**Tips On How To Have A Healthy Heart**

If an apple a day keeps the doctor away, what would it take to avoid a heart surgeon? How about, first, a good vitamin + mineral supplement and some omega-3 oil (canola-rapeseed, flax, fish)? Add a diet low in processed food and, in this order: 1. don't smoke, 2. control waist size, 3. manage stress well, 4. some exercise and you will improve your general health, and prevent or help heart disease.

This website looks at the food, supplement and prevention side of the picture. Nutrition in medicine is my long-term interest, not my job, so this site doesn't generate money or sell anything. Paint prevents rust on a car but does not cure it. This site is about the heart healthy nutrients preventing corrosion of your body proteins (and slowly even cure it), and about nutrients that can help you survive existing artery wall damage.

Science shows that a heart healthy diet is one with relatively unprocessed foods, with veggies, whole fruits and with rice or grains that retain most of their original kernel-structure. Those are the 'whole' foods that became scarce in Western diets. If you can't recognize part of the original food, the item is processed or refined. Some fresh eggs, liver or fish are probably also vital for most of us.

In food processing, as when making noodles or flour, we lose 60 to 90% of most of the heart healthy nutrients. Also lost is plant-structure 'whole-ness' that slows digestion, while factory hydrogenation preferentially zaps omega-3 oil, think of it as vitamin F-3, turning it into toxic trans fat.

Why a add multi-vitamin pill to your diet? Well, most fast single nutrient diseases like scurvy, beriberi and goiter were wiped out by food fortification, our 'weapon of mass nutrition'. However, processed foods low in many nutrients, such as vitamins B6, B12, folic acid and others, cause 'Long-Latency Deficiency Diseases', such as heart disease, cancer, bone loss and Alzheimer's. Think of these as nutrient deficiency diseases with long incubation periods and the science makes sense! Start with cholesterol and the science will never make sense (can your doctor explain the 4th figure from the bottom?).

While research is ongoing and not every nutrient is good for everyone, this site is one evaluation of the prevention evidence to date -but with a nutritional bias. The idea is HITMINS, "Health: It's The Micro-Nutrients, Stupid!" [and only then, the economy.]

Most scientists agree that almost no one has optimum levels of many key nutrients and that a multivitamin + mineral supplement fills many such gaps. Bonus: a high dose 'multi' is the only therapy to lower homo-cysteine, a slow poison simply corroding our life-long structural proteins, linked to over 100 diseases. A bottle with 6 month no-iron multis has no child-proof cap, it's that safe! The evidence for benefit is massive and pennies per day.
Even in health, there's excellent science for taking such (normally, no-iron) *multi* plus foods and supplements for a total daily intake of at least 1 gram vitamin C, 1.2 g calcium, 600 mg magnesium, 1200 IU (30 mcg) D (when not getting regular summer sunshine), about 200 IU 'mixed' E in a meal with *fat* and 200 mcg *selenium* [bench-mark of a great *multi*].

The good news: there are major health benefits from omega-3 rich *oils*, like about 1 teaspoon flax (lin) or fish oil or 2 *tablespoons* *canola (rapeseed)*. Lesser sources are *unhydrogenated soy***, mustard oil, wheatgerm, flaxseed, walnut, green leaf veggies (surprise), and of course fatty fish -and really not much else.

Cardiologist de Lorgeril: '.. in most cases, the prescription of capsules containing oils enriched in [plant and fish] omega-3's ... will be, ethically and scientifically, an obligation.'

The bad news: common *oils* with over 50% of the omega-6 *poly-unsaturated linoleic* may be *harmful* (soy, corn, sunflower, safflower, grape and cottonseed) as is *all* hydrogenated [trans] oil ('vegetable' shortening, deep fry oils or ghee, donuts and 90% of margarines). **Soy oil is a double edged sword as per person use in the U.S. went from zero 65 years ago to 31g/day, 10% of average daily calories. Soy is the main source of excessive *trans* and omega-6 fats in many countries: it's hidden and it's everywhere (scientific poster: [HTML](http://www.health-heart.org/) or [PDF](http://www.health-heart.org/))

These simple basics may well prevent or postpone nearly 80% of heart and other serious diseases! And what could be easier than an oil change to canola and some flax (linseed), and a few supplements at the end of your largest meal. Reducing the highly refined carbs, a next step, is not that easy as average American yearly eat his weight in added sugars.

*Apart from* lowered nutrients, *grains ground into a dust* (flour and *most* breakfast cereals) or starchy potatoes (low-fiber, rapidly absorbed carbs) keep you hungry and stress your insulin system, promoting *overweight & adult diabetes*. Here, high insulin *plus* high blood sugar team up to reduce blood circulation and promote heart disease.

*All illness* has nutritional links. There's no doubt that *all* omega-3 oils (*nature's COX inhibitors*) lower heart attacks and *double* your survival chances while *Vioxx* and *Bextra raise risk* as may *Aleve/naproxen & Celebrex*. Fish omega-3's have anti-inflammation effects and help arthritis and bowel disease. Why not consider if such condition can be linked to a low intakes of such oils. This site will help you think along those lines.
A good multi is a zero-calorie Essential Food Group, an Ounce Of Prevention and Nutritional Seat-Belt. There is no research showing that avoiding multivitamins makes you healthier and it's the only easy life-style change you can make. This website may not make you smoke less, walk more or revolutionize your diet but these ideas are simple and benefits major. This website will take you from the-not-so-bad cholesterol via fats and vitamins to the tastier foods.

C27·H45·OH HIGH CHOLESTEROL, a survival benefit prior to refined foods and you'd have to eat 20 eggs to absorb what you make each day. The famed Framingham study found clear thinking at high cholesterol while decreasing levels after age 50 predict more heart disease deaths!

Cholesterol Pills, statins like Lipitor, Zocor, Pravachol, Lescol, Mevacor or Crestor, (killer) fibrates and niacin (mega vitamin B3) have side effects, good, bad and unknown. Studies show that lowering cholesterol with statins, fibrates or omega-6 oils (but not niacin or fiber) promotes cancer [general effects and seniors].

The more statins cut cholesterol, the more they cut energy to nerves, muscle and heart by lowering CoQ10, 'battery acid' and anti-oxidant ('catalytic converter') of every cell. Here's a study with best cholesterol at the happy old "normal" range of 180-240 (4.6-6.0) (also: 1 & 2). Great sites: thincs.org and Myths.

PS-1 In heart failure, in the 20% with the lowest cholesterol: double the death rate!

PS-2 TNT trial implodes: 5000 heart patients for 5 years on 80 mg top-dose suffer 2 more deaths than patients on only 10 mg. On either dose, the same 26 ±1% progression in artery calcium in 12 months anyhow! Lipitor does NOT save lives in studies.


More cancer and no survival benefit (+0.1%) in high risk older Europeans: Lancet 2002 (3 million $3 pills taken). Next, in 6 years, nobody saved (+0.07%) in this younger group of 5170 Americans.

http://www.health-heart.org/
PS-3 The American College of Cardiology in 2004: "... there is no evidence for a total mortality benefit in women from dyslipidemia [statin] treatment." Women: 3 more deaths on Zocor and 2 more heart 'events' on Lipitor in large studies (4S, ASCOT). In 24,000 women over age 50, those in the lowest 25% for cholesterol had the same risk for death (+60%) as those smoking!

PS-4 Out of 1/2 million U.S. men at 'prime heart attack age', the top 0.8% for cholesterol [-292 (7.5)] on anti-cholesterol absorbing drug for 7.4 years (and 1/8th less "bad LDL" compared with dummy drug) but no difference in survivors; count them: 3. And, oeps: in 65,000 men with 2700 deaths, those with least cholesterol [below 187 (4.8)] had most deaths!

Fever indicates infection but sitting in ice water won't kill the microbe. 'Cholesterol', insulin, sugar and blood pressure are also indicators, think: excess junk carbs, lack of micronutrients and artery decline in progress.

Above minimal '6' homo-cysteine is the indicator for your personal lack of most B vitamins. But unlike cholesterol, homo-cysteine corrodes (permanently damages) all proteins. It is also a poison pill in cholesterol transporters (LDL droplets), making 'cholesterol' actually become 'bad' -as do trans fat and oxidized cholesterol from foods with egg or milk powder.

Homo-cysteine above 6 µmol/L [a 'modern' diet and not taking a multi] is the main reason for heart disease and also for it running in families. Multi-vitamins slash homo-cysteine, keep arteries open and thin and flexible and help avoid heart surgeons.

A BMJ study: '..there is still only .. inconclusive [sic] evidence of the effects of modification of total, saturated, mono-unsaturated, or poly-unsaturated fats on cardiovascular [disease and] mortality.' Here's a 2006 JAMA disease summary: the futility of eating 'less fat'. Incidentally, hydrogenation of oils, most industrially refined foods and heart attacks are something of the last 95 years [text for graph].

We explore heart disease as a recent multi nutrient deficiency problem, starting with omega-3 oils, magnesium, folic acid and vitamins B6 and B12.
There are no drug deficiency diseases, or 'essential diets', only essential nutrients, yet, per capita, Americans use $70 prescription drugs per month. Most drugs manage lab-numbers or symptoms like pain, not root causes; they don't 'cure'. This is why cholesterol, sugar and blood pressure drugs have such a hard time proving they actually save lives. Fat plus cholesterol, atheroma, in arteries is not seen in wild animals and is unique to humans, a rare species not making its vitamin C and the only one using cooking, refining and food processing, slashing the nutrients that tame toxic homo-cysteine. Atheroma is largely a structural repair gone bad. This site suggests to prevent the structural decline and control the repair with the "homo-cysteine vitamins", omega-3 oils and some other nutrients. Many arteries blocked like Bill Clinton: 1 year deaths on drugs 1.5%; slightly less drugs + bypass or angioplasty: 4.2%! Medically-caused deaths may be the 3rd cause of U.S. deaths so nutrition could be your best medicine. This age old concept is called nutritional, naturopathic or orthomolecular medicine -doctors who know the potential of nutrition.

- ARTERY DECLINE ... NOT LIKE THE CLOGGING OF A DRAIN PIPE -

Over simplified best theory. Arteries are a muscle layer sandwiched between 2 structural layers. Lack of B-vitamins causes excess homo-cysteine that dumps its sulfur onto the 'cartilage' of the inside layer (the proteo-glycans of the intima), 'un-ties' collagen 'cables' and 'crumbles' rubbery elastin. This 'excess sulfation' helps trap LDL's cholesterol, and then calcium, as in stage 4 lesions shown below and where finally the muscle layer, the media, is infiltrated.

Elastin-network 'crumbling' in the media frees muscle cells that move and 'dys'organize artery architecture. Crumbled elastin 'loves to' accumulate cholesterol and calcium. Homo-cysteine degrades the shape and thus function giving cysteine sulfur bonds in your life-long proteins*. It also promotes clotting and inflammation (II-8). B-vitamins with vitamin C, copper and zinc prevent such damage and repair some of it. Incidentally, excess sugar (glyoxal) in diabetes damages elastin and collagen in a very similar manner. [homo-cysteine + response-to-LDL-retention theories: CVD as a 'sulfur disease'.

*) Analogy: liquid latex is vulcanized into the shape of a tire by sulfur bonds; homo-cysteine degrades such sulfur bonds in your permanent structural proteins.]
-- CHOLESTEROL BONUS for DOCTORS and SCIENTISTS: --

LIPO-PROTEINS: nutrient transport emulsion
Good or bad cholesterol: only the PROTEINS change, NOT the cholesterol transported. YOU control the type of nutrients or toxins these proteins transport.

'bad' LDL, a mail truck for fatty nutrients and the 'good' HDL bicycle courier: different transport proteins for the same cholesterol

50% cholesterol LDL, 20% - 0% HDL
1 billion such emulsion particles per drop of blood, dozens different proteins, and a nutrient composition YOU determine by your diet. The ONLY bad cholesterol may be that found pre-oxidized in egg and milk powder products, or in dry or excessively fried meats. Trans-fats, insufficient omega-3 oils and excess homo-cysteine (from lack of B-vitamins) also degrade LDL quality.

Some ways to make this vital LDL droplet a Trojan horse yourself is by loading it with oxidized cholesterol, trans fats, or homocysteine.

SUMMARY: LIPO-PROTEINS CAN BE VITAL NUTRIENT DELIVERY OR GARBAGE TRUCKS [LDL] BUT HDL IS ALWAYS A MULTI-TASK CLEAN-UP AND DELIVERY SERVICE

Good HDL-cholesterol explained
This most microscopic of blood particles is really a package of over 50% protein, about 30% lecithin (emulsifier) and 0-20% cholesterol.

Calling it 'cholesterol' is thus a Medical Misunderstanding.
It is a 'space ship' of over 80 proteins in the blood, a messenger and courier controlling artery and cell health. Good it always is!
It interacts with other fatty blood droplets (LDL) and cell walls alike.
HDL raises with anything that promotes circulation: exercise, moderate alcohol, or as drug: mega-niacin. Also, foods with fats.
HDL lowers with waist-obesity, trans fats, high refined-starch, low-fiber low-fat foods. Factory refined flour products don't help.

Statins like LIPITOR (atorvastatin) don't save lives, and calcification continues!
17 to 53% less 'bad' LDL cholesterol.

Mathematically superimposed curves of the 33-year ASCOT Lipitor study (red lines) on the 6 year deaths of the ALLHAT Pravachol study.

Over 10,000 high-risk people for years on two typical statins, no one saved.
Another 5000 heart patients on top-dose Lipitor for 5 years suffer 2 more deaths than 5000 patients on low dose (TNT study)
And, on either dose, artery calcium increased 26% in 1 year anyhow! Medline 10415377
Top dose or no Lipitor: 53% less cholesterol, the same 22% increase in calcium in the valve of the aorta per year. Medline 15944423

2006 UPDATES: 2365 stroke patients for 5 years on top-dose Lipitor suffer 5 more deaths, more serious bleeding strokes and no fewer fatal heart attacks than those on placebo (SPARCL study)
and 1200 diabetics on Lipitor for 4 years had 2 more deaths and no fewer 'events' than those taking the placebo (ASPEN study)

-- NEXT: -- THE NAIL IN THE CHOLESTEROL THEORY:
-- WHERE WOULD YOUR DOCTOR SEND THE CHOLESTEROL DRUG? --
More 'bad' cholesterol but 4.4 times less heart disease and less plaque in Sweden.

Medical dilemma: cholesterol doesn't fit the scientific reality.

Where would your doctor send the cholesterol lowering drugs:
1. Sweden, 2. Lithuania or 3. the Baltic Sea in between?

Some micro-nutrients were lower in Lithuania. LDL nutritional "quality" may be more important than simply LDL "quantity".

AND FINALLY: A SIMPLIFIED GLOBAL PICTURE:
Supplement Summary

Multivitamin (with high-dose B's) such as Twinlabs Daily One Caps (U.S.) or Nu-Life 50+ Optimal (Canada) with largest meal, normally: 'no iron'.

Canola (rape) oil for plant based omega-3 (1-2 table spoons / day) or 1 teaspoon flax, oil, or flax/linseeds, crushed in coffee mill (1-2 table spoons / day) PLUS about 1 g/day fish oil as 1 pill or 2 fatty fish meals / week

1-3 calcium + magnesium + vitamin D combo pills/day, most / best at night.

1-2 g vitamin C & 200 IU mixed E optional, CoQ10 a must when on statin.
There is little reason for an early heart attack. The same is true for many other diseases like osteoporosis, mental decline and several cancers.

Over 50% of U.S. women (more than men) dying today do so from heart and blood vessel diseases and one American dies every 5 minutes from 'properly' prescribed drugs.

On the supplement side of the picture however, no one has ever died from their indicated use and there's zero research showing that avoiding a multi makes you healthier. As luck has it, they are the only easy part of health maintenance.

Follow some of these easy tips to prevent heart problems and promote health. If you do only one thing: take a good multivitamin and get your omega-3's. Incorporate some of the other changes and prevent, help, or postpone most of the slow-building diseases common after mid-life.

1. START WITH a single multivitamin with most B's near the 25 mg level, B3 at 100 mg, folic acid at minimum 400 mcg and B12 at 100 mcg. The Where page has several sources, including some single multis with all that stuff for about 11¢US per day. Super important: use omega-3 oils like fatty fish (or pills), flax(lin) seed (or oil), and start using canola (rapeseed, colza) or in India: mustard seed oil. Refrigerate all omega-3 oils! Olive has zero omega-3.

2. STEP TWO --increase unprocessed and unrefined fresh foods: "above-the-ground" veggies and fruits, whole kernel (little ground) grains, bran, wheatgerm, beans, brown rice and, yes, fresh eggs. If you like liver .., good!
3. **STEP THREE** --reduce sugar, *white* flour (if it says *enriched*, it ain't whole), *white* rice, ordinary *white* noodles and foods that are deep fried, have shortening and anything "hydrogenated". Potato (starchy or fried) is also a high "glycemic load" food with few health benefits. Avoid all high *linoleic* omega-6 oils, like soy, corn, sunflower, safflower and cottonseed. *Never* use polyunsaturates for frying for which only saturates are totally safe.

Separately take 200 IU "mixed" natural (type d) *vitamin E* (best not type dl), at least 1 gram *vitamin C* (not *Ester-C*). Get 200 mcg *selenium*.

**Make sure** to get not less than 1200 mg *calcium*, about half that much (700 mg) *magnesium* (*most* people will need to supplement) and 800 IU [-2000 IU= 50 mcg] *vitamin D* to make the calcium actually build bone (get sun and from fall to spring: cod liver oil is a good source!).

**Don't take iron** unless you are in your child bearing years and/or have a medically established reason. Go easy on the *copper* (1 - 2 mg max.) but do include 15 mg *zinc*. These, the selenium and the most "D" can be found in the same single multi; see [Nuts & Bolts].

**For omega-3's**, use 1 (or 2) teaspoons of cold-pressed *lin(flax)* oil or 2 tablespoons of *canola* or (or if you can't find canola/rape or mustard oil) *un-hydrogenated soy*. *Lin(flax)* seeds and walnuts are great sources. Regularly eat *fatty fish* (or, to save the oceans, a 1 gram pill/day); extremely important [see Comments]. Olive oil is healthy but has no omega-3 (so spike it with flax oil). Butter is better than margarine except those based on *un-hydrogenated canola*.

**Lack of potassium** (celery, fruits, veggies & imitation salt --but *not* in flour, sugar or fats; also in high starch banana and potato) and *magnesium* (full kernel grains, nuts, greens -or as part of a calcium/magnesium + vitamin D pill; any brand will do) are main causes of heart attacks. Sweating and *most* diuretics flush out these spark plugs for the heart. Magnesium is likely The Most Important of the minerals *most* Westeners are low in.

4. **ABOUT CHOLESTEROL** [see picture at end], I wouldn't pay too much attention unless the "good" HDL is considerably below say "45" (1.1) --see [cholesterol], or unless you have a special (genetic) reason *-and* are not taking omega-3s *and* a B vitamin supplement. 'Low cholesterol' people on average tend to live shorter while higher cholesterol people when older tend to be 'smarter' and have better aging brains.
If your doctor proposes you have a 'cholesterol problem' (which is not an illness), at all costs try to avoid the statin drugs by taking niacin instead (vitamin B3, about 2 g/day). Generic niacin is 10 - 20 times cheaper and uniquely beneficial in its action on blood fats. It lowers, if you also take a multi, all that could be bad and raises most that is good, and more. It also makes doctors happy. The scary 'flush' soon disappears if taken after meals.

NOTE: If you have a (congestive) heart condition (CHF) or take statin drugs (Lipitor, Zocor, Pravachol, etc), strongly consider at least 60 mg coenzyme Q10 (CoQ10) as statins dramatically lower this energy producing agent. Let no doctor put you on a statin drug without knowing your Lp(a) and homocysteine first: for Lp(a) high-dose niacin + vitamin C work better while for homocysteine [which also runs in families -and "family history" is often a reason to put you on a statin-] it takes B-vitamin "therapy" instead.

Each of the above steps is important for heart and blood vessels as well as for the entire body and mind --yes, there is a mental health and Alzheimer's link! Don't smoke, get some exercise & don't sweat the small stuff.

Chances are that long-term use of these foods, supplements and omega-3s will reduce your risk of sudden heart death by up to 80%. Not bad for stuff you can buy in a market or health food store! Jan. 1st, 2008.
CHOLESTEROL moves in HDL ("good") and LDL (sometimes "bad")

- HDL: low is bad in men and women: important to have as much as possible; raised by: exercise, moderate alcohol, mega-niacin (B-3), saturated fat; lowered by: starch [over-weight, adult diabetes]
- LDL: a 20x larger "transport vehicle" (droplet) for cholesterol, vitamins A, E, K, carotene, lycopene and more-supplying all cells. LDL therefore is basically great stuff and needed for life. However, some things "corrupt" LDL making it toxic to your arteries:
  1. egg/milk powder, egg noodles (oxidized cholesterol)
  2. margarine, shortening, baked goods (hydrogenated -trans- fats)
  3. homocysteine - this is a natural blood toxin we all have; it can only be lowered by a "high-dose" multi B-vitamin

LDL is thus great unless you corrupt it, making it "bad" -cholesterol

HOW TO HELP THINGS:
A: omega-3 oils - canola, flax, walnut, fatty fish [-none in solid fats]
B: high fiber foods help get rid of excess cholesterol (fruits/veggies, oat fiber, crushed flax seeds, metamusil... whole kernel breads)
C: potassium and magnesium from fruits/veggies, magnesium suppl.
D: vitamin C from supplement (keeps arteries healthy)
Voici un résumé des faits essentiels provenant d'un site sans-but-lucratif, en Anglais, expliquant le rôle de la nutrition et des suppléments alimentaires (micro-nutriments) pour une santé optimale, et principalement pour prévenir les problèmes cardio-vasculaires.

L'auteur suit attentivement le domaine de l'alimentation et des maladies chroniques (cardio-vasculaires, cancer, ostéoporose, déclin mental, etc.) depuis des dizaines d'années. Il vous propose une théorie simple concernant "l'alimentation préventive".

Une modification simple de nutrition --un choix d'aliments peu altérés (légumes, fruits et grains, produits entiers) et l'usage de quelques 'vitamines', peut améliorer le triste bilan de santé moderne: la moitié des décès sont dus à des problèmes cardio-vasculaires (plus de femmes que d'hommes), et un quart au cancer. De plus, toutes les 5 minutes, selon la revue *JAMA*, un Américain meurt et 20 subissent des conséquences graves à cause de médicaments prescrits par leur médecin.

Par contre, personne ne meurt à cause des suppléments alimentaires suggérés, et aucune étude ne prétend qu'éviter ces suppléments améliorera votre santé. A eux seuls, ces suppléments (micro-nutriments) constituent une modification simple des habitudes de vie -pourtant leurs effets à long terme peuvent être importants.

Si vous ne faîtez qu'une seule chose, prenez l'une des vitamines multiples suggérées. Les vitamines B qu'elle contiennent sont la *seule* thérapie pour réduire le corrosif principal affectant toutes nos protéines, l'acide aminé toxique homocystéine (pensez: corrosion d'artères, bris, démences, et autre). Incorporez quelques unes des suggestions suivantes et vous pourrez retarder la plupart des maladies chroniques, si fréquentes après un certain âge.

1. **AUGMENTEZ**: Les produits les moins raffinés: légumes, fruits, grains entiers, fibre et germes de grains, fèves, riz-brun et, oui, œufs --et, pour les huiles oméga-3 (ω-3), le poisson contenant du gras (saumon, maquereau, sardine), et l'huile de lin (55% ω-3, de canola (colza; 10% ω-3) ou de noix de Grenoble. Au Canada il y a 3 types de margarine...
basés sur le canola/colza non-hydrogéné; en France, cherchez margarines et huiles indiquées: colza non-durcies.

2. **RÉDUISEZ**: Sucre, farine blanche (enrichie, ne veut pas dire "entière"..), riz blanc, nouilles ordinaires et toute nourriture contenant du gras hydrogéné (pâtisserie commerciale, margarine). L'huile de soya et acceptable (6% ω-3) mais évitez l'huile de tournesol, de maïs, de carthame (trop élevées en oméga-6).

3. **PRENEZ**: une multi-vitamine ayant les B's à minimum 25 mg, le B3 à 100 mg, l'acide folique à 0,8 mg (800 mcg) et le B12 à 0,1 mg (100 mcg). La page [Where] donne quelques sources de bonnes multi-vitamines (beaucoup d'autres sont trop coûteuses ou de piètre composition). Un tel supplément réduira vos risques de cancer ainsi que le taux d'homocystéine dans le sang [nocif pour le coeur (Québec) et le cerveau: Alzheimer].


De plus, prenez 200 IU (mg) de Vitamine E de source "mixte"/naturelle (type d) (mieux que "synthétique, dl"), et de minimum 1 g de vitamine C (évitez l'Ester-C).

Assurez vous d'obtenir environ 1,2 g de calcium, jusqu'à 0,7 g (700 mg) de magnésium (la plupart des gens doivent prendre des suppléments afin d'obtenir ces quantités) et 800 IU de vitamine D afin de permettre au calcium de créer de l'os (en hiver: 1 c. à thé d'huile de foie de morue!!). Des légumes verts fournissent de la vitamine K qui aide également les os.

Évitez le fer si la carence n'a pas été déterminée par analyse sanguine. Ne prenez pas trop de cuivre (1 - 2 mg) mais incluez 15 mg de zinc et 0,2 mg (200 mcg) de sélénium (anticancer et pro-coeur) par jour. Ces minéraux et la vitamine D se trouvent dans certains multis** précités, regroupés en une simple capsule.
Concernant les huiles oméga-3 (et la fameuse étude à Lyon en a prouvé l'importance), 1 cuillère à thé de l'huile de lin pressé à froid devrait être suffisante ou, pour un plus grand apport calorique, 2 cuillères à table de canola (colza) non-hydrogénée. Les graines de lin ou les noix de Grenoble sont également de bonnes sources. Les poissons identifiés plus haut vous procurent aussi ces huiles extrêmement importantes; voir item 1 des ["31 Tips .."].

L'huile d'olive vierge est un excellent produit mais ne contient aucun omega-3. Les huiles oméga-3 sont devenues rares dans l'alimentation d'aujourd'hui; elles aident toutes sortes de fonctions cardiaques, et d'autres problèmes. Évitez les huiles en très haute teneur d'oméga-6, l'acide linoléique (maïs, tournesol, carthame, cotton, et limitez soya).

Les carences en potasse (bananes, céleris, pommes de terre, légumes, substituts de sel) et en magnésium (céréales entières, noix, légumes verts) sont des cause d'attaques cardiaques. La transpiration et la plupart de diurétiques réduisent ces "bougies pour le coeur". Prenez assez d'eau.
4. LE CHOLESTÉROL a peu d'importance (Anglais: Québec), sauf en cas de niveau exceptionnel et lorsque votre alimentation est très différente de ce qui est suggéré ici --voir: [causes].

Cependant, si vous auriez un (très rare) "problème de cholestérol" et que vous étes suivi-e par un médecin, essayez d'éviter les médicaments de type statine, Lipitor (Tahor), Zocor, Pravachol, etc., qui n'ont pas d'effet sur la mortalité chez les femmes, et probablement même pas chez les hommes. Proposez plutôt à votre médecin d'essayer la niacine (acide nicotinique -vitamine B3-), environ 0,6g, 3 fois par jour après le repas. La niacine est de 10 à 20 fois plus économique que les statines et unique dans son action sur les lipides contenus dans le sang --augmentant tout ce qui est désirable (si vous prenez également une multi-vitamine) et réduisant tout ce qui pourrait être mauvais, y compris la Lp(a).

AVIS Si vous avez un problème cardiaque de type congestif, ou si vous prenez un médicament de type statine, envisagez un supplément de 60 mg au moins de coenzyme Q10 (CoQ10). Souvent votre 'historique familial' est un facteur menant votre médecin à prescrire une statine, tandis que d'autres facteurs génétiques (le Lp(a) ou le homocystéïne) auraient pu causer cet historique, et où respectivement une thérapie avec niacine + vitamine C et avec des viamines B devrait être la thérapie de choix).

Chacune des démarches précitées est importante afin de prévenir des conditions cardiovasculaires, à part du fait qu'il y a des connexions de bonne santé, générale et mentale, en allant de la maladie d'Alzheimer jusqu'à la schizophrénie, et le cancer. Abstenez
Santé générale; coeur et nutrition; les démarches simples

Il y a des fortes chances qu'à long-terme, les aliments et suppléments précités peuvent réduire la chance d'attaque cardiaque de 80%, et ceci en augmentant la santé générale. Pas mal pour des choses que vous pouvez acheter vous-même à votre épicerie, ou à votre magasin d'aliments naturels! Il est probable qu'il est encore plus économique de procurer les suppléments par la poste (internet). Si vous trouvez, chez vous, un supplément d'aussi bonne qualité, il me ferai plaisir de le mentionner ici. Eddie Vos, M. Ing., Sutton (Qc) Canada, le 1 jan. 2007.
Unprocessed foods provide original nutrients that prevent deficiencies and keep your body in peak condition to fight heart & artery decline.

<table>
<thead>
<tr>
<th>FOODSTUFF</th>
<th>HOW MUCH</th>
<th>WHY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Veggies</strong> -especially but with some exceptions, the &quot;above ground&quot; type or portion.</td>
<td>Any amount; dark colored ones are best. Fresh &amp; little processed [steamed] is preferred. Go easy on the rapidly absorbed starchy carbs from potatoes.</td>
<td>The colored ones have many types of carotenoid [like vitamin A] &amp; flavonoids [phytochemicals] that prevent all kinds of unhappy events (cancer, heart &amp; vascular trouble, strokes, etc). Especially the &quot;above-ground&quot; portions of veggies has fiber, slow-release energy and no fat. Cabbage, broccolli &amp; Brussels sprouts are anti-cancer. Garlic is probably heart-healthy. &quot;All the way with 5 to 10 a day&quot; --fruits and veggies that is.</td>
</tr>
<tr>
<td>Whole grains &amp; (brown) rice The finer ground into a powder, the quicker their sugars are absorbed, increasing their Glycemic Index, not good for heart disease or diabetes.</td>
<td>Reasonable amounts - if tolerated. When a product says enriched it ain't whole.</td>
<td>Basic food; contains many good components like fiber, minerals and vitamins that are removed in refining. Bran &amp; germ are very high in B vitamins, minerals &amp; betaine. Cheap. The Harvard &quot;Nurses Study&quot; found a reduction of over 30% in heart disease (CHD) for those eating 2½ servings per day of whole grain or rice products versus the group having them once a week (the US average being a ½ serving per day). Here's your reference: AmJClNutr; Sept. '99 (my comment is the April 2000 issue).</td>
</tr>
<tr>
<td>Food</td>
<td>Information</td>
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<tr>
<td><strong>Beans, soy and lentils (legumes)</strong></td>
<td>Reasonable amounts; combine with grains / again: if tolerated. Lower blood fats (triglycerides). High fiber, low fat. Combine with nuts &amp; grains. Their protein may be good for the heart. Soy is good for health, heart &amp; anti-cancer but there's discussion if its extracted protein and hormone like ingredients are healthy (veggie burgers, baby formula, sports-mixes]. Cheap.</td>
<td></td>
</tr>
<tr>
<td><strong>Fiber</strong></td>
<td>About 30 g/day, 2x the average US intake. 50g/day helps diabetes - NEJM May 11 '00 Often missing in processed foods. Aids elimination --reducing colon cancer risk by about 1/3rd. Helps cholesterol 'turn over'. Found in whole grains (oat), fruits, beans, veggies. 2 tablespoons of crushed flax seed gets you most of your fiber and all your plant-based omega-3; lowers excess Lp(a) cholesterol and helps keeps you 'regular'.</td>
<td></td>
</tr>
<tr>
<td><strong>Fruits &amp; berries</strong></td>
<td>Lots, within reason Same as veggies. Lots of vitamins and fiber and no fats. Their flavonoids strengthen blood vessels and are strong antioxidants.</td>
<td></td>
</tr>
<tr>
<td><strong>Eggs &amp; Liver</strong></td>
<td>Regularly (if you like them; fresh) High in protein, B vitamins, lecithin and choline and low in fat. Proportionally raises good cholesterol more than bad [if you think that's important]. Avoid dried egg: it has oxidized cholesterol.</td>
<td></td>
</tr>
<tr>
<td><strong>Oils</strong></td>
<td>Canola -rape seed is a uniquely cheap 10% source of omega-3 and otherwise much like olive. Flax oil has 5x that, but it must be used fresh and in tea spoon amounts. The only 2 essential oils - 'vitamin F'- are linoleic (n-6 or omega-6) and alpha-linolenic (n-3 or omega-3). These 2 polyunsaturates are the feed-stock for 3 classes of hormones, and for nerve, brain, skin and cell walls (you may want to read that again). The type you're probably lacking is omega-3, found only in fatty fish (like salmon, mackerel &amp; sardines), in flax(lin)seed, canola type rape seed (colza), mustard seed, chia, candlenut, wheat germ, some melon seeds, hemp, walnuts and some green leaf veggies. It is also found in unhydrogenated soy and, for the record, in snake oil. [Snakes and cold water fish can't afford stiffness or arthritis in their joints.</td>
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http://www.health-heart.org/goodfood.htm (2 of 4) [1/1/08 6:02:17 PM]
Second choices for nonhydrogenated canola margarines in Canada (the great stuff of the Lyon Heart Study) are Our Compliments, Fleischmann's and 'Bertolli Becel'.

As of May 2006, the U.S. (Vt) had no margarines I'd eat apart from possibly Olivio. 95% of U.S. margarines are toxic with masive omega-6 (soy, corn, sunflower] and hydrogenated trans fats.

As luck has it, 3 of the cheapest oils are full of omega 3: flax, canola & soy. and are therefore full of ultra fluid omega-3 oils. GOOD FOR: heart, cholesterol, triglycerides, blood fluidity, Crohn's disease, asthma, arthritis, cramps, adult diabetes, brain, MS, & smooth skin.

Omega-3's vital role is compromised by heating and hydrogenation (most soy is), by shortening, by omega-6s and by most saturated fats (but coconut and palm-kernel oils are nutritionally unique with 50% lauric-acid which has immune system roles).

Buy oils in dark containers and keep cool; they will spoil. Rancid omega-3 and -6 are toxic so they're always safer with a capsule or 2 of added vitamin E, the fat antioxidant.

DON'T overdose on omega-6 (linoleic) from corn, soy, sunflower, safflower or cottonseed. For frying I'd use butter, virgin olive, tropical (safest) or peanut oil. Virgin olive is a great oil for daily use but has no omega-3. Here's a remarkable canola info site, the heart-healthy oil.

5 pillars of heart health:
- Omega-3's
- Antioxidants
- Potassium + magnesium
- B vitamins
- Fruits 'n veggies.

Low amounts reduce heart disease. Red wine with its flavonoids protects blood cholesterol. Best with foods containing B vitamins such as liver.* All alcohol raises the "good" cholesterol but white wine, liquor & factory beer are nutritionally a bit like sugar or white bread, lacking micronutrients.

* Alcohol + folic acid (a B vitamin) appears to be cardio protective while folic acid may well remove the risk of some cancers (breast) linked to alcohol intake. Less gall stones.

Alcohol

1-2 glasses of red wine/day.

Avoid if there is any risk of alcoholism, or when pregnant

http://www.health-heart.org/goodfood.htm (3 of 4) [1/1/08 6:02:17 PM]
<table>
<thead>
<tr>
<th>Good Foods</th>
<th>Lecithin (factory soy based granules)</th>
<th>1-2 table spoons per day (also in liver, eggs, soy and beans)</th>
<th>Emulsifies fat; improves types of blood fats. It is part of our nerves &amp; brain; forms choline (makes neuro-transmitter) and betaine (lowers homocysteine). Health food store granules have nice fatty flavor. Refrigerate.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Meats</td>
<td>Not really essential. Some animal farming ecologically, morally and nutritionally iffy</td>
<td>As fresh as possible. Aging, drying and over-frying damages or oxidizes fats and cholesterol. Such damaged fats make the basically good LDL go 'bad', and are best limited. Aging softens muscle from beef. Other meats are almost never 'aged'. Fish evidently never is -because of its fast spoiling -smelly- omega-3 content!</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>Lots -within reason</td>
<td>Keeping things fluid &amp; may cut bladder cancer by ½ Jan. 1st, 2008</td>
</tr>
</tbody>
</table>
Refining removes fiber, vitamins & other nutrients.
Avoid or use in moderation the foods below:

<table>
<thead>
<tr>
<th>FOODSTUFF</th>
<th>AMOUNT</th>
<th>WHY AVOID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid fats -- from land animals</td>
<td>Limit these saturated fats - but <em>some</em> are needed</td>
<td>Zero fiber, vitamins* or essential oils. They compete with the good oils for nutrients and do slow down some essential cell functions, yet are part of others.</td>
</tr>
<tr>
<td><em>Red</em> palm oil is a great source of vitamin A &amp; E-like nutrients. Coconut is also healthy.</td>
<td>Safe for frying and slow to spoil. They cheaply add taste and calories</td>
<td>To absorb these mainly land-animal fats, we <em>increase</em> our production of cholesterol to make bile. Its re-intake from the bowel (if we lack vitamin C and fiber) is what raises blood cholesterol, especially the LDL type that becomes 'bad' when oxidized (if we lack vitamins).</td>
</tr>
<tr>
<td><strong>Trans</strong> (partially** hydrogenated) &amp; most deep fry oils.</td>
<td>Tasty but toxic</td>
<td>Factory-made hardened oils. Made from, and interfere with, the &quot;vitamin F&quot; omega-3 (and omega-6) oils. They also lower <em>good</em> and raise <em>bad</em> cholesterol. In nearly all store-bought baked goods made with shortening.</td>
</tr>
<tr>
<td>Sorry: 99% of commercial fries [see end of page] and 90% of chips, shortenings and margarines.</td>
<td>There's no nutritional excuse to hydrogenate anything - and many reasons not to [NEJM; '99-6-24]</td>
<td>About 40% of the fat in U.S. &amp; Canadian donuts, fries, store-bought cookies, crackers and margarines is <em>trans</em>. 1 donut + 1 fries = 10 g (0.4 oz) of toxic-<em>trans</em>.</td>
</tr>
<tr>
<td><strong>Butter</strong> is better than just about any margarine for several nutritional reasons [also in Europe].</td>
<td>Most research focuses on the danger of <em>trans</em> fats but not on the fact that <em>trans</em> is made from what was once called vitamin F, first and foremost of omega-3s. Not only do...</td>
<td></td>
</tr>
<tr>
<td>Foods to Limit</td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Dangerous</strong> transformed molecules are made in this <strong>partial</strong> process. <em>Full</em> hydrogenation makes less toxic saturated fats.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tip:</strong> if you see partial, hydrog., or vegetable shortening on a label: avoid! There are safe alternatives on the same shelf.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>they destroy the nutrient, they make it toxic! This double effect makes hydrogenation so detrimental: the nicotine spiking scandal of the food processing world, and probably even more deadly than its sister in the cigarette industry [some scientist should <em>publish</em> on this issue].</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>''Vegetable'' oil: corn, sunflower or undefined industrial types. The ''white'' - factory denatured-oils.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoid</strong></td>
</tr>
<tr>
<td>High intakes of refined omega-6 oils like soy, corn, sunflower, safflower, linola and cottonseed generate too much of one class of hormones. This can cause irregular heart rhythm, cramps and other health problems. Limited Unhydrogenated soy does little harm since it also has some omega-3. A new reduced omega-3 cross-breed <em>Soyola</em> may soon make soy as important to avoid as <em>Linola</em>.</td>
</tr>
<tr>
<td>If it simply says ''vegetable'' oil, assume it's hydrogenated, too low in micro-nutrients or too high in omega-6 polyunsaturates for good health!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flour (white - refined) and flour-made pasta. The more finely ground the flour and the more boiled [less <em>al dente</em>] the noodle, the higher the ''glycemic index'' ... not a healthy thing.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoid</strong></td>
</tr>
<tr>
<td>They lack essential nutrients, even after partial enrichment and are proven inferior to <em>whole</em> grain products. They are linked to increased heart disease [9-’99: The Nurses' Study]. Their rapid absorption causes fast changes in sugar/insulin balance - and eventually cell resistance to both = <strong>adult diabetes</strong> [100 million cases world wide, 15 of 16 of which are adult type]. Commercial <em>semolina</em>-based pasta is low glycemic but has about as much fiber as chocolate or beer. <em>Dried</em> egg noodles have dangerous oxidized cholesterol (Italian research).</td>
</tr>
</tbody>
</table>

http://www.health-heart.org/badstuff.htm (2 of 4) [1/1/08 6:02:37 PM]
<table>
<thead>
<tr>
<th>Foods to Limit</th>
<th>Moderation</th>
<th>Use the nutritionally superior and good-for-the-heart brown (whole) rice. Deficiencies in white rice lead to the discovery of B vitamins. P.S. Like starchy potatoes, also high glycemic index.</th>
</tr>
</thead>
<tbody>
<tr>
<td>White rice -the more &quot;whole&quot;, the better.</td>
<td><strong>Moderation</strong></td>
<td>The <em>fructose</em> half of sugar is a building block for cholesterol [and is a &quot;gluey&quot; molecule in your blood stream]. Zero fiber, vitamins or minerals. See Flour. Ironically, betaine, removed from sugar <em>beet</em>, is a magic key in lowering bad-for-the-heart homocysteine. ***Blackstrap molasses (especially) is a good source of calcium, magnesium, potassium and some B vitamins but it remains essentially sugar.</td>
</tr>
<tr>
<td>Sugar</td>
<td><strong>Avoid</strong></td>
<td>Avoid</td>
</tr>
<tr>
<td><strong>Dairy</strong></td>
<td>Not essential for adults. The jury is out deciding if its calcium actually helps build bone - probably not! Homogenation is another problem.</td>
<td></td>
</tr>
<tr>
<td><strong>Not everyone puts it in the avoid group but it's a food with complications:</strong> <a href="http://www.health-heart.org/badstuff.htm">NotDairy.com</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The more you eat of these foods, the greater the need to take supplements.
Foods to Limit

**Crisco Beats Butter With A Stick.**

*NEW!* ALL-VEGETABLE

**BUT NOT NUTRITIONALLY! THEY'RE TRANS-FAT STICKS.**

THE CORPORATIONS CONTROLLING THE WORLD'S MODIFIED FAT MARKETS CONSISTENTLY HIDE THE AMOUNTS OF TRANS, OMEGA-3 AND OMEGA-6 FATS, ALL VITAL CONSUMER HEALTH INFORMATION.

---

**3.6 grams of trans fat/portion!**

Frozen French Fries

**SHOESTRING**

NUTRITION INFORMATION NUTRITIONNELLE

PER 100 g SERVING (2/3 CUP) PAR PORTION DE 100 g (2/3 TASSE)
APPROX. 10 SERVINGS PER PACKAGE/ENVIRON 10 PORTIONS PAR PAQUET

<table>
<thead>
<tr>
<th>Energy/Energie</th>
<th>158 Cal/660 kJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein/Protéines</td>
<td>2.1 g</td>
</tr>
<tr>
<td>Fat/Matières grasses</td>
<td>5.3 g</td>
</tr>
<tr>
<td>Polyunsaturates/Polyinsaturs</td>
<td>0.1 g</td>
</tr>
<tr>
<td>Monounsaturates/Monounsaturs</td>
<td>1.1 g</td>
</tr>
<tr>
<td>Saturates/Satures</td>
<td>0.5 g</td>
</tr>
<tr>
<td>Cholesterol/Cholestérol</td>
<td>0 mg</td>
</tr>
<tr>
<td>Carbohydrate/Glucides</td>
<td>26 g</td>
</tr>
<tr>
<td>Sugars/Sucre</td>
<td>0 g</td>
</tr>
<tr>
<td>Starch/Amidon</td>
<td>20 g</td>
</tr>
<tr>
<td>Dietary fibre/Fibres alimentaires</td>
<td>2.0 g</td>
</tr>
<tr>
<td>Sodium</td>
<td>99 mg</td>
</tr>
<tr>
<td>Potassium</td>
<td>320 mg</td>
</tr>
</tbody>
</table>

**COMMENT:** "low in saturates" but if you add the poly, mono and saturate, you'll find 3.6g unreported trans fats per 3/4 cup of product. Commercial deep fry fat, or shortening, will *increase* the trans!
**Recommended Supplements**

Health is determined by the nutrients you happen to *not* get.

<table>
<thead>
<tr>
<th>SUPPLEMENT</th>
<th>HOW MUCH</th>
<th>WHY</th>
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</table>
| Vitamin E  | about 200 IU - type 'd', not 'dl. MIXED 'tocopherols' best. Relaxes arteries. **Always take in oil or fatty meal** - *AJCN: 1-2004* | **Antioxidant; protects blood fats; keeps cholesterol "happy". Prevents blood sticking, clots and artery damage. Like vitamin C, keeps blood and cell fats non-toxic.**

**Very important.** Take during "fattiest" meal.

Natural (d) type doubly effective --also consider: mixed "tocopherols" and possibly "mixed tocotrienols". Consider starting with lower dose. IF on Coumadin (warfarin), aspirin and/or high fish oil, use lowest dose: while preventing clotting, you could promote excessive bleeding.

As with the heart-healthy omega-3 oils, E's cardio benefits increase with time. The evidence for prevention is stronger than for E as a cure. |

| Vitamin C -- *not* Ester-C | 1/2 - 4 grams. At or above lower dose in health, higher in illness. | **Antioxidant. Works with and recycles vitamin E; Keeps blood vessels healthy; raises 'good' & lowers Lp(a) cholesterol; speeds up bowel, reduces length & severity of colds. Improves general health: point 2 in [31 Comments] and the [Linus Pauling Institute](http://www.health-heart.org/vitamins.htm).**

Anti-viral. At 4¢/g, best health bargain around. 99.9% of animals make their own in "mega" amounts as do all plants. We (monkeys and guinea pigs) do not. Very high doses are remarkably safe: ".itake as much as you like" [from the L. Pauling Institute's Top Ten, May 2000]. **Very important.** Nature's nitroglycerin, like arginine & vitamin E. |

| 238 references in *Am J Cl Nutr; June '99.* | If prone to oxalate type kidney stones, stay below 1 g, drink sufficient water, consider **vitamin B6**, low salt, low protein and high calcium foods. | |

Beneficial roles of very high doses in disease are probable but not well established.

C, easy to take for granted, hard to underestimate! |
| **The B's** -- No reported toxicity in doses mentioned. (B2), B6, B12 & folic acid will lower artery toxic homocysteine in anyone.  
*Take as a multi and not individually unless there is a special reason.* | | 
<table>
<thead>
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<tbody>
<tr>
<td>The B's are needed for 100's of processes in the body. Ultra high doses of some have anti-Alzheimer's, schizophrenia &amp; depression links.</td>
<td>They help digest fats and sugars, lower homocysteine (-best in higher than RDA amounts) and <em>reduce plaque</em>. Very high dose plain B3 niacin (about 0.7g, taken after each of 3 meals) is by far the <em>best &amp; cheapest</em> cholesterol &quot;modifying&quot; drug, raising HDL while lowering LDL, Lp(a), fibrinogen and triglycerides -<strong>must</strong> take with a daily <em>multi</em>. B3 is also good for your liver and brain.</td>
</tr>
<tr>
<td>Calcium (see minerals below) + Vitamin D, the <em>sun shine vitamin</em> (very important). I'd use calcium combined with magnesium.</td>
<td>1.2g Ca + 800IU D <strong>prevent bone loss and fracture at age 84!</strong> (here's your reference). Calcium is heart healthy: bone, boiled egg shell, oyster shell, dolomite, milk (may be) &amp; soy, and green leaf or cabbage type veggie (which also have the bone-building vitamin K). D = extremely important: fish liver [oil], fatty fish, high-sun on skin; science ref's: &quot;D&quot;-council &amp; Oregon State.</td>
</tr>
<tr>
<td><strong>Magnesium</strong> (for more and for potassium**, see minerals, below)</td>
<td>**Crucial for heart function; it, and potassium****regulate heart beat. Mg is needed for 325 reactions, not the least the lowering of toxic blood homocysteine. 90% of Mg is removed from refined grains and rice! Most Americans don't get the RDA of about 0.4 gr. <em>Very important and few side effects.</em></td>
</tr>
<tr>
<td><strong>Selenium</strong> (see minerals, below)</td>
<td><strong>Antioxidant, works with vitamins E and C. A lack causes</strong> heart disease &amp; cancer which are, in part, selenium deficiency diseases. <em>Very important.</em></td>
</tr>
<tr>
<td>CoQ10 (CoenzymeQ10, or ubiquinone)</td>
<td><strong>Essential for heart &amp; blood pressure; larger dose for serious heart trouble or cancer; vital when taking a &quot;statin&quot; drug.</strong> Body makes less when older (using most B vitamins and magnesium). Safe but expensive (1/100mg). Doubly absorbed when chewed in oily food.</td>
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http://www.health-heart.org/vitamins.htm (2 of 6) [1/7/08 6:02:48 PM]
Vitamins, description & good labels

| Vitamin F - with the F from Fat ... An old term that shouldn't be lost. α-Linolenic; omega-3 (ω-3 or n-3) type oil. Linoleic; omega-6 (ω-6 or n-6) type oil. | Omega-3: 1 to 2 tea spoons flax/lin or fish, or 2 table spoons canola oil [like: colza, rape, raap, kool, mustard], or soy -only if you can't find canola. Other types of omega-3 in fatty fish. Most people get too much n-6. | True vitamins: needed for heart-health. The only 2 fat types ("poly"-unsaturates) the body can not make itself. Omega-3 type alpha-linolenic is scarce in the Western food supply but key to heart, general and mental health. Fish oil works like α-linolenic, see: [Good Food] and point 1 in [31 Comments] and lowers triglycerides. Omega-6 type linoleic (corn, sun, saff, soy, cotton) is rarely lacking and is often excessive in relation to n-3 linolenic. Probably the most common "vitamin overdose" in Western diets at 2x-3x the ISSFAL maximum for most people. The cancer-link keeps on popping up in the high omega-6 research. |

*Minerals* are complicated as there are many and it *is* possible to overdose. Intakes depend on the degree of food processing and amounts in the soil. Plants *make* vitamins but must *mine* their minerals -if not in the soil, it won't be in the plant. Here's some info about their roles *not* necessarily as supplements- in health and disease.

<table>
<thead>
<tr>
<th>MINERAL</th>
<th>COMMON</th>
<th>OPTIMUM</th>
<th>HELPS</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selenium; vital: <a href="http://www.health-heart.org/vitamins.htm">US Nat. Inst. of Health</a></td>
<td>NE, SE and NW N-Am. &amp; North Europe, New Zealand, parts of China: under 50 mcg/day &amp; often insufficient. Southern Europe and a central N-S band in N-Am. seem to have adequate amounts in the soil. Large local differences (also: point 14 in Comments).</td>
<td>200-800mcg. The higher dose is above what is generally accepted as safe but may well slash the US cancer death rate by about one quarter [my guess] as well as the spread of AIDS [someone else's guess]. Zero reported deaths from supplements. Toxicity likely at 2500 mcg/d.</td>
<td>Cancer, heart disease, heart muscle, muscle, cataracts, blood pressure, some virus diseases, aging.</td>
<td>Some whole grains, fish, Brazil nuts, kidney and, more reliably, supplements Twinlab's <em>Daily One Cap</em>, a Best Buy, almost uniquely contains an excellent 200 mcg, see <a href="http://www.health-heart.org/vitamins.htm">Nuts, Bolts</a> for all sources.</td>
</tr>
<tr>
<td>Vitamin</td>
<td>Requirement</td>
<td>Source</td>
<td>Functions</td>
<td></td>
</tr>
<tr>
<td>------------</td>
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<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>Silicon</td>
<td>20 - 50 mg (not well absorbed)</td>
<td>5 - 10 mg or higher</td>
<td>Bones, joints, heart, skin, poor (weak) collagen</td>
<td>Unrefined plants and greens, whole grain, horsetail plant. Dietary fiber (oats, barley, and rice) and wine.</td>
</tr>
<tr>
<td>Chromium</td>
<td>30 mcg (US) often insufficient</td>
<td>200-400 mcg with selenium</td>
<td>Diabetes; helps insulin, cholesterol, acne, sugar use</td>
<td>Liver, grains, root veggies, green pepper.</td>
</tr>
<tr>
<td>Vanadium</td>
<td>10 - 60 mg often insufficient</td>
<td>100 mcg+</td>
<td>Diabetes; higher doses replace insulin</td>
<td>Shell fish, parsley, some processed foods, grains, beans.</td>
</tr>
<tr>
<td>Boron</td>
<td>1.5 mg often insufficient</td>
<td>3 - 9 mg</td>
<td>Bone health, diabetes, infection, arthritis</td>
<td>Water, fruits, veggies.</td>
</tr>
<tr>
<td>Manganese</td>
<td>2.5 - 4 mg often insufficient</td>
<td>5-15 mg</td>
<td>Bone, cartilage, heart, epilepsy, diabetes, cataracts</td>
<td>Unrefined vegetarian; not in animal products.</td>
</tr>
<tr>
<td>Copper</td>
<td>The only nutrient deficiency known to raise cholesterol. Without it artery structure is not made, or repaired!</td>
<td>0.7 - 1.5 mg often insufficient</td>
<td>Heart, arthritis, hair color, artery bursts (aneurysm, stroke), bad collagen, high LDL, poor clotting, Parkinson's</td>
<td>Nuts, grains, bracelets, supplements.</td>
</tr>
<tr>
<td>Zinc</td>
<td>Part of 300 enzymes, the nutritional screw drivers, hammers and pliers of our body (protein and fancy oils being the nuts, bolts and batteries, and glucose or fats the fuel).</td>
<td>7-14 mg Low intake is linked to 1.4% of the world's deaths! [WHO]</td>
<td>Arthritis, skin, infection, bad collagen, vision, prostate, diabetes, etc.</td>
<td>Shell fish, nuts, grains, beans, potatoes, fish and meat.</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>75-250 mcg or less</td>
<td>75-250 mcg</td>
<td>Organs, enzymes, cancer</td>
<td>Whole grains, beans, liver.</td>
</tr>
</tbody>
</table>
### Potassium** U.S. 
*(AIM; 2000-9-11): young adults: 3.4 g/d; high fruit + veggies: 8 - 11 g/d; urban whites: 2.4 g/d; often elderly or Blacks: ~1 g/d. 20% of hospitalized patients have low potassium.*

<table>
<thead>
<tr>
<th>Potassium** U.S.</th>
<th>2 - 5.6 gr (US RDA)**</th>
<th>Heart, heart failure, stroke, hypertension, cell function, sweating, diuretics, irregular heart beat**, muscle, fatigue, nerves, etc. etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>varies; often insufficient --in relation to sodium i.e. kitchen salt; lost in processing.</td>
<td>Try to get it from your food</td>
<td>Bananas, celery, fruits (prune, orange) and veggies (potato, broccoli, beets), meat, fish, salt substitutes. Zero in: white flour, sugar &amp; fats.</td>
</tr>
</tbody>
</table>

#### Sodium (salt) 
most often high or excessive

<table>
<thead>
<tr>
<th>Sodium (salt)</th>
<th>1/10th of potassium</th>
<th>Cell function, always sufficient; raises blood pressure</th>
</tr>
</thead>
</table>

#### Iron 
I'd only supplement -or use iron fortified foods- *if* a medical need has been established.

<table>
<thead>
<tr>
<th>Iron</th>
<th>16 mg (Sweden) often insufficient</th>
<th>10 - 15 mg don't overdose</th>
</tr>
</thead>
</table>

Blood; premeno-pausal women only; some infants, teens & elderly

Liver, nuts, grains & greens; vitamin C increases absorption

#### Magnesium (see above)
Mg has it's own amazing site [here](http://www.health-heart.org/vitamins.htm). Here's the US N.I.H. and [here](http://www.health-heart.org/vitamins.htm) a Medline heart disease link.

<table>
<thead>
<tr>
<th>Magnesium (see above)</th>
<th>300 mg (Sweden often insufficient; very important</th>
<th>500 - 1000 mg (at least half of calcium intake)</th>
</tr>
</thead>
</table>

Heart, heart failure, irregular heart beat, bone, PMS, cramps, fatigue, diabetes, stroke, diuretic use, etc.

Whole grains, nuts, soy, greens, root veggies & supplements

#### Calcium (see above)

<table>
<thead>
<tr>
<th>Calcium (see above)</th>
<th>500 mg (Belgium) often insufficient</th>
<th>1000 - 2000 mg (1-2g)</th>
</tr>
</thead>
</table>

Bone, heart, general, blood pressure

Bone, greens, grains, nuts & milk. Not in meats.

---

**Mineral needs** are complicated because each person's situation is unique while you or your health-advisor will never know which minerals were in the soil where your food was grown, how much was taken up, or by how much milling and cooking reduced their amount.

Each nutrient is important and wise supplementation with *some* minerals is a practical way to insure that you get the optimum amounts.

**POTASSIUM: ''It now appears quite possible that a lack of potassium in the coronary muscles may be the major cause of death from heart disease in humans'' [Adelle Davis, '72]. 95% of potassium is inside cells, as opposed to sodium, and magnesium keeps it there. Because raw plant-based diets are high in potassium & low in sodium, well functioning kidneys remove potassium faster than sodium. Disposal of vegetable cook-water, high salt or low magnesium diets, sweating and most diuretics can cause fatal depletions of potassium and/or magnesium. References: 1.) irregular heart beat: *JAMA*; '99-6-16; 2.) blood pressure: *JAMA*; '97-5-28; 3.) stroke: *NEJM*; '87-1-29 [60% of risk at 4.3 vs. 2.4g/d]; 4.) review *BMJ*; '01-9-1 [10 mmole = ~0.4 g].
<table>
<thead>
<tr>
<th>Supplement Facts</th>
<th>Excellent sample multi-take: at end largest meal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TABLETS ARE EASY ON SYSTEM</strong> Per 1 Tablet</td>
<td></td>
</tr>
<tr>
<td>Vitamin A (as Beta Carotene)</td>
<td>10,000 IU</td>
</tr>
<tr>
<td>Vitamin C (as ascorbic acid)</td>
<td>250 mg</td>
</tr>
<tr>
<td>Vitamin D-2 (calciferol)</td>
<td>400 IU</td>
</tr>
<tr>
<td>Vitamin E (as d-Alpha)</td>
<td>200 IU</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>40 mcg</td>
</tr>
<tr>
<td>Thiamin (Vitamin B-1)</td>
<td>25 mg</td>
</tr>
<tr>
<td>Riboflavin (Vitamin B-2)</td>
<td>25 mg</td>
</tr>
<tr>
<td>Niacin (Vitamin B-3)</td>
<td>25 mg</td>
</tr>
<tr>
<td>Vitamin B-6</td>
<td>25 mg</td>
</tr>
<tr>
<td>Folate (Folic Acid)</td>
<td>800-1000 is better 400 mcg</td>
</tr>
<tr>
<td>Vitamin B-12</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Biotin</td>
<td>25 mcg</td>
</tr>
<tr>
<td>Pantothenic Acid</td>
<td>25 mg</td>
</tr>
<tr>
<td>Calcium</td>
<td>try to get over 1200 mg</td>
</tr>
<tr>
<td>Iron normally; use &quot;no-iron&quot;</td>
<td>9 mg</td>
</tr>
<tr>
<td>Iodine</td>
<td>150 mcg</td>
</tr>
<tr>
<td>Magnesium</td>
<td>try to get over 500 mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>important 15 mg</td>
</tr>
<tr>
<td>Selenium important 200 mcg = good</td>
<td>105 mcg</td>
</tr>
<tr>
<td>Copper</td>
<td>1 mg</td>
</tr>
<tr>
<td>Manganese</td>
<td>3 mg</td>
</tr>
<tr>
<td>Chromium (= 0.12 mg)</td>
<td>120 mcg</td>
</tr>
<tr>
<td>Potassium</td>
<td>45 mg</td>
</tr>
<tr>
<td>PABA (para-aminobenzoic acid)</td>
<td>25 mg</td>
</tr>
<tr>
<td>Lutein</td>
<td>0.5 mg</td>
</tr>
<tr>
<td>Betaine (as Betaine Hydrochloride)</td>
<td>25 mg</td>
</tr>
<tr>
<td>Bioflavonoids</td>
<td>25 mg</td>
</tr>
<tr>
<td>Choline</td>
<td>25 mg</td>
</tr>
<tr>
<td>Inositol</td>
<td>25 mg</td>
</tr>
<tr>
<td>Lecithin</td>
<td>25 mg</td>
</tr>
</tbody>
</table>

**NOTES:** the "25" concept is for marketing and not for nutritional considerations. Last 7 not vital. Comments by E. Vos.

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**LEFT:** LINK TO **CARLSON LABS**

**BELOW:** LINK TO **GOOD INFO PAGE** OF **CENTRUM**

**MORE INFO** re SOURCES ON THE "NUTS & BOLTS" PAGE

---

**Centrum Silver**

<table>
<thead>
<tr>
<th>WAY better than nothing - certainly not the best.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GOOD:</strong> folic acid, zinc, calcium, magnesium and some others.</td>
</tr>
<tr>
<td><strong>POOR:</strong> B1, B2, B3, B6 &amp; vitamin C.</td>
</tr>
<tr>
<td><strong>DEFICIENT:</strong> selenium.</td>
</tr>
<tr>
<td><strong>EXCESSIVE for most:</strong> iron.</td>
</tr>
</tbody>
</table>

**America's most advertised brand**

**Comments by E.V.**

---

**P.S.** High selenium -100-200 mcg- is a benchmark of a great multi. 2008-1-1
You are only as healthy as your blood system

Blood transports and processes nutrients, fuel, oxygen, repair, defense and waste materials. Arteries are composed of muscle cells in a cartilage/collagen/elastin 'ground substance', and lined with sensitive skin cells. When blood passages get infected or block, harden, spasm or burst we have a stroke, heart attack, angina, cramp, pain, or loss of muscle, nerve or brain function. Optimum amounts of dozens of nutrients are needed to keep a happy blood system. Prevention is easier than repair. "Nutrition is Circulation" [R. Kunin]. Any body movement promotes circulation, including that of lymph, the stuff that bathes all cells and that outweighs blood by several times and that does not have a pump of its own.

GREAT BOOKS --but some older ones are not up-to-date on omega-3's.

McCully K - Homocysteine Revolution '97-'00 {THE #1 choice: The Heart Revolution}
Murray/Pizzorno - Encyclopedia of Natural Medicine '99 {the best handbook}
Ottoboni A & F - Modern Nutritional Diseases '02 {like this site: prevention}
Pauling L - How to Live Longer & Feel Better '85 {2006 cheap re-issue: wonderful}
Hoffer/Walker - Smart Nutrients '94 {mental health, general health & aging}
Erasmus U - Fats that Heal Fats that Kill '93 {a little master piece book, site}
Davis A - Let's Eat Right & Let's Get Well '70 & '65 {2 still relevant oldies}
Williams RJ - Nutrition Against Disease '71 {research; prophetic classic}
Haas E - Staying Healthy with Nutrition '90 {good. All about Heart Disease}
Dunne L - Nutrition Almanac '95 {simplest guide and a good reference}
Papas A - The Vitamin E Factor '99 {most complete guide; full E info here}
Simopoulos A - The Omega Diet '99 {health & omega-3; book info here}
Cooney C - Methyl Magic '99 {from homocysteine to betaine; book info}
Enig M - Know Your Fats '00 {anti-trans and rehabilitates the saturates}
Ravnskov U - Cholesterol Myths '02 {the science: site, links and book}
Kendrick M - Great Cholesterol Con -The Truth '07 {Sharp, funny [yes!]}
Graveline D - Lipitor Thief of Memory '04 {The Misguided War on Cholesterol}
Cohen E - Alzheimer's Disease '99 {Helpful, with best prevention options}
Hoffer A - Adventures in Psychiatry '05 {Schizophrenia; nutritional medicine vital insight}
Kauffman J - Malignant Medical Myths '06 {a book to make you healthier and wealthier}
WEIGHTLOSS / DIABETES / HEALTHY AGING:
Challem/Berkson/Smith - Syndrome X '00. High-carbohydrate, high-sugar, low-nutrient foods promote insulin resistance (adult diabetes): normal to high insulin with high blood glucose (both are toxic), high blood fats, high blood pressure, high middle body weight (central-obesity), premature aging, circulation problems and heart disease: the Anti-X diet. Read with the Whitaker book and consider "balancing" with the less stringent stages of the Atkins** book --and blend in some:
Willett W - Eat, Drink and be Healthy '01 {great, but passé (wrong) about omega-6 oils, saturated fat & cholesterol}, and mix in some
Whitaker J - Reversing Diabetes '01 {superb book / rather commercial website}

WEB SITES   --All links will open on new screens

Medline - Put key-words or names in search engine and click "go". Then select numbers, choose "abstract" and click "display" [to not see rats and mice: click "limits" and select "human"]. A medical research library at home! SUPERB conventional medicine consumer info at MedlinePlus. And here, type in a food and the USDA tells you what's in it.

Cholesterol Myths - Swedish MD; a must-read before going the drug route.
Thincs.org - Cholesterol Sceptics: low cholesterol, a misplaced priority.
Orthomolecular - Nutritional Medicine: cure & prevention. The place to start.
Nutrition Friendly Doctors [World-Wide] and U.S.A. and/or Canada.
Life Extension Foundation - Disease treatments, suggestions & products.
The Alternative Medicine Review - Publisher (Thorne), great stuff!
NutritionFocus - Reports, nutrients, herbs and info. Good site.
Arbor Nutrition Guide - Australian surfing of the nutritional oceans.
The Nutrition Reporter - Excellent web access & clearly written.
British Medical Journal - Once a most dynamic journal, now limited free access.
Cardiologist Colin Rose - Refreshing and non commercial overview of the real issues.
Am. Heart Ass'n - Diet & Drugs; Not practical and badly needs a by-pass.
Linus Pauling Institute - Institute doing research -and nutrition overview.
Dr. Atkins was a 'low-carb weight loss' and nutrition guy. His science about flour, sugar, glucose-fructose and supplements is excellent and his ideas about omega-3, homocysteine and refined-food mainstream. Atkins with its supplements and food pyramid can make a balanced nutritional mix and effective low sugar-'n-starch weight-loss program (1, 2) Like any 'diet', it has risks without the prescribed vegetables and vitamins. Polar opposite 'low-fat' vegetarian Ornish also uses high but excellent levels of supplements. 'Atkins' must be considered through all its 4 stages to see where it can benefit obesity and diabetes -and alleged risks of 'ketosis'. Ketones are made in the burning of fat and are a yardstick for results in his diet. Since body-fat doesn't just evaporate, Atkins calls ketosis: 'one of life's charmed gifts. It's as delightful as sex and sunshine, and it has fewer drawbacks.' Now there's a science project! Comparing 4 diets in 2007: Low-carb Atkins 'still' best for weight loss.
Blood Institute promotes drugs well beyond where the FDA, another department, allows drug companies to go: '.. if you have an LDL level of over 130 mg/dl [3.3 mmol/L], you will generally need [sic] to take medicine' This is a dangerous generalization not supported by science and one that promotes cancer, congestive heart failure and more if you use a statin. Note: when comparing regions in Europe, there are several where 10% less 'bad' LDL is associated with 4 times more heart disease. Explain that Mr. NHLBI ... and how to explain the 'exceptionally low' heart disease in this population with LDL at 186? Just one ugly fact disproves an entire handsome theory, remember Columbus? The site hardly deals with nutrition apart from avoiding fat and cholesterol, and 'unlimited' egg substitute***. Yet, blindly avoiding fat and cholesterol and following the USDA food pyramid will do little for your heart (see Harvard) as such thinking is rapidly becoming the flat-earth theory of heart disease --apart from being the very cause of adult diabetes since that pyramid has flour as its largest food-group.

For future historians, safely preserved, here is the 1994-2001 NHLBI / NCEP: if one parent has cholesterol over 240 (6.1 mmol/L), as of age 2 a child should have his cholesterol checked ... statins and sterols for baby? Then the NHLBI gives you the green light for brownies, fat free mayo [?], gelatin desert, fruit leather and turkey dogs [food clones..?], safflower oil for cooking [huh], tub margarine [see below], cheese- and cup cake, lemon wafers, bread sticks [so far zero fiber] and "ready-to-eat cereals often" [if that doesn't promote adult diabetes, nothing will]. Here's a jewel: 'Avoid fish oil pills because they are high in fat and calories'; let's hope so but apart from the fact that they would make you poor and smell like a fish before they would make you fat, they have omega-3s that prevent death by heart disease. While avoiding saturated fats and cholesterol per se won't kill anyone (since you make both of them), avoiding omega-3 oils surely will kill many (since you don't make them). ***For non Americans: egg substitute is colorized egg white with some vitamins to replace a few of the yolk nutrients.

The U.S. Margarine Manufacturers own a deceptive website called the HealthyFridge.org. These are the people who continue their century old practice of churning out hydrogenated (and thus low omega-3) margarines without honest trans and omega labels. Their National Spokesman is a heart attack victim and Viagra expert, football coach Ditka. Your fridge may well have margarine with only 0.5% omega-3 but 25% trans -and not the heart-healthy high omega-3 canola type used in Lyon and available in Canada. Even average U.S. tub margarine has about 15x more trans than omega-3. So avoid margarines -sorry coach
and, incidentally, why the switch from **Viagra to 'it works for me' Levitra** and why would anyone take advice from such poster-boy of arterial dysfunction.

95% of U.S. margarines and anything else hydrogenated doesn't belong in a Healthy Fridge [ISSFAL] no matter how smooth their websites. Coach Ditka and his handlers, play with *your* health: never mind our *trans*, the bad player is *their* cholesterol. All this, to mask a *trans*-fat doping scandal inflicted upon an unsuspecting world (sorry, coach, for being a bad-sport). Shame on that industry: informative labels and healthy spreads are truly cheap and easy to make!

**P.S. #1:** Hydrogenation may be called 'partial hardening' on European labels. In the U.S., 'zero *trans*' on the label may be a whopping 0.49 grams 'per serving'. This process is *much more harmful* than once thought according to the current science in *prostaglandins*, the COX enzyme directed, 20-carbon-oil-made hormones called *eicosanoids*; eicosa = 20 in Greek.

**P.S. #2:** In Europe most margarines have less *trans* but also excessive omega-6 *linoleic*, and food labels are even less informative than in the U.S. **In summary:** *partially* hydrogenated fat is hazardous to your health and industry websites suggesting otherwise are hazardous to your health.

Prevention through nutrition is vital since the alternatives (the drug, fat and cholesterol approaches) have essentially not slowed the later-in-life diseases. Such misfocussed thinking is fed by the drug, food, candy, margarine and medical industries. On the other hand, *Tufts* researcher Meydani: "Inclusion of 200 IU vitamin E along with 5-8 servings of fruit and vegetables... potentially reduces the risk of cardiovascular disease and improves immune function in later life" [**AJCN; 6-'00**]. Add to that a multi, whole foods and some omega-3 oil and you get The Nutrition Diet, the focus and subtitle of this website. Quoting another *Tufts* professor, Blumberg, at a 2001 conference about hospitalized patients: "[a] multi-vitamin is the most conservative thing one should consider." His concern was the universal multiple nutrient deficiencies in the elderly, possibly the group with most to lose from the inaction generated by the industry led debate. **Nov. 6th, 2007.**
**Why a Type 2 Diabetes Page in a Heart-Health Site?**

Well, both are related to nutrition and both can be prevented or helped by the same foods and supplements. **Type 2 diabetes is normally preceded by decades of slowly increasing insulin, blood sugar, and belt-size** (.. and it is always healthier to sit on your fat than have your fat sit on you). Early prevention is very effective but there come a point when insulin production permanently breaks down. Smart nutrition (and portion control) can first prevent overweight and diabetes, and therefore eventually heart disease.

Both conditions are epidemic with 1 in 13 Americans and 1 in 3 of those over age 60 developing 'adult' diabetes. *Most* will develop heart, kidney, nerve and blood vessel diseases for an amazing 1/4th of total health care costs! Other countries have similar increasing rates. Later-in-life diabetes (during pregnancy being a warning) is an eventual one-way track to heart disease.

What makes a diabetic? **Simply put: when your pre-breakfast blood sugar** (*plasma glucose*) **gets over 126 mg/dL or 7 mmol/L**. Another measure is when 2 hours after taking a dose of glucose the blood level is still over 200 mg/dL (11.1 mmol/L), with over 140 (7.8) starting to suggest a problem. Pre-breakfast 95 (5.3) is good, under 36 (2) is seriously low blood sugar, while above 180 (10) a safety-valve opens that sends glucose to the urine. To confuse anybody, the numbers changed from mg to the 18 times smaller mmole, they increase by 14% between 'blood' and 'plasma' in syringe samples -but the numbers for 'blood drop' and 'syringe-plasma' are similar. **However, it's the big picture that counts, not the decimal points of the reading.** This is one area where blood tests are important since serious organ and foot damage (!) can happen early.

In early-age 'type I' diabetes the body stops making insulin [see: Wikipedia] needed to process sugar and starch. *Type I* is about 5% of all diabetes. There is no cure and insulin, a protein, must be dosed by injection in proportion to sugar and starch intake. *Type I* can sometimes be prevented with vitamin B-3 in people with declining insulin -which can show years before irreversible damage [see ENDIT or here].

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http://www.health-heart.org/diabetes.htm (1 of 7) [1/1/08 6:03:48 PM]
Diabetes, weight and Heart Disease

In the now exploding 'type 2' diabetes, which develops in obese kids or at a more "mature" age [Non Insulin Dependent Diabetes Mellitus, NIDDM or maturity-onset], the problem is initially not a lack of insulin but body cells became insensitive (resistant) to its effects. Increasing amounts of insulin try to "push the gas pedal" but the system doesn't react (by taking fuel, glucose, into the cells).

In type 2, blood-sugar and (therefore) blood-insulin both become high which is a double problem.

This double problem is that:
1. High insulin changes excess blood-sugar into fat around the belly, and worse, it keeps it there. Insulin makes and keeps you fat;
2. High blood-sugar makes blood vessels and blood components 'sticky', slowly destroying your 'arterial tree'. Using frying temperatures when making meals makes that effect worse.

Both effects reduce blood flow to all areas of the body especially to the feet, eyes and kidneys. Fat, around the body or as triglycerides in the blood does nothing to promote blood circulation. Good circulation is 50%-of-good-health. This is why weight control, "shaking-up-the-fat" (exercise), a good multi-vitamin with minerals and extra magnesium, omega-3 [ω-3 or n-3] oils and high-fiber, low glycemic index foods are all-important. Unhelpful are omega-6 oils like corn, soy or sunflower while vitamin D works better than insulin drugs! High waist size (belt length, regardless of your height) with high blood triglycerides (fats), high sugar, high insulin and high blood pressure, all lead to ill-health. This group of symptoms is known as Syndrome X, the Metabolic Syndrome.

I remind you that this author is not a doctor and knows absolutely nothing about your specific situation. Keeping this in mind, here are some ideas that will help you see the global picture of diabetes (kidney, leg, eye and heart disease) more clearly.
1. **READ** two pieces of literature. First, the 2001 paperback *Reversing Diabetes* by Dr. Whitaker. His [website](http://www.health-heart.org/diabetes.htm) is very commercial but his science is truly excellent: a *vital* $15 investment. Second, read the [article (PDF)](http://www.health-heart.org/diabetes.htm) from the Nurses' Study by Harvard that found a **2.5 x** the risk getting diabetes is those eating most rapidly absorbed, low-fiber carbs.

The main 'offending' foods are: flour, boiled, baked or fried potatoes, *most* breakfast cereals and *the like* and noodles made from flour. Regular noodles made from semolina, gritty hard wheat core particles as in couscous, are low glycemic -- but also low in fiber and nutrients. Floury starches and carbs are high on the 'glycemic index' as they rapidly shoot glucose into your bloodstream for insulin to deal with, which eventually causes harm. P.S. Unlike some oils and proteins, no carbs are classified as 'essential nutrients'.

2. **INCREASE** fiber-rich vegetables and fruits that have not been processed much, beans and *partially whole kernel* grains (not finely ground) and omega-3 oils (flax, canola and fatty fish). Fiber, especially soluble fiber (gel or pectin-like fiber), is truly diabetes and heart healthy as it slows and regulates the speed of the uptake of foods--which is what diabetes control is all about. *All* agree about the major benefit of fiber -and it's cheaper than a glucose test strip. Every 10 g/day increase in fiber reduces diabetes risk by up to 30%!

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**Glycemic Index (blue) of common servings:**
- Most fruits: 1-4 g fiber; GI: 40-60
- Beans (cup, cooked): 5-14 g 35-50
- Broad(Fava) beans (cup): 9 g 110
- Large potato with peel: 6 g; 110
- Meat, eggs, fat & most dairy: 0 g low
- Most breakfast cereals: 0 g; 80-100
- Hot whole cereal: 5-10 g; 85
- Some bran cereals: 5-10 g; 40-50
- Donuts, regular breads: 0 g; 100-110

**GLYCEMIC INDEX TRIAL** (high index version of the same food)
- *Whole* grain barley bread 58 (as flour 100; like wheat flour bread)
- Semolina [grainy wheat core] pasta** 57 (ground as flour 100)
- Rice pre-boiled 65 (sticky rice 86)
- Whole kernel barley porridge 35 (same, barley flour 98)
- Whole lentils or red beans 36 (same, ground to flour 70)
- Whole white or brown beans 40 (same, flour 74)

*These foods were given to type 2 diabetics. Despite being *identical* in fiber and chemical composition, the 'less ground' more intact foods reduced the amounts of glucose and insulin by 30% and a blood clot factor (PAI) by 50%. A very important study in *Diabetes Care*.**
3. LEARN ABOUT low glycemic index foods and glycemic load. Not all foods release their sugars or starches at the same speed. The slow release foods, typically the least refined foods, have demonstrated benefits. Here is a full list of glycemic indexes. A large portion of a high glycemic index food creates a large glycemic load. Not good. The graph was simplified from *AJCN*, Feb. 2002. The 45 minute long blood sugar peaks, from 15-60 minutes, were identical but the presence of intact whole grain structure reduced the insulin that was triggered by 50% [1]. This lingering high "white bread insulin" lowered the 1.5 to 3 hour blood sugar to below starting levels. This causes cravings and jitters precisely because, despite of low blood sugar, insulin prevents you from using fat reserves to satisfy such energy craving. [And, logically, only sugar, flour, starch and maybe alcohol can fix such craving --but not fat or protein]. Remember: lingering insulin makes and keeps you fat, ratcheting fat into the cells --and then preventing its use for energy.

The good news about fat is that it never raises either insulin or glucose. This allows you to burn fat from food and from storage, if not swamped by insulin made for sugar or starch, so you lose weight. Carbs make you make fat especially when you have high-insulin, and regardless your starting weight (*AJCN*, Jan. 2003).
Protein raises insulin, as shown, but while up to ½ gets used like sugar, protein doesn't raise blood glucose. The only thing eaten here was 236 gr. (8 oz.) lean meat, providing 50 grams of protein. Similarly, also fructose (50% of plain sugar) has little effect on glucose but it raises insulin -and cholesterol. Notice in the last graph that type 2 diabetics have high fasting (morning) insulin. In type 2, the challenge is to keep insulin and glucose low. Yes, lowering carbs is safe and a valid option.

4. **DECREASE YOUR WEIGHT** if it is high: obesity leads to type 2 and heart disease. [Skinny diabetics, those not producing the fat-maker insulin, lose sugar-calories in the urine since they can't use sugar for fat or fuel.] ALL authorities agree with weight reduction benefits in type 2, as often blood-sugar returns below the cut-off point [and technically you're cured]. As fat-cells lose fats, there are relatively more insulin receptors active per unit of cell surface and the system works better. Moderate exercise (many benefits) and cutting down on (tasty and well-deserved) calories are ways to normalize weight. Easier said than done. Then there are changes in diet: try the wisdom in the books by Whitaker, Challem, Atkins and Willett (the 4 books in one frame in the links list). None of these books has all the answers but combined they provide a wealth of information about how weight loss can be part of a pleasant life-style. Low-carb Atkins 'still' best for weight loss. Another low carb high nutrient diet is Montignac. Obesity is stored fat, and you'll never lose fat if you over supply with starch, carbs and refined cereals...

5. **ABOUT DRUGS**... there are drugs that "raise insulin" [sic], make it work better or reduce blood-sugar by other means. In later stages of adult-diabetes [very high blood-sugar], injected insulin [at increased levels also a poison] is often added to drugs taken by mouth. On the surface this seems like good strategy as blood-sugar and therefore the blood marker HbA(1c) become more normal, for a while. This marker "A-one-C" tells how many "frosted" (sugar-damaged) red blood cells you have, evidently an important thing to reduce; less than 6% is normal.

The problem with drugs is that there are effectively no studies showing they actually postpone grief and improve survival. Many promising drugs and the patients on them are no longer with us. With drugs you can "normalize-the-numbers" to make the lab report look better but there are few studies proving that this delivers a long-term health benefit. Drug don't fix underlying problems, have side-effects and decreasing effects with time. Intuitively you would think that any drug that lowers blood-sugar [or cholesterol or blood pressure] should be beneficial.
but this is certainly not evident [UKPDS in *BMJ* '01-10-13: 854; changed into recommendations but further debated here]. Ask your doctor to explain this debate; it ain't easy for them either!

**NEJM Sept. 9, 2004**: the big new class of drugs in 20 years [with names ending on -azone (Avandia, Actos, other) increase weight and promote **congestive heart failure** [a 2007 editorial: 'not the answer'] ... while biguanide (metformin) and sulfonyl-urea (glipizide) **harden the aorta**; sulfonyl-urea increases **deaths**.

Later-in-life, type 2, diabetes becomes a hard to manage "condition" with much confusion and changing recommendations between individuals or expert groups. Mega-dollars are spent on and by each diabetic so the money interests are huge. Adding to the confusion, fundamental understandings (like the role of **inflammation**) are starting to emerge. It is a long way from studies to medical consensus and to supermarkets and restaurants --where the causes and solutions to diabetes and heart disease certainly lie. On a lighter note, there seems agreement (for people who are not driving, type 1, pregnant or alcoholic) that "...moderate **alcohol** consumption in the diet should not be discouraged", the benefit of a **drink-or-two**, and now **coffee**!

In California the **doubled** rate of type 2 diabetes in the 1990's was evidently **not** caused by a lack of drugs but, just maybe, by more low-fiber processed-foods [or by sitting in front of computers...]. But unlike your computer, you don’t want your food to be **fast**. You can slow down digestion with high fiber-foods without the loss of taste or food appeal (you'd never know the difference). About 30 g of fiber per day, about double current intakes and especially the soluble mucus-like variety, is one of the main keys to heart, blood-sugar and cholesterol health. And so we return to the apple-a-day concept... [3.7g fiber/medium size apple with skin].

The 2002 recommendations are [here](http://www.health-heart.org/diabetes.htm) but you'll find few solutions and the word "may" is used over 150 times. In fact, they *may* be wrong that you should eat at most 1 egg worth of cholesterol per day [if LDL-cholesterol is over 100 (2.6)] and eat about 10% of your energy as polyunsaturates (*never before* in human history...,*way* in excess of the **ISSFAL** safe upper limit, *and* a probable cause of type 2 diabetes as part of the **Israeli Paradox**). Nuts are not a good source of omega-3 oils, only walnuts are ... while avoiding saturated fat and cholesterol will certainly not prevent diabetes. Fact: **even saturated fat** -with carb avoidance- may be helpful!
The 'avoid cholesterol and fat' idea was a marriage-condition of the American Heart Association, an alliance to unify advice, yet fats used to be the energy source of choice for diabetics. Fat does not generate insulin or glucose so you can see why this was and fat per se does not cause obesity. Diabetes causes heart disease but heart disease never causes diabetes [this author in: DiabetesInControl.com about cholesterol]. Too bad for diabetes prevention that the ADA caved-in to the AHA about fats and the highglycemic index junk-cereals they endorse, like Cocoa Puffs & Count Chocula. A massive Lipitor trial also showed no cholesterol-lowering benefit in diabetics: Lancet 2003. On a positive note, everybody agrees that weightloss, exercise and high fiber intakes are good -- about 50g/day, now that's a lot of fiber [ensure your multivitamin has zinc].

Many groups suggest to follow your doctor's advice about drugs. This may be valid but only after you have both read and digested the book Reversing Diabetes that deals with the many benefits of the non-drug approaches. As in any such disease, why not keep copies of lab-reports (with MedlinePlus drug descriptions) and start a file on yourself. Knowledge is power, and unless you convince yourself about benefits, changes tend to be temporary while with drugs the slide continues. Jan. 1st, 2008. About the author.
SOURCES OF SUPPLEMENTS. There are many others in North America, few in Europe and elsewhere. Most are incomplete or of poor value. Here are some good products. This site gest no cut from any of them. Good luck avoiding the hype that infiltrates vitamin and supplement sales. 2 sample labels with comments at the bottom of Vitamins + page.

Mail-order world wide: Bronson 1-800-235-3200 or 1-801-756-5670 [Twinlab, the new owner]. Product: #93, a cheap no iron no frill, however low in selenium multi. Also good are C, #49, calcium/magnesium, #111, and selenium, #88. Their best vitamin E is #71 and CoQ10 is #342 -chewed with fatty food; always expensive. Also: Nutrition Warehouse 1-800-645-2929. Their multi #1122 or #1123 seems good; add selenium #1068, calcium/magnesium, C and E #1103. NOW has cheap C. U.K.: consider PatrickHolford and in Australia: GoldenGlow's Super One-A-Day. Cheap vitamin D, betaine and niacin.

U.S. Health-food store, Daily-One-Caps -click on Multis [contact for source]. The world's best multi for the price, partially because of the included 200 mcg selenium & 200 mcg chromium. Take "no iron" unless the need is diagnosed or probable. About U.S.$40-70 per year; most B's start at the 25 mg; B12 100 mcg [great], folic acid 800 mcg [good], beta carotene 10 000 IU [take no more], natural d type E 100 IU [a deal], C at 150 mg [good start]; zinc 15 mg, manganese 5 mg and copper 2 mg; also iodine and 400 IU D [vital], and some other good stuff. You might add: E -about 200 or 400 IU every other day; 'mixed' tocopherols are best, otherwise d type, and probably some C and certainly a 'calcium / magnesium + D' supplement [and CoQ10 if heart failure is a concern or are on a 'statin' drug]. P.S. Most vitamins especially capsules are best taken after your largest meal. Fish oil, however, stays down best when taken at the beginning of a meal. If you know of a similarly priced product in your area that is as complete, please e-mail.

Internet: Twinlab Daily One Caps, no iron VERY cheap [$19 to
Best vitamin types and sources; background info

$20/180 = 11¢/day] at these links VitaCost.com or Swanson.com  In a store, ask them to match 'the internet price' and often they will!

CarlsonLabs.com's Super 2 Daily is the Cadillac of multis; not the cheapest but very complete, including fish oil and excellent amounts of C, E, selenium and more (no iron). Here's their Super 1 Daily. Any company with the integrity NOT to sell Ester-C deserves a special mention; they seem to put their customer's health up front.

* Canada's best: Nu-Life has some superb multis at Loblaw's and elsewhere. Find stores U.S & Canada: tel (866) 583 0646 or for "Ultimate" (best: 50+) formula. Next best is Kirkland 'Forte Senior' at Costco.

* Canadian: Jamieson: Super VitaVim (info: most B's at the 30 mg level -9¢US/day; you may want to add 200 mcg selenium, some magnesium and possibly CoQ10 -mail orders to non Canadians only.

* Canadian: Swiss: Super Swiss One "50" (too much iron, no selenium but most B's at 50 mg -product 169003)- or "Vege", no iron and zero !] selenium -product 153302.

THERAPEUTIC DOSES OF SUPPLEMENTS If you want to 'improve' your cholesterol profile: NIACIN (mega-dose vitamin B3) after meals. 

Lowers: 1. "bad" LDL-cholesterol; 2. triglycerides; 3. fibrinogen; 4. Lp(a). It uniquely raises good HDL-cholesterol. There is a shown benefit on heart disease and overall mortality. Study use & use medical follow-up (per day: 4 to 6 pills of 1/2 g each). There are 2 effective kinds: pure = safe, very effective, very cheap ($50/kg at LEF.org) but for about the 1st week causes a brief harmless but impressive hot-flush (less if taken 15-30 minutes after a meal) and timed release = possibly safe, less flushing. Raising the 'good' cholesterol (protein) with exercise and moderate alcohol -combination therapy: running from bar to bar- or with a drug-dose niacin is clearly more important than lowering the 'bad'. Consumer Reports 3-1996: "Niacin. This vitamin is the cheapest and often most effective cholesterol lowering drug."

In fact it is by far the most effective HDL raising 'drug', the one 'risk factor' in the cholesterol department in women and elderly, if not in men, but it must be taken with a multivitamin also.

To fight colds, flu & infections: High dose vitamin C (4 - 20 grams or more). You will still catch colds but you will probably remain mobile and certainly be better faster. Also anti-cancer link at higher doses of C, selenium, CoQ10
Best vitamin types and sources; background info

(about 100-350 mg), lots of carotenoid containing foods, beets and vegetarianism; study use.

To improve special conditions: In some cases higher than suggested doses of some of the B vitamins may be beneficial. Comments to be added later.

Jan. 1, 2008
The Master Corrosive, Homo-Cysteine (the 21st amino acid, the Evil one)

Homo-cysteine, a toxic amino acid, corrodes cysteine the shape and function giving 'sulfur cement' of our protein structure and machinery. Proteins are necklaces made from 20 different amino acids, folded into precise shapes. The sulfur in one of the 'beads', cysteine, does much of the folding. Cysteine is thus fundamental to prevent protein aging, and as goes the expression, all roads (of research) lead to Rome, ironically, home of the 'Cysteine' chapel.

Sulfur vulcanizes liquid latex into rubber shapes and sulfur acts similarly in structural and working proteins. That sulfur is part of the 3-carbon cysteine, made from the 4-carbon homocysteine, itself only made from the 5-carbon essential amino acid methionine [thio means sulfur, meth means a 1-carbon atom group like methane, natural gas, and -ine stands for protein, nitrogen or amino, like ammonia].

Requiring most B-vitamins, the '4' is recycled back into methionine or turned into 3-carbon cysteine. Homocysteine is even more toxic when it forms a high-energy 'Evil Ring', a 'Lethal Lactone' looking for proteins to corrode with its sulfur and oxygen, opening at x-x in the picture. When homocysteine 'thiolates' a short-living protein like insulin with 51 amino acids, of which 6 are cysteine forming 3 sulfur 'bridges', we simply make new. When it corrodes the protein of LDL-cholesterol droplets that lives 2.5 days, things get serious. Homocysteine makes it a Trojan horse and affects its function. However, if corrosion is to a life-long protein with 380 cysteines like micro-fiber fibrillin, the damage can be artery fatal, as in Marfan syndrome and homo-cysteine-uria.

Because 'straight' homocysteine can fold back onto itself, if it would wind up in a protein during synthesis it could cleave the protein. Thus, it is removed .. but in that reactive ring shape --doing damage 'thiolating' the cell and surrounding structure.

So, what's to corrode in an artery?
Well, I like to think of arteries as a thick multi-layer of muscle cells sandwiched between 2 structural layers. Through the outside layer come 300 capillaries per square millimeter feeding the central muscle cells. On the inside is a cell-hostile layer of just structure. There are basically 3 materials: collagen, elastin with its fibers (about 18, all proteins) and proteo-glycans (stuff also found in cartilage). Here it gets interesting. Most of these 3 structural families can be life-long and all are corroded, poorly made or poorly repaired in the presence of that 'Evil sulfur ring'. The 3 structural families are:

1. **Collagen**, bundles of 3-strand rope stronger than nylon of which the ends during assembly are kept from unraveling by cysteine sulfur 'bridges'. The ropes then are interconnected by OH-lysine 'amino' bridges that cannot be made when homo-cysteine is either present or when it has destroyed the protein (lysyl-oxidase) making this 'glue'. Copper and vitamins B6 and C are also needed for this 'rope glue'. In bone, calcium builds along this rope, in artery the rope keeps it from ballooning under pressure.

2. **Elastin**, an amazing 'rubber' NOT vulcanized by sulfur but by the above mentioned OH-lysine bridges, here called desmosine x-links. Again here: high homo-cysteine, no copper or vitamins B6 and C, no bridges. This stuff is so tough, it survives a week-long bath in hot acid or alkaline. It is secreted and then assembled into life-long 'apartments' by the fragile muscle cells, protecting them in multi layer (laminae) rooms with windows (fenestrations) and elastin frames and curtains. Without such 'happy homes' muscle cells may wander into the inside layer of the artery where they [and the artery owner] come to grief. Similar to long-living collagen, elastin's half-life is 70 years (the good news) but the rest has to be maintained or made anew!

3. **Proteo-glycans**, a family of water filled 'compressive' and 'chemical storage' molecules of arteries and joint cartilage. It has 'di-cysteine' sulfur bridges in a 'core-protein', and bottle brush like arms made from glucosamine and chondroitin sulfates. That is the stuff that works for joint pain and repair. Homo-cysteine can damage the protein and add excess sulfate to the glycan (sugar-like) arms, affecting function and making it attract LDL droplets that should not be there.

**Lowering homo-cysteine**
Why arteries fail -- treating the long-term corrosives: homocysteine.

When methionine gives up a 1-carbon methyl group [-CH3] to one of about 100 enzymes (protein machines), it turns into that temporary toxin. Strategies:

First, eat foods with methyls, like eggs, liver, soybean lecithin and foods with betaine (trimethyl-glycine, TMG) such as wheat bran, germ and spinach. Eating such 'high choline' foods (including beans, rice, peas, lentils) we don't waste methyl from methionine for non vital roles. Insufficient (B-vitamin regenerated) methionine and DNA looks like if radiated by X-rays, says Bruce Ames. Think: cancer, birth and pregnancy problems (spine, harelip, clubfoot, preeclampsia, other).

Imagine that most artery (heart) disease, cancer, Alzheimer's, bone and joint disease does not happen when you keep your lifelong homocysteine under SIX [6 µmol/L]. This theory of healthy aging has not been proven wrong, uniting all roads of research. When all their road signs read Rome, it may be wise to heed their advice. When your car or proteins are damaged by corrosion, can a 'car'diologist, blood pressure or cholesterol drug really restore youth?

Third, coffee (sorry), smoking, mental stress, high-dose niacin (to raise the 'happy' HDL-cholesterol) and drugs like fibrate and methotrexate raise homo-cysteine. In each case a multi-vitamin as described here reverses that corrosive increase.

Know your homo-cysteine

That magic number of SIX is found in 15 year old U.S. males and 22 year old females since folic acid was added to the flour supply. Homocysteine was '22' in over 90 year olds near Boston and in 24 year olds in New Delhi where the common foods have essentially no folic acid and vitamin B12. Seven cents per year would add folic acid, B12 and vitamin B6 to the flour supply. This would drop homocysteine by half. Instead, a monumental heart disease epidemic in India and other countries where micro-nutrients are under supplied is under way. Massive. Less than $0.50 per year is the world-price to replenish required amounts of most micro-nutrients. Scientists argue and politicians don't act while Rome burns!

It's 'genetic' is a way for experts to tell you they don't know, and genes can't explain epidemics anyhow, but in homocysteine genes do play roles in about 10% of us. Women have life-long exposure to homo-cysteine 10-15% below men and get heart attacks 10
years later in life. You can't change your genes or gender and may never know your homocysteine level so taking a high 'potency' multi-vitamin + mineral supplement is brilliant prevention, even helping 'bad genes' and leveling the gender gap for men. Such 'anti-rust' supplements slowly repair existing damage resulting in 25% fewer strokes and, in stroke victims, an amazing 80% fewer hip fractures by improving collagen quality! Nutrients nourish reactions, drugs don't. When homocysteine is over 'six', you're under nourished for your genes and long-term health.

Our defenses against homo-cysteine

Our defenses: first, we sacrifice about 20 grams per day of blood proteins that bind homocysteine, *albumin* and *hemoglobin*. Next, we have *Para-Oxo-Nase*, PON. Like a sister protein *BLH* but that works within the cell, PON detoxifies the 'lethal lactone' formed whenever cells make proteins in the presence of homocysteine. PON travels outside the cell with the happy HDL-(good)cholesterol protein, the cleaning machine for oxidized fats and toxins!

**Homo-cysteine is not alone**

*Homo-cysteine corrosion* starts early and targets sulfur in proteins as well as the 'free' amino of their lysine. Excess blood sugar in diabetes also generates toxins attacking lysine as well as the aminos of arginine, two component vital for structure and function. One such toxin is glyoxal (C$_2$H$_2$O$_2$), also made by frying temperatures. Now we have two types of corrosives teaming up to destroy proteins in arteries, capillaries and finally organs and bone. While *homo*-cysteine is controllable by B-vitamins, blood sugar is made from sugars and starch and the more rapidly they are released from refined or cooked foods, the worse diabetic control becomes. In diabetes, a measure of sugar protein damage is 'glycated' hemoglobin called HbA(1c). When proteins are degraded by thiolation and glycation, so is their owner. Damage prevention is key since repair is never easy. The story is more complex but these are the basics!

**Homo sapiens is alone**

We're alone in the animal kingdom using fire and electricity and naturally getting athero-sclerosis. We poison rabbits with cholesterol and remove genes from mice as *mouse models* to study what anyone near a food store does 'naturally'. Big fish eat little fish, raw and whole but we deep-fry fish fillets, tasty nutrient disasters! For starters, *anything* we do to food destroys folic acid and B6, anything. U.S. heart deaths started dropping when vitamins were added to breakfast cereals in the 1960's and the decline *trippled* after 1998 when folic acid fortification became mandatory; *more so in stroke deaths*. High dose multi-vitamin / mineral pills help us back to micro-nutrient levels of our animal cousins. Add omega-3 oils (canola, fish) and some magnesium, in a calcium + vitamin D combo, and long-term heart health may be a reality.

More about benefits -- and with thanks for critique to Drs. Genest, Kauffman, McCully and Rose.

- ARTERY DECLINE: CHEMICAL CORROSION, NOT THE CLOGGING OF A DRAIN PIPE -

Over simplified best theory. Arteries walls are a muscle layer sandwiched between 2 structural layers. Lack of B-vitamins causes excess homo-cysteine that dumps its sulfur onto the 'cartilage' of the inside layer (the proteo-glycans of the intima), unravels collagen 'cables' and 'crumbles' rubbery elastin. This 'excess sulfation' helps trap LDL's cholesterol, and then calcium, as in stage 4 lesions shown below and where finally the muscle layer, the media, is infiltrated. Elastin-network 'crumbling' in the media frees muscle cells that move and destroy artery architecture. Crumbled elastin 'loves to' accumulate cholesterol and calcium. Homo-cysteine degrades the shape and thus function giving cysteine sulfur bonds in your life-long proteins*. It also promotes clotting and inflammation (Il-8). B-vitamins with vitamin C, copper and zinc prevent such damage and repair some of it. Incidentally, excess sugar (glyoxal) in diabetes damages elastin and collagen in a very similar manner. [homo-cysteine + response-to-LDL-retention theories: CVD as a 'sulfur disease'. *) Analogy: liquid latex is vulcanized into the shape of a tire by sulfur bonds; homo-cysteine degrades such sulfur bonds in our permanent structural proteins.]

![Image of artery structure](http://www.health-heart.org/WhyPDFpage5.htm)

'Marinate' an artery for 5 days in hot acid and only elastic tissue is left! Homo-cysteine has special ways of slowly degrading and 'unraveling' this fiber reinforced elastomer architecture. Not good.

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*Analogy: liquid latex is vulcanized into the shape of a tire by sulfur bonds; homo-cysteine degrades such sulfur bonds in our permanent structural proteins.*
THE ORTHODOX APPROACH

The American Heart Association suggests in general not to take supplements, to limit saturated fats, and to eat less than 300 mg cholesterol per day. However:

1. It has never been shown that not taking supplements improves health, or helps prevent heart disease, or any other disease for that matter.
2. In the real world, very low-cholesterol NCEP step 2 diets fail to significantly raise good or lower bad cholesterol in high risk people (N Eng J Med.; 98-7-2).
3. Many foods with cholesterol (liver and eggs) have key vitamins, proteins and other nutrients.
4. Groups can have 4 times more heart disease despite 10% less 'bad' cholesterol ... while over age 65, cholesterol is no risk-factor anyway (low cholesterol is!).
5. Low saturated-fat diets may be dangerously low in vitamins A, E and omega-3 --while some saturated fats (butter and coconut for example) may well have health benefits.
6. Benefits of drug-based prevention are poorly documented and results uncertain:

Two classic studies:
1. After 2 years most (75%) of the not-treated patients "remained free of major cardiac events" but only 57% of those told to avoid animal fat, dairy, butter, eggs, fried food and cholesterol but given olive oil, and only 52% of those on the same restrictions given (omega-6) corn oil. Conclusion: ...under the circumstances of this trial corn oil cannot be recommended in the treatment of ischaemic heart disease." [Br Med J; June 1965 (1): 1531-3].

Predictably the corn oil group had less cholesterol but little good that did! While this trial clearly suggests harm, it proves with 99% probability the lack of benefit of these dietary changes [...and of low cholesterol levels per se].

2. The large U.S. "Veterans Trial" (corn oil) found

One sad example of medical prevention involved intensive cholesterol and blood pressure lowering drugs and 15 doctor visits over 5 years. Five years after the trial 50% more treated men had died (67 vs 46) and 2½ times more cardio-deaths had occurred (34 vs 14).
slightly less heart disease wiped out by **doubled cancer** deaths (58.4 +/-0.6% survivors after 8 long years; *Circ.*; 1969 (40): Suppl. II and Pearce and Dayton in *Lancet*; '71: 464-7). 94 out of 100 similar studies would find more cancer after 8 years --which is more "cancer-causing" than smoking for 8 years!

There is no benefit in failure so there were no subsequent high-linoleic "**omega-6 polyunsaturate**" trials. Corn, soy, sunflower, safflower and cottonseed oils all have between 51-75% linoleic.

The **omega-6 / cancer link** reappears regularly, as in the "**Israeli Paradox**": this country's very high omega-6 (soy) and low animal fat intake should produce little heart disease but instead there are respectively 1.5, 2.3 and 3.4x higher rates of diabetes, heart disease and cancer in Jewish versus non-Jewish Israelis. P.S. Omega-3 studies with fish or canola do have happier results.

The cholesterol-focused approach is dangerous (except possibly in about 0.3% of people with genetic problems -a group worse hit by the 90 year old epidemic). The drug and care-giver industries promote the idea that lowering cholesterol, using "vegetable" oils or low-fat foods (high in sugar and starch) would be beneficial but their science is, at best, shaky.

The focus of the AHA and AMA is to raise "**good**" and lower "**bad**" cholesterol. This tide is slowly turning, even at the AHA: when its Dr. Sixsmith was asked on the Nov. 10 '99 NBC Today show if people should take a multi, her answer was: "Absolutely." The purpose of life is life and the content of life is time. Can you afford to wait .. ?

http://www.health-heart.org/causes.htm (2 of 7) [1/1/08 6:04:42 PM]
For sure, cholesterol, blood pressure, adult diabetes and impotence are important as wakeup calls. Yet, by "normalizing" the numbers with drugs one masks the symptoms without fixing underlying problems. Statin drugs, for example, slow the bicycle by (1) putting a brake on one of the wheels and (2) by reducing the "battery acid" [CoQ10] in the energizers of all cells, including those of the heart muscle ... think: muscle pain or (congestive) heart failure.

HOW ARTERY DISEASE STARTS & HOW TO AVOID IT

Modified Morrison/Willis/Stone/Pauling/Rath/McCully/others --
Heart Disease as Micronutrient Deficiency and Artery Repair Mechanism

"High cholesterol" doesn't explain blood vessel diseases as most people with heart disease have "normal" cholesterol levels (BMJ; March 7 '98).

About survival: ". . .odds ratios [risk] for total mortality were heterogeneous [mixed], generally failing to support the value of cholesterol reduction." - AmJEpid; March 1 '99 and points 20 and 21 in 31 Tips & Comments.

While some cholesterol related factors do play roles [low "good" HDL and LDL made "bad" by containing oxygen damaged cholesterol or fats, homocysteine or clotting protein Lp(a)], any lowering alone of cholesterol has made no dent in early heart disease.

The "bad cholesterol" concept is truly misleading. The "good" cholesterol particle HDL is beneficial and impossible to "corrupt" but its larger sister, the LDL globule, can be corrupted to which your arteries take offense. All these "corrupting influences" can be minimized with the proper foods and supplements, even or especially so if your genetics are not on your side.

The best indicator for most people in the cholesterol department is a high ratio of total to HDL cholesterol, over 9 being high risk and below 4 being best -Criqui/Golomb, AJM 1998. Total cholesterol 240 (6.2) with HDL 40 (1.03) would give you a ratio of 6.

Niacin -about 2 g/day- is the most effective agent to shift this ratio by raising the good HDL and (with vitamin C and L carnitine) will lower Lp(a) while the multi lowers the homocysteine in your LDL. Avoiding dried milk and egg-powder containing foods or eating anti oxidant rich foods reduces the load of oxidized cholesterol. All this helps this 'bad' cholesterol emulsion particle LDL become beneficial again.
Following is a nutrition oriented theory, based on past and ongoing research, about the basic causes of heart & blood vessel diseases: [the 'why' page has more on the basics]

1. **Most blood vessel problems start with inflammation [latin: "-itis"] and repair mechanisms**, such as artery wall thickening (hardening, atherosis, sclerosis --slow processes) and blood clotting, a fast process, from hours to many days.

2. **Repair mechanisms activate** when arteries are weakened by **infection**, by **free radical attack** (due to low antioxidant intake, smoking, or by your immune system) and by **life-long or periodic low vitamin C**. However, MOST IMPORTANTLY, it is **corrosion attack by homocysteine** on the structural proteins of the artery wall due to refined diets low in many nutrients. SOLUTION: a 'high vitamin B' multivitamin with 1 mg copper and some extra vitamin C. In very high homocysteine, a few grams of betaine is useful. Homocysteine damage is called **thiolation** which is incredibly similar but overlapping damage to what is called **glycation** damage found in diabetes from excess blood sugar. Thiolation damage starts at or before birth, glycation damage rarely does and may be more repairable.

3. **High vitamin C lowers infection and inflammation** (viral & bacterial) and, as said above, maintains strong vessel walls not needing repair. **Vitamin C helps make the mortar** of the structural cement (connective tissue or ground substance) between cells, that breaks down in scurvy, a condition with internal bleeding and tissue degradation. This connective tissue is the elastic and collagen fibre and water filled mesh 'cartilage' that regulates nutrient access and that supports and positions artery muscle and lining cells. **Vitamin C is also the recycler** of vitamin E which shields cells, fats, cholesterol and LDL from oxidation and it's a relaxer of arteries.

4. **Long-term or periodically low vitamin C** weakens this connective tissue (made of collagen, elastin and 'cartilage proteo-glycans') which then allows blood to enter the artery walls, thickening and hardening them with repair and clotting materials, with calcium and with cholesterol crystals. Muscle cells then multiply inside the connective tissue to strengthen the wall. Such thickened artery walls increase the risk for stroke and heart disease --**NEJM; Jan. 7 99**. Chondroitin (4-sulfate)
Causes and Solutions to Heart Problems

cartilage supplements have been shown to similarly benefit heart-health (Morrison / Schjeide, 1985).

5. **High Lp(a)** (a repair protein working like "radiator-stop-leak", uniquely developed in non vitamin C producing primates, & piggybacked to LDL) and high (clotting) fibrinogen are risk factors, as are most clinical inflammation and repair indicators (more damage and inflammation: more repair, more clotting (ex: *Circ*; 00-9-5: 60% more risk in highest 1/3rd of Lp(a)-).

6. **Vitamin C & niacin (B3)** reduce inflammation (C-Reactive Protein - where B6 may also be helpful- *Circ*; '01-5-12 & *Circ*: March 2002: inflammation, a great scientific summary). "C and B3" also lower the production or need for repair Lp(a) and alcohol lowered Lp(a) in some studies -- *BMJ*; 98-5-30

7. **Oxidized fats & oxidized cholesterol (only)** are toxic to cells and degrade LDL, generating immune and repair response & adherence of LDL to connective tissue components. This is avoided by a good diet and by the taking of supplemental antioxidants (carotenoids, C, the vitamin E family, selenium, CoQ10, others).

8. **Amino acids lysine and proline** possibly dissolve Lp(a) based repair clots in arteries (best sources: wheat germ, oats or yoghurt, and eggs respectively). **Arginine** makes artery relaxant and blood fluidity factor nitric oxide (same sources + meats).

9. **Anti-inflammatory** aspirin (very low-dose) and all omega-3 oils (fish, canola, flax) work like vitamin C to decrease the level of vessel repair mechanisms. They and vitamin E also have anticlot (thrombosis) and blood fluidity roles (Vitamin E reduced circulation related leg amputations by 90% --in a study by Dr. Knut Haeger, -*Vas. Dis.* 12-68:199-213). Omega-3 oils decrease sudden cardio-death caused by irregular heart beat, as do potassium and magnesium foods.

10. **Most harmful effects described above** as well as high-insulin(-amyloid) and high-glucose caused vessel damage in adult diabetes [high glucose slows vitamin C use by cells] are prevented or improved by appropriate nutrients and supplements. From a historical series of studies by Dr.

http://www.health-heart.org/causes.htm (5 of 7) [1/1/08 6:04:42 PM]
Causes and Solutions to Heart Problems

G.C. Willis: "Massive doses of vitamin C may be of therapeutic value in the treatment of atherosclerosis and the prevention of intimal haemorrhage and of thrombosis." (CanMAJ; 7-'53, 12-'54 & 4-'55 - copies upon request). Benefits of C in heart disease and deaths were found 40 years later in the massive NHANES study on typical U.S. adults (Epidem; May '92).

Artery disease is usually, but not always, a very slow process (loss of function, angina, congestive heart disease, claudication, impotence).

A heart attack and most strokes start with sudden vessel obstructions by a piece of plaque or blood clot. In clotting and plaque break-away, tiny flat platelets become round balls of "velcro" that inter-lock using sticky fibrinogen "rope". Then the vessel constricts!

You want your artery muscles as relaxed, responsive and flexible as possible, permitting blood flow. You also want the blood itself as liquid as possible and to only clot in the case of a real injury or cut. Here are some examples about reductions in deaths in high risk groups on a low-dose of the anti-clot drug Coumadin/Warfarin: Circ; July 11 2000 and ArchIMed; Sept 11 2000.

Omega 3 (fish, flax & canola oil) made hormones, ultra low dose aspirin, vitamins E, C and niacin decrease the tendency to make the clots that lead to sudden (heart, leg, lung & brain) obstructions, before, during and after heart attacks.

In a pending heart attack, and while waiting for an ambulance, I would first chew some aspirin in water, and then take some vitamin C, E, flax oil and niacin (all of these are anti-clot and blood flow promoting).

I would also consider some magnesium if I could be low. Preventive heart arrhythmia regulating plant (maybe fish) omega-3, potassium foods and magnesium supplements (and after heart attack intravenous Epsom salt) appear safe in most people.

You would want to study if these data might apply to yourself -but these are life threatening situations where emergency medicine is your main recourse. Hopefully the information in this prevention aimed website helps you lower
your chances of needing such care. Jan. 1st, 2008
1. About omega-3's: "...relatively simple dietary changes achieved greater reductions in risk of all-cause and coronary heart disease mortality .. than any of the cholesterol-lowering studies to date. This is emphasized by the finding that the unprecedented reduction ... was not associated with differences in total cholesterol." This is from a landmark editorial in Circulation about the 70% (!) reduction in deaths in those given 2 table-spoons of canola oil per day, most as a non-hydrogenated margarine given to the family. One measly tea-spoon of flax (linseed) oil has as much omega-3 (alpha-linolenic). Flax, a unique nutritional power seed.

More about this Lyon Diet Heart Study and the oil that 'prevents' 75% (!) of heart attacks is in Lancet 1994: 1454-9, AJCN; 1995: 1360S-6 and Circ; 1999: 779-85. Read the full data [it's a little tough] and you'll agree that this regimen is best described as "The Canola Oil Happy French Cuisine". Canola (rapeseed) is cheap. Cold pressed low-refined canola tastes better than English-walnut oil, another rare source of omega-3. Canola may well lower the risk for stroke, and there was also much less cancer in the Lyon canola group. More recent evidence: 75% fewer heart attacks in tropical diet low-fish intake Costa Rica: "important protection against cardiovascular disease" at the top intake of plant-based omega-3.

Just a few grams of omega-3 a day prevents irregular heart beat [arrhythmia] and decreases inflammation and promotes blood flow and helps keep a by-pass open and protects you after a heart attack. Omega-3 from fish oil safely lowers the need for pain killers from Aspirin to Celebrex, and they slash 'triglycerides' (high blood fats). Imagine: 2 grams/day of fish oil after heart attack: 20% fewer deaths and 45% fewer 'sudden' deaths (GISSI trial). Omega-3 is the rediscovered half of what used to be called vitamin F -with the F from Fat. It takes omega-3 to balance the other half of vitamin F, the omnipresent omega-6 from soy, corn, sun-, safflower and cottonseed, Linoleic Acid (LA). Polyunsaturate has become synonymous with omega-6 only, which now appears to be part of a health disaster in heart disease, diabetes and cancer, especially breast cancer, excessive blood clotting and immune system problems including asthma. Making things worse since 1911, hydrogenation trans-forms unsaturates and messes with their vitamin or structural roles and raises bad-boy Lp(a). It preferentially zaps the most precious oil of all, omega-3. Virgin olive is a healthy oil but a poor source of omega-3.
Saturated fat, 40% of grey matter brain-fat, gives anchor and structure. Mono unsaturated (olive, canola) has molecules with 1 rigid 60° bend, 2x unsaturate linoleic (corn, soy) has 2, alpha-linolenic (flax, canola) 3, and EPA and DHA (fish) have 5 and 6 such bends. The 3, 6 or 9 with the letter omega is the location of the first bend from the fatty end. Factory partial hydrogenation straightens these "functional-bends", leaving an oil unsaturated but with toxic 'trans' kinks. All fats are mixes of various fatty acids from 4 to 22 carbons long. Health depends on the length and the number and place of the 'cis' bends.

Fats: carbon chains with a fat end on one side, an acid end on the other

10 to 12 carbons (short): saturates found in coconut and palm-kernel oils (50%), in breast milk fat (10%) and in butter fat (5%). Not made in people except for baby. Anti-virus, antibacterial and energy roles; easy to digest.

16 carbon saturate: palmitic acid, made in our bodies (with the aid of insulin) when we eat excess sugar or starch [as do cows, pigs, poultry, etc.]. We can stretch this 16 to an 18 carbon saturate and make mono [not poly] unsaturates out of either, like the ones dominating in olive, canola, and in "peanut, pork 'n poultry".

18 carbon polys: the "essential/must-eat" polys: omega-6 linoleic (always excessive) and omega-3 alpha-linolenic (rare and beneficial; good mixes in canola & flax).

20 carbon polys: the omega-3 [EPA] and omega-6 [AA] unsaturates we use to make (cell-wall generated) regulating-hormones (clotting, unclotting, pain, cramping, inflammation, anti-inflammation, etc.). The 3's prevent irregular heart beat (arrhythmia) and they must balance the 6's. Used for nerve and cell-wall function (yes, walls function). Fish or self-made from the 18 carbon omega-3 and 6.

22 carbon poly: DHA, the very delicate omega-3 polyunsaturate found in fish. This is the 8%-of-the-brain-fatty acid we use for thinking. It is effectively the keyboard of the eyes, brain and nerve cells. From fatty fish and not self-made from plant omega-3.
Adults, but not babies, slowly change the omega-3 from seeds or leaf veggies into the omega-3’s found in fish. Those are the ones that are found in our eyes, nerves and brain and that are key for hormonal and cardio-vascular balance [and for full-term births]. Unlike human and horse milk, cow milk and most vegetable oil based baby-formula don't have the omega-3s needed for brain development between the last months before birth to age 2.

One of these fish oils -DHA- does much of the work after a signal hits the brain/nerve cell while the other -EPA- is present in very small amounts to control the beginning and end of this work; it controls a thought, motion, depression or mood swing from start to finish. In fact, the over-activity of certain brain-fats due to insufficiency of EPA [-1.8g/d?], may well underlie schizophrenia and some types of depression [Fincastle], Huntington's and post-partum (birth) depression. Depression also predicts heart disease. Or, thinking nutritional deficiency (made worse by masses of omega-6-), a lack of omega-3 [EPA] may be a common linking cause in schizophrenia, (bipolar)-depression, M.S., cancers, adult diabetes, bone and heart disease [Horrobin et al]. Think: there's the DHA of a 2 kg (5 lb) salmon in your head -- and appropriately enough, the molecule is shaped like a ? mark or fish-hook -in fact, it wiggles like a worm on a hook, millions of times a second, around that basic shape, making it arguably the brain's most versatile molecule. This fat, DHA, is the keyboard of your eyes, the processor-chip of the computer in your brain and may help prevent Alzheimer's Disease!

Another 1999 study found a 60% reduction in sudden heart deaths in the high omega-3 oil group - when associated with high vitamin E or low trans fat intakes: *Am J Cl Nutr*; May 99. Fish oil is high in omega-3 and dramatically lowers blood triglycerides in people with very high starting levels: *NEJM*; '85:1210-6

An overview by Dr. Simopoulos of benefits of omega-3 and dangers of excessive cholesterol lowering omega-6 linoleic (again: soy, corn, sunflower, cottonseed and safflower) is here: *Am J Cl Nutr*; Sept '99. She has a practical book, the Omega Diet. Simply put: Balance Canola, Olive and Flax --and easy on the rest. The Heavy Science is here and here's a great review about omega-3 in heart disease. Some fish plus plant based omega-3 halves heart attack risk.
The table above by the 'cream' of the world's fat experts is the standard by which fats, oils, mayos, margarines and labels must be measured. If the label is bad, don't buy the fat. There was some 2004 tweaking where marginally less alpha-linolenic is called 'healthy'. Minimum 0.5g EPA+DHA is suggested for heart-health. Since 2002, the American Heart Association agrees. ISSFAL is dead against trans-fats.
made by industry from the healthiest of fatty acids.

**Time for an oil-change...** to unhydrogenated canola, flax (lin)seed & fatty fish. Unhydrogenated soybean might be o.k. but it's also high in omega-6 linoleic, already an excess in most Western diets (an average person already stores over 1 kg -3 lb; see also points 29 and 30 below). Here's an omega-3 reference for the little heart disease [and depression] in Japan where the oils are fish, canola and soy: *AJCN; Jan. 2000*, and here's the history of omega-3 by pioneer Holman. You may want to add some vitamin E to your oils and refrigerated them: they (like cholesterol) become harmful when damaged by processing, heat or light. While motor oils are designed for engine health, most "vegetable" oils are engineered for lack of flavor, clear appearance and shelf life. Short-chain saturates store well and are safest for frying.

2. **Vitamin C's most important study** was in the Canadian Medical Association Journal of Sept. 23 1972. During 102 days (3.4 months) in winter, 407 about 25 year old Canadians took 1 g/day + 3 g/day during the first 3 days of any illness. An identical group on taste and look-alike dummy pills had 40% more people seeking medical help (56 vs. 40), 58% more doctors visits [94 vs. 60] and a "similar" increased prescription drug use. There was a 99.9% probable reduction in days of disability. Here's the follow-up study also proving benefit; Here's Wikipedia. For long-term benefits: *Epidem; May '92*.

In science, if no effect is found, there was none, the study was badly designed, or statistically unlucky. Significant results from proper studies stand until proven wrong by other studies. According to these non refuted results, 1 g per day of vitamin C with an increase during illness would change the face of everyday medical practice.

**Comment.** 200 mg, with some effort and cost obtainable from fruits and veggies, saturates blood and cells in totally healthy people. Illness and infection makes the need for vitamin C skyrocket. It is here and in long-term health that benefits of high amounts are likely. The biochemistry is so complex - *ProcNutrSoc; '99: 469-76* - that only simple indicators like doctors visits, drug use and days of disability provide practical answers.
3. 'The current evidence suggests that people who take such supplements and their children are healthier.' This quote is from an editorial 'Eat Right and Take a Multivitamin' in the New England Journal of Medicine. [Dr. G. Oakley from the Centers for Disease Control and Prevention talking about "standard" multivitamins with 400 mcg folic acid.] Here's the effect in heart disease prevention.

4. The same major study found a 75% reduction in colon cancer risk (one of the 3 biggies) after 15 years of multivitamin use. Here's a study about long-term multivitamin use and less cervical cancer. Just like it takes decades to cause cancer, it may take decades of supplement use to prevent it. Here is one folic acid based theory how: *J of Nutr; Feb 2000* [also: point 11, below]. Folic acid (folate, folacin or B9) is one of the most dangerous and common long-term vitamin deficiency around; liver, beans, green veggies, multi-vitamins. Anything you do to foods specifically destroys folic acid, and B6.

5. Few have a financial interest in supplements but you, your family and your insurer - but supplements are taxed and you won't get a credit on your premium. A life-time supply of folic acid (a cancer, Alzheimer's disease, birth defect & artery damaging homocysteine risk reducing vitamin) until recently cost $10. The average 0.2 mg/day added to N. American grain products costs less than 1¢ per year. The minimum needed dose is 0.4 mg (400 mcg), 1/10th the weight of a tiny flax seed. Being low in folic acid is truly dangerous since it prevents many of life's diseases!

If Americans would take a good quality multi, like Twinlab's Daily One Caps, they would save about $100/yr in hospital costs regarding babies and heart disease alone (estimate *WJM*; May '97), not to mention other diseases or suffering. New: a Down's syndrome link.

6. Multi-level pyramid sales, patented or special formulations are rarely cost effective, think: *Coral Calcium*. Another example is Ester-C, chemically not an ester but a costly degraded mix of oxidized vitamin C. From their website: *All of the .. studies are considered to be pilot or preliminary, and although the results suggest a positive result, further studies are necessary [but not for sales] to verify these conclusions.*" Eleven years after the patent the largest study for 24 hours in 54 people. Six more years later, in 2006, still only one 'preliminary study' suggesting their process of 'natural oxidation' of vitamin C helps Ester-C work differently [sic]. Feel like wasting time, here's their patent. Such practices based on deceptive research give the vitamin industry a bad name, yet their very friendly watch dog, the *Council for Responsible [sic] Nutrition*, refuses to bite this industry-wide scam. This watch dog knows who pays the dog food, collecting 0.1% of member company's Ester-C sales. So much for being 'dedicated to enhancing the health of the U.S. population' -
however, they do help keep vitamins legal (their CEO is a lawyer). How‘bout also patenting pre-oxidized vitamin E? Well no, they now flog Ester-'E' just because it would be oxidation protected in 'unpublished animal studies'. Promoting Ester-C as 'fatty acid ester free' is like hyping sugar for being fat-free. Shame on that industry that price-fixes, that makes good cheap multi's hard to find on store shelves and refuses to self-police and weed out supplement scams.

7. Half of American men over age 40 are affected by degrees of impotence due to local artery dysfunction, smokers 2x as often as nonsmokers. An early warning for a men's entire heart and vascular system. Smoking and not taking B vitamins raises heart disease risk 12 fold; not taking C 8 fold! Soon: nicotine gum, condoms and vitamins at the same counter.

8. In women, the no-alcohol + low-folic acid group had 4.5x the heart disease deaths of the highest alcohol + highest-folic acid group. Another study found an almost doubled cardio-risk in women with the lowest intake of nuts, and increasing without a multi or vitamin E supplement.

9. Imagine ... that just maybe a friend's colon cancer or Alzheimer's disease was caused by low folic acid, breast or prostate cancer by low selenium or fatal irregular heart beat by low magnesium, potassium or omega-3. Imagine most heart disease is caused by micronutrient deficiencies. Imagine how cheap and easy it would have been to avoid ... and how hard to undo. The list gets longer while we wait for "conclusive" evidence.

Low vitamins D, C, B1, B3 or iodine respectively cause rickets, scurvy, beriberi, pellagra and goiter (to the disbelief of the medical world at the time). The next 2 sections tell how long-term low B6, B12 and folic acid (general malnutrition or processed diets) promote heart disease, cancer, brain (cognitive) decline and Alzheimer's. Here's a teaser: 400 versus 100 mcg folic acid intake, and 19 years later, 20% less cardiovascular disease and stroke!

10. More-studies-are-needed. While there will never be certainty, there is sufficient data to send the optimum-nutrition case to the jury with instructions that, in life, a hung jury is not an option. This website is one such analysis. Here's one by Nutrition Science News. Here, inPDF, is another but more technical analysis by AltMedRev; '96: 132. Any doctor not having read the latter and the Feb. 16 '99 issue of Circulation about omega-3's and McCully's homocysteine book has dangerous information deficiencies.
McCully, again a Harvard professor, established the link, via the blood chemical homocysteine, between many diseases and poor nutrition. This link is the Mc² [think McC-ully] of low micro-nutrient intake and disease: higher than minimal homocysteine proves malnutrition (in each of us and in groups). This discovery, for which he should be on the short-list for a Nobel Prize, supports Adelle Davis' views of the early research, like eating B-vitamin and methyl group supplying eggs and liver against heart disease (-research like the pioneering work of Lester Morrison and Charles "insulin" Best before that; also 11 and 24, below).

11. Dropping homocysteine is cheap and easy using a multi with high amounts of B vitamins [this author in Arch Int Med]. B vitamins reverse artery plaque [3rd figure below, and here] and help blood flow and balloon (angioplasty) operation success. Without high intakes of B vitamins, this 'natural slow-poison' we make from protein hangs around longer than needed. This damages arteries, liver, brain and DNA. Let me propose: atheromas, the fatty swellings in arteries (and many cancers and Alzheimer's disease), are proportional to the time spent at homocysteine levels over 6, the level of most 10 year olds. 30 years at level '15' is ill-health and decline; that time spent at '6' is long-term health. Science: this nasty little molecule opens at X when that carbon marries the 2nd nitrogen from lysine, disabling this amino acid needed to make collagen and elastin, the actual artery structural materials. The opening of the ring then leaves the sulphur atom on its own, ready to do more damage.

The effects of the 5 main agents [folic acid (B9), B6, B12, B2 & betaine (B14)**] are cumulative, together probably lowering by ½ the risk of heart, blood vessel and Alzheimer's disease (also: AJCN). The left graph was (over) simplified from NEJM 2002-2-14, a homocysteine study in 1100 elderly and the % getting dementia and Alzheimer's many years later [vitamin B-3 and fish oil omega-3 may also help]. High homocysteine is and proves low B vitamin status: NEJM: "The simple addition to a normal diet of large doses of folacin, vitamin B12, or betaine will substantially reduce plasma homocysteine in most people." [magnesium, other B vitamins also play roles].
Even if in real life only half these benefits materialize this would still be a massive reduction in suffering. Other benefits of these nutrients (directly and through homocysteine) are in birth defects, pregnancy complications, (significant) cancer prevention and artery relaxation. These effects are the best rationale for taking a high-dose multi vitamin. The book Methyl Magic is a fine reference. High homocysteine is the best indicator of malnutrition and vitamin deficiency (the shameful rule in the home-bound elderly).

Happy homocysteine: below 7 in mid-age and below 9 when elderly; the lower the better with 6 µmol/L a "target". In the Framingham Study, average was 11.5 at age 60-65 to 22.5 above age 90 but in all 7 age categories were people with ideal values of below 6!

Dimes per day for the multi and zero risk! Add vitamins C and E, fiber, minerals (think: magnesium), omega-3 oils and eat low processed foods** and you'll reduce your statistical chances of early heart and mental ill-health to a fairly low level, regardless of your genetics. Smoking, possibly unfiltered coffee, mega-niacin and fibrate drugs increase this blood toxin. So do stress or anger!

Homocysteine lowering is especially important for the about one third of us with a genetic tendency to higher levels. For some reason, most people with heart disease have "desirable" cholesterol levels. McCully: "[In 2/3rds of autopsies with severe atherosclerosis] ... the disease developed without evidence of elevated ... cholesterol, diabetes, or hypertension." Could low omega-3, mineral, antioxidant and homocysteine lowering nutrients cause that difference --or does your MD, heart specialist or lipidologist [yes, a "blood-fat-specialist"] have a better theory? Since half of you reading this website have or will have heart and blood vessel diseases, this question is worth asking.
**Betaine** [be-tai-ine, bee-tain, TMG or B14] and choline are about 0.5% and 0.25% respectively of wheat bran and germ - leaving refined flour with only about 0.06% (Cereal Chem; 1-’67: 48-60). New 2003 figures for **wheat germ and bran** are even higher. Both nutrients have similar vitamin-like roles that are crucial for artery health (this author in AJCN). Choline (eggs, liver, soy, wheat bran/germ, meat, fish, and self-made from lecithin) turns into betaine (3 methyl groups stuck onto the amino acid glycine; also found in beets, spinach, wheat bran/germ, shrimp & beer) that, after donating a methyl group (like the famous and expensive SAMe) turns into DMG, another donor of methyl groups:

These nutrients produce "methyls" that drop homocysteine and protect blood, arteries, brain, liver and DNA. Methyl groups do hundreds of good things (excepting possibly in mania and some late-stage cancer). Sticking methyl onto the sulfur of homocysteine generates the essential amino acid methionine, taming the beast. Methionine, lecithin, choline and betaine are "lipotropes" that help us deal with fats [like fatty-liver caused by alcohol, overweight and type 2 diabetes]. Morrison first "improved" cholesterol "types" with betaine in patients and 50 years later we have trials of betaine improving homocysteine in normal people. Interestingly, unlike B6, B9 and B12, betaine also lowers homocysteine after a meal. Cancer: massive DNA damage and breakage with "low normal" folic acid intake [for scientists: RNA's uracil winds up in DNA and its removal causes major DNA disruption, prevented by sufficient methylation; RNA's uracil + methyl = DNA's thymine].

Nutrient info is unlikely to come from a cardiologist. For example, the ACC's expert panel on Heart Failure only mention of nutrients is: "Physicians should monitor [which is difficult] and correct any deficiencies in potassium and magnesium, since these may cause ... arrhythmias [irregular heart beat]."

The ACC Guide to Preventive Cardiology for Woman: "Diets rich in antioxidant ...nutrients and folate are preferred [says who?] over supplements." (JACC; 5-1999: 1751-5). Why not do both since folic acid (B9), and B12, are best absorbed from a multi-vitamin pill. For example, 1 in 8 Americans over age 60 is B12 deficient (yet able to absorb B12 from a pill) because of low or drug-reduced stomach acid. Doctors however like to inject people with B12. In a different "vein" (sorry), vitamin E from food plus a multi will not get you, as all cardiologists know, the about 200 IU's linked to a 40% lowered risk of future heart disease.
Some wise words about such "expert committees" or websites, including this one, as Dr. JRA Mitchell once said: "What passes for knowledge is often no more than well-organised ignorance." and "The alternative to scientific experiment is the expert committee. Unfortunately, just as one cannot be sure of the relationship between risk factors and disease, we cannot be sure of the relationship between the opinion of the committee and the truth: the opinion of the committee will depend on who is selected for it."

12. In most heart attacks, plaque breaks, imitating a cut or a wound, and thus blood clots and the vessel contracts. Maintaining good intakes of magnesium, potassium and omega-3 oils will help save you by preventing the resulting irregular heart beat.

In other words, heart disease, clotting and strokes start when repair Lp(a), fibrinogen and/or homocysteine are high, HDL & CoQ10 are low, or when LDL and artery walls are damaged by homocysteine or oxidized cholesterol (old, burnt or heated fats). Plaque forms in damaged sites in vessel walls. Vitamins B3, B6, B12, folic acid and betaine and antioxidants E, C, selenium, CoQ10 & omega-3 oils prevent LDL or inflammatory damage--by keeping LDL "good", and the arteries healthy, thin and flexible.

13. FIRST Assure Optimal Nutrition underlies the medical principle of first not to cause harm. In other words, first insure that an illness cannot be cured or helped by nutrition. Nutritional medicine is also called naturopathic or orthomolecular medicine or psychiatry. The stupid idea that a "well balanced diet" gives optimum amounts of the nutrients you need is based on dogma, not on science. While a 'balanced & varied' diet with lots of fruits, veggies & whole-grains is truly a superb idea (JNCI; 00-1-19), no scientist can say that even such diet (and more importantly your actual diet) has your optimum amounts of selenium, magnesium, calcium, potassium, vanadium, silicon, molybdenum, chromium, vitamins C, E, etc.

People don't readily change eating patterns shaped by taste, family, habit, price, availability, restaurants, vending machines, corporate profit, religion and custom -- and 1/3rd of Americans get almost half of their calories from 'Energy-Dense, Nutrient-Poor' junk foods -AJCN; Oct. 2000. This being a human and dietary advice reality [the 'CELL' study], taking a few supplements (a good multi, C, E, calcium / magnesium + vitamin D, and omega-3 in the diet) is one cheap and easy thing anyone can do about the known nutrients likely to be lacking.
14. **Selenium** is crucial in heart disease and **cancer prevention** -- or put the other way, many heart conditions and cancers are, at least in part, selenium deficiency diseases. Selenium is found in US or Canadian wheat flour at 1 to 120 mcg/100g depending on where it was grown, making it either a good or a terrible source (you need about 200 mcg/day for long-term health).

Since 1984, ultra-low selenium and ultra-high heart disease Finland supplements its fertilizers with selenium. Rather than supplementing fertilizer and hoping you'll get optimal nutrients, your chances are much improved with a good vitamin-mineral supplement. Sure, it looks like a pill but it's a targeted food concentrate. This study in men found a 63% reduction in prostate cancer from 200 mcg selenium and it should work for breast and other cancers as well. Selenium is an **anti-inflammatory** in rheumatoid arthritis, it **likely improves longevity** and it may reduce HIV / AIDS and other virus diseases.

15. **Dog food** contains a vitamin and mineral supplement, even the canned-meat variety. This lack of added supplements explains the veterinary *dogma* that your dinner leftovers are bad for a dog! Animal science accepted years ago that a supplement is an essential food group for dogs, cats, zoo, farm & lab animals. Farm science also proved that supplements are vital to crop health because plants may not get all the nutrients they need from the soil. As your pet and crop get supplemental micro nutrients, what are the chances you get them from restaurant or supermarket foods?

16. **Food-pyramids** of the various food groups are made by portion size and some relative importance. However, the 1995 U.S. Dietary Guidelines and Pyramid do little to prevent disease according to studies 1 and 2, with fresh insight by the Ottobonis. These studies call for a change in the guidelines. A suggestion: promote whole and unprocessed foods, omega-3 oils and a multi, while refined rapidly absorbed carbs (now the base of the pyramid) would move into the 'use sparingly' category. Part of the very base of an improved pyramid would be fruits and vegetables that would share this base with a category for omega-3 oil and a micro-nutrient supplement. This was in fact the comment of one of U.S.'s top senior scientists at the May 2001 Linus Pauling Institute nutrition conference ... while a second top scientist commented that a multi is the most conservative thing one should consider for a hospitalized patient.

17a. **UNDER-dose of nutrients** affects most people. The most common ones are: calories, protein, iodine, iron, calcium, magnesium, potassium, zinc, selenium & vitamins A, B, C, D, E, omega-3 oils (fish % varies, flax -57%, unhydrogenated regular canola -9%, unhydrogenated soy -7%, wheat germ -5% & unrefined walnut -5%) and last but not least: folic acid. Anything you do to foods (freeze, can, boil, age) specifically lowers 2 homocysteine lowering vitamins: folic acid and B6.

17b. **OVER-dose of nutrients**, apart from things like calories, omega-6, iron and copper are rare and usually benign. About fluoride however, the "do not swallow", supervise-your-kids and "use only a pea-sized amount" warnings on Crest toothpaste are ominous, and valid. Fluoride is nearly as toxic as arsenic. Fluoride causes aging, dark skin blotches, white-spotted teeth, cancer, collagen and DNA damage, "unwanted" bone growth (in cartilage and in artery walls and as spurs on bones), and it may not even prevent tooth decay long term -- ref's 1
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2. Applied to growing teeth, it forms fluor-apatite, \((\text{CaF}_2\text{Ca}_4\text{(PO}_4)_3\text{)}\), a hard mineral also found in bone-hard calcified arteries. Promoted as if it could be a nutrient by money and bad science, fluoride is the toxin that raised permanent "mottle" tooth damage in U.S. kids (fluorosis = permanent white spots) from about 6 to 30%: CDC/JADA; Feb. 2002. Here is an important Canadian summary: directly applied to growing permanent teeth, there might be a small benefit in one (1) age-group (age 5 to 9 ?) but ingested-from toothpaste, water, drinks or very high tea intake (leaves)- there is risk to all (bone-fracture, cancer). P.S. The title of Dr. Leo Spira's 1953 book with the first 25 years of science is: The Drama of Fluorine, Arch Enemy of Mankind. Fluoride anyone?

17c. PRESCRIBED drugs in U.S. hospitals daily kill a jumbo-jet full of people (300) and cause 6000 adverse reactions defined as 'permanent disability, more hospitalization or causing death' (JAMA; '98-4-15). This is 1 FDA approved drug-death and 20 very serious reactions every 5 minutes!

Why worry about Anthrax as the medical drug toll surpasses that of the World Trade Center calamity every 10 days in the U.S. alone. In 2003, 1 in 4 Canadians was affected by medical mistakes. Yet, only perceived dangers (fear, terrorists, exams) most motivate people, not death by meds. About sudden heart problems: go to a hospital able to 'balloon' or 'by-pass the problem' and you'll have a 10 times greater chance of getting such intervention and a 14% greater chance of being dead 6 months later.

18. ASPIRIN daily kills about 46 Americans, as many as die from AIDS (NEJM; June 17 '99) but an ultra low dose (~1/4th of a high strength pill (125 mg) every 2nd day -but not if you take ibuprofen first) can be anti-clot + anti-inflammation heart healthy (for those at high-risk -see the FDA) and about 160 times more bang for your buck than cholesterol lowering statin drugs (BMJ; Dec. 5 '98). Aspirin however is linked to 200,000 U.S. hospitalisations for congestive heart failure ["NSAIDs should be used with caution in patients with a history of cardiovascular disease."]], internal bleeding and it triggers asthma. "Aspirin, like all other drugs, is a poison" is the title of this editorial in BMJ that concludes that ".it may be more appropriate for some people to eat an apple rather than an aspirin a day." [here's the Jan. 2002 update and discussion]. Then there is Tylenol / paracetamol which like its parent, phenacetin, and aspirin to a lesser degree, may damage your kidneys and combined with alcohol is disaster for your liver --and it should therefore not be sold in bars, or used for hangovers. Two vital reality checks ..: aspirin and Tylenol.

Aspirin, Tylenol and super expensive Celebrex/ Vioxx/ Mobicox work by reducing inflammation and/or pain from omega-6 oil-based molecules. The omega-3 family of oils, and most effectively fish oil, does the same but more gently, more safely and with more flavor (some would say: with too much flavor). These omega-3 effects are from "COX-regulation" in addition to the electro-chemical effects of the oil itself. These omega-3 benefits are evident in heart disease, in gut diseases like colitis and Crohn's, in arthritis, and health in general. JAMA sounded an alarm in 2001 about COX-2 inhibitors Celebrex & Vioxx regarding 50% more heart attacks. Three years later Vioxx® was pulled off the shelves, then Bextra and Celebrex is under a similar cloud: they reduce one of the really good prostaglandins (prostacyclin PGI-2) and prevent bones from healing.
Simply put: the aspirins prevent clotting but cause bleeding while the vioxxes may lower bleeding but promote clotting --and slow surgical, bone and wound healing. CycloOXygenases (proteins clinging to fat-based cell membranes) put the loop (Cycle) into and the OXygen onto several already bent 20 carbon long fatty acids (removed from the host-membrane). This turns them into prostaglandins. Inhibitors prevent this, which can be good (for pain, inflammation and blood flow) or bad (for clotting, bleeding, kidney, blood-pressure, heart failure, etc.). Such anti-inflammatories and pain killers are little nuclear weapons against the fat-based machinery of your system, the effects of which will not be understood for decades [and now there are P-COX-1a, P-COX-1b, COX-3, and whoknows...].

All COX-1 and some COX-2 reside in a small sub-cell inside each cell and make the cell work properly. Other COX-2 sits around your DNA and tells it what to do and how to behave but most COX-2 is made in inflammation and infection, hopefully only when needed (otherwise it promotes cancer, arthritis and heart disease, and possibly Alzheimer's). Let me guess ... this is more than you wanted to know.

19. Nutrient modification by processing is little questioned: pick any food store shelf. This includes Europe where the foods are no better and where the nutrition labels are terrible. Since the addition at a yearly cost of 1¢ in the U.S. of folic acid to grain products and flour, many highly processed foods are now endorsed as sources of folic acid --NEJM; May 13 '99. While fortification helps, about 90% of the world eats non supplemented refined grain and rice products --and nobody replaces the 80 - 100% of removed magnesium, zinc or vitamin E to name but a few lost nutrients. Low magnesium alone is linked to 11% of U.S. heart mortality (Int. J. Epid; 1999).

20. The combined supplements --E, C, the B's, minerals, CoQ10, flax or fish oil & niacin if desired & (maybe) ~1/4th of a high strength aspirin every other day (in non-hypertensives)-- are cheaper and a heart-healthier package than any of the cholesterol lowering statin drugs. Over 50 billion $ in sales and related costs (JAMA; '00-4-12: $2.2-$5/day) and drug companies still aren't allowed to say they will improve or prolong life for most users --unlike niacin (JACC).

Mega-niacin does take some medical guidance and for the first few days it will give a harmless but frightening hot-flush. It is the only drug suggested by the AHA to raise HDL and it's 1 of 3 to lower LDL [including fibrates, drugs increasing deaths]. Best: plain niacin (not 'no-flush') and it may make your doctor feel better about law suits since you're doing something about 'your' cholesterol. Always take with a multi otherwise it raises homocysteine and, bonus: it lowers clotting Lp(a) and fibrinogen.
21. CHOLESTEROL PILLS, statins, -Pravachol, Lipitor, Zocor, Mevacor, Lescol, Crestor- '..if diet and exercise alone are not enough..' make part of a lab report look 'better'. This makes families poorer and less concerned about food choices while doctors aren't yet getting blamed for prescribing them. They hardly raise HDL and slash the production of CoQ10 by the same % as LDL, forcing heart, in fact all cells, to work with less energy and more 'free radical' damage. Their limited effect is clearly not from cholesterol but from lowering inflammation (2nd ref.) and blood clotting, and by changing artery function, as do more cheaply C-RP by aspirin, some omega-3 oils and some vitamins (high-dose E).

Stanol-sterol margarines, policosanol, fibrates, gugulipid, dextrothyroxine, estrogen, ezetimibe [Zetia, Ezetrol, part of Vytorin -click for warning] and torcetrapib all 'manage cholesterol' in various ways but have never shown to save lives, just like Lipitor.

Canadian fine-print warns "The effects of ... on cardiovascular morbidity [illness] or mortality [death] ... have not [!] been established." And: "Significant decreases in circulating ubiquinone [CoQ10] levels in patients treated with X or other statins have been observed [happens in all users, and this does] .. lead to impaired cardiac function [= heart failure, nerve death] ..". Also: ".. in some patients the beneficial effects of lowered... cholesterol may be partially blunted [canceled] by a [linked] increase in Lp(a) levels."

MedlinePlus list 100 statin side effects but not the most vital, CoQ10 reduction. Simply put:

1. Sometimes good: inflammatory, clotting and nitric oxide effects -likely short-term (weeks or months near 'events' or 'interventions');

2. No effect: from changes to cholesterol [lipids];

3. Always bad: pain (joints, weakness), 'senior moments', inability to learn, less CoQ10, more Lp(a), serious birth defects, bleeding strokes and probably cancer.

4. Scary ads & faulty science [Zocor, Vytorin and the Pfizer feet in the morgue fear of death campaign called 'unethical' by the World Health Organization];

5. Don't prolong survival in most high-risk groups and not in women:
Massive benefits proclaims Oxford University about its 2002 Zocor - Heart Protection Study. 75% of heart attacks still happen and 300 on Zocor for 1 year to postpone one (1) death. Massive drug use, few 'men' saved. The next study claiming benefit in high-risk elderly, Pravachol's PROSPER had 28 fewer heart but 24 more cancer deaths and more 'new' cancers in each of 4 years in a group with 52 fewer smokers. Next, zero 'anything' was found in Pravachol's ALLHAT in high-risk North Americans: 1 death postponed per 1.1 million $3 pills taken! Next was Lipitor's ASCOT also without mortality benefit (graph below). From 10 years ago: cholesterol lowering by any means caused 150 more deaths per 100,000 patient-years of intervention. Cheers. No statin benefit in "primary" prevention in 2003, click on the right picture: the University of British Columbia.

"Ask your doctor if 'Rx' is right for you" prompt the ads but vital information is hidden from you and your doctor. This paves the way for after-the-damage criminal investigations and lawsuits. Statins, fibrates and high intakes of the common cholesterol-lowering polyunsaturated omega-6 'vegetable' oils (like corn) are linked to more cancer, as is just plain low cholesterol. Canadian ads but not U.S. ads warn that statins lower CoQ10; there's your muscle and nerve pain, and lack of energy. Fewer studies were done on women and elderly, groups where high LDL has no evident link to mortality [low HDL does have such link, but HDL is best raised by, for example, exercise, moderate alcohol use or mega-niacin with -or it will raise homocysteine- a multivitamin]. No mortality studies were done in people taking a good multi, whole foods and omega-3 oil.

Many B-vitamin (homocysteine) trials are now being done but some are in people where prevention is rather (too) late, some were destined for failure (VISP) and many are set-up to have statins share the credit. The latter paves the way for combination therapy: statins + niacin and/or aspirin and/or fish oil and/or multi-B-vitamins ... if statins alone are not enough ...

A TV ad exclaims: 'Lipitor did it, the lower numbers you're looking for.' Then, a small banner: "Lipitor has not been shown to prevent heart disease or heart attacks." Isn't that what people expect when taking the drug? Now, in 2005, Lipitor ads no longer mention heart disease, it simply 'treats' (bad) cholesterol, a concept created by the drug and food industry. Another TV couple: 'Oh, Jessie, I love you too! ...Zocor, Be There! Up to 87% of Baycol* users drop to 'target levels' but 'effects on disease and death have not been established.' Why not real wellness goals such as less illness, fewer doctors visits or more time with friends?

"Targets" for pain killers are clear. However for drugs dropping blood sugar, pressure or cholesterol, ask your doctor if real health benefits are actually proven.

Eight authors of the U.S. ATP III 2004 treatment guideline 'update' got money from average 10 drug companies; one, a NIH gov't employee, got $114,000 + 'stock options' from the statin industry. The 9th author earns a living as NCEP Coordinator with the job to 'increase the proportion [.. of Americans] who adhere to their cholesterol-lowering regimen.' And, oeps, they forgot the largest statin study ever, J-
LIT. More in BMJ on study conflicts of interest. Could the brilliant beauty of a drug (industry) blind a well meaning doctor? Is it fear of not following 'guidelines'? *)Baycol (Lipobay) was withdrawn for causing unexpected deaths: here's an important comment about all statins. Also, StatinAlert.org or StoppedOurStatins.

How about Pravachol? Two analysis by the Journal Club here and here: some high risk participant would have to be treated for over 200 years at a drug cost of $200 000 to prevent one cardiac 'event'. The WOSCOPS study selected 6600 men out of 160 000 and treated half. After 5 years and 30% giving up on the drug total deaths were not quite statistically different. The CARE study found, in patients with prior heart attacks '.. no significant differences in overall mortality ..' [1.6 per 1000 years of drug use, a statistical fluke.] NEJM; 99-4-8:1115 about a 3rd study (LIPID): '[Pravachol] has no particular advantage over placebo [dummy-pill].' Finally the truly massive ALLHAT study found 'zip' in any health department!

The Mevacor (lovastatin) EXCEL trial had with 89% probability 2.75x more deaths (97% cardio-vascular) after 2 million pills were swallowed (11% fewer heart attacks, 40% more cancer); then, dumping 97% of the placebo group, Merck continued but without the risk of the drug proving conclusively to be more fatal than their dummy pill! Then, after 3 times more Mevacor pills, the AFCAPS / TexCAPS trial ended with 3 more drug deaths (also 40% more cancer). Next, Merck's 1st Zocor study (4S) killed 3 more women but saved men, yet with unexplained anomalies in the mortality curves after 18 months.

Scandal at Oxford: Sir Peto and Dr. Collins refuse to publish the Heart Protection Study mortality curves in men, women, diabetic or not. In 1992 both wanted 'total mortality' trials, proposing this was relevant. They did the study and now hide the mortality curves. In 2004 Dr. Collins suggested they would release these data but did not. In April 2007, author Dr. Baigent said it would be 'inappropriate' to publish these data and author Dr. Sleight: 'It is not my decision, but it looks like that.' [not releasing data about deaths]. Study sponsor Merck is also mum about deaths but as always, women did not benefit.

If you're a diabetic women with a 75% chance to die from blood vessel diseases, would you not like to know how many days of life you might statistically gain or lose taking Zocor for 5 years? That is not an 'inappropriate' question but a real one and even more so when balancing money for food or drugs.

Twenty percent of 1st time Zocor users were motivated by cholesterol fear instilled by a football coach (Merck annual report). Not to be out done Pfizer uses 4 sports heros and a doctor never having practiced medicine.

A shocking statement on the 2007 ALLHAT website: "..trials demonstrating a reduction in coronary heart disease from cholesterol lowering have not [sic] demonstrated a net reduction in [all-cause] mortality." MedlinePlus about ALLHAT: "... people taking pravastatin were no less likely to die or develop heart disease than people receiving usual care." Lipitor's ASCOT 3.3 year mortality result is no different: 5168
people on statin, 5 million pills swallowed and the curves touch, and cancers, quality of life and muscle pain not reported. The 2006 SPARCL trial ended after 5 years with fewer deaths in the group on dummy pills than in the group taking the top dose Lipitor.

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Statins aren't cholesterol but mevalonate lowering 'therapy'. This mother-molecule also makes CoQ10 and other vital stuff with names like isoprene (it takes 10 to make Q10, 6 to make cholesterol], farnesyl, geranyl, dolichol and squalene. Similarly, aspirin is not simply "anti-clot therapy", it rearranges all fat-based "house keeping", pain and signal machinery. Statins and aspirin hamper (inhibit) fundamental body processes. Whatever good necessarily comes with the bad. On the other hand, niacin promotes over 300 reactions and has few harmful effects since it stimulates body processes, like all vitamins. Niacin must be taken with a multi-B-vitamin or it will raise homocysteine. It is just a partial answer to heart disease and has other benefits but niacin did prevent heart attacks and did save lives; 2006 update.
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**Bottom Line:** At 10 - 36x the price of *generic niacin* (1.2 kg for $50 or 80¢ per week [here]*)*, in some types of (mainly male and non-congestive) heart patients, some statins *may* reduce the risk of "events" by one fifth [probably not "deaths", and you have to scrape the statistical barrel]. This leaves no less than 4/5ths of the risk. To deal with the larger underlying problem, remember that fat substitutions have proven of no value, apart from those involving omega-3 oils, and that whole-foods and supplements cheaply lower most risk factors - and survival chances. *(tel. 1.800.544.4440 or 1.954.766.8433; product 94.)*

**22. BLOOD PRESSURE.** The *7 Countries Study* tracked 49 year old men who curiously enough had (in all these varied countries) average systolic blood pressures of 138 +/- 3%. 'Normal' is 120/75 (2.4/1.5 psi); a 10 'point' long-term drop would be success for a drug, yet is only 13g/cm² or 0.2 psi. They found (after 25 years) that heart-mortality in northern Europe and the U.S. was 4 x higher than in coastal south-east Europe or southern Japan (*NEngJMed*; Jan 6 '00: p1). At identical blood pressures, death by heart disease varied *greatly* between populations. The same factor 4 difference in heart deaths was also found at identical cholesterol levels.

Within each location however people with heart disease were found to have higher blood pressures. The *report* and *editorial* interpret this as if blood pressure *causes* heart disease; thus the potential for drug treatment. The reverse is more logical: the heart pumping into hardened less functional arteries evidently causes higher pressures than if pumping into healthy ones.

**Bottom line.** High blood pressure is not good for bleeding stroke but helps maintain blood circulation and prevent dizziness and falls in the elderly. An *increasing pressure* is a warning for artery and kidney disease. The quality of your diet - and often your belt size - are *the* important risk factors for both heart disease and blood pressure. If cholesterol or blood pressure are not risk factors in your case, simply lowering the numbers with drugs is like painting a car while ignoring the oil change. Blood pressure drugs: in 85,572 patient-years of observation, 13% fewer deaths in men but **26% more deaths in women**. More heart attacks in men (figure below) as with a 3rd drug type, the *-sartans*, and where 'patients may need to be told.'

There seems consensus that drugs are maybe only warranted in very high blood pressure (and with added diabetes?) and that in all cases nutrition and often weightloss are of primary importance and proven worth [--as can be CoQ10]. If you *must: 'go water pill' [less heart failure] but consider more magnesium, nature's 'calcium channel blocker'.

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http://www.health-heart.org/comments.htm (19 of 25) [1/1/08 6:07:17 PM]
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All blood pressure drugs have side effects -and have not been clearly shown to prolong life! If you have a drug name, check RxList. You may also want to find out about lowering salt and increasing high potassium foods (fruits and veggies) and increasing omega-3 oils and the amino acid arginine that makes (with help from vitamin C) the artery relaxant nitric oxide (found in: lean meat, eggs, low fat dairy, nuts, whole grains, wheat germ or or nitroglycerin; - think: dynamite). There are several other nutritional approaches (see book 2 in links).

About the complexities of drugs in heart conditions: BMJ; Feb. 12 '00.

23. The AHA is a 1/2billion$/year organization with 3.8 million volunteers. Unfortunately, most of its prevention approach is tainted by the massive soft-money from interest groups [... treating to "targets", reaching number "goals" in lab reports]. The focus is prevention by lowering fat and cholesterol 'as part of a balanced eating plan'. Its website recommends in general not to take supplements while among the foods suggested are water bagels, molasses cookies, angel cake and [check for yourself] ... frankfurter buns. These are all refined-starch, finely ground flour-based foods, that are high-glycemic, trigger insulin, promote obesity and type 2 diabetes which eventually leads to heart disease and stroke.

There are 3 AHA "heart-checks" on Lipton's "Promise Ultra Fat Free Nonfat Margarine" which has "0% fat", zero protein, zero etc. Some Promise, 2 of the 50 nutrients you need: water and supplemented vitamin A. Telling you not to supplement, they endorse an imitation margarine for its supplemented vitamin A. How about "Smart Beat Fat Free American Flavor Non-Dairy Slices"? Cheers! Also endorsed is the Breakfast Candy listed below, because it contains a piece of a multi-vitamin. Such "nutrient-fortified and enriched starches" [sic] are in evident conflict with the CHD-Taskforce and AHA Dietary Guidelines: "...individuals should choose foods and beverages low in sugars, particularly added sugars.

AHA endorsements are sold for a yearly fee and include Frosted Flakes (42% sugar and only 1 g fiber), Cocoa Krispies ("chocolatey sweetened rice cereal"), Cookie Crisp (sugar and hydrogenated oils) and Cocoa Puffs (1st ingredient sugar: 47% + 0.2 g fiber, 1/125th of your daily requirement --I managed to grow mold on it so it does support life). Then, there's scary Count Chocula, synthesized from de-germed corn meal (corn starch), sugar and marshmallow bits, a hydrogenated Frankenfood through marriage to the equally spooky Frankenberry (95% carbs and 0.2 g fiber -not certified). No joke, but no yolk! No AHA scientists could possibly suggest that Count Chocula or spreads like Promise "fight heart disease and stroke".

If a food has as much as 1/10th of an egg, a whole food with all the nutrients to make a new chicken and no evidence of harm, it won't be endorsed but sawdust with over 10% of 1 of only 6 required nutrients (fiber) qualifies. Endorsements based on saturated fat and cholesterol and only one added nutrient is irresponsible. America's most reliable source of heart-health information, according to itself, must change its orientation if it doesn't want to remain part of the core problem. Using its dedicated doctors and without corporate money, simple science based advise should be given endorsing all healthy foods even without industrial sponsors. A good step is AHA's position on omega-3 oils (flax,
canola, fish-oil). If only the word cholesterol could be banned; that horse has been dead for 30 years, buried by the trials finding no fewer deaths from cholesterol lowering (page or CMAJ). Cholesterol-thinking poisons heart associations world wide: time to face these facts and tell the people.

Donations: Until the AHA gets nutrient-wise, stops endorsing stuff like Cocoa Puffs and puts your donation supported 5 journals free on the Internet, Americans may consider giving instead to the excellent nutrition dedicated Pauling Institute with their free news-letter. Why give to the AHA (or similar group) for probably over $200 million/yr, corporate soft money tainted advice that helps cause disease in the first place? The AHA gets $90 million/yr from estates but spends $100 million on fund raising and $3 million on its CEO and vice-presidents with average $60,000/yr incentive bonuses. Now that is charity!

24. Avoiding liver or fresh eggs for their cholesterol is most often bad for your heart since they also provide protein, lecithin, choline and B vitamins. Liver is low in fat and it happens to be the best source of heart-healthy folic acid (B9), B6, B12, choline and of most other B vitamins, while its betaine (trimethylglycine or TMG) may soon become a heart health food. High cholesterol shrimp are heart-healthy (AJCN; Nov. '96) -but avoid trans-fat filled batter, and dried egg product.

America’s most celebrated nutritionist, says her publisher*, Adelle Davis: ‘.eggs.. should never be restricted in the diets of persons with atherosclerosis.’ Her chapter about ‘cholesterol problems' instead suggests high-cholesterol liver [4 oz or 110 g/day]. It is now clear that fresh unoxidized cholesterol is not toxic but that oxidized cholesterol as in egg or milk powder is. It is also clear that the B vitamins in liver lower homocysteine. Recently, Veteran's Administration and Harvard prof., career-long heart researcher McCully published a chopped liver recipe: 1 lb (450 g) chicken livers, 1 boiled egg, 1 tblsp. butter, 1 onion, salt and pepper -fry lightly. Delicious and heart healthy!

About half of the brain, your hormones, nerves and cell walls are various types of fats and cholesterol. It is thus logical that even slightly modified or lacking fats or cholesterol have major effects on physical, and mental, health. Since your brain is basically a machine made of fats (directing other fats and proteins), it is for its own protection not primarily equipped to burn fats (like your heart) and it constantly needs glucose for energy --dying quickly when this blood sugar supply stops (called: a stroke). The brain also protects itself from oxidized cholesterol, the dried egg product variety, by making all of its own cholesterol.

It is amazing that 35 years ago Davis suggested the amount of omega-3 now proven as cardio-protective: 1 tblsp. flax/lin or 2 tblsp. unhydrogenated soy or of the later developed canola. She was also right that high omega-6 safflower, sunflower and corn don't have such benefit. She was wrong with the theory of the day that people can turn omega-6 into omega-3 [there may be good biological reason to keep these 2 systems separate]. **The same publisher who 6 years after her death concocted "her" to-be-avoided book Let's Stay Healthy. Her original 1965 Let's Get Well with 2280 scientific references however could be a text book in a course Treasures of the First 50 Years of Nutrition Sciences (mistakes and foresight included). A similar book with parallel thinking and 1100 references is Nutrition Against Disease by vitamin discoverer R.J. Williams.
25. This chart illustrates the great underlying puzzle. Some areas [and here] still have no heart disease while others suffer steep increases like some former East Block countries. The steep part of the curve follows: 1.) the use of low fiber/nutrient flour, made by steel 'roller mills' rather than grind stones; 2.) the invent of hydrogenated fats; 3.) the explosion of added sugars and refined starches and 4.) the reduced use of eggs and other whole foods. Leveling rates follow vitamin additions to breakfast cereals in 1962, the increasing supplement use and omega-3 intake from soy and canola. Since 1998 when folic acid was added to grain products, the decline increased from 1 to 4.5%/year in the U.S.

The American Heart Association directed the fat and cholesterol phobia and a 700% jump in heart disease that [no surprise] paralleled the one in cancer. With this track record, endorsements of Cocoa Puffs, Count Chocula and other high glycemic index starches and heavy reliance on drugs, the role and direction of the AHA beg for an inquiry. Now, there's a job for U.S. vice-president and 1st heart patient Cheney. The year was 1912: Procter & Gamble introduced trans fats (foremost made from omega-3's; Crisco 1912) and heart attacks were first described in the U.S. (Herrick. JAMA; Dec. 12: 2015-). Angina, nitroglycerin and digitalis were known but heart attacks were rare and journal worthy. The Crisco ad writers with incredible foresight: "and realize why its discovery [trans fats] will affect every family in America." Ain't that the truth! Life without omega-3': On Sale in the U.S.: 3 lbs (1.4 kg) brick-like '100%' cholesterol-free soy margarine, 10,000 kcal, for $0.99 -Cheers!

26. Carotenoids are "functional pigments" related to vitamin A of which beta-carotene and lycopene [org] are 2 out of over 600. They are best eaten in lightly steamed carrots, tomato (or tomato paste), and in all deeply colored fruits and veggies. Without some oil in the same meal they won't be well absorbed! Lack of vitamin A in some Asian and African countries is the major cause of blindness and one major cause of death in kids. In Western countries, low antioxidants and low carotenoids lutein (the yellow in yolk, and in green-leaf veggies) and zeaxanthin (corn, spinach, greens, fruits) are linked to macular [central vision] blindness in older people (JAMA; 1994: 1413-20) and to adult onset diabetes (AJCN; 4-'00). Low lycopene (tomato/paste, watermelon, grapefruit, guava and apricot) is linked to heart disease and prostate cancer (many studies). While vital to good health, especially if pregnant or smoking, I'd avoid supplements with over about 10,000IU (6 mg) of beta-carotene. Lycopene is the predominant carotenoid in the prostate, as are lutein and zeaxanthin in the eye where these "macular pigments" have protective antioxidant roles.
27. Bone loss (osteo-arthritis / fracture): eat bone (water, 10% fat, 20% protein, and 25% mineral that is 96% calcium based). It is surprising that not all research about low bone density first suggests to eat more bone and/or calcium. Think: when your tire has low air density, you give it air. Amazing: women at age 84 building better bones when given 1.2g calcium + 800 IU (20 mcg) vitamin D per day: 43% less hip fractures in just 18 months. Low vitamin D is extremely common and a huge player in hip fractures and 22% fewer fractures with a 2.5 mg vitamin D supplement every 4 months (equivalent to 800 IU/day). It is made in the skin when not using sun block under a high-angle sun only: burn is bad, sun exposure is vital [book]. Surprise, the "D" (all of 10 mg/year) is more important than the calcium. More: the vitamin-D-council [best sources: sun, fish liver oil, fatty fish]. BMJ Lesson of the week: common muscle and lower back pain! Here's a free book, a cancer link at SunArc.org and a great song.

Another bone-density risk factor is low vitamin K intake (green leaf veggies, broccoli and cabbage: 2/3rd reduced hip fractures in high vs. low intake --AJCN; May 2000). Note that Coumad(r)in / Warfarin and antibiotics mess with vitamin K (think: Koagulation, Klotting, Kalcium and Koumad(r)in).

--PS If you can now afford a broken hip or wrist, you could have afforded the about 1.2 g calcium, 700 mg magnesium, 800 -1600 IU vitamin D [2006 update: 4000 IU/day] and green leaf or cabbage type veggie for vitamin K to have prevented this fracture, or indeed today's bad back -and calcium + D may prevent colon and breast cancer, tooth loss and gum disease and deliver healthy babies; how about flu / influenza! Low D, NOT just an extinct disease in kids! After the sun, my cheap source of D.

--PPS High protein (even milk) and soft-drink intake consume calcium from bones unless you also get sufficient extra calcium-type minerals or alkali buffers (fruits and veggies). -and milk over age 30 may not help!

--PPPS Omega-3 (fish oil) helps grow bone! [T Terano or BA Watkins]. Also, lowest vitamins [= highest homocysteine]: men 4x and women 2x the hip fractures in the Framingham Study.

--PPPPS Paradox: faster bone loss in bone, faster bone growth in arteries. In the lab this happend by oxidized LDL-cholesterol [think: egg & milk powder].

28. Similarly, in the case of cartilage loss (again: arthritis): eat cartilage (when purified, called glucosamine -shells of crustaceans- and chondroitin -shark and animal cartilage- sulfates) and a lesser source, soft bone itself. Biochemically not surprisingly, research links cartilage health with artery health and heart disease survival (Morrison/Schjeide, medical library book WG300 M879c 1973 and Angiology 1973; 24(5):269-87). The chondroitin taken for cartilage (joint) health may well help the cartilage (connective tissue = collagen, elastin and 'glyco-s-amines') of your artery walls!
29. **People and animals store** the *types* of fat they eat. For instance 20 mg of butt-fat ('adipose tissue aspirate') reveals your long-term consumption of fats. Feed chickens flaxseed, their eggs retain omega-3. The regular intake of flax oil makes one's heart beat (and skin) stay 'smooth', while lecithin and fish oil keep things 'fluid'. Now imagine: *more than* half their energy from 'killer-coconut' fat yet artery disease was *uncommon* in these Polynesians -found the great Dr. I.A. Prior. Coconut has mostly rare fats that we *don't* store but that do kill viruses and microbes.

**Naturally saturated tropical** fats [link under palm-tree], tallow and butter are much *healthier* -and certainly for frying- than the common "vegetable" oils, margarines and shortening (think: French fry and donut) as shown in this **Figure 1** in NEJM. Surprise, fats are as important as protein: surrounding and controlling every cell and every factory in and on each cell. There are hundreds of fat combinations in the miscellaneous cell walls that "host" this machinery: channels, proteins, enzymes and some DNA -all of which these fats control. They, the fats of the host-membranes, control where the guest proteins go, how they behave and fats may perform tasks for the guest proteins. Fats, in a balance between omega-3 and -6, control every motion, emotion, pain and heart beat, with your brain effectively a glob of smart fat!

30. **Omega-3** is a problem to food processors as they are liquid and quick to spoil. This is why this vitamin F that prevents death by -and in- a heart attack is eliminated by hydrogenation. This turns it into toxic *trans* fat, a double nutritional whammy underlying heart-disease that is found in ½ of N. American vegetable (read: seed) oils. Omega-3 type vitamin F can also be eliminated from the plant, like in the low omega-3 (yellow, not brown) flax/linseed Linola or soy cross-breed Soyola. There is no guarantee that these nutritionally inferior stains can be kept separate in the plant kingdom. Regardless, they reduce the few available plant sources of omega-3.

*For deep-fat frying* low omega-3 strains are still not as safe as saturated fat but they are safer than hydrogenated canola or soy -however at what risk to the long-term omega-3 type vitamin F supply? The key in *all* plant and food engineering is extreme caution and long-term public interest. This is clearly not served by vitamin F removal. *Superb* omega-3 and *trans* labels are coming to Canada: here's the one proposed for soy. That won't fix the fact that in the U.S. up to 0.49 g "per serving" [there's your loophole] will continue to be advertised as zero *trans*, like 'I Can't Believe It's Not Butter!' margarine. *Trans* warnings on labels and menus would give consumers health options until governments ban hydrogenation altogether. *Until then*: if the listed fats don't add up to the total fat, the balance is *trans*, so avoid [in the above label: 2+1+7+4 = 14, thus 0 *trans*].

31. **Eddie's Muesli "The Breakfast Mix":** 1/3 no-fat yogurt +1/3 fruits (currants, raisins, apple, banana, strawberries, blueberries, cantaloupe, apricot, prune, papaya) + 1/4 whole rye (cook 1-2 min.) & oat kernels, oat bran & wheat germ (&/or rolled oats or low-fat granola type cereal) + 1/6 lecithin, flax seeds, flax oil, sunflower seeds, Brazil & walnuts (better oil than pecans and almonds). Powdered vitamin C keeps things fresh. Mix in 1 gal. (4 l) container. Let sit for 12 hours. Refrigerate & eat within 7 days. **Good & delicious** breakfast and snack food; increase the fruits and you'll get a dessert -vary to taste.
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    11. homocysteine, Alzheimer's, health & betaine
    12. heart attack
    13. first, nutrition; people don't change
    14. selenium and cancer
    15. dog food
    16. food pyramid  ... change and the multivitamin
    17. overdose, Crest, and real drug dangers
    18. Aspirin and the COX pain killers, pros & cons
    19. nutrient modification and fortification
    20. vitamins are cheaper  ... than drugs
    21. 'Cholesterol Pills', *Lipitor*, money & bad science. Separate: [PDF](http://www.health-heart.org/cholesterol.htm) or [html](http://www.health-heart.org/cholesterol.htm)
    22. blood pressure
    23. the American Heart Association and *Frosted Flakes*
    24. liver and eggs and Adelle Davis
    25. the rise and fall  ... of fatal heart disease
    26. carrots, carotenoids, eyes and prostate
    27. bone loss: eat bone ... and ...
    28. cartilage loss: eat cartilage, and more
    29. tropical oils are good, trans fats are bad
    30. omega-3, the double whammy of hydrogenation
    31. Eddie's muesli

12. **Author**  ... a little about the main person behind health-heart.org
Here's a little info about Eddie Vos, the person behind the heart and nutrition site www.health-heart.org.

I am a 61 year old material sciences engineer with no sign of the diseases I write about. I work close to Montreal, just North of the Vermont border. My work is to determine the causes of technical failures. I go on location, establish physical data and facts and add those up in a report --and try to do the same with some of the diseases that have popped up in the last century .. and why arteries fail.

Growing up in Holland, my first English book was *The Origin of Life* by Russian scientist A.I. Oparin. I got a scholarship to study biochemistry but chose material sciences engineering, so a long-term hobby about how-life-works was born. Now my reading material comes from 'Journals' and sites like Medline, anyone's free internet medical library or consumer info.

We all deserve a hobby so this site is a model-train of sorts and to keep it on-track and independent, it won't generate money from approaches it proposes. Medical or dietetic association and drug companies can't sanction me, so I am free to follow unadvertised and less traveled tracks, if that is where the science goes.

The reward from this hobby is in meeting and corresponding with some of the remarkable people in the field, from lay-people to icons, in following the science and in attending at least one scientific conference each year. My writings led to 8 references on Medline.

The responsibility of running this website is that it can affect people's health. I answer all e-mail and while careful to indicate I'm not a doctor and while supplements cause about 1 million times fewer premature deaths than drugs, some nutrients can act like them or change their action. With people taking increasing amounts of drugs, it's evident, for example, that people on blood thinners shouldn't overdose on fish-oil or vitamin E and there are many such drug-nutrient effects.
The concept behind the site, the age-old "let foods be your medicine" is based on the fact that all diseases may be helped, caused or made worse by nutrition. You are what you ate --and become what you don't eat -deficient and ill. A well balanced diet won't get you all the nutrients you need is a reality confirmed by almost every issue of the Journals I read. While healers and websites have views one should consider, balancing many ideas, and listening to one's body, appears most beneficial in health.

I've never had a regular doctor, I fry my eggs in coconut oil or butter, order my weekly liver sautéed in butter and take my daily Twinlab multi and a few other supplements, including calcium/magnesium+D, and a few grams C, niacin and betaine [B14]. I keep up my omega-3 oils and avoid hydrogenated or deep fried foods and junk cereals. Yes, it's easy to not get enough fruits and vegetables but as the Lipitor ad on U.S. TV says: "no body is perfect."

I hope this website serves you well. While I take responsibility for the site, I extend my appreciation to the many others who have contributed. Publications:

* Vos E, Mascitelli L, Rose CP. Does simvastatin save lives: if so, when and in whom? [in progress J Vasc Surgery]
* Vos E, Mascitelli L. Statins have no role in Pulmonary Disease Mortality Chest 132(4) Oct. 2007.
* Vos E. Letter to Editor (Lower LDL-cholesterol may be worse) Can J Cardiol 2007.


* Vos E. Multivitamin supplements are effective and inexpensive agents to lower homocysteine levels. *Arch Intern Med.* 2001 161:774-5.
