will have one less heart attack
- **Statin trials minimize health risks by using a run-in period. Participants are given the drug for a few weeks, after which those who suffer adverse effects are simply excluded, thereby lowering the perceived frequency and severity of side effects**

LIVER WORKSHEET 1

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Alk Phos	32 - low	10 - LOW				
SGOT	14 - low		14 - low			
SGPT	12 - low		33 - high			
GGT						

	Conditions	Considerations
Case 1	Low Liver Function **Nutrients:** Zinc, B-Complex, Vitamin C, Magnesium	Poor Diet, Malnutrition, Drug
Case 2	Possible Osteolytic Sarcoma **Nutrients:** Zinc, Vit C, Magnesium, Potassium	Nutrient Deficiency, Drugs
Case 3	Liver Dysfunction **Nutrients:** B-Complex, Vit C, Milk Thistle Extract	Drugs

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Alk Phos	32 - low	10 - LOW				
SGOT	14 - low		14 - low		4 - LOW	11 - low
SGPT	12 - low		33 - high		6 - LOW	16 - low
GGT				40 - LOW		9 - low

	Conditions	Considerations
Case 4	Severe Pancreatitis – Possible End Stage **Nutrients:** Pancreatic Glandular, B-Complex, Lauricidin	Drugs, Cancer
Case 5	Severe Liver Disorder **Nutrients:** Liver, Glandular, Milk Thistle, B6, Choline, Inositol	Cirrhosis, Possible End Stage, Drugs
Case 6	Low Liver Function **Nutrients:** B-Complex, Milk Thistle	Diet, Drugs

LIVER WORKSHEET 2

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Alk Phos			97-high	90-high		
SGOT	31-high	33-high	37-high			
SGPT		31-high	37-high	33-high		
GGT			41-high			

	Conditions	Considerations
Case 1	Inflamed Liver **Nutrients:** Lauricidin	Drugs – Even Aspirin, Food Poisoning
Case 2	Inflamed Liver **Nutrients:** Lauricidin, Liver Glandular	Drugs, Food Poisoning, Infection
Case 3	Inflamed Liver / Possible Smoldering Hepatitis **Nutrients:** Lauricidin, Milk Thistle, Vitamin C	Drug, Gall Bladder, Digestion, Infection
Case 4	Inflamed Liver w/ Possible Arthritis **Nutrients:** Glucosamine / MSM, Lauricidin, Vitamin C	Drugs

XXX	Case 7	Case 8	Case 9	Case 10	Case 11	Case 12
Alk Phos					190-HIGH	
SGOT		75-HIGH	230-HIGH	37-high		110-HIGH
SGPT		60-HIGH	250-HIGH	37-high		120-HIGH
GGT	60-high			300-HIGH	150-HIGH	200-HIGH

Case 9	Hepatitis **Nutrients:** Lauricidin, Vitamin C, Liver, Methionine, Beta Carotene, Choline, Inositol	Drugs – Multiple Drugs, Recent Hepatitis Exposure
Case 10	Pancreatitis **Nutrients:** Liver, Vitamin C, Beta Carotene	Drugs, Alcohol, UA, Glucose, Hgb A1c
Case 11	Bone Lesion, Arthritis, Liver Disease **Nutrients:** Vitamin C, Lauricidin, Glucosamine/MSM	Drugs, UA, LDH, ESR, CRP, Glucose, Hgb A1c, Alcohol
Case12	Inflamed Liver **Nutrients:** Liver, Vitamin C, Lauricidin	Drugs, Alcohol, UA, Glucose, Hgb A1c, Kidney

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XXX	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10	Case11	Case 12
Alk Phos			97-high	90-high							190-HIGH	
SGOT	31 - high	33-high	37-high					75-HIGH	230-HIGH	37-high		110-HIGH
SGPT		31-high	33-high	38-high	31-high	37-high		60-HIGH	250-HIGH	40-high		120-HIGH
GGT			41-high		44-high		60-high			300-HIGH	150-HIGH	200-HIGH

	Conditions	Considerations
Case 1	Inflamed Liver Nutrients: Lauricidin	Drugs - Even Aspirin, Food Poisoning
Case 2	Inflamed Liver Nutrients: Lauricidin, Liver Glandular	Drugs, Food Poisoning, Infection
Case 3	Inflamed Liver / Possible Smoldering Hepatitis Nutrients: Lauricidin, Milk Thistle, Vitamin C	Drugs, Gall Bladder, Digestion, Infection
Case 4	Inflamed Liver w/ Possible Arthritis Nutrients: Glucosamine / MSM, Lauricidin, Vitamin C	Drugs
Case 5	Liver / Pancreatic Inflammation Nutrients: Lauricidin, Vitamin C	Drugs, Glucose, Hgb A1c, Gall Bladder, Digestion, Alcohol
Case 6	Inflamed Liver Nutrients: Vitamin C, Milk Thistle	Drugs - Especially Cholesterol Lowering Drugs
Case 7	Pancreas Nutrient: Vitamin C, Milk Thistle, Lauricidin	Drugs, Alcohol, Glucose
Case 8	Serious Liver Disease Nutrients: Lauricidin, Vitamin C, Liver, Methionin, Beta Carotene, Choline, Inositol	Drugs Check Everything: UA, Stool, Metabolic UA, EKG
Case 9	Hepatitis Nutrients: Lauricidin, Vitamin C, Liver, Methionin, Beta Carotene, Choline, Inositol	Drugs - Multiple Drugs, Recent Hepatitis Exposure
Case 10	Pancreatitis Nutrients: Liver, Vitamin C, Beta Carotene	Drugs, Alcohol, UA, Glucose, Hgb A1c
Case 11	Bone Lesion, Arthritis, Liver Disease Nutrients: Vitamin C, Lauricidin, Glucosamine / MSM	Drugs, UA, LDH, ESR, CRP, Glucose, Hgb A1c
Case 12	Inflamed Liver Nutrients: Liver, Vitamin C, Lauricidin	Drugs, Alcohol, UA, Glucose, Hgb A1c, Kidney

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It takes time: more or less

- 59y/o male 5'9", 240 pounds
- Symptoms: CFS, IBS, panic attacks, high BP, high pulse, decreasing memory and concentration, slow stream, cystitis, testicular pain, bloating, high cholesterol, abdominal pains, bloating, peptic ulcer, nausea, dry skin and rash (cellulitis) on legs, headaches, joint stiffness.
- These problems had been progressing over the last 25 years and were very significant the last 10 years.

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It takes time cont.

- Medications:
  - Capozide (for high BP) for 25 years
  - Prevacid (for Barrett's: precancerous esophagus) for 10 years
  - Cardura (for high BP) for 7 years
  - Zocor (for high Cholesterol) for 10 years
  - Levbid (for IBS) for 5 years
  - Had been on Prilosec/Prevacid/Zantac or similar for +20 years

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Name: ST20032 Gender: Male Age:57
Weight:238 Blood Type: B Test # 1

Test Description	Current Result	Current Rating	Homeostatic	Clinical	units
Date	3/2/2000	HI			
Glucose	112	LO	85.00 - 100.00	65.00 - 110.00	mg/dl
Phosphorus	2.3	LO	3.40 - 4.00	2.40 - 4.60	mg/dl
Calcium	5.75	LO	7.90 - 10.10	7.00 - 10.11	
Calcium-Phosphorus Index	13.23	HI	30.00 - 40.00	20.00 - 40.20	ratio
Alkaline Phosphorus	166	HI	60.00 - 80.00	41.00 - 138.00	mu/ml
GGT	106	HI	1.00 - 36.00	0 - 65.00	mu/ml
Ferritin	448	HI	12.50 - 218.30	10.00 - 291.00	mg/ml
Cholesterol	210	HI	150.00 - 180.00	140.00 - 200.00	mg/dl
Triglycerides	224	HI	80.00 - 115.00	10.00 - 195.00	mg/dl
VLDL	44	HI	5.00 - 20.00	5.00 - 40.00	mg/dl
T3	31	LO	36.00 - 40.00	32.00 - 43.00	%
Red Blood Count	5.65	HI	4.50 - 5.50	4.50 - 5.50	m/cumm
Hemoglobin	16.5	HI	14.00 - 15.00	12.00 - 16.00	gm/dl
Hematocrit	48.1	HI	40.00 - 47.00	37.00 - 47.00	%

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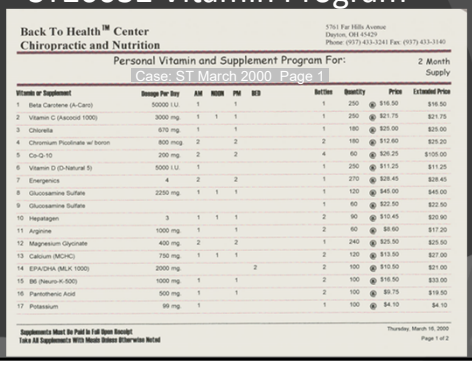
ST20032 Vitamin Program



Back To Health™ Center
Chiropractic and Nutrition

5761 Far Hills Avenue
Dayton, OH 45429
Phone: (937) 433-3241 Fax: (937) 433-3140

Personal Vitamin and Supplement Program For:

2 Month Supply

Case: ST March 2000 Page 1

	Vitamin or Supplement	Dosage Per Day	AM	NOON	PM	BED	Bottles	Quantity	Price	Extended Price
1	Beta Carotene (A-Caro)	50000 I.U.	1		1		1	250	$16.50	$16.50
2	Vitamin C (Ascocid 1000)	3000 mg.	1	1	1		1	250	$21.75	$21.75
3	Chlorella	670 mg.	1		1		1	180	$25.00	$25.00
4	Chromium Picolinate w/ boron	800 mcg.	2		2		2	180	$12.60	$25.20
5	Co-Q-10	200 mg.	2		2		4	60	$26.25	$105.00
6	Vitamin D (D-Natural 5)	5000 I.U.	1				1	250	$11.25	$11.25
7	Emergenca	4		2		2	1	270	$28.45	$28.45
8	Glucosamine Sulfate	2250 mg.	1	1	1		1	120	$45.00	$45.00
9	Glucosamine Sulfate						1	60	$22.50	$22.50
10	Hepatagen	3	1	1	1		2	90	$10.45	$20.90
11	Arginine	1000 mg.	1		1		2	60	$8.60	$17.20
12	Magnesium Glycinate	400 mg.	2		2		1	240	$25.50	$25.50
13	Calcium (MCHC)	750 mg.	1	1	1		2	120	$13.50	$27.00
14	EPA/DHA (MLK 1000)	2000 mg.				2	2	100	$10.50	$21.00
15	B6 (Neuro-K-500)	1000 mg.	1		1		2	100	$16.50	$33.00
16	Pantothenic Acid	500 mg.	1		1		2	100	$9.75	$19.50
17	Potassium	99 mg.	1				1	100	$4.10	$4.10

Supplements Must Be Paid In Full Upon Receipt
Take All Supplements With Meals Unless Otherwise Noted

Thursday, March 16, 2000
Page 1 of 2

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Name: ST20032 Gender: Male Age:57
Weight: 238 Blood Type: B Test # 2

Test Description	Current Result	Current Rating	Prior Result	Delta	Homeostatic	Clinical	units
Date	5/15/2000		3/2/2000				
Glucose	106	HI	112	☺	85.00 - 100.00	65.00 - 110.00	mg/dl
Phosphorus	3.1	LO	2.3	☺	3.40 - 4.00	2.40 - 4.60	mg/dl
Calcium	7.75	LO	5.75	☺	7.90 - 10.10	7.00 - 10.11	
Calcium-Phosphorus Index	24.03	LO	13.23	☺	30.00 - 40.00	20.00 - 40.20	ratio
Alkaline Phosphorus	132	HI	166	☺	60.00 - 80.00	41.00 - 138.00	mu/ml
GGT	72	HI	106	☺	1.00 - 36.00	0 - 65.00	mu/ml
Ferritin	218	OPT	448	☺	12.50 - 218.30	10.00 - 291.00	mg/ml
Cholesterol	119	LO	210	☹	150.00 - 180.00	140.00 - 200.00	mg/dl
Triglycerides	102	OPT	224	☺	80.00 - 115.00	10.00 - 195.00	mg/dl
VLDL	20	OPT	44	☺	5.00 - 20.00	5.00 - 40.00	mg/dl
T3	34	LO	31	☺	36.00 - 40.00	32.00 - 43.00	%
Red Blood Count	5.04	OPT	5.65	☺	4.50 - 5.50	4.50 - 5.50	m/cumm
Hemoglobin	14.8	OPT	16.5	☺	14.00 - 15.00	12.00 - 16.00	gm/dl
Hematocrit	42.9	OPT	48.1	☺	40.00 - 47.00	37.00 - 47.00	%

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It takes time cont.

- First analysis on 3-02-2000
- Most recent 10-25-2001
- 6 SBN Panel blood tests
- 2 hair analysis
- 5 UA's
- 1 ECG
- 1 Alcat
- Over $3,500.00 in supplements
- 45 chiropractic treatments and therapy
- **Was it worth it? Was it a good value?**

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It takes time: current status

- 11-25-2001 "Overall I feel 95% better. My digestion and overall health is great!! It took a long time but it was worth every penny."
- He told me that for 3 years from 1960-1963 he worked at a boiling degreasing tank with tetrachlorethane.
  - Tetrachlorethane is no longer used in industry due to its high carcinogenicity.
- This tetrachlorethane, I believe contributed or caused his problems. It more than likely affected his blood work (CBC, liver, Monocytes, kidney/bladder), prolonged his recovery and will probably continue to be a factor.
- He has avoided or at least delayed some very serious problems associated with this poison.

6-24-2010 email from a DO to an SBN member DC after using 'Cleanse/flush' on 3 patients that ended up in ER within 1 month.

I am an Osteopathic physician and very much understand the holistic approach to the patient. I am also

"The colon cleansing is something disproved by many scientific studies and only supported by unfounded testimonials and outright 'scare tactics' on patients. The colon was designed by God to handle the body's waste products and help eliminate them from the body as well as maintain proper water balance. It does a wonderful job and does not need to be 'washed out or cleansed to rid the body of spackle or toxic wastes.""

The outcomes on all these patients were good. They are all back on their previously prescribed medicines that were working just fine for a number of years.

I respect the practice of Chiropractic and often refer patients for management of musculoskeletal issues. Please also respect my practice of medicine and trust that science can also play a role in taking care of patients. Thank you.

Respectfully,

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21 DAY DETOX

- If you're recommending "detox programs" and multiple herbals...you'd better be testing to monitor what you're doing is SAFE AND EFFECTIVE!
- From a fellow doctor:
  - We were doing great with this patient until she decided to do the 21day detox with (name of supplement company removed...NOTE: this is a VERY popular supplement company).
  - After that the test results after the detox were not the best. She decided to continue with the acupuncturist rep of (supplement company) to do muscle testing for the past 2 months and see if they can help her. **Her new liver results are 5 times worse.** She has now have come back to fully work with me.

	Current Rating 05/03/2017		Prior 02/06/2017	
SGOT (AST)	173.00	Very High	24.00	☺
SGPT (ALT)	91.00	Very High	31.00	☺
TSH	10.26	Very High	9.26	☹
T4 Thyroxine	11.60	high	10.10	☺

Begin it Now

"Until one is committed, there is hesitancy, the chance to draw back, always ineffectiveness. Concerning all acts of initiative (and creation), there is one elementary truth the ignorance of which kills countless ideas and splendid plans: that the moment one definitely commits oneself, then Providence moves too. All sorts of things occur to help one that would never otherwise have occurred. A whole stream of events issues from the decision raising in one's favor all manner of unforeseen incidents and meetings and material assistance, which no man could have dreamed would have come his way. Whatever you can do or dream you can do, begin it."

Boldness has genius, power, and magic in it. Begin it now.

William Hutchison Murray

Warning Signs and Observations

- Frequently sick
- Bruises easily
- Heals slowly
- Ulcers that heal slowly
- Chronic skin problems (rashes, psoriasis, boils, change in mole
- Fingernails and toenails
- Osteoarthritis and Redness of the fingers but not the hand
- Fissures/cracks of heels and finger tips/hands
- Edema in the ankles and sore feet
- Discoloration/darker color of the skin of the feet and ankles
- Weak or absent pulses
- Tremors
- Dizziness
- Decreased memory/concentration
- Frequent changes in vision, floaters, eye problems, glaucoma, macular degeneration
- High BP
- High Pulse
- Low Oxygen
- Low bone density
- Unusual chronic fatigue

Warning Signs (cont.)

- Digestive aids – especially chronic usage
- Constipation
- Diarrhea
- Stool that floats
- Gas/bloating
  - Little boy with extremely foul gas
  - Senior drug toxicity, overdose, low or slow clearance, drug induced conditions (Alzheimers)
- Bad breath/Coated tongue/ Cracked lips
- Blood out of any orifice that it isn't supposed to be in
- Long term drug use/frequent short term drug use
- Skin, hair, eyes
- Posture

Warning Signs

A doctor must not dismiss or minimize "Warning Signs" these should lead to a nutritional consultation and you will…save a life sometimes.

"Warning Signs" are tools to create:

- awareness about their present state of health
- doubt in the patients mind about their true health
- the potential critical or serious situation
- a desire to find out what is really happening
- establish you, the doctor, as the expert: caring, thorough and knowledgeable

Getting Started: Marketing Tips

- Do Urinalysis day
- Do a vitals day, BP/Pulse
- Do file updates
- Put up 'Warning Signs' and 'Pulse' pictures in office
- GO FISHING

The Best Investment- SBN ROI:

2 pt per month for 12 months= $12,000/year
+600% ROI

- Net $500.00/patient which includes vitamin sales at 20% profit

Vitamin sales, getting started:

- Sell $500.00 / month with 20% profit of $100…ROI 20%/month
- 240% ROI of $1,200.00 if you sell $500.00/month for 12 months at 20% profit

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Long Term Growth

At one new patient per week and 30% retention
These are very conservative estimates.

1 pt per week for 1 year (50 pts) at $500.00 per patient net = $25,000.00

1st year $25,000 X 30% = $7500

2nd year $32,500 + $25,000.00 + $7500

3rd year $40,000 ($25K + $7500 + $7500)

4th year $47,500

5th year $55,000

6th year $62,500

7th year $70,000

NOTE: This does not take into consideration retesting, additional vitamin sales, consultations etc.

Planning

Patients

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

????????

- Pass out seminar evaluations
- Pass out seminar attendance certificates

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Identifying Hemochromatosis

Standard Blood Tests

- High Ferritin
- Low or slight low transferrin
- High serum iron

Liver biopsy is the "Gold Standard"

Genetic testing is also available for a price.

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Identifying Hemochromatosis

Ferritin

- Correlates with total body iron stores
- Decreases before anemia occurs
- May contain only a small amount of iron or a relatively large amount
  - Guyton: Textbook of Medical Physiology 5th edition

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Ferritin

DECREASED in:

- Iron deficiency
- **Exhausted iron stores with ferritin < 12ng/mL**

INCREASED in:

- Iron overload
- Hemochromatosis
- Acute and chronic liver diseases
- Alcoholism (declines during abstinence)
- Malignancies: note: poor prognosis with increased ferritin.
- Leukemia
- Hodgkin's disease
- Renal cell carcinoma
- Infection

Increased in:

- Malignant lymphoma
- Hepatocellular carcinoma
- Prostate Cancer
- Inflammation
- Rheumatoid arthritis
- Hyperthyroidism
- Acute myocardial infarction
- Anemias not due to iron deficiency
- Megaloblastic, Hemolytic, Thalassemia

Recommendations for increased Ferritin:

- Silymarin/Milk Thistle
- Phlebotomy

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CLINICAL SYNOPSIS of hemochromatosis

Skin:
- Hypermelanotic pigmentation

Cardiac:
- Cardiomyopathy
- Congestive heart failure
- Arrhythmia

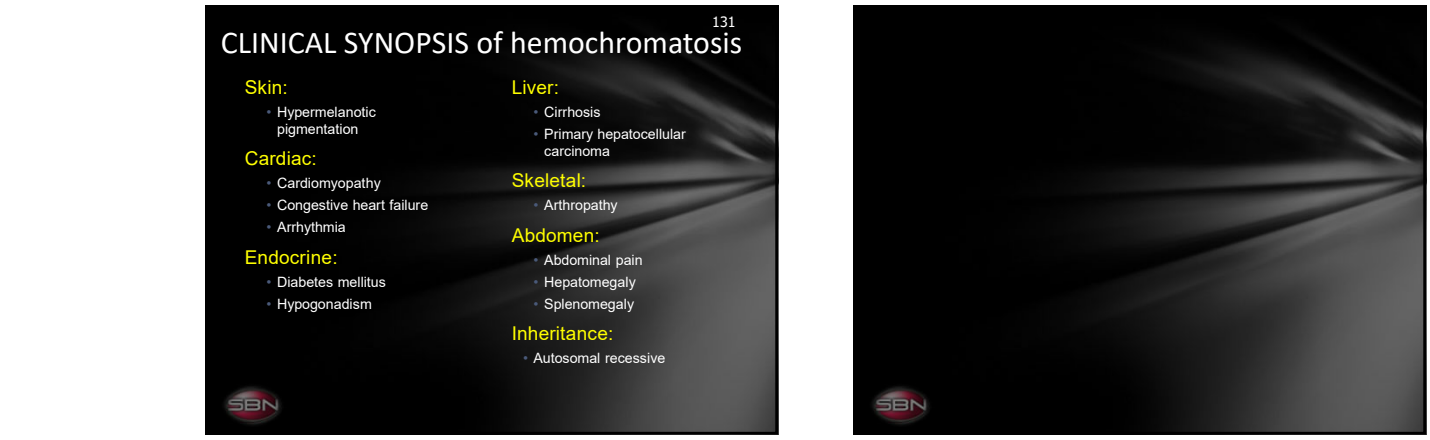
Endocrine:
- Diabetes mellitus
- Hypogonadism

Liver:
- Cirrhosis
- Primary hepatocellular carcinoma

Skeletal:
- Arthropathy

Abdomen:
- Abdominal pain
- Hepatomegaly
- Splenomegaly

Inheritance:
- Autosomal recessive



Hemochromatosis is excess iron stores. 131

The Ferritin is very high. This may be an inflammatory condition possibly involving the liver. This may also be a condition associated with improper utilization of iron known as Hemochromatosis. These values would indicate an iron handling problem and this could possibly lead to Hemochromatosis. Donating blood as noted below is advised.

Hemochromatosis is excess iron stores. The solution for Hemochromatosis is periodic phlebotomies (blood letting) in order to pull excess iron out of your system and lower your iron levels. Ferritin is a blood test that detects the level of iron stores and iron reserves. The Ferritin test determines the severity of Hemochromatosis and can be used to monitor the need for therapeutic phlebotomies. In the early stages there are no symptoms or only vague symptoms such as painful joints, fatigue, weakness, a loss of libido/sex drive, abdominal pains and swelling, auto immune thyroid problems, auto immune disease, and various heart problems, such as a-fib and heart flutters and low testosterone in men. If left untreated, the excess iron (Ferritin) builds up in the organs for hemochromatosis patients - especially in the liver, heart, spleen, and pancreas - it tends to destroy cells. Eventually, the iron builds up in the organs similar to rust.

This 'rust' or iron overload in the brain is linked with the neurofibril tangles and amyloid-beta plaques that are common in Alzheimer's patients. Basically, to help avoid or slow Alzheimer's disease, it would be prudent to reduce Ferritin and Serum Iron to optimal or even slightly lower levels.

Long term excess iron can cause hormonal problems in men and women as well as frequent infections, skin bronzing or hair loss. Hemochromatosis can be a significant cause of early death especially in men who are being treated for heart, liver, kidney disease, cancer, high blood pressure, diabetes, stroke or other chronic problems. Liver cirrhosis (liver scarring), spleen enlargement (splenomegaly), liver cancer, heart failure, diabetes, and arthritis are all possibilities for advanced untreated hemochromatosis sufferers as the excess iron builds up to cause tissue damage.

Hemochromatosis is rare in women who are having monthly periods. However, as a women enters menopause, women develop it at the same rate as men once menses stops. Various extensive drugs, hormones and treatments might be tried when the most important thing to do is to get rid of some iron using phlebotomies on a regular basis. Genetic or not, this is a familial condition- if one person in the family has it, more than likely other members and extended family are also affected. It is recommended that one phlebotomy (having blood taken or drawn) of one pint of blood at least 2-4 weeks before your next blood test is recommended if cancer, anemia or other contraindications for phlebotomy are absent.

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SIDEBAR: WHAT IS FERRITIN?

- *Ferritin is a protein complex that binds to iron and has a direct correlation to the level of iron stores in the body.*[2]
- *Approximately 250mg of iron exit the body with each blood donation thereby lowering overall Ferritin levels without significantly altering other tests such as serum iron.*[3]
- *Excess stores of iron, indicated by high Ferritin, can increase cellular oxidative stress and damage tissues. This may lead to insulin resistance and abnormal glucose metabolism.* [1,4]
- *Several studies show that decreasing Ferritin levels directly correlates to a reduced Hemoglobin A1C.* [1,4]

1. Jiang R, et al, Body iron stores in relation to risk of type 2 diabetes in apparently healthy women., JAMA. 2004 Feb 11;291(6):711-7.
2. http://en.wikipedia.org/wiki/Ferritin
3. http://www.labtestsonline.org/understanding/analytes/ferritin/faq.html
4. Fernández-Real José Manuel, Penarroja Georgina, Castro Antoni, Garcia-Bragado Fernando, Hernández-Aguado Ildefonso, Ricart Wilredo. *Blood Letting in High Ferritin Type 2 Diabetes – Effects on Insulin Sensitivity and B-Cell Function. Diabetes.* 2002; 51:1000-1004.

Identifying Hemochromatosis

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The simple keys to diagnosis and management of Hemochromatosis

High Ferritin
High Hematocrit
High Hemoglobin
Low/normal CRP & ESR

Hemochromatosis every time in my many years of practice.

Note: Phlebotomy will not be done if the Hct is below 38%, and/or Hgb is below 14gm/dl regardless of the level of Ferritin or Transferrin. Better check the ESR, CRP, Diabetes, liver or something else that would cause the Ferritin and/or Transferrin to be elevated. Manage the rate of phlebotomy with the Ferritin, Hct and Hgb levels.

Traumatic Brain Injury 6-2018
now: "I feel like a million Bucks!"

6-2018 Email from SBN member:

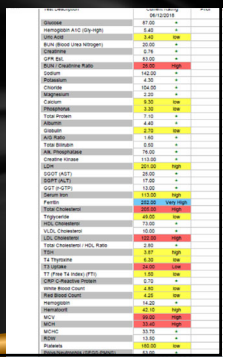
I can't tell you how much better I feel since taking your recommended nutrition. I have a history of TBI and my symptoms have been getting progressively worse over the last few years. As it turns out, the symptoms that I was attributing to my TBI turned out to be from hemochromatosis. Now that I've dealt with that and am working to heal my damaged organs I feel like a million bucks! I am able to work almost twice the amount of hours I was before, I no longer have daily headaches and I can now have a glass of wine without feeling like crap. Everyone in my life has noticed the difference, and honestly, this has been life changing for me.

Classic case 64 y/o female
6-2018 Question from SBN member
What is wrong?

Progressive thyroid problems,
Hormone problems developing: hot flashes, decreased sex drive, brain fog, insomnia, fatigue, feels cold, leg cramps, thinning hair, poor memory

Levothyroxine and Nature-Throid -even higher levels of thyroid support are not helping.

EASY: Hemochromatosis!!!



Case #9 - Presenting Symptoms

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High BP, Sexual Dysfunction

Name:	RB
Gender:	Male
Age:	55
Weight:	240
Blood Type:	B
Presented:	02/00

- Claims general good health
- High blood pressure
- Overweight
- Gained about 10-15 lbs. in the last 5 years
- Significant decrease in sexual function
- Edema or puffiness under his eyes
- Drinks about 1-2 Pepsi's daily
- PSA of 4.1 in '99

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Name: **RB** Gender: **Male** Age: **55**
Weight: **240** Blood Type: **B** Test #: **1**

Test Description	Current Result	Current Rating	Homeostatic	Clinical	units
Date	3/28/1900				
Glucose	88	opt	85.00 - 100.00	65.00 - 110.00	mg/dl
Hemoglobin A1C	5.7	hi	4.00 - 5.40	3.40 - 6.10	%
SGOT	61	HI	18.00 - 26.00	0 - 40.00	mu/ml
SGPT	84	HI	18.00 - 26.00	0 - 47.00	mu/ml
GGT	53	hi	10.00 - 36.00	5.00 - 65.00	mu/ml
Serium Iron	113	opt	85.00 - 120.00	50.00 - 180.00	mcg/dl
Ferritin	842	HI	12.50 - 218.30	10.00 - 291.00	ng/ml
Hemoglobin	16.4	HI	14.00 - 15.00	12.00 - 16.00	gm/dl
Hematocrit	47.1	HI	40.00 - 47.00	37.00 - 47.00	%
Erythrocyte Sed Rate	5	opt	0 - 8.00	0 - 9.00	mm/HR
C Reactive Protein	5.1	HI	0 - 0	0 - 4.90	mg/L

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Name: **RB** Gender: **Male** Age: **55**
Weight: **240** Blood Type: **B** Test #: **2**

Test Description	Current Result	Current Rating	Prior Result	Delta	Homeostatic	Clinical	units
Date	5/18/2000		3/28/2000				
Glucose	97	opt	88		85.00 - 100.00	65.00 - 110.00	mg/dl
Hemoglobin A1C			5.7		4.00 - 5.40	3.40 - 6.10	%
SGOT	46	HI	61	☺	18.00 - 26.00	0 - 40.00	mu/ml
SGPT	33	hi	84	☺	18.00 - 26.00	0 - 47.00	mu/ml
GGT	23	opt	53	☺	10.00 - 36.00	5.00 - 65.00	mu/ml
Serium Iron	48	LO	113	☹	85.00 - 120.00	50.00 - 180.00	mcg/dl
Ferritin	362	HI	842	☺	12.50 - 218.30	10.00 - 291.00	ng/ml
Hemoglobin	14.8	opt	16.4	☺	14.00 - 15.00	12.00 - 16.00	gm/dl
Hematocrit	45.3	opt	47.1	☺	40.00 - 47.00	37.00 - 47.00	%
Erythrocyte Sed Rate	6	opt	5		0 - 8.00	0 - 9.00	mm/HR
C Reactive Protein	0	opt	5.1	☺	0 - 0	0 - 4.90	mg/L

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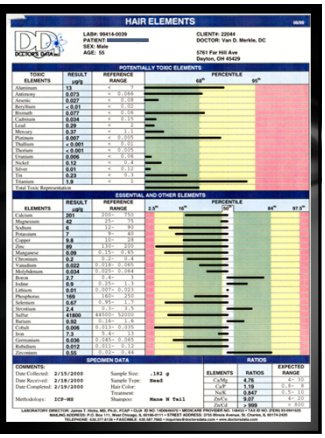
Name:	**RB**
Gender:	**Male**
Age:	**55**
Weight:	**240**
Blood Type:	**B**



Name: **RB**

Gender: **Male**

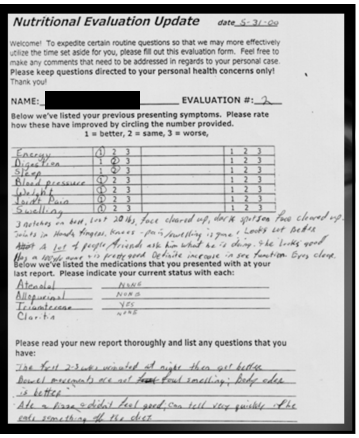
Age: **55**

Weight: **245**

Blood Type: **B**

Patient noticed significant increase in sexual function

(Wife complained!)



Nutritional Evaluation Update date 5-31-09

Welcome! To expedite certain routine questions so that we may more effectively utilize the time set aside for you, please fill out this evaluation form. Feel free to make any comments that need to be addressed in regards to your personal case. **Please keep questions directed to your personal health concerns only!** Thank you!

NAME: [redacted] **EVALUATION #:** 2

Below we've listed your previous presenting symptoms. Please rate how these have improved by circling the number provided.
1 = better, 2 = same, 3 = worse,

Energy	(1) 2 3		1 2 3
Digestion	1 (2) 3		1 2 3
Sleep	1 (2) 3		1 2 3
Blood pressure	(1) 2 3		1 2 3
Weight	(1) 2 3		1 2 3
Joint Pain	(1) 2 3		1 2 3
Swelling	(1) 2 3		1 2 3

3 notches on belt, lost 20 lbs, face cleared up, dark spots on face cleared up. Joints in hands fingers, knees - pain/swelling is gone, Looks lot better. A lot of people/friends ask him what he is doing. He looks good. Has a 100 y/o aunt + is pretty good. Definite increase in sex function. Eyes clear.

Below we've listed the medications that you presented with at your last report. Please indicate your current status with each:

Atenolol	NONE
Allopurinol	NONE
Triamterene	YES
Claritin	NONE

Please read your new report thoroughly and list any questions that you have:

The first 2-3 wks urinated at night then got better. Bowel movements are not ~~foul~~ foul smelling; Body odor is better.
Ate a pizza & didn't feel good; can tell very quickly if he eats something off the diet.

8-30-2018

Dear Dr. Merkle,

I just wanted to thank you for what you are doing. Last year I got tested and my iron was 706!! Yikes!! I was just tested yesterday and my level was 63!! Liver enzymes were also down.. What can I say except thanks for saving me!! Once again you had a life changing effect on someone. All my thanks come from the heart.

Sincerely,

Gary LaRocca, DC

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Herbert H.

AGE related Complaints? His MD said: 'Just getting older'

July 2010 63 y/o Male 5'6" 175 lbs

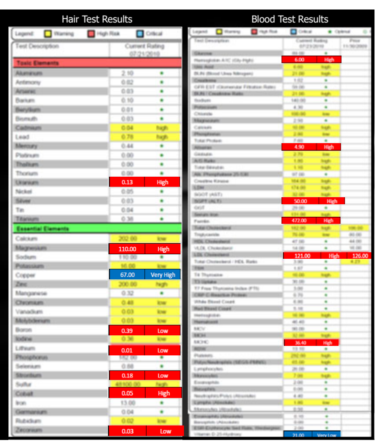
Primary Complaints:

1. High Blood Pressure
2. High Cholesterol
3. Gastro/Intestinal Dysfunction
4. Anemia
5. ED
6. Mild Fatigue
7. Headaches

Medications:

Aspirin +2 years
Simvastatin +2 years
Lisinopril +2 years

A DMSA urinary challenge was ran on this patient because nearly all of the toxic elements in his hair results were yellow or clear/optimal.



Herbert H. Chelation Tests

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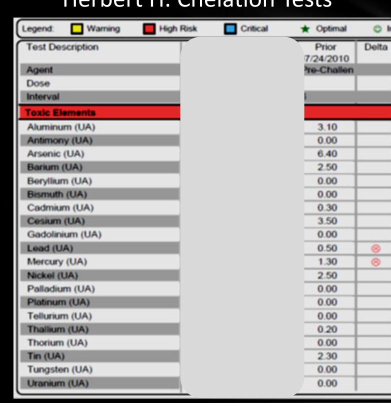

Legend: Warning | High Risk | Critical | Optimal

Test Description		Prior 7/24/2010	Delta
Agent		Pre-Challen	
Dose			
Interval			
Toxic Elements			
Aluminum (UA)		3.10	
Antimony (UA)		0.00	
Arsenic (UA)		6.40	
Barium (UA)		2.50	
Beryllium (UA)		0.00	
Bismuth (UA)		0.00	
Cadmium (UA)		0.30	
Cesium (UA)		3.50	
Gadolinium (UA)		0.00	
Lead (UA)		0.50	⊗
Mercury (UA)		1.30	⊗
Nickel (UA)		2.50	
Palladium (UA)		0.00	
Platinum (UA)		0.00	
Tellurium (UA)		0.00	
Thallium (UA)		0.20	
Thorium (UA)		0.00	
Tin (UA)		2.30	
Tungsten (UA)		0.00	
Uranium (UA)		0.00	

Important Questions ?

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What were Herbert's real problems?

What are symptoms of the real problem?

Would functional tests have been positive in urine or saliva?

- Adrenal function? Would patient 'feel' better on adrenal support?
- Hormones: Cortisol? Testosterone? DHEA? Testosterone? Growth Hormone?
- Amino Acids?
- Fatty Acids?
- Neurotransmitters?
- Urine Organic Acids?
- Digestion: food allergies? gluten sensitivities?
- Psychological/mental impact of toxic elements?

Consultation:
The most important question

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How long have you had this problem?

Secondary:

- Why are you sick now?
- What is different now?

Keys to Completing The Consultation

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I don't have a cure or vitamin for your problem.

Our goal is to get you healthier.

If we can get you as healthy as you were _X_ years ago, that would be good, wouldn't it?

Let's get started, the longer you wait the more damage can be done.

We need some testing.....

- Case: S—Lupus

Basic Keys To The Consultation

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Acknowledge the problem, why they came in, how it is affecting their life

Identify the medications and relate that your goal is not to take them off of the medications but to get them healthy so that they no longer need them.

Identify how long they have had the problem and that something has changed.

The main focus is not to treat their problem but to get them as healthy as they were before the problem started.

Let's get started before more serious conditions develop.

Hormones: Where did they come from?

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Daryl E.: low testosterone around **125** for years even on a testosterone patch, he had taken shots to no avail. After being on the SBN program for 4 months his testosterone is **325** (clinical range: 241-827; healthy range: 390-652) Among other things he says he feels "A thousand percent better".

No 'natural' hormones were used: yam, DHEA, Melatonin etc.

Ready

Shoot

AIM!

The Doctor of the Future...

...is you!

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It is not the critic who counts, not the man who points out how the strong man stumbled, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena; whose face is marred by dust and sweat and blood; who strives valiantly, who errs and comes short again and again; who knows the great enthusiasms, the great devotions, and spends himself in a worthy cause; who, at the best, knows in the end the triumph of high achievement; and who, at the worst, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat.

Theodore Roosevelt

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Do something today to be healthier than you were yesterday.

-Van D. Merkle

Van D Merkle DC, DABCI, CCN, DCBCN, Vice President of CBCN

Currently in training to be the future World Record Holder in the 800 m run… for 110 year olds.

www.NutritionPracticeBuilder.com

Thyroid in 20 minutes

- Start with minimum of T4, T3 Free and TSH
- Even better is to add: Free T4 and T3 Total

T3 Uptake and T7: basically useless today

- T3 Uptake is **an indirect measurement of the amount of thyroid-related binding proteins that happen to be in the blood.** This includes albumin, TBG, and prealbumin.
- www.restartmed.com › t3-uptake
- Apr 16, 2020 · T3 Uptake is **one of many thyroid lab tests available to assess thyroid function.** Unfortunately, as far as clinical utility is concerned, T3 Uptake is not a helpful lab test and you can get more information from the other thyroid lab tests which are available.

T7 Free Thyroxine Index is a calculation to calculate Free T4. Now unnecessary: just do a Free T4.

- T7 Free Thyroxine Index The T7 Index is used to **calcula**te **Free T4, one of the two active thyroid hormones in your bloodstream.** The T7 Index is a calculated Free T4 score and is not as accurate as a machine run Free T4 test.

Easy Thyroid Analysis: First things

- Is patient on Synthroid or other prescription thyroid meds?
  - Why is patient on Synthroid?
- History:
  - Thyroid removed: Yes or No?
  - Thyroid cancer: Yes or No?
  - Graves' disease?
  - Hashimoto's?

Easy Thyroid - Patient on Synthroid but still has thyroid and does not have cancer, or history of Graves'

- Medical doctors will monitor T4 and TSH. Why?
  - Question: does an optimal T4 and TSH indicate optimal thyroid function?
  - Answer: NO - the T4 needs to be converted into the more active Free T3 that is used by the body…
  - It is true that TSH and T4 can be optimal and still have low or even very low thyroid function because the Synthroid, which is T4 keeps the TSH low.
  - Most of this T4 to T3 Free conversion occurs in the liver, kidneys and GI tract.
  - Liver, kidney and GI tract can lower thyroid function.
  - Thyroid Peroxidase assist the conversion process of T4 into T3 Free, however, Thyroid Peroxidase Antibodies halt or slow the conversion of T4 into T3.

Easy Thyroid - Patient on Synthroid but still has thyroid and does not have cancer, or history of Graves'

- TSH and T4 but also need to have at least T3 Free but also T3 Total and T4 Free.
- If TSH is low and T4 and T3 Free are optimal then Synthroid level is sufficient.
- If TSH is high and T4 and T3 Free are low then dose of Synthroid is insufficient or not effective, maybe patient is resistant to the Synthroid medication.

Easy Thyroid- Patient on Synthroid but still has thyroid and does not have cancer, or history of Graves'

- Is it possible to get this patient off of Synthroid?
  Maybe but Synthroid has rare side effects and one of the 'safest' drugs to be on.
- However, the lower level of Synthroid needed is always a good goal.
  CAUTION: needing higher and higher levels of Synthroid is bad, the patient is becoming resistant or even 'allergic' to Synthroid - this can be a crises.
- DO NOT CAUSE A THYROID PROBLEM by trying to get a patient off of Synthroid too quickly.

Easy Thyroid - Patient on Synthroid but still has thyroid and does not have cancer, or history of Graves'

- First start the patient on your vitamin and diet program for a week or 2 then possibly have patient reduce Synthroid by 25% for 2 weeks and retest the TSH, T4 and Free T3.
- The TSH will likely be elevated but if it is over 10, (or increased significantly since first test) indicate that was too fast of a reduction in Synthroid especially if the T4 and T3 Free has notably decreased.
- If the T4 and T 3 Free are still optimal or only a little lower, then continue with your diet and nutrition program for another few weeks then retest the TSH, T3 Free and T4.

Easy Thyroid - Patient on Synthroid but still has thyroid and does not have cancer, or history of Graves'

- Is it even possible to get a patient off of Synthroid?
- Thyroglobulin (Tg) is produced only by the follicular cells of the thyroid gland and used entirely within the thyroid gland protein content of the thyroid gland.
- If thyroglobulin is zero then there is no thyroid gland function, which is preferred if there has been a history of thyroid cancer.
  - Patient will be on Synthroid or similar for life.
- Thyroglobulin Antibodies attack thyroglobulin proteins and can destroy the thyroid gland or at least reduce thyroid gland function.
  - These antibodies are associated with Graves' and Hashimoto's diseases.

Easy Thyroid - Patient on Synthroid History of cancer, or Thyroid gland removed maybe due to Graves'

- This patient will need to be on Synthroid for life.
- If thyroid cancer, then testing TSH and Thyroglobulin are necessary.
- Thyroglobulin indicates current thyroid gland function.
- With Thyroid cancer, removal or radiation is used to completely destroy the thyroid gland. If Thyroglobulin is not zero, this indicates residual thyroid gland tissue, which is bad.

Easy Thyroid - Thyroid cancer and TSH

- TSH stimulates thyroid gland tissue, which is bad with a thyroid cancer history.
- Therefore, the dose of Synthroid needs to be high to keep the TSH as low as possible.

Graves' Disease

- TSH is low
- T4, T4 Free, T3 Total and T3 Free are high or very high
- TPO Ab and Tg Ab are often elevated
- Check for infection
- Consider natural treatments for infection and inflammation
- Reduce inflammatory factors

Hyperthyroidism

- Graves' disease is most common
  - More prevalent in females
  - Average onset is 20 - 40 year of age
  - An auto immune disorder resulting in:
    - Thyroid enlargement
    - Hyperactivity
    - Serum antibodies to fractions of the thyroid gland

Graves' Autoimmune Thyroid Disease

- Graves' Disease
  - Thyroid-Stimulating Immunoglobulin (TSI) - this is the primary test for Graves' disease

Easy Thyroid – Graves' Disease

- The TPO Ab, Tg Ab and Reverse T3 might be a way for the body to reduce the activity of the thyroid function but these antibodies and Reverse T3 might be a trigger for the thyroid to be hyperactive.
- Graves' disease is another form of autoimmune thyroiditis, with symptoms of weight loss, insomnia, swelling of the thyroid gland, anxiety, palpitations, irritability, brittle or thinning hair, eyes that bulge out, weight loss, thinning skin, unusual fingernail growth, rapid heart rate usually over 100bpm, sweating, and nervousness and will bounce from increased to decreased energy.
- These findings could be due to poor response to thyroid or other medications. Regardless, the thyroid metabolism is high and modification of medication might be considered.
- Steroids and hormone replacement therapy and other drugs can affect thyroid function. Inflammation of the thyroid can be associated with infection, inflammation, high Ferritin, low vitamin D, low minerals and high toxic heavy metals including uranium, arsenic chloride, fluoride and bromide. Gluten sensitivity has been known to be a primary factor with Graves' disease and hyperthyroid autoimmune conditions.
- Treatment considerations: gluten free diet, vitamin D based on testing and other vitamins.
- L-Carnitine 2-4 grams/day has been shown to have the ability to reverse hyperthyroid symptoms within a couple of weeks.
- Retesting is indicated within a couple of weeks and a second opinion is always welcome and encouraged.

Hyperthyroid Symptoms

- Cold intolerance
- Weight changes (usually weight loss)
- Sweating
- Fatigue
- Irritability
- Nervousness
- Menstrual irregularity
- Weakness (commonly upper extremity)

Hyperthyroid Symptoms Cont.

- Muscle atrophy
- Fasciculations (involuntary contractions/twitching of muscle fibers)
- Exaggerated deep tendon reflexes
- Babinski's sign?

Hyperthyroid Symptoms Cont.

- Dysphagia
- Hoarseness
- Respiratory weakness
- Upper eyelid not completely opens
- Weakness in chewing/tongue

Hyperthyroid Testing

- Low TSH
- Elevated:
  - T4
  - Free thyroxine index (FTI)
  - Total T3
  - Serum T3
  - Thyroid resin

Hyperthyroid Testing Cont.

- For autoimmune
  - ANA (anti-nuclear antibodies)
  - Serum thyroperoxidase
  - Thyroglobulin antibody titers
  - Antithyroglobulin autoantibodies
    - Positive in 85% of Hashimoto's disease and ~80% of Graves' disease
    - Hashimoto's thyroiditis is very unlikely cause of hypothyroidism in the absence of thyroglobulin and microsomal antibodies

Hyperthyroid Findings

- Alkaline phosphatase: increased
- Calcium: increased
- Anemia

Hyperthyroid Natural Alternatives

- Anti-inflammatory properties
  - **L-Carnitine 2-4 gms/day**
  - Vit C
  - Bioflavonoids
  - Turmeric (Cercumin)
  - Ginger
  - Bromelain
  - GLA
  - Iodine sources:
    - Iodoral
    - Norwegian Sea Kelp
    - Rad Block

T3

Clinical Range: 24-39% Healthy Range: 35-40%

- Increased in:
  - Hyperthyroidism
  - Thyrotoxicosis
  - Hypoproteinemia
  - Hepatitis
  - Nephrosis
  - Metastatic carcinoma
  - Pulmonary insufficiency
- Decreased in:
  - Hypothyroidism
  - Cretinism
  - Myxedema
  - Pregnancy
  - Simmonds disease
  - Anovulatory drugs

T4

Clinical Range: 4.5-12mcg/dl
Healthy Range: 7.1-9mcg/dl

- Increased in:
  - Hyperthyroidism
  - Thyrotoxicosis
  - Early hepatitis
  - Pregnancy
  - Anovulatory drugs
- Decreased in:
  - Cretinism
  - Myxedema
  - Hypothyroidism
  - Hypoproteinemia
  - Nephrosis
  - Simmonds disease

With elevated T4 and T3 consider

- L-Carnitine 2-4 grams
- Iodine
- Liver (check for elevated SGPT)
- Eat : rutabaga, cauliflower, brussel sprouts, cabbage, kale, sauerkraut

With decreased T4, T3: consider

- Raw thyroid
- Tyrosine
- Iodine
- *Avoid*:
  - Soybeans, rutabaga, cauliflower, brussel sprouts, cabbage, kale, sauerkraut

Hashimoto's Thyroiditis

- An auto immune condition.
- Commonly will present as hyperthyroidism during the initial acute phase of the disease but tends to eventually result in a hypothyroid condition, due to destruction of the hormone producing thyroid tissue.
- Antithyroglobulin Antibody (ATA) in 70% of the cases and Antimicrosomal Antibodies or Thyroid Peroxidase (TPO) antibodies are found in 95% of the cases.

Hashimoto's Thyroiditis Confusion - FACT Experts Speak:

- Hashimoto's disease: FACT
- Q: 12 year old diagnosed with Hashimotos are there any alternative tests that should be done?? Interesting to note is that a major personality change started in late september...within weeks of a tetanus shot. Scott Close DC

Hashimoto's Thyroiditis

A1: Dear Scott,

In our practice, we do a version of NAET we call SRT, "Sensitivity Removal Technique." Tetanus is very first allergen we neutralize with EVERY patient. I learned this trick of the trade many years ago from a chiropractor friend of mine who is the best EAV-tester I have ever known. He said tetanus "always" shows up as an adverse allergen, even if you have only had one shot and it was 50 years ago. We have been using this vial in our program since 2000 and I can attest he is absolutely right.

He thought the mechanism of action for tetanus toxoid is that is "locks up" intracellular fluidity and messaging. I believe this is correct. If you have access to this technique, purchase or make a DTaP vial and treat him with it. He could quickly become better. Also be sure he is on TONS of omega 3s, far beyond the "usual" dose. This helps cell fluidity.

I believe that tetanus vaccine is most neurotoxic of ALL vaccines. Tetanus toxin (tetanospasmin) is made by deactivating it with formaldehyde and ammonium sulfate. It is filtered and adsorbed onto aluminum phosphate. Tetanospasmin is one of the strongest neurotoxins known to man.

In a tetanus infection, tetanospasm is released from a C.tetani when a spore germinates. The toxin spreads through tissue spaces into the lymphatic and vascular systems. It enters the nervous system at the neuromuscular junctions and nerve trunks, then passes into the CNS by retrograde axonal transport. It blocks the release of inhibitory neurotransmitters GABA at motor end plates, leading to the spasmotic disease we characteristically think of as "tetanus."

But what if some of the toxin isn't completely inactivated in the vaccine? or some of the active toxin slips through the filter? (there is no assurances that every particle is inactive). GABA neurons in the brain provide the major inhibitory role of in regulating behavior. It is my understanding that if the GABA receptors are blocked or disrupted, anxiety disorders, epilepsy, schizophrenia and insomnia can result. He has lost his inhibitory pathways. You should write this up as a case report and be sure to report it to VAERS.

So, yes, the tetanus shot can result in this behavior. NO vaccine is safe at any age, even if given alone.

As for his Hashimotos, certainly the vaccine led to autoimmune disruption. Be sure he is on 100mcg/day of L-selenomethione. It is the form of selenium that has been shown in the literature to reduce thyroid antibodies by as much as 60% over 3-4 months (mechanism of action is that it acts like a "mop" to absorb excess H2O2 used in the coupling of iodine to tyrosine. Iodine supplementation should always coupled with selenium) Hope that helps, Dr Sherri Tenpenny Cleveland, Ohio www.DrTenpenny.com

Hashimoto's Thyroiditis

A2: Dear Scott,

The reason for thyroid problems of your son might be mercury-containing thimerosal in the tetanus shot. Mercury affects thyroid gland and in our study from 1999, patients with Hashimoto disease showed increased inflammatory response to mercury. You can download the article form our website: www.melisa.org (Research literature) If your son has "silver" fillings (amalgam containing mercury), you should contact an experienced dentist and consult possible replacement.

If you are interested to find out if your son is sensitized to thimerosal and inorganic mercury, you can test him in MELISA test. Contact Dr Lana Foree in San Francisco, the contact is on our website.

Best regards

Vera

Ps. The abstract of article regarding patients with autoimmune thyroiditis is given below.

Mercury and nickel allergy: risk factors in fatigue and in autoimmunity Sterzl I et al. Neuroendocrinology Letters 1999; 20:221-228

This study further explores the link between hypersensitivity to dental metals with chronic fatigue syndrome (CFS). It looks at 22 patients with autoimmune thyroiditis, 28 fatigued patients free from endocrinopathy and 22 fatigued professionals with no evidence of autoimmunity. All had their dental amalgams replaced with non-metallic materials. After six months, many patients reported disappearance of many symptoms previously encountered. Their MELISA response also fell considerably. We suggest that hypersensitivity to metal affects the hypothalamic-pituitary-adrenal axis (HPA axis) and indirectly triggers psychosomatic symptoms characterising CFS, fibromyalgia and other diseases of unknown etiology.

Hashimoto's Thyroiditis

A3: check the tetanus shot for mercury containing agents as ''conservatives'' and do a lead and mercury and arsenic challenge test. Also a Iodine/Iodide (Iodoral 50mg) challenge test, if less than 45 mg (90%) Iodine comes out in the 24hr urine following the 50 mg load, he needs long term Iodoral replacement. When detox and nutritional support has provided the best possible circumstances, thyroid live cell therapy injections can be considered to boost his own thyroid production and hopefully reduce the dosage of medication.

Good luck, R. Trossel

Hashimoto's Thyroiditis

A4: Hi Scott,

It sure seems to be a correlation to the vaccine due to the dramatic change in his physical and emotional health near the time of its use. It may be that a homeopathic remedy would help here. Homeopathic Thuja is usually given for negative effects from a vaccine, but it does not necessarily fit the symptoms of the case. I would consider finding a great constitutional homeopath to work with him. I am not sure where you live, but I bet there is someone in your area. I think Andre Saine in Canada will do phone consults???

Anyway, what really hit me but does not seem to correlate to the timing of the vaccine is that people with Hashimotos are often very gluten sensitive and also gluten sensitive folks often have many mood disorders. Does he eat a lot of foods with gluten? Could you get him to do a totally strict gluten free diet for a month or two to see how he responds?

Take care,

Laura Schissell, ND, DC

Hashimoto's Thyroiditis

A5: Some Hashimotos are related to gluten sensitivity even with negative antibodies, may try gluten free diet, though time course certainly suggests possible reaction to tetanus. Look at DAN, defeat autism now web site, not that he has autisim, but some of their detoxification techniques may help, ie post vaccine.

John Abell M.D.

A6: This is a classic autoimmune reaction caused by corruption of the immune system due to the inoculation, as explained in the documents on my website. I have reversed many such cases with my Hippocrates protocol.

Dr Carley

Hashimoto's Thyroiditis

A7: Thyroid tests become unreliable in the face of significant antibody elevation. It could take weeks to significantly lower the TSH and many more weeks to improve symptoms completely. In fact symptom improvement may never happen with synthroid if your son has difficulty converting synthroid (synthetic T4) into T3. This is why Armour (or other more natural thyroids) which contain about 20% T3, is far preferable in my opinion. Selenium, 200 mcgs/day has been shown in recent studies to gradually lower thyroid peroxidase antibodies over 6-12 months. This of course, is about symptom relief, not addressing the underlying problems which have lead to the Hashimoto's.

I'd focus, as is often emphasized by Gary, on the total body burden of pathogens. Do a provoked urine for heavy metals, viral screen, etc., but don't expect tests to show everything! Chelate, treat pathogens and support detox pathways in all the ways regularly discussed on this site. Best of luck.

Rick Linchitz MD (Linchitz Medical Wellness, PLLC
LinchitzWellness.com 516-759-4200)

Hashimoto's Thyroiditis

A8: Doctor,

You can help any autoimmune disease by supporting regulatory T cell function. Vit D 4-5,000IU QD), Glutathione (I use a high dose liposomal delivery; Oxicell from Apex Energetics) and EPA & DHA all support regulatory T cell function.

You can also order a T&B lymphocyte & NK Cell panel(#505015), an IL-10(#826746) and a TNFa(#140673) from Laboratory Co-Op (1-866-999-4041). These tests will tell you if you are dealing with a TH1 or TH2 subset dominant autoimmunity. Knowing this will allow you to treat with the most appropriate herbs (of course, you can use drugs). You can call Apex Energetics and ask for Don Sing for help interpreting the test results. Don's not a doctor but he knows these panels well. I call on him for help whenever I need it.

The big idea is that you will get the most impact out of treating the autoimmunity. Treating the thyroid itself has minimal impact in these cases.

p.s. Iodine and/or L-tyrosine are popular supplements for thyroid patients. Hoshimoto's patients should not take these supplements however because they increase the attack and destruction of thyroid cells by the immune system.

Steve Zaeske, DC DABCI

Hashimoto's Thyroiditis

A9: Selenium lowers thyroid antibodies. I would also give fish oil and check vitamin D levels, both nutrients which relate strongly to auto-immunity. Intestinal yersinia has been found commonly in auto-immune thyroid conditions. Also consider gluten intolerance. A person with hashimoto's has 10 x higher likelihood of having gluten intolerance. Lastly remove amalgams if he has any and irrespective of this chelate for mercury. If possibly I would consider some thyroid glandulars as well.

Best regards,

Blake Graham, B.Sc (Honours)

Clinical Nutritionist

Hashimoto's Thyroiditis

A10: My guess is that he was born when your wife was over 26 years old and/or she had at least relative hypothyroidism during the pregnancy with him (reduction in libido, post partum depression, inability to lose weight after pregnancy and changes in the menstrual cycle all indicate pregnancy related hypothyroidism). If the tetanus shot was toxic due to its intrinsics, we would see more reactions like your son's. However in an immune compromised person that is born to a hypothyroid mother, anything that weakens the immune system can facilitate overgrowth of opportunistic infections. Candida is a common one, but there are certainly others that pile on like MRSA, EBV, herpes etc.

The histology of inflammation of Hashimoto's and Grave's is exactly the same. Biochemical production of mucin is the same in both diseases also. These links suggest a common etiologic agent. I treat both with antifungals with great results. Synthroid is rarely the best choice in thyroid replacement. However an endo who is not aware of this will not be convinced of it, especially not by a D.C. Get Mark Starr's Hypothyroidism Type 2 book. You must become the thyroid expert. Choose another doc for your son's best interest. Go to <www.aboutthyroid.com> to find a competent thyroid doctor in your area. The book Thyroid Solution by Baylor professor of endocrinology Ridha Arem M.D. will explain the psychiatric manifestations of hypothyroidism your son is experiencing. His condition is completely reversible.

Roby Mitchell M.D.(Dr Fitt)

drfitt@mac.com<www.drfitt.com

Hashimoto's Thyroiditis

A11: Scott~ The 1st thing I would do is get him off of synthroid. Armour is much better!!! But before I would put him on anything I would run the barnes test along with a saliva thyroid, (Diagnos-Tech's) is the lab is would recommend. Blood work is the least accurate test for thyroid activity. It doesn't matter the age I find 75-80% women & 65-70% males have weak thyroid. I do ALOT of Bio-Meridian testing & I can pick up thyroid cases off of that. I can't tell you the # of pt's. I've fixed with low thyroid & the results are amazing once you get the thyroid going on how it fixes stuck cases on the bio-meridian. What I have found works the BEST is Iodoral & thytrophin from standard process. With your sons size I would use 2-bid of Iodoral & 1-tid of thytrophin, if his thyroid shows weakness after barnes, saliva, & bio-meridian testing. Don't forget that the thyroid is connected to the pituitary, adrenals, & testes in his case & NEEDS to be supported also for results.

Good luck~ Dr. Matejka Any further questions call or email me at drglen99@sbcglobal.net or 815-455-4500

Hashimoto's Thyroiditis

A12: Scott, you may want to do urine and hair analysis for metals. If his growth rate is abnormal for the family, check for a pitutary tumor (prolactin).

Depending upon the results, this is an autoimmune condition and often responds better to treatment as such rather than a "thyroid" condition.

There is evidence that iodine at this stage may make the condition worse (even though blood values improve). The symptoms you have listed can be related to his condition. I would ceratinly look at what changed in his environment before all this started. Full blood work is often ignored simply because practitioners are used to insurance. In addition to blood work for a pitutary tumor you may want (fasting) a CBC with diff, CMP, LH, CRP, HbA1c, lipids, iorn, ferritin, ESR, t3,t4,t7,tsh,tpo all at once to see the relationships within the body. I have found a high correlation between Voll, AK and blood, but still like to see the diagnostic testing.

Roy Horn DC

Hashimoto's Thyroiditis

A13: Sorry for your situation. 12 years old, 180 pounds and defiant must be difficult. Whatever the triggering event, he appears to have a cascading situation of abnormalities in both the immune system and neurohormonal systems. Though not likely a problem, I would drug test. The prognosis of lifetime synthroid is premature. The treatment of your son cannot be done from this one report but I would consider the following: thyroid -thyroid nutrients and iodine (any high quality manufacturer); immune - zinc, selenium, vit C, vit E, then I would consider a Myers followed by a glutathione IV then reassess.

Neurohormone - Your son seems to have a clinical picture of early depression - (Chinese -Hot) Agitated, probable high dopamine, high cortisol, high glutamate. You can test for cortisol levels. Treatment on neurohormonal basis could include tier 2 nutrient therapy to lower cortisol, increase seratonin, decrease norepineghrine, increase GABA and decrease inflammation such as taurine, GABA, theanine, inositol, MG++, B6, glutathione, vit D3, NAC, 5HTP, B12, 5-MTHF,DHA. Next you could consider the next tier of treatments using herbs (I know endocriinologist said no but I would consider depending on how things go) sam-e, holy basil, curcumin, rehmania, rhodiola, ashwaganda. Food ideally would be no cow dairy, no gluten, no nightshades. Probably avoid high tyrosine foods too eg bananas, meats, google them.

Hope this provides something for you to consider.

Mark Laursen MD

Sedona, AZ

Hashimoto's Thyroiditis

A14: Dear Dr Close,

Please inform yourself about iodine. Many of your son's symptoms including the Hashimoto's are signs of severe iodine deficiency. You may find a lot of information at the following sites www.drbrownstein.com I recommend his book on Iodine, 3rd edition most highly, and the DVD; although the sound quality on the DVD isn't good, the message is of vital importance.

www.helpmythyroid.com/iodine.htm Here you will find a 24-hr urine test that will accurately measure his whole body iodine status. There are receptors for iodine on all cells in the body and I don't think they are there for decoration.

www.quackcenter.com/jodoral.html This is my site where I have collected a lot of information, update frequently, and have posted a lot of feedback and questions from customers.

Standard Process makes a product called Prolamine Iodine. Some people love it, and my friend Dr. William Schlee swears by it, but it didn't do a thing for me.

Regards,

Nancy Adams, LMT

Hashimoto's Thyroiditis

A15: Dr. Close: As a Mental Health Counselor and Biofeedback Clinician I have had to separate mood disorders from physical illness, frequently following extensive negative medical evaluation. As you know, teenage mood disorder of any variety is a serious thing and psychiatric antidepressants can sometimes trigger more problems in vulnerable individuals. Thus, while you search for a cause, as a priority find a like minded counselor so as to establish a grounding therapeutic relationship during treatment. This is especially needed if there is any family related mental illness such as Bipolar depression, etc. on either side (mother especially).

Charles G. Jacques III LPC, BCIA

A16: Dr. Close:

Can you provide some more information about your son please? I am wondering about the event that led to the tetanus toxoid injection. Was there an injury to the face or teeth? What dental work has your son had, and when? Also, have you spoken with a homeopath regarding the unusual behavior and sudden onset of symptoms? Interesting cross reference in B7T's Materia Medica w/Repertory.

Cecilia Castiglione

ccastig@aol.com

Hashimoto's Thyroiditis

A17: This sounds similar to a recent episode on the T.V. show "House". The young son and daughter were indirectly in contact with the father who was taking steroids for his maleness. The children were adversely affected by the steroids, changing their young libidos, emotional attitudes, and sexual characteristics. Keep looking; this may be a clue somehow....
Michael Frank, D.C.

A18: interesting set of problems. would add to the testing: free t3, free t4 and follow on the followup with the synthroid, would also get reverse t3. maybe it will be ok to consider l-carnitine and selenium and not bother the doctor since these are not herbs.

A19: Check iodine levels, Armour thyroid has both T3 and T4 which many times is more effective.

Iodine - YES OR NO?

- Experts:
  - Hyper thyroid including Graves' - yes and no
  - Hypo thyroid including Hashimoto's - yes and no
  - What does Dr. Merkle say about use of Iodine.
    - Test, test and test some more.
  - If Iodine is high in the hair - do not recommend Iodine.
  - If Iodine is low in the hair then use Iodine even if Graves' or Hashimoto's.
    - No Iodine if thyroid cancer.
  - When Iodine is used the TSH will often increase for a few weeks till the new thyroid Iodine and function improves, then it will go down. Be patient and don't panic.

Thyroid Synopsis and main things to test

- TSH: Reflects the blood level of thyroid stimulating hormone.
- Total T4: Reflects the total amount of T4 present in the blood, i.e., the protein bound (unavailable) T4 and the Free T4. Note that high levels of estrogens (birth control pills or pregnancy) can increase the amount of the protein that binds T4; giving misleading elevated Total T4 values which can look like 'hyperthyroidism' when it is not.
- Total T3: Reflects the total amount of T3 present in the blood, i.e., the protein bound (unavailable) T3 as well as the Free T3. Again, high estrogen levels create the same effect as mentioned in relationship to T4 above.
- Free T4: Reflects the biologically active (free) form of T4. This T4 can be converted to T3 or RT3. In the presence of elevated estrogen levels, the Free T4 gives a more accurate assessment of thyroid function.
- Free T3: Reflects the biologically active (free) form of T3 that can generate production of energy (in the form of ATP). In the presence of elevated estrogen levels, the free T3 gives a more accurate assessment of thyroid function.

Drugs That Alter Thyroid Function

- Dopamine
- Glucocorticoids
- Octreotide
- Lithium
- Iodide
- Amiodarone
- Aminoglutethimide
- Colestipol
- Cholestyramine
- Nicotinic acid
- Furosemide
- Fenclofenac
- Mefanamic acid
- Salicylates (salicylic acid: A common component of aspirin and a preservative)
- Aluminum hydroxide
- Ferrous sulfate
- Sucralfate
- Estrogens
- Testosterone
- Tamoxifen
- Heroin
- Methadone
- Mitotane
- Fluorouracil
- Androgens
- Anabolic steroids
- Corticosteroids
- Phenobarbitol
- Rifampin
- Phenytoin
- Tegretol

Conditions Associated With Hypothyroidism

- Mild anemia
- Low selenium
- Low copper
- Low iodine
- Low zinc
- ***High chloride***
- ***High fluoride***
- ***High Bromine***
- Low phosphorus
- High calcium
- High magnesium
- Low potassium
- Low globulin
- Low protein

Soy is Bad

- Soy contains goitrogens - substances that depress thyroid function. In 1997, researchers from the FDA's National Center for Toxicological Research made the embarrassing discovery that the goitrogenic components of soy were the very same isoflavones. Divi, R.L. et al., "Anti-thyroid isoflavones from the soybean." Biochemical Pharmacology (1997) 54:1087-1096.

Soy is Bad

- In 1991, Japanese researchers reported that consumption of as little as 30 grams or **two tablespoons of soybeans per day for only one month resulted in a significant increase in thyroid-stimulating hormone (TSH).** Diffuse goiter and hypothyroidism appeared in some of the subjects and many complained of constipation, fatigue and lethargy, even though their intake of iodine was adequate.
- *If thyroid function is lowered by soy then the pituitary tries to stimulate more thyroid function hence, the elevated TSH.*
  - Dr. Merkle

Soy is Bad

- An April 2000 study published in *Carcinogenesis* found that soy feeding stimulated the growth of a rat's thyroid even with iodine deficiency. This was partly through a pituitary-dependent pathway.

Soy is Bad

- 25 grams of soy protein isolate, the minimum amount claimed to have cholesterol-lowering effects, contains from 50 to 70 mg of isoflavones. It took only 45 mg of isoflavones in premenopausal women to exert significant biological effects, including a reduction in hormones needed for adequate thyroid function. **These effects lingered for three months after soy consumption was discontinued.** Cassidy, A. et al., "Biological Effects of a Diet of Soy Protein Rich in Isoflavones on the Menstrual Cycle of Premenopausal Women",
  - American Journal of Clinical Nutrition (1994) 60:333-340.

Soy is Bad

- High soy consumers and users of isoflavone supplements are at risk of thyroid disorders. The subtle effects of anti-thyroid agents such as soy on thyroid function would most likely be evidenced as subclinical, or even overt hypothyroidism.
  - New Zealand Medical Journal (Volume 113, Feb 11, 2000)

42 Year Old Female

- Early menopausal, headaches, hot flashes, mood swings, malaise, fatigue, and a long history of low thyroid, complete blood test and program for 6 months…minimal help.
- Soy protein drink for breakfast and sometimes lunch, 2 protein bars a day (soy), and genestein from the health food store for her hormone problems.
- 2 weeks after we took off all soy her symptoms disappeared.

Pass the Salt Please

- More thyroid problems since the salt phobias in the last 20 years.
- Iodized salt is a good source of iodine.
- Iodine competes with fluorine and chlorine.
- Is patient on a salt restricted diet.
- Sometimes dramatic results in thyroid function with just adding salt.

Foods That Block Iodine Utilization (Goitrogens)

- Raw turnips
- Kale
- Brussels sprouts
- Cauliflower
- Spinach
- Turnips
- Cabbage
- Peanuts
- Cooking deactivates Goitrogens

Adverse Effects of Iodine Supplementation

- Iodine induced hyperthyroidism
- Iodine induced goiter
- Iodism: iodine poisoning marked by severe coryza (allergy symptoms) not limited to:
  - Acneiform eruption mostly seborrheic areas
  - Headache originating in the frontal sinuses
  - Sneezing
  - Weakness
  - Salivation
  - Foul breath (unpleasant brassy taste)

Iodine Induced Hyperthyroidism

- Is an iodine deficiency disorder
  - Iodine deficiency increases thyrocyte proliferation and mutation rates resulting in hyperfunctioning autonomous nodules in the thyroid…and hyperthyroidism after iodine supplementation
- Predisposing factors:
  - Treated graves' disease
  - Hashimoto's thyroiditis
  - Post-partum lymphocytic thyroiditis
  - Subacute painful thyroiditis
  - Lobectomy for benign nodules

Iodine Properties Cont.

- Iodine is an essential element for breast normality and for protection against fibrocystic disease of the breast and breast cancer
- ~7.5mg/day of iodine
  - *Breast cancer and iodine by Derry D*

With Elevated T4 and T3 Consider

- L-Carnitine 2-4 grams
- Iodine
- Liver (check for elevated SGPT)
- Eat : rutabaga, cauliflower, brussel sprouts, cabbage, kale, sauerkraut

With decreased T4, T3 and Elevated TSH Consider

- Raw thyroid
- Tyrosine
- Iodine- check hair
- Selenium- check hair
- *Avoid*:
  - Soybeans, rutabaga, cauliflower, brussel sprouts, cabbage, kale, sauerkraut

SBN Hormone Panel: DHEA

- Dehydroepiandrosterone (DHEA) is a natural steroid hormone precursor produced from cholesterol mostly by the adrenal glands, gonads and adipose tissue.
- DHEA is the precursor of androstenedione, which can produce the androgen testosterone and the estrogens estrone and estradiol. Regular exercise and calorie restrictions are known to increase DHEA production in the body.
- High levels of the chemical DHEA in the body of a person bring specific effects, as this chemical is a hormone precursor similar in many respects to the other male and female hormones normally found in the body - it displays specific side effects that are connected to its hormonal action.
- Elevated levels of DHEA in the body can for example, lead to the virilization of the female body - the development of masculine features. It may induce the formation of acne on the skin, it can cause greasy skin, it can lead to the development of facial hair and hair loss in women, it may greatly enhance the rate of perspiration, and it can also lead to the development of a deeper voice in women and cause a gain in weight.

SBN Hormone Panel: DHEA cont.

- Similarly, elevated levels of DHEA in men can lead to the opposite effect, inducing the develop of more prominent breasts - in a condition known as gynecomastia, it may cause tenderness in the breasts, it may lead to a rise in the blood pressure, it can result in testicular wasting, or make the man more aggressive in behavior.
- Men may in addition suffer from other types of hormone related side effects of DHEA, they may develop resistance to insulin, the blood sugar levels may be raised, and the patients may suffer from changed cholesterol levels as well as changed thyroid hormone levels in the blood. The supplement may also completely change the functioning of the adrenal glands.
- DHEA supplements must be used with great care by patients already suffering from diabetes or hyperglycemia, people affected by high cholesterol levels, all kinds of disorders of the thyroid, or any type of other endocrine associated hormonal abnormalities must also use the supplement with caution.

SBN Hormone Panel: DHEA cont.

- Supplements of DHEA, if used, could theoretically speaking, increase the risk of developing certain types of cancers, including ovarian and breast cancer in women and prostate cancer in men.
- Supplements of DHEA might also be contributing to tamoxifen resistance in breast tissues of women affected by breast cancer.
- DHEA supplements have also been linked to other side effects when used for a long period of time, these symptoms can include psychological agitation and delusions, the development of sleep disorders including insomnia, extreme nervousness and mental irritability, a psychosis or manic state of mind.
- Excessive supplementation with DHEA, leading to elevated levels of the chemical in the body has been associated with the condition known as Cushing's syndrome. If the condition develops in a person unexpectedly, excessive supplementation of DHEA supplements is most likely to blame.
- The addition of DHEA can convert into the necessary testosterone for women, as the body needs, but men generally do not get much conversion of DHEA to testosterone. In fact, men tend to get more estrogen conversion from DHEA, if they use too much (over 50 mg. of DHEA per day).
- Herbs like avena sativa, maca and Horny Goat Weed may completely restore the free and total testosterone to normal levels in many cases.
- Regular exercise and calorie restrictions are known to increase DHEA production in the body.

SBN Hormone Panel: Estradiol (E2)

- The Estradiol (E2) is the second form of the estrogen hormone and it is the most important form of estrogen found in the body.
- Estradiol is the predominant sex hormone present in females; however, it is present in males, albeit at lower levels.
- Estradiol has not only a critical impact on reproductive and sexual functioning, but also affects other organs including the bones.
- Fat structure and skin composition are modified by estradiol.
- Lower-than-normal levels may indicate low estrogen production related to rapid weight loss or low body fat and other conditions including previous use of hormones.
- The main considerations would be thyroid, xenoestrogens and mineral deficiencies.

SBN Hormone Panel: Estrogen (male)

- The Estrogen (male) is produced in small amounts by the testes and adrenals.
- There may be some dysfunction at these areas and also with the liver.
- Major causes of excess estrogen in men include environmental estrogens like antibiotics, herbicides, pesticides and hormones used on livestock and produce.
- Medications including Propecia, body building supplements including DHEA and hormone and cancer therapy, prolonged intense stress increases demand for cortisol, which is made from progesterone can contribute to elevated Estrogen.
- Excess estrogen dominance symptoms that men can experience include weight gain, bloating, mood swings, irritability, headaches, fatigue, depression and hypoglycemia.
- Estrogen dominance is known to contribute to cancer of prostate and the breast.
- It may seem paradoxical, but men are not immune to breast cancer.

SBN Hormone Panel: Follicle-Stimulating Hormone (FSH)

- The Follicle-Stimulating Hormone (FSH) is produced by the pituitary.
- This test may be useful in infertility. FSH levels vary over the course of the menstrual cycle with peaks at the time of ovulation.
- It is also increased in primary hypogonadism commonly known as menopause, gonadal failure, and alcoholism.
- High plasma follicle stimulating hormone (FSH) is an early indication of ovarian aging.
- Certain medications can also elevate FSH levels.
- FSH and LH are pituitary products, typically tested together, useful to distinguish primary gonadal failure from secondary causes.
- In men, FSH stimulates testicular growth and enhances and sustains the maturing sperm cell.
- A low level of FSH in men is likely to adversely affect fertility.

SBN Hormone Panel: Free Androgen Index

- The Free Androgen Index test.
- In most men and women, >50% of total circulating testosterone is bound to sex hormone-binding globulin (SHBG), and most of the rest is bound to albumin.
- The free androgen index can be used to estimate physiologically active testosterone.
- This index is calculated as the ratio of total testosterone divided by SHBG (both expressed in the same units) and multiplied by 100 to yield numerical results comparable in free testosterone concentration.

SBN Hormone Panel

- Luteinizing Hormone (LH) in both males and females is essential for reproduction.
- LH levels are normally low during childhood and, in women, high after menopause.
- In females, LH varies widely over the course of the female cycle. LH triggers ovulation, releasing the egg and prepares the utuerus for implantation. The action of LH on the ovary stimulates androgen and other hormonal precursors for estradiol production.
- Female
  - Follicular Clinical 1.90--12.5
  - Midcycle 8.7--76.3
  - Luteal 0.5--16.9
  - Pregnant 0.0--1.5
  - Postmenopausal 15.9--54.0
  - Contraceptives 0.7--5.6

SBN Hormone Panel: Luteinizing Hormone (LH)

- Luteinizing Hormone (LH) in both males and females is essential for reproduction.
- LH levels are normally low during childhood and, in women, high after menopause.
- In males, LH acts upon the testis and is responsible for the production of testosterone, which stimulates spermatogeneses and other endocrine activity.
- Persistant High LH levels indicate the normal restricting feedback from the gonad is absent increasing production of both LH and FSH in the pituitary gland. While this is typical in the menopause, it is abnormal in the reproductive years. The most common causes of persistant high LH levels are:
- 1. Premature menopause
- 2. Polycystic Ovary Syndrome
- 3. Testicular failure

SBN Hormone Panel: Progesterone

- For females, Progesterone levels need to be correlated with the female cycle, pregnancy or menopause.
- For men, Progesterone is a potent inhibitor of 5-alpha-reductase, which **reduces the conversion rate of testosterone to dihydrotestosterone (DHT).**
- It is thought that adding progesterone helps to prevent testosterone from changing into DHT.
- DHT may lead to enlargement of the prostate and cause or contribute to baldness in men and women.

SBN Hormone Panel: Prolactin

- The Prolactin Level is usually the first test done for work-up of galactorrhea (inappropriate lactation).
- It is a pituitary function test useful in the detection of prolactin secreting pituitary tumors such as microadenomas and macroadenomas with or without galactorrhea and with or without structural evidence of sellar enlargement.
- This value may be increased in patients on estrogens, blood pressure lowering and antidepressants, haloperidol, methyldopa and in patients with hypothyroidism. Verapamil has also been reported to have induced hyperprolactinemia and galactorrhea.
- Normal prolactin level does not rule out pituitary tumor.
- Prolactin secretion is episodic and is influenced by stress and by low glucose levels.
- TSH levels done along with Prolactin levels are recommended to rule out primary hypothyroidism. Prolactin secretion is also inhibited by levodopa, dopamine and thyroid hormones.
- Persistent elevations of plasma prolactin levels may be observed with and after withdrawal from chronic cocaine abuse and maybe indicative of neural derangement.
- In men, one of the primary cause of elevated prolactin is use of body building steroids and/or hair growth formulas such as Propecia, which are estrogen promoters and will or can increase prolactin.

SBN Hormone Panel: Total Testosterone

- The Testosterone Total Serum is the principal androgen in men but also plays a role in female health as well. The production of testosterone by the male testes is stimulated by luteinizing hormone, LH, which is produced by the pituitary. LH secretion is, in turn, inhibited through a negative feedback loop by increased concentrations of testosterone and its metabolites.
- Diminished testosterone production is one of many potential causes of infertility in males. Low testosterone concentrations can be caused by testicular failure (primary hypogonadism) or inadequate stimulation by pituitary gonadotropins (secondary hypogonadism).
- **Since men with hypogonadism often have high SHBG levels, the measurement of free or bioavailable testosterone has been recommended when total testosterone levels are normal in men with symptoms of androgen deficiency.**
- Many women with slowly progressive androgenic symptoms are diagnosed as having polycystic ovarian syndrome or PCOS. PCOS affects approximately 6% of women of reproductive age. Women with this complex syndrome experience symptoms of androgen excess associated with menstrual abnormalities and infertility. Chronic anovulation (no periods) experienced by patients with PCOS increases their risk of developing endometrial cancer. Women with PCOS are often overweight, although this is not always the case and are likely to suffer from insulin resistance putting them at increased risk for developing type 2 diabetes mellitus. Obesity and insulin resistance can also raise the risk of cardiovascular disease in women with PCOS and give them a significantly increased risk for myocardial infarction.

SBN Hormone Panel: Free Testosterone

- Free testosterone is the concentration of unbound testosterone in serum.[1]
- The majority (approximately 60% to 90%) of serum total testosterone is associated with sex hormone binding globulin (SHBG); this fraction is tightly bound and biologically unavailable to its target tissues. The remaining bioavailable testosterone is mostly bound to albumin, with only a small fraction (approximately 0.5% to 2%) circulating in the free form.[1,2]
- Free testosterone is the form of testosterone that can diffuse into the tissues and act on receptors and is considered the active fraction by many physicians.[1,3,4] Free testosterone assessment is recommended as a primary or secondary measure of androgen activity in men[2,5-11] and women.[12-16]

SBN Hormone Panel: Free Testosterone

- The primary screening test for the diagnosis of hypoandrogenism in men is the measurement of total testosterone in serum in a morning sample.[2,5-11]
- Determination of free testosterone can be of value in men with borderline total testosterone because alterations in SHBG levels can markedly affect the concentration of biologically available free testosterone.[2,17-20]
- Factors and conditions that tend to increase SHBG concentrations in men include aging, hyperthyroidism, estrogens, HIV disease, anticonvulsant therapy, and liver disease.[2]

SBN Hormone Panel: SHBG (Sex Hormone Binding Globulin)

- The SHBG (Sex Hormone Binding Globulin) is produced by the liver, circulates in the bloodstream and binds to sex hormones.
- Once bound to SHBG, the sex hormone is no longer available for the cells to use, commonly called reduced bioavailability.
- However, the bound hormone is still part of the 'total level' of a sex hormone.
- **SHBG often increases with age in men and women, which results in symptoms of low testosterone due to the fact that the testosterone is bound up leading to reduced muscle mass, low bone density, increased bone fractures, reduced libido, ED, mood changes, depression and sleep disturbances.**

SBN Hormone Panel: SHBG (Sex Hormone Binding Globulin) cont.

- With older age, a decline in total testosterone is associated with an increase in SHBG.
- **Studies have shown that omitting all animal-based proteins and going to a vegetarian diet might actually increase SHBG levels.**
- To lower SHBG levels, a diet of less fat and more protein is preferred. Dietary fat can lower total testosterone whereas excess protein does not have the same impact.
- Minimal use of alcohol, caffeine and sugar is encouraged.
- Nutrients that might be of benefit include zinc, magnesium, vitamin D, boron and possibly DIM Diindolylmethane.
- Serious over-training has been shown to increase SHBG.

Advanced Coronary Panel: OmegaCheck

- The OmegaCheck level takes into consideration: the Total Omega 3 Fatty Acids, the Omega-3 FA DPA and the Omega-3 FA DHA and Omega-3 Fatty Acid (FA) EPA.
- **The OmegaCheck value is a formula calculation that takes into consideration all of the fatty acids.**
- **Basically, the higher the OmegaCheck: the lower the coronary risk.**
- The Fatty Acids EPA, DHA and DPA are known to lower inflammation of all forms including inflammation associated with heart disease as well as inflammation associated with autoimmune disease.
- O3FA lower triglycerides, help with depression and anxiety, improves vision in adults and neurological development in infants, may help prevent macular degeneration, improve cognitive function, and aid in sleep, inhibits platelet aggregation that can lead to blood clots and aids in improving circulation.
- They promote wound-healing and helps to prevent angiogenesis.
- Optimizing these Omega-3 FA's will likely help to reduce coronary risk and sudden death due to cardiovascular disease and improve overall health. With intake of 3 g/day or less of EPA and DHA, there is no significant risk for increased bleeding time beyond the normal range. A daily dosage of 1 gram of EPA and DHA can also lower triglycerides. Fish and Fish oil supplements are the best source of these fatty acids.

Advanced Coronary Panel: ARA/EPA Ratio

- The ARA/EPA Ratio is a very important test as it measures the level of cellular inflammation in the body. Lowering cellular inflammation is very beneficial for preventing heart disease and other inflammatory diseases as well as reducing the chance of developing chronic disease in the future. An anti-inflammatory diet and EPA supplements are the only ways to reduce the ARA/EPA ratio.

Advanced Coronary Panel: Omega-6 to Omega-3 Ratio

- The Omega-6 to Omega-3 Ratio. Industry-sponsored studies have suggested that omega-6 fatty acids should be consumed closer to a 1:1 ratio to omega-3, though many **individuals today have a ratio of about 16:1, mainly from vegetable oils.** Currently, the optimal ratio is thought to be 4 to 1 or lower and some sources suggest ratios as low as 1:1. A ratio of 3:1 omega 6 to omega 3 helped reduce inflammation in patients with rheumatoid arthritis. A ratio of 5:1 had a beneficial effect on patients with asthma but a 10:1 ratio had a negative effect. A ratio of 2.5:1 reduced rectal cell proliferation in patients with colorectal cancer, whereas a ratio of 4:1 had no effect.

Advanced Coronary Panel: Total Omega-6 Fatty Acids

- The Total Omega-6 Fatty Acids. The most important Omega-6 Fatty Acids are Arachidonic Acid (ARA) and Linoleic Acid (LA). These tend to be pro-inflammatory and pro-thrombotic and tend to increase coronary heart disease. A low or optimal level is desired.

Advanced Coronary Panel: Omega-6 Arachidonic Acid (ARA)

The Omega-6 Arachidonic Acid (ARA) does have a significant role in inflammation related to injury and many disease states and is most abundant in the brain, muscles and liver.

- NOTE: ARA will often be elevated in people that exercise consistently and with significant intensity.

- How ARA is metabolized in the body dictates its inflammatory or anti-inflammatory activity.

- High ARA consumption is not advised when there is a history of inflammatory disease, poor health or those who have elevated cardiovascular risk factors. Basically, elevated ARA is due to increased physical activity, increased consumption of Omega 6 fats or the bad vegetable oils or due to exposure to toxic chemicals.

- ARA appears to be the proper response to stress in nearly all forms and is the body's attempt to neutralize or minimize damage with inflammation and constriction and then to promote healing and repair with anti-inflammatory properties.

The cause of the elevated ARA is the key to determining the proper course of therapy.

Advanced Coronary Panel: Omega-6 Alpha-Linoleic Acid (LA)

- The Omega-6 Alpha-Linoleic Acid (LA). LA is an essential fatty acid that serves as a source of energy and as a building block for DHA and EPA. Medical conditions like diabetes or certain allergies may significantly limit the human body's capacity for metabolizing of EPA from LA. LA is abundant in many nuts, fatty seeds (flax seeds, hemp seeds, poppy seeds, sesame seeds, etc., which are good). A deficiency of LA might show symptoms of mild skin scaling, hair loss, and poor wound healing. Heart disease, cancer and other degenerative conditions are associated with increased LA especially when the source of LA is from vegetable oils like canola, corn, soybean, cottonseed and margarines. It is also recommended to reduce or limit safflower, sunflower, grapeseed and peanut oils.

Advanced Coronary Panel:
F2 Isoprostane/Creatinine (F2-IsoPs)

- The F2 Isoprostane/Creatinine (F2-IsoPs) level: A low or optimal level is desired. Elevated F2-IsoPs levels show an increased risk of atherosclerosis and coronary heart disease and are elevated with cancers, inflammatory conditions, chronic disease, and act as a potent vasoconstrictor and promote platelet activation resulting in blood clots. F2-IsoPs are usually increased in smokers and excessive intake of red meat. Improved fitness and diet will often help to lower F2-IsoPs levels. Note: Individuals who exercise a lot may be at risk of increased oxidative stress in their bodies due to a lack of nutritional balance and insufficient exercise recovery.

Advanced Coronary Panel:
Asymmetric Dimethylarginine (ADMA)

- The Asymmetric Dimethylarginine (ADMA) and the Symmetric Dimethylarginine (SDMA) are metabolites of L-arginine and reduce NO production. Elevated levels are associated with endothelial dysfunction, insulin resistance, hypertension and subclinical or early atherosclerosis and correlates with internal carotid artery thickness and plaque formation.
- **Elevated ADMA and SDMA in young adults has been associated with increased CT scan coronary artery calcification and are associated with twice the risk for adverse events including MI and stroke than those with normal levels.**
- Elevated SDMA is also associated with impaired kidney function.

Advanced Coronary Panel: Galectin-3

- The Galectin-3 is a carbohydrate-binding lectin, an important biomarker that assists in the detection of early heart disease and **helps predict prognosis in patients with heart failure.** Increased levels have been linked to higher risk of hospitalization and mortality. Patients with cancers typically have increased Galectin-3 levels as well, as this glycoprotein serves as a signaling molecule for metastasis and cancer cell adhesion.
- Typically, **Galectin-3 is found in small amounts in our bodies however, high levels indicate a variety of serious health concerns like degenerative processes such as heart failure, cancers, chronic inflammation, and fibrosis.**
- Galectin-3 can induce cardiac fibrosis and reduced ejection fraction in animals.
- Optimal levels of Galectin-3 help to reduce or prevent heart organ fibrosis.

Advanced Coronary Panel:
Myeloperoxidase (MPO)

- The Myeloperoxidase (MPO), an inflammatory enzyme, measures disease activity of the arterial wall. MPO in the blood is a specific marker of vascular inflammation and vulnerable plaque/erosions/fissures formation that lead to arterial blockage and reduced blood flow. As such, elevated levels of MPO are associated with or predict risks for cardiovascular disease, myocardial infarction and future cardiovascular events.
- Basically, **elevated levels of MPO indicate current or developing blockage of arteries**.
- A low or optimal level of MPO indicates a low probability of plaque rupture in vessels.

Advanced Coronary Panel:
Oxidized LDL (OxLDL)

- The Oxidized LDL (OxLDL). An elevated OxLDL is associated with coronary artery disease, development of atherosclerosis and elevated levels may be seen in cardiovascular disease, metabolic syndrome, acute myocardial infarction, kidney disease, polycystic ovary syndrome, autoimmune disorders, Alzheimer's and similar diseases.
- Foods will have unpleasant odors and flavors as the fats (lipids) become oxidized. This same oxidative process can occur in the body leading to a myriad of adverse health effects as noted above. OxLDL levels usually respond to improvements in diet, weight loss, nutritional supplements and exercise. An optimal or low level of Ox LDL is desired.

Advanced Coronary Panel: Lp-PLA2

- The Lp-PLA2 is a **vascular-specific inflammatory enzyme that plays a direct role in the development of atherosclerosis.**
- **Increased Lp-PLA2 activity is associated with a higher risk of coronary heart disease (CHD).**
- **People with elevated Lp-PLA2 are twice as likely to develop CHD at 7 years and are twice as likely to experience a CHD event (MI or CHD related death) at 5 years.**
- A low or optimal level of Lp-PLA2 is desired.

Advanced Coronary Panel:
(International Normalized Ratio) or INR

- An INR is useful in monitoring the impact of anticoagulant ("blood thinning") medicines, such as Warfarin (Coumadin). While taking Warfarin, patients have regular blood tests to monitor their INR. In healthy people, the INR is about 1.0. For patients on anticoagulants, the INR typically should be between 2.0 and 3.0 for patients with atrial fibrillation, or between 3.0 and 4.0 for patients with mechanical heart valves. However, the ideal INR must be individualized for each patient.
- The INR The (International Normalized Ratio) or INR measures the time it takes for blood to clot (Prothrombin Time) and compares it with an average.
- An INR can be too high; a number greater than 4.0 may indicate that blood is clotting too slowly, creating a risk of uncontrolled bleeding. An INR less than 2.0 may not provide adequate protection from clotting.

Advanced Coronary Panel:
Prothrombin Time

- The Prothrombin Time indicates the time for blood to clot
- The Prothrombin is converted into the universal INR (International Normalized Ratio)
  - Also called the INR PT

Advanced Coronary Panel:
B-type natriuretic peptide (BNP)

- The B-type natriuretic peptide (BNP), this 32-amino-acid polypeptide is secreted by the ventricles of the heart in response to excessive stretching of heart muscle cells in the ventricles.
- BNP is elevated in left ventricular dysfunction and correlates with both the severity of symptoms and the prognosis in congestive heart failure.
- BNP is a useful marker of cardiovascular risk, even in people with no clinical evidence of cardiovascular disease.
- **The levels of BNP predict the risk of heart failure, first cardiovascular events, atrial fibrillation, and stroke or transient ischemic attack**.
- An optimal or low level of BNP is preferred.