

Oxidants and antioxidants: the fight for your body

by James Jackson, Ph.D.

As you are reading this article, your cells are having a raging battle for survival! This battle is taking place at the molecular level where the enemies are things called oxidants, or free radicals, and the defenders are called antioxidants.

If the free radicals in your body are not neutralized, your body will “rust away,” just like a car.

Your next question is “What are oxidants or free radicals (henceforth called FR), and why are they trying to kill me?” Just by breathing oxygen and generating energy you produce a lot of oxygen radicals. They are also produced as a result of stress inside or outside the body. Some FRs are generated from Reactive Oxygen Species (ROS); an example is hydrogen peroxide. Most FRs are unstable oxygen molecules, lacking an electron and are like moving molecular magnets, stripping electrons from your cell’s membrane, protein, and DNA.

For those few of you who have an interest in chemistry, the chemical structures of some of the FRs are:

1. Superoxide anion = O_2^-
2. Singlet oxygen = 1O_2
($\cdot\text{O}\cdot\cdot\text{O}\cdot \rightarrow \cdot\text{O}\cdot + \cdot\text{O}\cdot$ free electron)
3. Nitric oxide = $NO\cdot$
4. $HO\cdot$ = Hydroxyl free radical
5. H_2O_2 = Hydrogen Peroxide-ROS

Normally your body has enough antioxidant enzymes to neutralize FRs

as they are generated. However, when there are more FRs generated as a result of excess psychological or physiological stress, called oxidative stress, you need additional antioxidants. These come from vitamins and minerals, things your body cannot make! When oxidative stress occurs, things get serious! Some common stressors that produce FRs or ROS are: cigarette smoke, chlorine, alcohol, radiation, pesticides, toxic chemicals, sunlight, pollution, carbon monoxide, preservatives, and processed foods, just to name a few. Psychological stress comes more from thinking about the stressful situation than from the actual situation itself!

Why is oxidation dangerous? To give you an idea of what oxidation does, oxidation causes iron to rust, old rubber tires to turn brittle, meat and butter to turn rancid, and peeled apples and potatoes to turn brown. If the FRs in your body are not neutralized, your body will “rust away,” just like a car.

What form of “rust” takes place in my body? All the effects of aging and many degenerative diseases are related to FRs. They are thought to cause premature aging, wrinkling of skin, hardening of the arteries, arthritis, cataracts, macular degeneration, cancer, and various CNS diseases. If one looks at the NIH statistics, the top three causes of death in people age 65 and over for whites, blacks, Asians, and Hispanics are heart disease, cancer, and stroke. For Native Americans, they are heart disease, cancer, and diabetes.

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Exercise slows aging at chromosomal level

Long observed association between exercise and a slightly longer life span may have its origin in the chromosomes, a new study found. The ends of chromosomes hold up better in exercisers than in sedentary individuals, possibly contributing to extended life.

Tim Spector, a physician and epidemiologist at King’s College, London, and his colleagues measured the effects of exercise on the length of telomeres, which protect the ends of chromosomes much like the plastic ends on shoestrings. The researchers accessed a British study of 2,401 adult twins who had answered a medical history questionnaire. The participating twins also donated blood samples from which the researchers determined the length of telomeres in the twins’ white blood cells.

The twins who reported moderate to vigorous exercise of more than three hours per week had markedly longer telomeres than did the least active twins, the researchers found. [H]

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PUBLICATION INFORMATION

Editor: Richard Lewis

Associate Editors:

Marilyn Landreth & Barbara Dodson

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Oxidants and antioxidants—Cont'd from page 1

Also, 43% of Americans (of all races and cultures) over 65 will spend time in a nursing home at a cost of \$40,000 to \$100,000 a year. One in 25 people over the age of 65 will have significant vision loss. In the U.S., heart failure and neoplasm (cancer) cause over half the deaths of people over the age of 45, about 144 per hour.

Dr. Bruce Ames estimates that each of the 80 trillion cells in the body suffers 10,000 “hits” a day from FRs. In addition, FRs increase with age, and an “elderly” person has nine times the frequency of mutations in the DNA than infants. In a 70-year period, the body is said to produce over 17 tons of FRs. This is with an average life expectancy of 77.8 years.

So, then, after all this good news, what can I do to reduce my risks of all this damage? Antioxidants, antioxidants, and antioxidants! There are 50 things you need to remain healthy and survive; about 50 of these are nutrients! That is just the start. As I mentioned in a previous *Health Hunter Newsletter* article, “D.A.M.E. Your Food, Full Speed Ahead to Good Health,” you must eat then **D**igest, **A**bsorb, **M**etabolize, and **E**xcrete the metabolites of nutrients. Any block in this process is the same as not eating them!

Many of these essential nutrients are minerals. They help make antioxidant enzymes, the first line of cellular defense. These minerals are a “transitional” type, able to receive or give up an electron. Things that give up an electron are oxidized (“oxidants”), while things that receive an electron are “reduced.” Some of these minerals that make up the enzymes are copper and zinc (superoxide dismutase-1), manganese (superoxide dismutase-2), iron (catalase), and selenium (glutathione peroxidase).

The second line-of-defense is from phytochemicals, or chemicals in food—carotenoids, flavonoids, lycopene, beta-carotene, lutein, etc., fat soluble and water soluble vitamins. The water soluble vitamins, C and B, protect the proteins and structures in the cell cytoplasm. The fat soluble vitamins, A, D, E, and K (mainly A and E), protect the membranes surrounding

the cell and nucleus.

O.K., you say, but I get all this stuff I need from food! Not really. According to the USDA and NIH statistics, on any given day of the people in the U.S.:

- 41% did not eat any fruit or vegetables
- 82% did not eat any cruciferous vegetables, such as broccoli and cauliflower
- 73% did not eat any vitamin C rich fruit or vegetables
- 80% did not eat any vitamin A rich fruit or vegetables
- 84% did not eat high fiber grain food
- 89% did not eat the RDA of fruits or vegetables
- 80% of Americans are low in magnesium (used in over 300 enzyme reactions)

The next question is how much and what should I take? It depends on how much you have or need, what is your stress level, how active are you, how old are you, are you male or female, how much do you weigh, do you have a family history of any type of degenerative disease, etc.? Also, you may be wondering, do the antioxidants work? If you ask the drug companies, they would say no. However, more and more data prove them wrong. Some evidence that they do work are:

- The risk of stroke was 73% lower in people who consumed the most bioflavonoids than those who consumed the least.
- Men with lower selenium levels had 4 times the risk of dying from stroke than those with the highest level. (Keli SO et al., *Arch Intern Med.* 1996 Mar 25, 156(6):637-42; Virtamo J et al., *Am J Epidemiol.* 1985 Aug, 122(2):276-82).
- The risk of having a 2nd non-fatal heart attack was reduced 77% in men taking 400 to 800 I.U. of vitamin E a day. It also slowed the progression of heart disease by reducing the oxidation of LDL. (CHAOS Study, *Lancet.* 1996 Mar 23, 347(9004):781-6; Hodis HN, et al., *JAMA.* 1995 Jun 21, 273(23):1849-54).

continued on page 3

- One to 3 grams of niacin a day can increase HDL and decrease LDL and triglycerides. (Lab Medicine. 2002 Apr, 4(33):270).
- One in 500 people in the U.S. over the age of 50 has Parkinson's disease and 60,000 new cases are diagnosed a year. Increased oxidative damage may play a role in many degenerative diseases. Vitamins A, C, E, CoQ-10, and omega-3 fatty acids were useful in preventing or delaying the onset of neurodegenerative diseases. (Beal ME, Ann Neurol. 1995 Sep, 38(3):357-66. Mecocci P, et al., Free Radic Biol Med. 1999 Feb, 26(3-4):303-8; Fahn S, Ann Neuro, 1992, 32(suppl):S128-32)
- Vitamin A deficiency is the leading cause of blindness in some countries, especially India.
- Iron deficiency is widespread. According to a U.N. report, 40% of the world's population has iron deficiency and 15% lack iodine. A lack of iron lowers a child's I.Q. 5 to 7 points, while a lack of iodine lowers it 13 more points. Iron deficiency in mothers causes 18 million children to be born mentally impaired.
- Folic acid deficiency causes 200,000 severe birth defects a year in 80 countries.
- Total cancer mortality was reduced 50% in those taking 200 mcg of selenium daily compared to placebo, and the risk of developing many types of cancer decreased 48% to 74%.

How can you tell if you have enough antioxidants to combat the oxidants? Some time in the near future you should have your blood levels measured (similar to checking the oil, transmission fluid, and air in the tires of your car). I suggest that you consider the Health Hunter/Beat The Odds Days at The Center held in April and October. You can pick the health panel you want, based on your family history, or just see for yourself how your antioxidant levels really are. It is the only way to see if the foods you are eating are being digested, absorbed, metabolized, and excreted. [H]

HEALTH HUNTERS AT HOME

FDA bans hormone as “unapproved” drug

Just the other day Ron Hunninghake, M.D., dropped a copy of an article from the HOMECoalition.org on my desk that had the headline, “FDA Bans Hormone Produced by Human Body as ‘Unapproved’ Drug.” HOME is short for Hands Off My Estrogens! It peaked my interest.

It opens with this statement, “Countless women currently rely on replacement hormones that are prescribed by their doctors and compounded in local pharmacies. These compounded hormones are biologically identical to the ones produced in the human body. The formulas include bio-identical, naturally occurring estrogen hormones such as estriol.”

But the FDA says no, you cannot use estriol. On January 9 of this year the U.S. Food and Drug Administration (FDA) ordered all pharmacies to stop providing prescriptions that contain the bio-identical hormone estriol even though estriol is manufactured in the human body.

The FDA claimed that estriol is “a new and unapproved drug” and that “the safety and effectiveness of estriol is unknown.” The FDA also ordered pharmacies to stop using terms like “bio-identical hormone replacement therapy” and “BHRT” claiming that these terms represent “false claims.”

Again, let me quote from the article by HOMECoalition.org. “For decades the FDA has called any claim about a natural substance, no matter how accurate, a ‘false claim’ if it is not FDA ‘approved.’ But there’s a big ‘Catch-22:’ It costs up to a billion dollars to achieve FDA approval. As a general rule, companies cannot afford to spend these huge sums unless their drug is patent-protected. And again, as a general rule, natural substances such as bio-identical hormones cannot be patent-protected. As a result, the FDA has ‘approved’ only a very small handful of natural substances, sometimes only after being sued and ordered by a judge.”

HOMECoalition.org says that in a press conference, “The FDA admitted that no adverse event involving

compounded bio-identical estriol has ever been reported.” They also say that estriol is a major hormone that soars (up to one thousand times) to enormous levels during pregnancy.

Then, it asks the important questions. “How can bio-identical estriol, identical to every woman’s natural estriol, be unsafe or ineffective? And how can the FDA claim that the substance present in our bodies from the dawn of humanity is a ‘new and unapproved drug’?”

So, what can a woman do to get the FDA off her back and let the pharmacy fill the prescription written by her doctor that includes estriol? You can call your representative or senator or the White House and express your concerns and wishes. The numbers are:

The U.S. Senate and the House of Representatives:

(202) 224-3121 (switchboard)

The White House:

(202) 456-1414 (switchboard)

(202) 456-1111 (comments)

HOMECoalition.org pleads, “Please do it NOW, or your access to bio-identical hormones will disappear!”

They list two distinguished medical doctors at the end of their plea for action. The first one is Jonathan Wright, M.D., the head of the Tahoma Clinic in Renton, Washington, and the first North American doctor to prescribe bio-identical hormones for clinical use.

The second one is Jeanne Drisko, M.D., the Riordan Professor of Orthomolecular Medicine and Director of Integrative Medicine at the University of Kansas School of Medicine who has presented at The Center for the Improvement of Human Functioning International for our Lunch and Lecture series. She is also the president of the American College for Advancement in Medicine (ACAM).

Estriol deserves your support and action. Call your U.S. representative and your U.S. senator quickly so that your name can be added to the list of those in support of estriol that is naturally in your body. [H]

—Richard Lewis

INFORMATION WORTH KNOWING

by Marilyn Landreth, M.A.

Times have really changed since 2000. We are having more and more choices for the food we eat. Foods are labeled “organic,” “low-carb,” “natural,” and “fat-free.” Do you know what each one of the labels means and which ones are good for you and your family or are you as confused as most of us? Kimberly Lord Stewart has written *Eating Between the Lines: The Supermarket Shopper’s Guide to the Truth Behind Food Labels*. What claims are certified by authoritative groups such as the Federal Department of Agriculture (FDA), United States Department of Agriculture (USDA), or merely a marketing ploy. This book is organized by supermarket sections from the vegetable aisle to the dairy case. Detachable shopping lists, for your convenience, will help you bring the best foods to your table. Sometimes it is difficult to remember that food labels were written for the consumer and not for a scientist. This book is an explanation of the tactics that food companies use to get us to buy their products. Stewart writes in an interesting and knowledgeable fashion. The questions this month are taken from her book.

- 1 Every year the USDA tests for pesticide residues on more than 13,000 samples purchased at grocery stores of fruits, vegetables, grains, milk, and drinking water. The Environmental Working Group (EWG) examines that data and narrows it down to 46 commonly eaten fruits and vegetables. They came up with a dirty-dozen list based on higher pesticide load. Included in this list are: apples, cherries, nectarines, bell peppers, and _____,
 - a. potatoes
 - b. asparagus
 - c. onions
 - d. broccoli
- 2 Pesticides are designed to kill or at least repel pests whether it comes from your kitchen cabinet or a jar with skull-and-crossbones on it. There are four categories of pesticides from highly toxic to relatively nontoxic. None of _____ pesticides allowed in organic farming exceeds the class III or relative non-toxic levels.
 - a. 10
 - b. 13
 - c. 25
 - d. 30
- 3 USDA certified organically grown foods are higher in vitamins and minerals than foods grown without being certified organic.
 - a. True
 - b. False
- 4 Organic products can be certified in one of three categories—“100% organic” that contain only organic products, “organic” that must consist of at least 95% organically produced ingredients, and “made with organic ingredients” that must contain _____% organic ingredients.
 - a. 5
 - b. 50
 - c. 70
 - d. 80
- 5 When a product is labeled “reduced” or “less” it contains at least 25% less of a nutrient or calories than the regular product. For this to be significant you should read the label to find out the amounts of sugar, salt, and _____.
 - a. canola oil
 - b. trans fats
 - c. flaxseed oil
 - d. hemp oil
- 6 When a product is labeled as “Healthy” it must meet the definition for low fat and no more than 60 mg of cholesterol and 480 mg of sodium per serving. This can assure you of a product low in sodium.
 - a. True
 - b. False
- 7 All hormones in chicken production were banned in the late 1950s. When you see chicken advertised as “No Added Hormones” and “No Added Steroids” you might think you are seeing “raised _____.”
 - a. with no antibiotics
 - b. by a mother hen
 - c. cage free
 - d. range free

• FOR ANSWERS, SEE PAGE 7 •

Test of the Month

by Dr. James A. Jackson,
Director, Bio-Center Laboratory

Vitamin B₁ (thiamine)

Vitamin B₁ is also known as thiamine, thiamin, and aneurin. Thiamine is the name used in the United States, while the name aneurin is sometimes used in Europe. It is a water-soluble vitamin which cannot be made by humans. B₁ is a vital coenzyme in changing fats, carbohydrates, and proteins into energy. With glucose, this takes place through the Krebs cycle. Without B₁ you could not use food for energy and would shortly die. The active form of thiamine (B₁) is called thiamine pyrophosphate. We measure this form in our laboratory.

The lack of thiamine in the body causes a condition named Beriberi. Beriberi was first described by Jacobus Bonitus in Java around 1630. His description of the disease was “A certain very troublesome affliction, which attacks men is called Beriberi (which means sheep). I believe those, whom this same disease attacks, with their knees shaking and legs raised up, walk like sheep. It is a kind of paralysis, or rather Tremor: for it penetrates motion and sensation of the hands and feet, indeed sometimes the whole body...” It was caused by eating “polished rice,” or rice without the covering or bran. The outer covering contains thiamine. Beriberi is still common in parts of Southeast Asia where polished rice is still a common food in the diet.

Beriberi is the most serious form of B₁ deficiency. B₁ deficiency causes weight loss (anorexia), heart abnormalities (enlargement of the heart), and neuromuscular disorders (itching, burning sensations, muscle weakness, weariness, general weakness, and foot and wrist drop).

The three types of Beriberi are dry, wet, and infantile. Another serious type is called Wernicke-Korsakoff Syndrome or Wernicke’s encephalopathy. This type is seen most often in the Western hemisphere. It affects

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alcoholics for three reasons. Their diets are usually poor. Their diets are rich in carbohydrates (alcohol and rice), which increases the demand for thiamine. Alcohol also inhibits an intestinal enzyme ATPase which helps in the uptake of thiamine.

Dry Beriberi affects older adults and causes atrophy, inflammation of nerves, and paralysis of the lower extremities. Wet Beriberi causes a rapid heartbeat, nerve inflammation, and edema. Edema progresses from the feet up to the heart, causing congestive heart failure.

Infantile Beriberi is seen in breast-feeding infants whose mothers are thiamine deficient but not showing any signs of Beriberi. These infants are anorexic and have trouble keeping milk down. If not treated, it may cause heart failure in a matter of hours. That is why if pregnant or nursing, it is recommended that women take an additional 0.4 to 0.5 mg/day of thiamine.

If you are elderly, under stress, a heavy drinker, or an athlete, you may need to take more thiamine. Ask your doctor. The RDA is about 0.5 mg for every 1000 kcal and a minimum of 1.0 mg/day. Remember, everyone is different and what is enough for one person may not be enough for another.

Foods high in thiamine are Brewers yeast, 1 tbls = 1.25 mg; shelled sunflower seeds, ¼ cup = 0.83 mg; a 2-oz lean pork chop = 0.75 mg; 3 oz lean ham = 0.58 mg. A lean, 3-oz hamburger only contains 0.05 mg and one egg contains 0.03 mg. Since the average adult eats about 0.69 mg/1000 kcal and the average child about 0.79 mg/1000 kcal, Beriberi is rare in the U.S.

If you want to know the thiamine level in your blood, sign up for one of the health panels containing thiamine at the upcoming Health Hunter/Beat The Odds Days in April. For more information, go to www.brightspot.org and click on Health Hunter/Beat The Odds under Bio-Center Laboratory. [H]

Anyone who believes that anything can be suited to everyone is a great fool, because medicine is practised not on mankind in general, but on every individual in particular.

—Henri de Mondeville

Herbal History

by Chad A. Krier, N.D., D.C.

Thyroid supporting herbals

While many think in terms of iodine and thyroid hormone when talking about the health of the thyroid gland, there are also some botanical options to consider. In this article, I'll address four herbs that can have positive effects on the health of the thyroid gland. These herbs are most beneficial used in combination for those who suffer from sub-clinical hypothyroidism. These herbs may also be used in conjunction with thyroid hormone replacement therapy.

Iris versicolor (Blue flag iris root), Commiphora mukul (Guggul lipid), Fucus vesiculosus (Bladderwrack), and Phytolacca decandra (Pokeweed) are all beneficial in supporting healthy thyroid activity.

Blue flag root was used as far back as 1898 as drug treatment for the cure of goiter (enlarged thyroid). It is known as

a detoxifier of the thyroid gland (thyroid chemistry is disrupted by environmental toxins). It works as a choleric (stimulates production of bile in the liver) and cholagogue (stimulates bile flow from the gallbladder). Guggul lipid increases iodine uptake by the thyroid gland and promotes conversion of T₄ to T₃ (active thyroid hormone) in the liver. Fucus (Seaweed of North Atlantic) has also been used historically in the treatment of goiter. It contains approximately 600 mcg of iodine per gram. Fucus may also contain trace amounts of diiodotyrosine, T₃, and T₄. Phytolacca increases circulation through the thyroid and improves lymphatic flow through the thyroid.

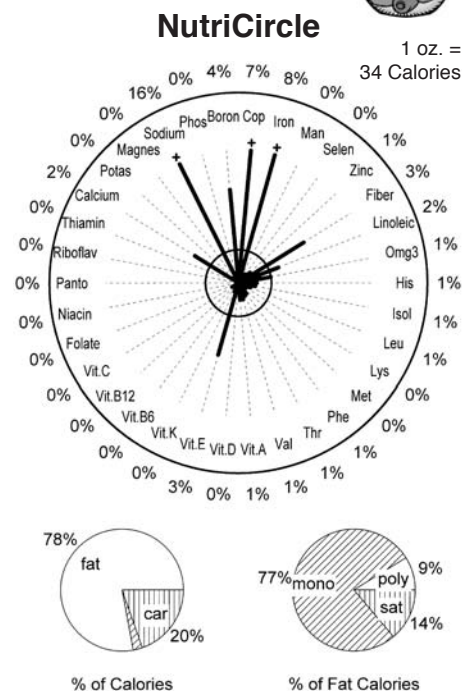
Blue flag and Phytolacca should only be used in small amounts under doctor supervision as their constituents can be very powerful. [H]

Food of the Month

by Donald R. Davis, Ph.D.



OLIVES are the fruits of trees native to the Mediterranean area. At harvest, they contain a bitter antioxidant that is leached out for palatability by soaking the fruits in brine, water, or lye. Both green (immature) and dark (mature) olives of several flavors and textures are available from the Middle East. California olives are mostly immature, either green or blackened by air during processing. Many olives are too salted to eat plain but go well in salads, stir-fries, casseroles, and pizzas (reduce other salt in the recipes). A one-oz. serving (ripe and pitted) has 3 grams of quality fat and modest amounts of several nutrients and phytochemicals.



The length of each bar shows the amount of one nutrient. If a bar extends out to the inner circle, the food has enough of that nutrient to match the calories it contains. The numbers show nutrient amounts in RDAs per serving shown. The pie charts show the sources of calories (left) and the types of fat (right). [H]

Mental Medicine


by Marilyn Landreth, M.A.

Time for change again

Have you ever noticed how some people embrace change, some people avoid change as much as possible, and for some people change is just a way of life? We are making changes for our Health Hunter members. Have you visited healthhunteronline.org yet? Several of you have upgraded your memberships to the premium level and are enjoying some extra benefits for your memberships.

Did you know that you can see *Health Hunter Newsletter* a couple of weeks earlier by logging onto healthhunteronline.org than by receiving it in the mail? For those of you outside the United States it may be even faster. Once the *Health Hunter Newsletter* is sent to the printer it is also available on our website. If you have computer savvy, it is a fun place to visit.

Your basic membership also entitles you to view 4 Archive (View on Demand) Lectures. You can find the list of lectures to choose from on the website. If you have upgraded to the Premium Membership level, you have access to all the Streaming Archive Lectures and two live On-Line Health Lectures per year. It's time to step outside your comfort zone and try something different.

Sydney Harris said, "Our dilemma is that we hate change and love it at the same time; what we want is for things to remain the same but get better." I think you will find this change to be the best of both worlds. You can continue as you have in the past or you can get more for your membership dollar. It can remain the same or get even better! 

Case of the month

A 46-year-old man came to see Dr. Chad Krier complaining of shoulder and lower back pain in November of 2004. Dr. Krier worked on these two areas with chiropractic manipulation with good success.

But this Patient of the Month is not about Dr. Krier's chiropractic skills, which are extensive. This is about Dr. Krier's other degree—his doctorate in Naturopathic Medicine skills, which are also extensive.


This same individual came in to see Dr. Krier to work on his sinus problems in early October of 2007. At that time, Dr. Krier discovered that the individual had a laboratory report that indicated his cholesterol was up to 324 and his triglycerides were over 350.

Dr. Krier suggested that he start taking 1200 mg of Red Yeast Rice each day. He increased his Coenzyme Q10 from 100 mg per day to 200 mg per day. He also suggested that he take flushing niacin starting at a 1000 mg dosage a day with food and work up to 2000 mg per day with food and 2000 mg per day of EPA. He picked up these nutrients from The Center and started on them immediately.

On his own, the patient also took TMG (Tri Methyl Glycine) and Beyond Chelation dose packs one a day.

A month later the patient returned to have an appointment with Dr. Krier to treat his sinus problem. Since the patient is in the medical field, Dr. Krier suggested a list of tests that he should have done. In addition to cholesterol and triglycerides, these tests included red blood cell magnesium and calcium, homocysteine, vitamins B6 and B12, coenzyme Q10, ferritin, free T3, thyroid stimulating hormone (TSH), DHEA(S), testosterone, and estradiol.

When the laboratory results came back, they showed that his cholesterol was down to 202, which is an excellent result for only about six weeks. His triglycerides were now down to 156 and his TSH was now within normal limits.

The patient took all the nutrients that Dr. Krier recommended and he had excellent results for his efforts. 

CENTER UPDATE

Cholesterol from eggs increases plasma HDL cholesterol in overweight men



Fatness is on the increase in the U.S. The increased incidence of obesity is associated with increased metabolic syndrome [Met-S], cardiovascular disease, and type II diabetes. Along with this increase in weight came an increase in waist circumference and belly fat.

A recent study appearing in *The Journal of Nutrition* showed that a carbohydrate reduced diet (CRD) not only reduced the weight of the obese men in the study, but it reduced their waist circumference, tummy tubbiness, cardiovascular disease, and, in 84% of the men who were classified as having metabolic syndrome, they no longer had the syndrome. That is quite impressive.

In the study, the researchers divided the subjects into two groups. Both groups used CRD. One group, called the EGG group, added two eggs daily to their diet while the other group, called SUB, used egg substitute in their diet for 12 weeks. The researchers wanted to find

out how the eggs would affect the men who received them in their diet.

"In this study, we demonstrated that by including eggs as part of a low carbohydrate intervention [diet], the plasma LDL-C [low density cholesterol-C] concentrations did not increase but HDL-C [high density cholesterol-C] did increase. Because low concentrations of HDL-C contribute to Met-S, this is a very positive aspect of the intervention," the researchers said.

In addition, because the plasma triglycerides were significantly reduced in both diets, "the beneficial effects of CRD on plasma lipids were not modified by additional cholesterol consumed by the EGG group," the researchers added.

The researchers also showed dietary cholesterol from eggs during weight loss from CRD does not affect Met-S "but rather plays a major role in the positive effects on plasma HDL-C concentrations," the researchers concluded. 

Answers from page 4

- 1 a. Asparagus, onions, and broccoli have the least amount of pesticide residue and are not included in the dirty-dozen.
- 2 b. These pesticides are made from ingredients like bacteria and fungus found in soil, flower petals, clay, and oils from plants.
- 3 a. Averages were higher in the following categories: calcium 63%, chromium 78%, iron 73%, magnesium 118%, potassium 125%, zinc 60%.
- 4 c. Products in this category are not allowed to use the organic symbol on their label.
- 5 b. It may be lower than a comparable product and still contain a significant amount of salt, sugar, and/or trans fat.
- 6 b. This label is a good measure of a product that is low in fat and cholesterol but not sodium. Sodium should not exceed 140 mg per serving.
- 7 a. Smart poultry marketers count on the consumer to mentally string words like "antibiotics" and "hormones" together. H

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**EATING BETWEEN THE LINES:
 The Supermarket Shopper's Guide
 to the Truth Behind Food Labels**

By Kimberly Lord Stewart
 Do you want to help take the confusion out of what to buy to eat right? This book helps to take the confusion out of food claims. Learn what ingredients to avoid and what ones are beneficial. Softcover. \$14.95 HH price \$13.46

**TOP 10 REASONS TO EAT
 MORE WHOLE FOODS**

with Donald R. Davis, Ph.D.
 Are you among the many Americans who want to eat right but are sometimes confused about how to eat better and don't realize that you eat mostly non-whole foods? Food marketers often mislead us, and it is not a matter of where you buy food. Learn what whole foods are, the many great reasons to eat more of them, and some tips for doing so.

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