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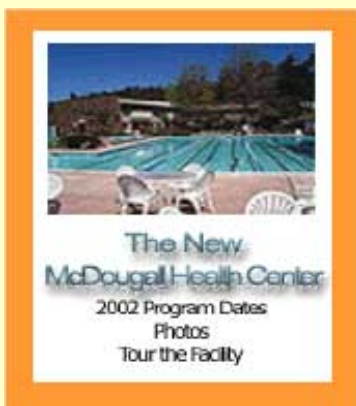
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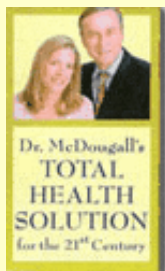


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September 2002 Vol. 1 No. 9

In Search of the Perfect Bowel Movement – Part 1

This article continues a series exploring the health of your intestinal tract. Consider the strongest contact with the world around you is through your food, processed and absorbed by your intestine.

Interest in bowel movements may seem perverse to many, but is actually a very common source of worry for most people and a topic of discussion for more of us than you can imagine. Young children and the elderly do not find this subject off limits – in fact they seem to enjoy talking about their daily accomplishments. Walk through your local drug store and observe the aisles of laxatives, stool softeners, bulking agents, stimulants, and antidiarrheal remedies – somebody must have concerns – they're spending billions on these products. For example, Americans spend \$725 million a year on laxatives alone.

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Cholesterol - When and How to Treat

Elevated cholesterol is the most common concern I face in my live-in clinic in Santa Rosa, California, and it is one of the most common health worries among people of Western cultures.

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Treat "High Normal" Hypothyroidism

The normal adult thyroid gland consists of two lobes connected by an isthmus and is located in front of and below the larynx (voice box). The thyroid synthesizes several hormones. The most important ones are called L (levo) - thyroxine and triiodo-L-thyroxine, and their production depends upon the entry of iodine into the thyroid gland. Thyroid hormones influence the growth and maturation of the body's tissues, total energy expenditure of the body and the metabolism of essentially all substances in the body.

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Vegetarian Times Spreads Protein Misinformation

Thank you for sharing my concern that influential people are spreading misinformation about the nutritional value of plant foods. In summary, the Nutrition Committee of the American Heart Association has taken the scientifically unsupportable position that plant foods are deficient in amino acids and therefore must be classified as incomplete proteins. I have tried to correct their error. You can read all about this in the August 2002 McDougall Newsletter at www.drmcDougall.com.

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Fall Garden Bounty Soup
Barbecued Bean Salad
Texas Barbecue Wrap
McDougall Wraps
Spicy Garbanzo Pinwheels

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Heather McDougall with a degree in English and a love for cooking, especially with her mother, will be a frequent contributor to the newsletter. We invite you to contribute your thoughts and recipes to the McDougall Newsletter also. Write heather@drmcdougall.com

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In Search of the Perfect Bowel Movement – Part 1

Interest in bowel movements may seem perverse to many, but is actually a very common source of worry for most people and a topic of discussion for more of us than you can imagine. Young children and the elderly do not find this subject off limits – in fact they seem to enjoy talking about their daily accomplishments. Walk through your local drug store and observe the aisles of laxatives, stool softeners, bulking agents, stimulants, and antidiarrheal remedies – somebody must have concerns – they're spending billions on these products. For example, Americans spend \$725 million a year on laxatives alone.

The amount, consistence, and frequency of bowel movements vary among people and most of this difference is not caused by slight dissimilarities in the human intestinal tract, but rather by the things we choose to put into our bodies – our food choices.

To my knowledge no one has ever tried to define *the perfect human bowel movement* – based on my professional experiences as a doctor, and my personal experiences, I will now attempt to do this (even though I risk permanently damaging my squeaky clean reputation).

A bowel movement occurs when feces present in the rectum cause distention, which leads to reflex contraction of the smooth muscles of the rectum and relaxation of the anal sphincter. About this same time the abdominal and diaphragm muscles contract and the stool is expelled. Let's begin with what is common.

What is the typical Western bowel movement?

In Western societies, "normal" stool frequency ranges from 2 to 3 times a day to 2 to 3 times a week. However, I have met patients who moved their bowels less frequently than every 12 days and this monumental task required a laxative or two. For someone on the American diet the urge to defecate can be accompanied by feelings ranging from mild discomfort to distressing pain, felt in the mid to lower abdomen. The active passage of the bowel movement is often accompanied by rectal pain and bright red rectal bleeding. Most commonly a stool formed from the typical American diet requires muscular straining to pass – recall the grunting and groaning sounds echoing from the bathroom walls. The time required for the typical bowel movement can be measured by the length of one to two stories in *Reader's Digest*. After all that effort, more often than not, one is left with a feeling of incomplete emptying. The stool itself varies from "tiny rock hard fecal marbles" to "tubular play dough," about an inch in diameter, and dark brown in color. The more meat consumed the darker the stool color.

Clean up afterwards (with toilet tissue) is sometimes difficult because of the stickiness and greasiness of the feces. The grease in the bowel movement is from the undigested fats and oils in the foods consumed. Moist tissues are often required to complete the cleansing operation.

What is the ideal bowel movement?

Ideally, the abdomen will be completely comfortable until the time to eliminate, and then an urge, with no pain or distress, will be felt in the lower abdomen. There is no break-neck rush to the bathroom – and if necessary, a short delay is easily achieved until the proper facilities are located. The actual movement is painless and accompanied by a sense of pleasant relief, and occurs after one light abdominal push (no severe or repeated straining). Maximum “downloading time” will be less than 60 seconds. A feeling of complete evacuation is experienced and any further urge to defecate disappears until some time later when the rectum is filled again. One to three movements occur daily – usually in the morning, shortly after rising. The stool is large, unformed (more like a cow-plop than a tube), and colored shades of light yellow, orange, and brown – depending upon foods consumed. Clean up afterwards, with a small amount of toilet tissue, is effortless. (I always wondered why my dogs, cats, and birds never required toilet tissue – I guess it is because I always fed them properly – the foods they were designed to eat.)

Constipation – the All-American Movement

An official definition of constipation is: difficult or infrequent passage of feces, hardness of stool, or a feeling of incomplete evacuation. Between 16 and 34 percent of children are reported to be constipated and 20% of people over the age of 65 years.¹ The worse a person’s diet the more likely they are to report constipation. Nearly 70% of people on the very low-fiber, high meat and dairy, Atkins diet report constipation.² I have observed that what is “normal” and what is “constipation,” is often based upon what the person is used to. Many people confess to me that they only realized they had been constipated all their lives after they changed to a diet based on unrefined plant foods.

Constipation is the most common complaint of people with irritable bowel syndrome (IBS). This is the one of the most common gastrointestinal problems seen in the practices of primary care and gastroenterology doctors. Much of the information here applies to people with “constipation-dominant IBS.” A future newsletter will discuss this common condition in detail.

Common Reasons for Constipation

The Low-Fiber American Diet

Dietary fiber makes up the bulk of the stool and is mostly undigested carbohydrate.³ Dietary fiber is commonly divided into soluble and insoluble fibers. Soluble fibers include pectin, guar gum, B glucan, and psyllium and this class causes modest reduction in blood cholesterol and blood sugars. Insoluble fibers are mainly responsible for providing bulk to the feces, and these include cellulose and lignin.

Do not think of fiber as the bristles of a broom that will scratch your intestinal lining. Fiber is actually microscopic chains of sugar (carbohydrate). The difference between *dietary fiber* and *dietary carbohydrates* is the sugars forming dietary fiber are connected by linkages that our intestine lacks enzymes to digest – so the chains of sugar travel all the way through the small intestine intact (undigested). With the dietary carbohydrates (found in starches, vegetables, and fruits) our intestinal lining has enzymes that cleave the connections between the sugars, so they are broken down into simple sugars, which are then absorbed into our body.

Like dietary carbohydrates, fiber is only found in plant foods. There is not a speck of fiber in any beef, chicken, fish, lobster, egg, milk, or cheese. On the American diet the few grains people do consume, like rice and flours, are highly refined into “white” rice and flour – and in the manufacturing processes most of the fiber is removed. Therefore, on the American diet people consume 6 to 10 grams of dietary fiber a day. On the McDougall diet the amount is 30 to 100 grams daily.

When there is little fiber in your diet, there is little substance to form a stool (a few dead cells and a paltry amount of fiber) and the result is, in the worst case, a few tiny rock hard fecal marbles. Because these marbles are small in volume they provide little distention of the rectum, resulting in constipation. Besides the small size there are other reasons the American stool just doesn't want to come out.

Dairy Proteins Paralyze the Bowel

Early in my practice (24 years ago) I was surprised when people swore they followed my diet, but still complained they were constipated. I soon learned how to answer this dilemma with a question, "When are you going to give up the skim milk on your cereal?" Dairy protein (not the fat or sugar) causes severe constipation in many people. This was clearly demonstrated in a study published in the *New England Journal of Medicine* in 1998, of 65 severely constipated children.⁴ They complained of only one bowel movement every 3 to 15 days and didn't even respond to strong laxatives (lactulose and mineral oil). Forty-four of the 65 (68%), however, found relief of their constipation when taken off the cow-milk. Evidence of inflammation of the bowel was found on biopsy and anal fissures and pain were commonly associated with the constipation. All of these were resolved with the elimination of the cow-milk. When cow-milk was introduced into their diet 8 to 12 months later all of the children developed constipation within 5 to 10 days. So it is not just the lack of fiber in the diet that binds you up, but also other qualities of animal foods.

Less Common Causes of Constipation

Anal Fissures and Hemorrhoids – Painful conditions can produce a spasm of the anal sphincter muscle, and fear of defecation can cause retained stool.

Diseases - Diseases of the nervous tissues and muscles, such as scleroderma, multiple sclerosis, Parkinson's disease, spinal cord injuries, and stroke, can cause constipation. As can scarring, inflammation from diverticulitis, tumors, and cancer that produce mechanical compression of the intestine, and sometimes complete bowel obstruction. Metabolic disorders such as dehydration, diabetes, and hypothyroidism can also cause constipation.

Immobility and inconvenience - due to injury or illness, especially when a bed pan is required, or a schedule that makes elimination inconvenient or unsociable will result in retained feces that become dehydrated and hard to pass.

Laxative use – Because of real or imagined constipation many people become dependent upon laxatives. Stimulant laxatives are particularly troublesome because the bowel becomes dependent on this stimulation and will not contract sufficiently with the normal reflexes caused by filling the rectum with stool.

Medications - Many medications, including pain medications (narcotics), antacids containing aluminum or calcium, antispasmodic drugs, antidepressant drugs, tranquilizers, iron supplements, anticonvulsants for epilepsy, antiparkinsonism drugs, and antihypertensive drugs, especially calcium channel blockers, commonly cause constipation.

Pregnancy – Pregnant women are encouraged to drink at least four glasses of milk a day and eat plenty of protein in the form of meat. No wonder they are usually constipated. Pregnancy is a normal healthy stage in a woman's life – not an illness – and regular bowel function will occur in pregnant women on a healthy diet of unrefined starches, vegetables, and fruits.

Travel – Constipation due to travel is caused by the changes in diet, water intake, and schedule. Conscious avoidance of unhealthy foods and dehydration alleviates this disturbance.

Eat Right and Exercise to the Perfect Bowel Movement

In order to have a normal healthy bowel movement you need to put the right things into your colon – a process which begins at the dinner table. Your diet needs to be based upon unrefined starches like potatoes, beans, rice, corn, sweet potatoes, and whole wheat breads and pastas with the addition of fruits and vegetables. No animal products, and especially no dairy protein of any kind, should be a part of your diet. The effects of eating dairy products, and/or a fiber deficient diet, are usually experienced the very next day and you shouldn't expect normal function to return for 3 to 4 days after discontinuing these foods and reintroducing healthy ones.

Priming the Pump:

Years of poor bowel function characterized by constipation can cause residual problems, like bowel distention and a “lazy bowel,” especially if there has also been laxative abuse. Due to physical diminished forces, an overdistended bowel contracts less effectively. To make things worse, when the bowel muscles have been stimulated for years to contract by the chemicals in laxatives, rather than the reflex caused by natural distention from filling of the rectum, the bowel becomes insensitive to the presence of the stool – it waits for the drugs.

To break the laxative habit and cure a “lazy overdistended bowel” takes some planning, patience, and above all, training. The bowel must be brought back to its normal condition of contracting from the stimulus of fecal distention. It needs to be exercised so the muscles can grow strong again. The first step is to eat right and eat plenty of food (this is no time for “dieting”). Fill the bowel with fiber and remove all “paralyzing” dairy proteins. It may take several days before the urgency to have a bowel movement is experienced. Be patient, nothing bad is going to happen to you – the stool formed from a healthy plant-based diet is soft and moist and will eventually pass. (If you think something is wrong then see your doctor, because occasionally people have already developed a fecal impaction which must be mechanically removed by the doctor.)

Sometimes it is necessary to “prime the pump,” so to speak, by artificially and purposefully over-filling the bowel. Wheat bran may effectively accomplish this, or a non-absorbable sugar, called lactulose (doctor's prescription required) may be even more effective at filling the bowel and causing a reflex contraction. Once the movements start with this additional help, the days following should experience ever-improving bowel movements. When the movements are effortless, the dosage of the wheat bran and/or lactulose can be slowly decreased, and eventually stopped.

Extra Help

Exercise may also be beneficial. The effect of physical activity on constipation seems likely, but has not been proved. Some explanations for benefits are: an effect on colonic motility, decreased blood flow to the gut, biomechanical bouncing of the gut during running, compression of the colon by abdominal musculature, and increased fiber intake as a result of increased energy expenditure.⁵ Likely people who exercise are also diet conscious and as a result eat a diet higher in fiber.

Fluid Intake (water) is recommended by many primary care physicians and gastroenterologists; however, despite common medical advice to consume extra fluid for constipation, one study found that extra fluid intake in normal healthy volunteers does not produce a significant increase in stool output.⁶ The extra fluid was efficiently absorbed in the gut and the body simply eliminated the extra fluid as urine. However, another study found with the addition of 25 g of fiber and 1 to 2 extra liters of water daily there was an increased stool frequency in patients with chronic functional constipation.⁷ Maybe the extra fiber is necessary for the water to make a difference?

Fruits add both dietary fiber and water to the diet. Some fruits like prunes and kiwifruit have mild stimulatory effects on the bowel, promoting bowel movements.^{8,9}

Fiber Supplements like partially hydrolyzed guar gum (PHGG), SunFiber for example, and wheat bran, produced improvements in IBS symptoms (abdominal pain and bowel habits). PHGG was better tolerated and preferred by patients.¹⁰

Flaxseed increases bowel movements by about 30%.¹¹ Flaxseed can be consumed as a cereal, like Uncle Sam Cereal[®], or flaxseed can be added to any grain before cooking – add 2 to 4 tablespoons of flaxseed to each cup of grain, such as rice. Flaxseed may also reduce the risk for colon carcinogenesis.¹²

Wheat Bran can add bulk to the stool and encourage effortless bowel movements. This product can be purchased as “Miller’s bran” or in various cereals advertised as “bran.” Wheat bran (10 to 15 grams/day) has also been associated with a *decreased* risk of developing colon cancer.^{13,14}

Laxatives

There are many forms of laxatives and they include:

Stool Bulking Agents: Metamucil, psyllium (ispaghula, ispagol, seed husk), methylcellulose (Citrucel), and sterculia increase the volume of the stool.

Stimulants: Castor oil, senna, dioctyl sodium sulphosuccinate (Dioctyl), Bisacodyl (Carter's Little Pills; Dulcolax; Fleet Bisacodyl).

Osmotic Agents: Lactulose, magnesium hydroxide, magnesium sulfate

Rectal Ememas and Suppositories: Dulco-lax, Glycerol suppositories, phosphate enemas.

Bulking agents and osmotics are much preferred over stimulants, because the bowel easily becomes dependent upon stimulants.

Need for a Medical Evaluation

If anyone continues to have abnormal bowel movements after a change to a plant-based diet, and especially if pain or bleeding with the bowel movements occurs, then a doctor’s examination is indicated. Evaluation will likely include an examination of their large bowel, which can be simply and cost effectively done with a barium enema x-ray and a sigmoid exam. However, in part because it is much more profitable for them, most gastroenterologists will want to do a colonoscopy which has more risks, costs, and requires an anesthetic for the procedure. Either approach will rule out most serious diseases that cause constipation and IBS.

More than just Constipation

In the months that follow you will learn the role diet plays in constipation-related diseases, like irritable bowel syndrome (IBS), and how straining in an effort to move

the constipated American stool causes damage to the body, leading to hemorrhoids, varicose veins, and a hiatal hernia. In the meantime, work on attaining “the perfect bowel movement” with the things you learned so far. What a relief to have that nasty nagging difficulty behind you – your whole day will be improved by your new found freedom to occupy your thoughts with issues much more important than “will I have a BM today?”

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The McDougall NEWSLETTER

September 2002 Vol. 1 No. 9

Cholesterol – When and How to Treat

Elevated cholesterol is the most common concern I face in my live-in clinic in Santa Rosa, California, and it is one of the most common health worries among people of Western cultures. One reason for this heightened awareness is the sale of a class of powerful and expensive cholesterol lowering agents, known as HMG-CoA reductase inhibitors and commonly called “statins.” Pharmaceutical companies want you to know about this risk factor for heart disease in order to enhance the market. Even so, elevated cholesterol is a real crystal ball to your future and should not be ignored.

What is Normal Cholesterol?

Normal cholesterol was once based upon what was common for Americans. Their average cholesterol is 210 to 220 mg/dl. So this was considered the desirable range until someone noticed that the average American was sick. The average American has a 50% chance of dying prematurely of heart disease or stroke. “Average” you don’t want to be. So about 15 years ago recommendations for “desirable” cholesterol levels began to be used in laboratories and medical practices. Unfortunately, to date, there are few official recommendations for “ideal” cholesterol – a cholesterol level associated with the best possible health, and more specifically, the lowest risk of dying of heart disease.

Standard recommendations and McDougall's recommendations for blood lipids (this is "blood fats," which means the various fractions of cholesterol and triglycerides) are the following (in mg/dl):

Total cholesterol levels

- a) Less than 200 - desirable
- b) 200-239 - borderline high
- c) 240 or above – high
- d) McDougall – less than 150 mg/dl

LDL cholesterol level, or so-called "bad" cholesterol

- a) Less than 100 - optimal
- b) 100-129 - near optimal/above optimal
- c) 130-159 - borderline high
- d) 160-189 – high
- e) 190 and above - very high
- f) McDougall – less than 90 mg/dl

HDL cholesterol levels, or so-called "good" cholesterol

- a) Less than 40 - low
- b) 60 or above - high
- c) 40-60 – optimal
- d) McDougall - higher is better, but a healthy diet makes this fraction of total cholesterol lower because all fractions of cholesterol are reduced. So don't be misguided into thinking something is wrong when your HDL level falls with a healthy diet.

Triglyceride levels

They are less important predictors of heart disease risk than cholesterol.

- a) Normal less than 200 mg/dl
- b) High - 200 to 500 mg/dl
- c) Very high - in the thousands
- d) McDougall – less than 150 mg/dl.

Ideal Cholesterol is Below 150 mg/dl:

Worldwide and nationwide heart disease is very rare when people have blood cholesterol levels below 150 mg/dl.^{1,2} This is why I have set this value for your laboratory results as "a great big A+" on the report card. This level can be attained

by almost everyone by following a strict low-fat, no cholesterol diet, such as I recommend, and judicious use of medications.

Who Should Get Medication?

I'm not sure, but I am called upon to make my best guess with my patients every day.

The most recent guidelines of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults considered that an ideal LDL cholesterol level is below 100 mg/dl and recommended that persons with coronary heart disease or similar high risk should be considered for drug therapy when LDL is equal to or greater than 130 mg/dl.³ However, some doctors are even more aggressive and recommend medication when LDL cholesterol of less than 100 mg/dl cannot be obtained with diet and lifestyle changes alone.³

My goal is to have all my patients achieve total cholesterol below 150 mg/dl (and LDL cholesterol below 90 mg/dl) with diet alone. So what do I recommend for those who cannot accomplish this with diet alone?

I have little hesitation recommending they take relatively safe “natural” cholesterol-lowering medications like garlic, oat bran (oatmeal cereal), vitamin C and E, and/or guggulipid for those who have tried without success.

“Natural” Cholesterol Lowering Medications:

<u>Preparation</u>	<u>Dosage (daily)</u>	<u>% Reduction Expected</u>
Garlic	½ to 1 clove	½ to 1 clove
Vitamin C	2 grams	12
Vitamin E (dry)	200 IU (mg)	15
Oat bran	2 oz. (3 oz, cereal)	3 to 10
Guggulipid	500 mg 3 x a day	21
Niacin*	2000-3000 mg	20 to 25

The effects of combinations of the above can be additive.

* Niacin can be very toxic to the liver, especially when taken in time-released forms. Take under doctor's supervision. I suggest the immediate-acting forms only.

Use of Prescription Medications:

The decision to use prescription medications is much more difficult. Some of my thoughts when I am trying to help a patient make the right decision are:

1) I find it difficult to condemn a young person to 20 to 30 years of drug therapy just because the cholesterol level is high, unless there are other very strong indications that they are at high risk of heart disease (see next section).

2) People with a high risk of heart disease because of a previous history of heart attack, an alarmingly positive heart test (an angiogram or ultra-fast CT scan), angioplasty, bypass surgery or angina (chest pains), I tend to treat very conscientiously with medications – my goal is to get their cholesterol levels below 150 mg/dl and out of risk for future problems. Other issues such as age, diabetes, hypertension, obesity, family history, and especially, the patient's own feelings and fears heavily influence my recommendations.

3) Occasionally, someone has a very alarming history with maybe heart attacks and heart surgery, along with diabetes, and/or obesity; and *yet still has low cholesterol* (say 140 to 170 mg/dl). In these difficult cases, I will still treat them with medications to lower their cholesterol even further. Obviously, the low level they had at the time of their problem was too high for them.⁴

4) An **Ultrafast CT (Heart) Scan** will sometimes help me make the decision to recommend treatment. This test looks at the amount of calcium in the heart arteries. Calcium is a reflection of previous inflammation from years of atherosclerosis and does not accurately predict who is going to have a heart attack, but simply indicates a history of previous damage. If someone has a concerning cholesterol level and a "clean" heart scan, then I will tend to avoid recommending

medication. If the calcium count was mild to moderately elevated, then I will tend to recommend no drug therapy for now, but a follow-up scan in two years to assess the benefits of any treatments, like diet, exercise and “natural” medication. If the initial scan showed a high calcium count and indicated very serious inflammation in the past, then I will tend to start drug therapy without waiting for a follow-up test.

Prescription Medications:

There are two general approaches to prescription medications:

1) Cholesterol binding agents, called bile acid sequestrants, and/or niacin (nicotinic acid). These binding agents are found as powders or pills. They bind cholesterol and bile acids (which form cholesterol) in their intestine and they prevent the absorption into the body; causing them to be eliminated in the stool. Niacin’s actions are not fully understood, but it decreases cholesterol production in the liver, and may remove fats from the lipids (cholesterol-fat particles) in a variety of ways. Niacin is difficult to take because of a flushing reaction. Reductions in lipids with 2000 mg of niacin can be as much as: total cholesterol 12%, LDL 17% and triglycerides 35%, while HDL can rise 26%. Binding agents (like Colestid) can lower total cholesterol by 25% and LDL by 31%, but triglycerides often rise. Their main side effect is constipation.

2) HMG-CoA reductase inhibitors (“statins”) are very powerful medications that inhibit cholesterol production in the liver. They are easy to take in pill form and have few side effects. The most common problems are an elevation of liver enzymes due to liver damage (about 2% of users) and a rare, but serious form of muscle damage. Total cholesterol levels are typically reduced by 13 to 32% and LDL by 21 to 40%. Triglycerides are reduced by 12 to 24%.

Both approaches have been shown to reduce the progression of atherosclerosis almost immediately, and actually cause regression of disease after two to four years of treatment.⁵

Recently, I have been prescribing pravastatin (Pravachol) because of evidence that it is the most effective drug for lowering the risk of heart attacks and death.⁶ The

action of Pravachol is different from other “statins” in that it does not enter the cells of the body easily and therefore avoids some of the effects within the cells that may cause an increase in risk of atherosclerosis and heart attacks.

In Summary:

Everyone should be on a low-fat, no-cholesterol, diet based on unrefined starches with the addition of vegetables and fruits. People with elevated triglycerides should further limit simple sugars, even fruit and juices, because they raise triglyceride levels and may cause rises in total cholesterol levels.⁷⁻⁹ All people with elevated cholesterol and/or triglyceride levels should consider the “natural” cholesterol-lowering agents. People with a higher risk of complications of atherosclerosis should consider prescription medications. One of our goals for our patients at the Santa Rosa live-in clinic is a level below 150 mg/dl for both cholesterol and triglyceride levels. You should check your blood levels every 3 to 6 weeks when making changes in your diet or medication therapy to assess the results. When everything is stable (and hopefully ideal) then you should check your blood levels every six to 12 months or less.

Don't forget other important health issues, such as habits (smoking, coffee, and alcohol), body fatness, and daily exercise. You have control over your future health – even if you are already in trouble – and by making the right decisions you can solve your problems and enjoy excellent health.

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E-mail newsletter
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The McDougall NEWSLETTER

September 2002 Vol. 1 No. 9

Treat “High Normal” Hypothyroidism

The normal adult thyroid gland consists of two lobes connected by an isthmus and is located in front of and below the larynx (voice box). The thyroid synthesizes several hormones. The most important ones are called L (levo) - thyroxine and triiodo-L-thyroxine, and their production depends upon the entry of iodine into the thyroid gland. Thyroid hormones influence the growth and maturation of the body’s tissues, total energy expenditure of the body and the metabolism of essentially all substances in the body.

The rate of production of these hormones is based upon a feedback mechanism, like a thermostat regulates heat by adjusting the function of the furnace. When too little thyroid is produced, the pituitary gland synthesizes thyroid stimulating hormone (TSH) which *stimulates* the thyroid gland to make more thyroid hormone. The TSH level can be measured in the blood and is a very sensitive indicator of thyroid function. A low TSH means there is a high production of thyroid hormone (hyperthyroidism) and a high TSH means low thyroid hormone (hypothyroidism). Therefore, you do not want your TSH level to be too high or too low. Normal range for a laboratory test can be 0.49 to 4.67 mIU/ml.

Approximately 5% of women over the age of 20 have hypothyroidism. The incidence increases with age so that eventually 16% of elderly males and 21% of elderly females in the US have evidence of an underactive thyroid gland.¹ Hypothyroidism is often accompanied by elevated cholesterol, high blood pressure and heart disease, and is a strong indicator of risk for atherosclerosis and heart attacks, especially in elderly women. So how do people get hypothyroidism?

Autoimmunity and Thyroid Damage

The most common cause of thyroid damage and subsequent hypothyroidism (low thyroid production) is an autoimmune disease called *thyroiditis*. This is a condition where the body’s own immune system attacks the thyroid gland and destroys it. People who have one autoimmune disease commonly have others, like type 1 diabetes, lupus, myasthenia gravis, and/or celiac disease.² So why would the body attack itself?

The process is called “molecular mimicry.” Proteins, often food proteins, from the intestinal tract enter the blood stream. The body recognizes these as “foreign” and makes antibodies against them, like it would to foreign proteins from a virus or bacteria. The antibodies, unfortunately, are not specific just to the food protein, but also find similar proteins on the body’s own cells. The antibody attaches to and destroys our own

tissues, in this case the thyroid producing tissues. Proteins from animal-derived foods are the most likely ones to cause this reaction because they are similar to our own tissues. (We are animals. Plant proteins are so different from us they are rarely involved in this type of reaction). No one has identified the culprit protein (food) in thyroid disease, but I would not be surprised if pig and cow thyroid glands ground up into filler meats were the cause. Protein from the thyroid of a pig has been found to induce thyroiditis in experimental animals.³

Treating Hypothyroidism:

Once destroyed the thyroid gland never grows back. Therefore, the only solution is to replace the thyroid hormones with supplemental hormone in the form of pills, for example, concentrates from cow thyroid glands, or synthetic thyroid hormones, called Synthroid. I prefer the Synthroid, and one reason is the cow-derived thyroid hypothetically could be infected with microbes, such as those that cause Mad Cow Disease. I usually start with 0.125 mg of Synthroid and adjust the dose every 4 to 6 weeks depending on the body's response as measured by the TSH level.

If the TSH value is elevated above 4 mU/L and there is an insufficient amount of free thyroid hormone in the blood (thyroxine level of less than 11 pmol/L) then the condition is considered hypothyroidism. Subclinical hypothyroidism is defined as an elevated TSH level with normal levels of thyroxine in the body. Hypothyroidism is more accurately considered a graded phenomenon with a continuum from perfectly normal to subclinical "high normal" to definite hypothyroidism.

For the following reasons I have been treating people with TSH levels elevated in the "high normal" range (2 to 4 mU/L) with thyroid replacement medication; especially if I am worried about the effects of suboptimal thyroid activity in relation to elevated cholesterol, heart disease and other form of atherosclerosis:

- 1) TSH levels in these ranges have been found associated with raised LDL cholesterol and low HDL cholesterol levels.⁴
- 2) A coronary angiography study found greater progress of atherosclerotic lesions in hypothyroid patients whose TSH levels were in the slightly elevated range, compared to those treated and maintained within the normal range.⁵
- 3) Impaired function of the arteries (endothelial dysfunction), which is an early sign for the development of atherosclerosis, has also been observed in individuals in the "high normal" range.⁶

To keep your thyroid healthy and avoid autoimmune thyroiditis eat a plant-based diet (devoid of animal products). As a part of your routine evaluation (whether performed with your doctor or independently) which should include a check of your blood pressure, cholesterol, triglycerides and blood sugar, you should also have your TSH level checked. Most doctors will only treat TSH levels well into the abnormal range. I have given you the reasons to consider supplementation at even lower levels.⁷

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The McDougall NEWSLETTER

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***Vegetarian Times* Spreads Protein Misinformation**

An Update on “Plants are Complete Protein”

Thank you for sharing my concern that influential people are spreading misinformation about the nutritional value of plant foods. In summary, the Nutrition Committee of the American Heart Association has taken the scientifically unsupportable position that plant foods are deficient in amino acids and therefore must be classified as incomplete proteins. I have tried to correct their error. You can read all about this in the August 2002 McDougall Newsletter at www.drmcDougall.com. So far, even after my letters and yours, they have failed to make any correction or further comment.

By coincidence, the September 2002 issue of the magazine *Vegetarian Times* has taken a similar position with an article from the monthly feature “goingveg,” called “Amazing Aminos,” by Susan Belsinger. She says, “Incomplete proteins, which contain some but not all of the EAAs (essential amino acids), can be found in beans, legumes, grains, nuts and green leafy vegetables—from the good stuff vegetarians love. But because these foods do not contain all of the EAAs, vegetarians have to be smart about what they eat, consuming a combination of foods from the different food groups. This is called ‘food combining.’”

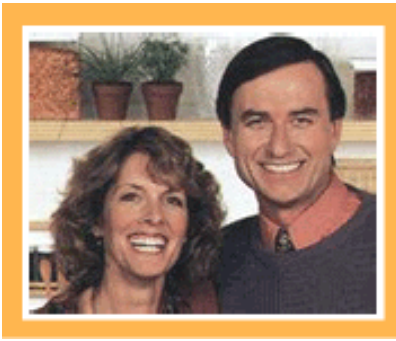
I have contacted the editor, Laurel Lund, and asked her to review the scientific issues around their incorrect statements and get back to me. So far I have not heard of any plans from the people of *Vegetarian Times* to correct this very serious error in basic science that undermines the vegetarian movement – surprising!

I will keep you posted.


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Recipes

FALL GARDEN BOUNTY SOUP

As the days turn cooler, I like to make soup for dinner. Soups are the perfect one pot meal. All you need for dinner is a hearty soup and a great loaf of fresh whole grain bread. This is also the time of year that many gardens have an abundance of vegetables ready to harvest for your soup. This soup can easily be varied to contain whatever is most prolific in your garden this year. This also reheats well and freezes well.

Preparation Time: 45 minutes

Cooking Time: 60 minutes

Servings: 8

½ cup water

1 onion, chopped

2-3 teaspoons minced fresh garlic

2 carrots, peeled and sliced into rounds

2 stalks celery, sliced

3 cups chopped Roma tomatoes (about 12)

6 cups vegetable broth

1 15-ounce can cannellini beans, drained and rinsed

1 15-ounce can small white beans, drained and rinsed

2 tablespoons soy sauce

2 cups sliced zucchini

2 cups small cauliflower florets

2 cups thinly sliced green cabbage

2 cups thinly sliced Swiss chard

½ cup small uncooked pasta

¼ cup slivered fresh basil

several twists freshly ground black pepper

Place the water, onion, garlic, carrots, and celery in a large soup pot. Cook, stirring occasionally for 5 minutes. Add tomatoes, broth, beans, and soy sauce. Bring to a boil, reduce heat, cover, and cook for 10 minutes. Add zucchini, cauliflower, and cabbage. Continue to cook for 15 minutes. Add Swiss chard and pasta and cook for an additional 10 to 15 minutes, or until pasta is done. Stir in fresh basil and pepper.

Serve hot.

BARBECUED BEAN SALAD

This is a fast and delicious salad that can be served in many different ways. It can be eaten plain as a side dish, as a topping for chilled greens, such as spinach or lettuce, stuffed into a pita bread with some fresh chopped greens, or rolled up in a wrap plain, with barbecued tofu (see recipe below), or with greens. To use home cooked beans in this recipe, cook your beans in a pressure cooker or on the stove and use about 1 ½ cup cooked beans for each can of beans called for. This may also be made with other variations of beans, choose all one kind or a mixture of different beans.

Preparation Time: 15 minutes

Chilling Time: 2 hours

Servings: 4-6

1 15-ounce can black beans, drained and rinsed
1 15-ounce can pinto beans, drained and rinsed
1 15-ounce can white beans, drained and rinsed
½ cup diced sweet onion
1 stalk celery, diced
1 medium red bell pepper, diced
1 cup frozen corn kernels, thawed
½ cup bottled oil-free barbecue sauce
1 tablespoon red wine vinegar
2 teaspoons Dijon mustard
dash salt

Place beans in a large bowl. Add vegetables and mix well. Add remaining ingredients and toss again to mix. Refrigerate to blend flavors.

Hint: To use fresh corn instead of frozen, cook two ears of corn until tender. Cool. Slice from cob and use as directed above.

TEXAS BARBECUE WRAP

Heather came up with this idea when we had some of the Barbecued Bean Salad in the refrigerator. We all agreed it was wonderful! This is also a great lunch idea because it is just as delicious cold as it is warm. Take all the ingredients in separate containers and assemble just before eating.

Preparation Time: 10 minutes

Cooking Time: 45 minutes

Servings: 4-6

1 pound firm tofu, drained (not silken)

1 cup oil-free barbecue sauce

¼ cup salsa (optional)

2-3 cups Barbecue Bean Salad (recipe above)

1 avocado, thinly sliced (optional)

2 cups leafy greens torn into bite sized pieces (lettuce or spinach)

8-10 fat-free tortillas

Barbecue sauce or salsa as desired

Preheat oven to 350 degrees.

Cut the drained tofu into ¼ inch thick slices. Mix the barbecue sauce and salsa together. Lay the tofu slices in the bottom of a non-stick baking dish in a single layer. Pour the sauce over the tofu, then flip and turn until the tofu is well covered with the sauce. Place the tofu in the oven and bake uncovered for about 25 minutes, then turn all the tofu over and continue to bake for another 20 minutes, or until the sauce has cooked into the tofu and the tofu is no longer soft. Remove from oven and slice tofu into bite-sized strips.

To assemble, warm a tortilla, spread some of the bean salad down the center of the tortilla, add a few strips of tofu, some greens, avocado, and sauce, if desired. Roll up and eat.

MCDOUGALL WRAPS

We always have many kinds of “wrappers” in our kitchen, stored in the refrigerator or freezer. Tortillas are the most common wrappers, but lavash, a long, thin, soft

flatbread, also works well to roll around a variety of fillings. Pita bread may be used in place of any of these wrappers, the filling is just stuffed inside the pita. Look for tortillas, lavash, or pita that are made with healthy ingredients (no animal products or added oil). You should be able to find at least a few varieties of these no matter where you live. Wraps are easy to eat warm or cold, and there is little clean-up afterward. The fillings and vegetables may be varied as desired, so there is always something new to try. Almost any filling works well in a wrap, although I have been making a variety of bean fillings for years. Beans are very versatile and adapt well to many different seasonings. Our favorite bean burrito meal is actually a wrap meal. We use cooked, mashed pinto beans (cooked with chopped onion and whole garlic cloves) as the filling, then layer on the onions, tomatoes, sprouts, lettuce, and salsa, roll up and eat!

General assembly instructions: Take a large tortilla, spread some of the filling mixture down the center of the tortilla, layer with assorted stuffings such as tomatoes, onions, shredded carrots, sprouts, cabbage lettuce, etc. Fold the bottom of the tortilla up over the filling, roll the sides over, pick up, and eat. Or after rolling tightly, slice into pinwheels and use as an appetizer (this works very well with the larger lavash wraps).

SPICY GARBANZO PINWHEELS

I received an e-mail from a woman who had attended one of our classes in Santa Rosa many years ago asking me if I remembered the roll-ups we served at the class. She wanted the recipe for the roll-ups because she hoped to serve them at a party she was giving. These were always a favorite at our classes and they are easy to make.

Preparation Time: 30 minutes

Chilling Time: 2 hours

Servings: variable

- 1 15-ounce can garbanzo beans, drained and rinsed
- 2 green onions, chopped
- 1 tablespoon soy sauce
- 1 ½ tablespoons grated fresh ginger
- ½ teaspoon minced fresh garlic
- 1 teaspoon rice vinegar
- ½ teaspoon honey (optional)
- dash hot sauce, if desired

fat-free tortillas
shredded carrots
grated red cabbage
alfalfa sprouts
green onions

Combine the beans, 2 green onions, soy sauce, ginger, garlic, rice vinegar, honey, and hot sauce to taste in a food processor and process until smooth. Refrigerate before using to allow flavors to blend. Adjust seasonings, if necessary, after mixture has been refrigerated for at least 1 hour.

Spread the garbanzo mixture on the bottom of a large tortilla, almost to the edge. Layer with shredded carrots, grated red cabbage, alfalfa sprouts, and julienned green onions. Roll up tightly like a log, then slice into thick pinwheels, about 1 ½ inches thick. Serve cold or at room temperature.

Hint: If you are making these ahead of time, do not slice until shortly before serving. Roll the logs into parchment paper, then roll tightly in foil. Keep in the refrigerator until ready to slice.

This garbanzo spread also makes a delicious sandwich filling, dip for vegetables or crackers, or a stuffing for pita bread.

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