

Headaches and Heart Disease are not caused by Aspirin Deficiency

**Grant Richards, Nutritionist,
HealthWise Newtrition, Tauranga**

Introduction

Modern diseases are mostly if not totally preventable and they are not caused by drug deficiencies. Modern medicine and medical practice can answer reasonably well the question, “how does a disease happen?” but not “why does it happen?”. Put another way, we know a lot about and focus a lot on what makes disease and how to fix it, but very little on what creates health and how to maintain it or find good health again. The new health paradigm must embrace the wisdom of preventative and functional medicine if significant progress is to be made in achieving real health care, not just disease care. The deathbed reversals of Louis Pasteur are all too correct whereby he confessed “it is the resistance of the host that is ultimately important not the disease”. The ‘one disease, one drug approach’ has failed and has not lead to better health care. Dr Ernst T. Krebs, D.Sc (Krebs, 1991) made this statement: “Almost every drug is totally dispensable; every micronutrient is indispensable”. While quantum leaps have been made with modern medicine, the real progress will be made when our health system starts focusing on preventative nutrition and functional medicine that addresses the functional problems causing modern disease states in the first place. Nutrition is the new medicine!

What causes modern day diseases? A focus on cardiovascular disease

Heart disease was virtually unheard of at the turn of the century yet today every one knows someone who is having problems with heart and artery health. Today, cardiovascular disease is the most common cause of death. Cholesterol especially from eggs was considered to be the culprit thirty years ago but today we are far wiser and know more about the causes of heart disease. Dietary cholesterol is not the cause of heart disease (Passwater, 1977; Hirshowitz et al, 1975; Herbert P, 1977). In fact, “Cholesterol is vital to health including mood, depression, sex hormone, vitamin D and bile acid production. Lower cholesterol too much and the risk of

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suicide, depression and cancer increases.”(Golier et al, 1995; Ueshima et al, 1979; New Scientist, 1995)

Intervention studies proved this. Strokes went up in one study of 6500 Japanese men when cholesterol dropped below 190 mg% (7). Nathan Pritikin, the famous engineer who designed the Pritikin diet, took his own life after reducing his cholesterol very low. Dr George Mann, expert on Coronary Heart Disease quotes in his book (Mann, 1993), “33 clinical trials have failed to show that cholesterol and saturated fat intake or cholesterol lowering drugs protect against coronary heart disease” and, “That myth is the greatest scientific deception of this century”. So what is going on with the rise in heart and vascular diseases? Good question!

How healthy is your cholesterol?

There are several types of cholesterol. There is good cholesterol (HDL), bad cholesterol (LDL) and very bad cholesterol (VLDL). The worst problem is when either of these cholesterol types are oxidized or they turn “rusty”. This is partly caused by inadequate antioxidant protection (selenium, vitamins C, E, D, A), excess toxin/chemical exposure and inadequate detoxification potential. Unfortunately, the very bad cholesterol VLDL increases on very low fat diets. Low fat diets are not the answer as we were once told. Higher consumption of polyunsaturated fats are not the answer to reducing myocardial infarction (MI) and cardiovascular disease (CVD) as we were told and as Dr A.U. Mackinnon (Mackinnon, 1987) concluded from his research, “MI deaths have increased in direct ratio to the consumption of polyunsaturated fats as oils and margarines (plasticized fats)”.

A trial among 86,000 nurses, which was designed in part to prove that margarine did not cause heart attacks proved exactly the opposite as reported in the Lancet 1993.

How eating habits and food processing practices have changed

Table 1: Effects of eating habits

Eating Habit	Effect on Health
Less oily fish is consumed	Good omega 3 and DHA intakes have reduced
More saturated fat is consumed	This raises bad cholesterol
More omega 6 fats are consumed	These do not promote good heart and artery health and are pro-inflammatory
More damaged fats are consumed	Called or classed as trans fatty acids, they are present in all heated and hydrogenated fats and present in processed foods (cake, biscuits, pies, chips)
Antioxidant intake is reduced Antioxidant demand is increased	This means less protection, despite an increased protection requirement
Vegetable and fruit intakes are reduced	Higher fibre diets improve cardio health

Cholesterol lowering drugs (statins) are really only helpful for about 5% of the population who suffer from hypercholesterolemia. Those people do not adjust cholesterol production via the liver very well when dietary cholesterol levels alter. Do statin drugs work? No better than the dietary approach and at considerable extra risk which is mainly unpublicised at present. Statins reduce Co Enzyme Q10 production which raises the risk of heart attacks within six months. No cholesterol reduction programme should rely on drugs (e.g. statins) alone and patients should take supplemental Co Enzyme Q10 when using statins.

Recommendations for Reducing Bad (LDL) Cholesterol and Raising Good Cholesterol:

- Eat garlic and onions to social and bowel tolerance
- Increase dietary fibre especially oats, barley and flaxseed fibre
- Use flaxseed oil daily. This is very high in vegetable omega 3
- Increase oily fish to 3 to 4 times per week (sardines, tuna, salmon, mackerel)
- Increase Vitamin C (1-2 grams/day) and Chromium (200-300 mcg/day)
- Increase Niacin 1-2 grams per day (use non-flushing formula)
- Increase magnesium and selenium
- Reduce and minimise saturated fats and damaged fats
- Increase all antioxidants including Vitamin E, Cu, Zn and Se
- Increase MOS (mannanoligosaccharide) supplements
- Increase aerobic exercise to raise good HDL cholesterol
- Increasing red wine alone is weakly protective
- Do not go on a super low fat diet as this will raise the very bad VLDL cholesterol.

Beyond cholesterol, the toxic amino acid homocysteine (87, 88, 89) appears to be more harmful especially to the genetically predisposed. In combination with the pathological link between heart disease and Chlamydia pneumoniae (48, 50), there are complex interactions working in the heart disease malady. Anyone with a familial risk and incidence of heart disease should get homocysteine and lipoprotein A levels checked out by their doctor. These can be reduced into the low risk range by simple nutritional changes.

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Why are there so many strokes, blood clots and deep venous thrombosis (DVT)?

Thick or viscous sticky blood with poor artery integrity is a key factor in this. DVTs and clots are not caused by a Warfarin or rat poison deficiency. What influences these problems?

A recipe for clots, DVT and stroke:

- Low Niacin and vitamin E levels cause sticky blood with higher clotting risk
- Low omega 3 diets cause thicker blood and red blood cells that cannot bend to get through arteries and capillaries efficiently
- Low vitamin B12 levels cause macrocytic or enlarged red blood cells which cannot travel through blood vessels easily
- Low vitamin C, E, bioflavonoids (citrus white flesh), omega 3 and magnesium levels cause poor artery integrity with scarred abrasive surfaces that promote clogging especially when saturated fats and oxidized LDL cholesterol is high
- Low selenium levels cause increased platelet aggregation and hence raise clotting risk
- Low magnesium levels cause reduced artery diameter and promote cramping of blood vessels which increases the risk of blockages and clots forming
- Excess calcium causes blood vessel contraction, calcifying and hardening of arteries otherwise known as Atherosclerosis
- Excess alcohol and inadequate water intake thicken the blood raising the risk of clotting and hypertension
- Stress and smoking are vasoconstrictive, meaning they cause blood vessels and heart muscles to contract leading to increased blood pressure or hypertension
- High blood fibrinogen levels mean increased clotting risk. This should be checked in those at risk or with familial history of clotting, DVT or stroke

However, fruit and vegetables, especially garlic and onions, have a positive effect on artery health, circulation capacity as well they contain natural anti-clotting agents.

You don't need to be a Rhode Scholar to figure out that reversing the above problems and nutrient deficiencies reduces risk and can reverse symptoms of the problems already being observed.

Why does heart disease increase in post menopausal women and why is heart disease higher in younger men than women? (13) Let's iron out the problem!

Post menopausal women have increasing blood iron and ferritin levels, and levels equal to men at age 70 but only 25% of men at age 45. Excess iron is as bad and even more life threatening and debilitating as low blood iron levels (anemia). A study of 1900 Finnish men showed those with higher iron levels were more than twice as likely to have heart attacks (13). In fact, iron was a greater risk factor than excess cholesterol!

Excess iron depletes zinc and vitamin E and can cause oxidizing of cholesterol. Donating blood may lead to reduced heart attacks especially where ferritin levels are greater than 100-150 mmol/l.

A condition known as haemochromatosis, (or iron load) occurs in the genetically susceptible whereby excess iron is absorbed and stored. Haemochromatosis affects 1 in 200 people and 1 in 10 are carriers of the defect gene(s). The over-promotion of the iron intake message, especially when one is doing it to treat symptoms of anemia which overlap haemochromatosis (fatigue, weakness), is potentially highly detrimental. If you have these symptoms and are not anemic according to blood work, if you have familial history of these symptoms: bronzing skin, joint pains, aches and pains, liver cancer, heart disease, pain under the right rib cage (liver) and are of Celtic descent, then check out this risk factor for heart and liver disease immediately. Go onto low iron, lower vitamin C, high vitamin E, selenium, zinc type diets and supplements. (13) Increase green tea, calcium citrate and lactoferrin intakes.

Magnesium for healthy bones and healthy Hearts: What is the connection?

Ever wondered how the strongest animals in the world have the best bones without drinking milk? What about the fact that Japanese, Asian and African women have stronger bones than western women yet consume far less calcium and milk? (14). One key difference is that the diets of these ethnic groups are well balanced for magnesium and calcium. The higher the intake of magnesium, the better calcium is absorbed. As calcium intake increases, absorption capacity decreases, meaning it never reaches the blood.

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Dr Susan Brown Ph.D claims osteoporosis is not a normal loss due to aging but is a degenerative disease caused by devitalized and imbalanced foods. There are numerous interacting nutrients required to build and maintain strong bones for life. These include, zinc, copper, manganese, boron, magnesium, calcium, phosphorus, Vitamins D,E,A,K,C, lysine and omega 3 among others.(16)

The promotion of extra milk consumption to increase calcium requirements as protection against osteoporosis may be questioned. Why? Milk has a ratio of Ca to Mg of 9:1.(18) Today nutritionists recommend a ratio of Ca1-2:Mg1. Calcium causes arteries and muscles to contract and harden. Conversely and very importantly, magnesium causes relaxation of arteries and muscles. This extremely out of balance ratio of Ca to Mg, along with the extremely high dietary omega 6 to omega 3 ratios that have the same affect on arteries and muscles, is extremely detrimental. What makes up the foam cells and plaque that blocks arteries? The plaque found in the arteries of heart attack victims consists of 95% calcium and 5% oxidized LDL (bad) cholesterol. (17,19)

Where is all the calcium coming from? Potentially from milk and calcium supplements and unfortunately, directly out of the bones. Why out of the bones? To help re-buffer the effects of the high protein, highly acidic diets that westerners are on. Acidic diets are caused in particular by high protein intakes of animal origin. Not only are the arteries affected but joints as well. Calcium is deposited in the joints, reducing mobility and increasing pain levels. What does the medical profession do for heart attack patients? They prescribe calcium channel blocking drugs, which reduces the excess calcium from penetrating and hardening the arteries but these blockers do nothing to address the cause of the problem or put the calcium back in the bones. For many people, extra vitamin K with dietary modification and other supplements help to correct this problem, avoiding the need for such drugs. Excess calcium will also compete with copper and zinc absorption. Copper deficiency is linked to aneurysms and both minerals are involved in bone formation, progesterone production, liver antioxidants (SOD), excess cholesterol and diabetes control.

Western diets are also saturated with phosphorus. Phosphorus is present in high amounts in all animal protein sources while phosphoric acid is used as a preservative and is present in high amounts in fizzy/carbonated drinks especially in Coca Cola®. There is enough phosphorus, acid and sugar in food and drinks today to send bones like noodles.

A study on children found that the more cola consumed, the more calcium was in the blood. Calcium needs to be put into the bones and kept there, not in the blood risking damage to arteries. Acidic high animal protein diets need to be re-balanced to avoid this problem. Sugar, stress, smoking and saturated fats, along with alcohol and coffee, are all detrimental to bone health. With a moderate intake of these, bones become more bony and strong. Increasing weight bearing exercise and becoming less sedentary (eg. less TV) is recommended and your

bones will thank you. Aerobic exercise does not build strong bones. Weightlessness and aerobic exercise in astronauts proved fatal for bone mass and density. NASA corrected the problem by introducing weightlifting while in space. Reducing protein intake to under 50 grams per day (unless you are bodybuilding) will assist bone health. (Dr P Holford in 100% Health).(20)

Another twist on bone health is related to the interactions of the hormones oestrogen and progesterone. Oestrogen and progesterone production reduce after menopause but progesterone reduces relatively much more as no eggs are being produced. The progesterone deficiency is relatively far greater than the oestrogen deficiency but we have concentrated in the medical arena on promoting oestrogen (HRT) therapy alone. A few are waking up to the problem. Exactly what is the problem? A little science will help: "Oestrogen helps build bone cells called osteoblasts which help old bone to be reabsorbed. Progesterone helps build osteoblasts which enable new bone cells to be built".

Put simply, more bone is being lost than is being made because your hormones are out of balance after menopause and even from 30 years onwards. The imbalance is potentially worse when considering the huge load of Xenostrogen present in the environment that is entering the food supply. These are oestrogen mimickers that trick the body into doing things it shouldn't. This factor is critical in the story on hormonally caused cancers of the breast and cervix. The bottom line is one needs to get oestrogen and progesterone checked via blood and saliva testing and get expert help on what balancing is required. Bone building response and osteoporosis reversal has been far more successful with progesterone use than with HRT therapy. Combine the dietary, environmental and lifestyle strategies in this message and osteoporosis will be a non-event in your life.

Of further concern, is the lower level of fat soluble vitamins, A, D, E and K, in skimmed and low fat milk. When coupled with the message on lowering cholesterol (precursor to vitamin D and bile acids) and the low sunlight message to avoid skin cancer, it is little wonder the bones of women are woefully weak. Time for a rethink!

A new factor is surfacing that is being attributed to the milk fat enzyme Xanthine oxidase (XO). Xanthine oxidase is toxic to arteries and because of the homogenization process, XO is allowed to reach the arteries. Unfortunately it is present in low fat skimmed milk as well. Dr Kurt A Oster claims that the XO milk fat enzyme initiates over 50% of all heart disease, a

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serious and disturbing claim for people and the dairy industry (21). XO is claimed to destroy plasmalogen which comprises nearly one third of arterial membranes. Interestingly, non homogenized milk XO cannot get near the heart (21). If this is correct, then non-homogenized, fat reduced milk maybe better for us.

Hints to help manage osteoporosis and cardiovascular disease

- Increase magnesium to 500-1000 mg per day
- Increase seeds, nuts, fresh and whole vegetables (Mg:Ca 2-3:1)
- Increase vitamins A, D, E and K
- Don't avoid or limit cholesterol unless you are a genetic cumulator
- Don't avoid sunlight but don't get burnt
- Reduce acid forming foods and excess animal protein
- Eat alkaline foods which are also cancer, bone, kidney and heart protective
- Modify milk intake according to genetic, lifestyle and environmental risk factors
- Consume more antioxidants to protect cholesterol from oxidizing
- Reduce saturated fat intake but avoid very low fat diets.
- Re-balance milk fat with omega 3 and DHA (flaxseed oil, oily fish)
- Increase folic acid, B12 and B6 intake to reduce the homocysteine risk factor and
- improve the methylation process and re-cycling
- Request a hormonal profile check (DHEA, oestrogen and salivary progesterone).

Don't rely on aspirin alone to save you!

While aspirin is known to thin the blood and reduce clotting risk, so to do omega 3 fats, vitamin E, water and low alcohol consumption. How many aspirin research trials have actually worked? One in five to my knowledge and investigation. Why is there only one trial that has made doctors basically say "An aspirin a day keeps the cardiologist away"? This research from the Physicians Health Study (PHS) (22) showed a 44% reduction in first non fatal heart attacks attributable to aspirin. Why one success and so many failures? Dr James A Landauer from Electrolyte Labs in Denver USA reported that Bufferin was used in this trial which contains some magnesium but was not used in the other trials on aspirin.

Magnesium can bring remarkable benefits to heart health

What would the Physicians Health Study outcome have been on magnesium alone? Magnesium reduces platelet aggregation, is a powerful vasodilator and anticoagulant, it prolongs clotting time and is a natural calcium channel blocker along with vitamin K. The most positive aspect relative to aspirin is that magnesium has no known or acknowledged side affects. Further support for magnesium comes from the reduction of heart attacks in areas of hard water

with high levels of dissolved magnesium and calcium. Dr H Schroeder, in a nationwide USA survey (23), uncovered this interesting correlation and benefit.

Asprin is not without side affects and risks according to Dr Martin who quotes in the Lancet (24). The side affects can include stomach ulcers, ulcer-like pain and perhaps its worse effect is on the lung where long term asprin users can predate emphysema and lung disease, according to the expert work of Dr Timothy Gerrity of the University of Illinois, College of Medicine and reported in the New England Journal of Medicine (25). Dr Gerrity reports that asprin inhibits prostaglandin E1 which is vital for the health of the cilia in the lungs (cilia carry away and help remove the “gunk” and mucus). The hormone PGE1 is important for both prevention of heart attacks and cancer. It is also reported in the Lancet (26) that asprin will make asthma worse in 20% of patients. Further risks reported include, cerebral haemorrhage which can lead to stroke, nasal polyps, liver damage especially in those with inadequate detoxification metabolism and to allergic reactions (27). Furthermore, it may also deplete iron and alter haemoglobin so that it does not carry oxygen (28). According to Nobel Laureate, Dr Bengt Samuelsson of Karlinska Institute, diabetics have difficulty making an enzyme called delta-6-desaturase (D-6-D). It is this enzyme which converts linolenic acid (omega 3) into PGE1. Asprin can interfere with D-6-D and with the population wide essential fatty acid deficiency present today, such that there are serious health implications for diabetics (29,30). There is no doubt some will benefit (as discussed next) from asprin, but even though it is plant derived, natural is not always safe for all. Dr Professor Brown from Cambridge University suggests there is something better than Asprin. (31)

Asprin or Fishoil EPA and vitamin E for low CVD? The Eskimo enigma

The traditional Eskimo or Inuit diet is among the fattiest and highest in cholesterol in the world and yet heart disease is virtually unheard of among them. Why? Investigating this supposed paradox, Dr Hugh Sinclair, a medical scientist from Oxford University showed, in 1974, that by living off their type of diet he personally reduced his triglycerides (blood fat), raised his HDL (good) cholesterol and reduced the thickness of his blood significantly (32). The elixir and explanation comes from the long chain fats called EPA and DHA, present in high

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amounts in certain fish and fish oils. The Japanese similarly have traditional diets high in EPA and also experience low heart disease levels and excellent longevity (33,34).

Facts and research evidence for fish, EPA and lowering heart

Disease

- A Study of 850 Dutch men in 1985 was conducted for 20 years. Those who ate two meals of fish per week had a lower incidence of CVD (35).
- A large scale American (MRFIT) study involving 6000 men at high risk of CVD found that the higher the intake of Omega 3 oils, the lower the mortality from CVD (36).
- A trial in 1994 involving 306 men and women found a strong correlation between low levels of EPA in the blood and a high risk of CVD (37).
- The Medical Research Council put 2000 male heart attack survivors on one of three diets. After four years those on oil-rich fish or fish oil capsules had one-third fewer deaths (38).
- A Fish oil consumption trial lowered triglycerides, a risk factor for CVD (39).
- Dr Reg Saynor from the Cardiothoracic Unit in Sheffield's General Hospital gave volunteers 20 mls of EPA and found reductions in triglycerides (TG) and increased HDL or good cholesterol. Continuing with 100 cardiac patients for over a year, he found virtually every person achieved normal triglyceride levels with much reduced need for angina medication (40).
- Professor Renaud of the French National Institute for Health and Medical Research in Lyons studied the population of Crete where the incidence of heart disease is among the lowest in the world. Gamma linolenic Acid (GLA) was found to be 68% higher on the Crete diet. (41). Their diet is high in olive oil (monounsaturated fat), a good fat source which has very high antioxidant potential.

EPA from fish Oil: Seven proven facts

1. EPA decreases the stickiness of blood. Meaning reduced clotting risk and DVT
2. EPA lowers blood triglycerides (fats)
3. EPA lowers LDL (bad) cholesterol
4. EPA raises HDL (good) cholesterol
5. EPA reduced the need for anti-angina medication
6. Fish oils help reduce insulin resistance and manage weight
7. EPA plays a vital role in reducing artery inflammation.

The truth is that no drug will do all this and with no side effects. Statins can lower LDL cholesterol but they won't raise HDL or good cholesterol. Statins deplete Co Enzyme Q10 which is vital for heart health and function.

Dr Rodney Foale, a consultant Cardiologist at St Mary's Hospital London, recommends fish supplements to anyone with a risk of heart disease who does not eat oily fish two to three times per week. Caution: Combining EPA and aspirin may cause excessive blood thinning and potential bleeding (42). Consult your health professional to manage this interacting risk factor.

Vitamin E and heart disease: What benefits are there?

The Heart Foundation rightly point out that two large well conducted trials on vitamin E indicated no benefit from the use of vitamin E for protecting against heart disease. However this is unfair dismissal of the value of Vitamin E when a more thorough appraisal of the scientific literature is conducted. What supporting evidence is there for the role of vitamin E in cardiovascular disease? Professor Brown and colleagues from Cambridge University showed a 75% reduction in death or heart attack in a group of 2000 patients with heart disease compared to those on the placebo (42). These results were approximately three times better than any drug yet tested. Professor Brown concluded that "This is even more exciting than aspirin. Most people in our study were already taking aspirin. The average benefit from taking aspirin is in the order of 25-30% reduction. Vitamin E reduces the risk of heart attack by a massive 75%." (42) Professor Brown today recommends 400-800 iu of vitamin E per day.

Further compelling evidence comes from a study of 87,200 nurses in 1993, who were given 100 iu of vitamin E daily for two years. A 40% reduction in fatal and non-fatal heart attacks was reported for those taking vitamin E (43). Furthermore, 39,000 male health professionals were given 100 iu of vitamin E for two years. They experienced a 39% reduction in heart attacks with vitamin E (44). A ten year study involving 11,178 people aged 67 to 105 found that supplementing vitamin E reduced risk of death from all causes by 33% and reduced risk from dying from heart disease from heart attacks by 47%. Those taking vitamin E for longer reduced their risk from dying from heart disease and cancer by half. Those taking both vitamin C and E supplements reduced overall risk of death by 42% and risk of death from a heart attack by 52% (45). In a double blind study, 1600mg of vitamin E per day reduced intermittent claudication (pain and lameness in the limbs by arterial blockage) by 66% (46)

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Dr Diaz at the Memorial Department of Medicine and the Whitaker Cardiovascular Institute, Boston University, has comprehensively reviewed all the human studies on vitamin E and concluded there is ample evidence that vitamin E does reduce CVD (45). The reason why two studies have shown no improvement is related to the less than adequate dose rate of 50-100 iu only and that potential benefits over placebo group are not seen until after at least 200 days and up to two years on vitamin E supplements. Linear benefits are with dose rates increasing from 100-400 iu Vitamin E per day. Levels above this offer diminishing returns.

Dr Evan Shute, an eminent physician and devoted vitamin E researcher knew all this in 1948. He suffered greatly at the hands of the US cardiologists for his research and conviction that vitamin E reduces heart disease (47). His convictions and research are being realized today by scientifically driven health practitioners. Vitamin E is best taken in a mixed tocopherol form including acetate, gamma tocopherol and tocotrienol forms. As dietary levels above 50 mg per day are very hard to achieve, supplementing with vitamin E becomes the only option to achieve 400 iu per day. Diets rich in nuts, seeds, beans, wheat germ, fish oil and sweet potatoes are the best sources of natural vitamin E.

Chronic infection and inflammation: Is it linked to heart disease?

The death of 15 elite and very fit Scandinavia orienteering athletes between 1979 and 1992 was considered to be an epidemic of unknown cause. Swedish researchers uncovered by post mortem examination, chronic infection with the parasite chlamydia pneumoniae (48, 49, 50).

Individuals with chronic infection have been shown to have elevated biomarkers for chronic inflammation (51). These biomarkers such as C-reactive protein (CRP) and serum amyloid (a) trigger cytokines and inflammatory markers that increase the risk of damage to the heart and promote heart disease. Harvard Medical school researchers report that aspirin may help protect against heart disease through its ability to reduce inflammation (51). Research on 543 men in the Physicians Health Study showed that men with higher C-reactive protein had higher risk of heart disease.

Those who took aspirin on a regular basis had a lower risk of heart disease. Aspirin may be reducing inflammation associated with toxic exposure, trauma and infection, particularly in the GALT immune tissue of the gut region (52). The alarm substances produced by GALT tissue could interact with genes in genetically susceptible individuals to eventually produce heart disease. While this is only a recent discovery, medical advisors may need to move well beyond cholesterol to treat and prevent heart disease (53). Those with chlamydia pneumoniae and helicobacter pylori may benefit most from aspirin, but aspirin is not an elixir for all people with heart disease or other risk factors for it.

Heart disease: Is it acquired or inherited?

Cardiovascular disease often runs in families so is it acquired or inherited? The answer is both. The risk of over producing cholesterol and homocysteine is partly inherited at least for some. However, even when these risks have emerged they can be reversed, meaning even with inheriting a genetic predisposition to heart disease promoters you have the power to control them and don't need to submit to destiny fatalistically (47). That is great news when you cannot choose your ancestors. Interestingly, these risk factors have far more to do with the lifestyle and dietary habits you inherited rather than what genes you inherited. That is good news because it is easier to change these lifestyle factors than to change your genes! The earlier this begins, the better.

Another twist in the heart disease story comes from the work of Professor Barker with researchers from Helsinki University Hospital in Finland. Finland has one of the highest CVD rates in the world. They researched (55) whether CVD risk could be programmed during foetal development as it might depend on the nutrition a foetus receives from its mother in pregnancy.

This is called the "foetal programming theory" of heart disease and diabetes. Results with 3302 men born between 1924 and 1993 and other study results showed that:

- Those born with low birth weights had a higher risk of hypertension (high blood pressure), diabetes and CVD later in life.
- Those born thin or short in terms of body length had double the risk of CVD or diabetes.
- Being born to a short, overweight mother increased insulin resistance later in life.

This may not be welcome news if this applies to you but the good news is that a specific nutrition and lifestyle strategy can re-programme your metabolism towards many healthy years to come.

Good food and nutrients for a healthy heart

CoEnzQ10

CoEnzQ10 shows an extraordinary ability to help patients with heart disease, gum disease and conditions where energy production within the body is not efficient (mitochondrial dysfunction). Reportedly, no less than 12 million people in Japan take CoQ10 supplements. A

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six year study at the University of Texas with people with congestive heart failure showed that 75% of those on Co-Q survived three years compared to 25% on conventional medication (56). Around 20 trials have repeatedly demonstrated a remarkable ability of CoQ to improve heart function (47). Blood pressure was also reduced by 11% versus only 2% in the placebo group. (56) Angina patients have been shown to be able to increase tolerance to exercise and to experience less angina attacks after only four weeks on CoQ10 (56). CoQ10 at 90 mg per day has been shown to reduce oxidative damage in the arteries, so protecting fats in the blood such as LDL cholesterol from becoming oxidized and contributing to arterial blockages (57). CoQ10 should be taken in an oil based form and rates of 100-300 mg per day should be consumed. Sardines and mackerel contain the highest natural CoQ10 content.

Arginine

Arginine is an amino acid from which nitric oxide is formed (58). Nitric oxide is a vasodilator hence it helps to keep blood vessels open. Blood cholesterol and heart disease increase in animals being given diets low in arginine and high in lysine (59). Researchers have confirmed arginine has a positive effect on heart function and blood flow (60,61). Rates of 5 to 7 grams daily maybe helpful. Vegetable proteins are high in arginine and low in lysine. This may explain why some people have reduced risk of heart disease and can reverse CVD symptoms when on such diets.

Vitamin C

Dr Linus Pauling, a two time Nobel prize winner, co-authored a landmark paper with Dr Matthias Rath called, "A Unified Theory of Human Cardiovascular Disease". This paper has attracted considerable attention by cardiologists for its proposed solutions to CVD (62). To repair damaged and leaky blood vessels, lipids and apoprotein combine to form lipoprotein (a). While lipoprotein (a) (LPa) is good, too much is bad and a good predictor of impending CVD. There appears to be a genetic predisposition to overproduce LP(a) in some individuals (62,63). There are over 1100 research papers making reference to LP(a) since Paulings' original paper. While more proof is required on the role of vitamin C, lysine and niacin to reduce LP(a), evidence is growing, including results from clinical practice, that these nutrients help control LP(a) type cholesterol (64). One study from the University of Arkansas of Medical Sciences reported a 35% decrease in LP(a) (65). In practice, the results are better when combined with Vitamin C and lysine. It is noted that chronic fatigue (M.E.) and post-viral syndrome patients often have high LP(a). Beyond HDL, LDL and LP(a) there are lipoproteins apoprotein A1 which lower CVD risk and also lipoproteins called apoprotein A2 or E2 which increase CVD risk. Blood profiling that determine your personal CVD risk will be based on these factors as well in future (66)

A number of studies have shown that the higher a person's vitamin C status, the lower their blood pressure and cholesterol levels (67). In one double blind study, researchers found that 1 g of vitamin C per day gave a significant reduction in systolic blood pressure but not diastolic. This research group from Alcorn State University in Mississippi concluded that vitamin C supplementation may have therapeutic value in human hypertensive disease. (68)

Antioxidants help regenerate each other after they mop-up free radicals in the body. Vitamin C helps regenerate vitamin E and alpha lipoic acid helps regenerate both vitamins C and E. This is called synergistic re-cycling of antioxidants. In practice, a combination of antioxidants is better than high amounts of singular antioxidants for this reason.

Niacin

There is no doubt that niacin will lower LDL cholesterol and lipoprotein (a) and raise HDL cholesterol. Dr Robert Kowalski pioneered this work and promoted it in clinical practice (The 8 Week Cholesterol Cure) (69). Supplementing between 1-3 grams of niacin per day provided the necessary reduction for many patients. Niacin was five times more effective in raising HDL cholesterol compared to two cholesterol lowering drugs in three studies (70,71,72). Niacin trials have shown a 22 per cent drop in total cholesterol and a 50 per cent reduction in blood fat levels in a month (73). The Journal of American Medical Association sung the praises of Niacin in 1986 as well (74).

Garlic and Onions

Anti-social as they are, they may save you from heart disease. Garlic contains over 200 biologically active substances that counteract the effects of some diseases including CVD. In a review of numerous studies, cholesterol has been shown to be lowered by 9-12% (75,76), Garlic helped to reduce the oxidation of cholesterol by 30% in one trial (77) and it also protects against blood clots. Garlic thins the blood and Professor Eric Block isolated the substance responsible called ajoene. Eating three cloves of garlic per day will reduce clotting by about 20%. The only problem you may have is no friends to enjoy your life with. A three year study was conducted, by cardiologist Dr Arun Bordia at Tagore Medical College in India with patients who had already suffered a heart attack. They were given garlic as a treatment equal to 6-10 cloves per day (whew!) This group suffered fewer heart attacks and had significantly lower cholesterol levels than the non garlic group (78). Onions contain various sulphur type products which have

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been shown to be particularly helpful in clearing triglycerides from the blood. If you must have a fatty meal, eat some onions with it. Benefits will be found from consuming 1-3 cloves of garlic per day and cooked garlic is as good as, or better than, raw garlic but not as good as raw garlic for stimulating the immune system.

A certain recipe for heart disease

Smoking

Smoking a packet a day gives you twice the risk of a heart attack and five times the risk of a stroke. Nine out of ten heavy smokers have moderate to advanced atherosclerosis compared to three in ten non-smokers (47).

Stress

Stress promotes high blood pressure and thickens your blood. Feelings that accompany stressful events can more than double the risk of a heart attack immediately in the hour after the stressful event. Conversely, exercise and relaxation can raise good HDL cholesterol. Learn how and when to relax and match your nutrition and protection packages to your stress levels (79,80). Benefits can be observed from increasing B vitamins especially pantothenic acid (anti-stress vitamin) under stressful conditions.

Lack of Exercise

Exercise lowers blood pressure and total cholesterol and raises good cholesterol (81). Aerobic exercise three times per week and raising heart rate to 120 beats per minutes is the ultimate goal. If you are new to this, start very gently and get some expert advice on the best exercise programmes for you first (81,82).

Obesity

Being obese suggests sickness and poor longevity chances. Obesity is widespread. More than two thirds of women and half of men are overweight. Being overweight raises blood pressure, cholesterol and insulin resistance or diabetes. Obesity is a major cause of cardiovascular disease. Being overweight is singly the biggest cause of all related diseases and cancer. Body mass index, while still useful, has given way to the stronger predictor of heart disease and diabetes: the waist to hip ratio. Ideally the ratio needs to be 0.85-0.95. Waist to hip ratio of 1.00 or more is approaching the high heart disease and diabetes risk bracket. (47)

Salt

Salt is known to raise blood pressure especially for certain prone individuals. Excess salt is in all processed and fast foods. We consume over 5 to 10 grams per day on average which is 10 to 20 times greater than our actual requirements. The potassium to sodium ratio in natural

unprocessed foods averages 7 to 1 (K:Na) (83). Today's over-salted, over-processed and devitalized foods means that the sodium to potassium ratio is now reversed to 3.6:1 (Na:K). This, along with low magnesium is a major cause of high blood pressure. Note that blood pressure may not be simply just an excess salt type problem but due more to low Mg, Ca and K levels. For some, lowering salt levels does not reduce blood pressure and can be even dangerous.

Get good advice when attempting low salt diets. Whole, fresh unpeeled vegetables, wholegrains and unprocessed seafoods give the highest potassium and lowest sodium levels. Importantly there is salt and salt. Standard commercial table salt is highly processed. Natural Celtic salt has the above important minerals included. Go for this type of salt if you have to have some. Replacing half the salt in your diet with potassium chloride is also potentially useful for some.

Sugar

Sugar raises both blood pressure and causes increased CVD. Some researchers consider sugar more of a problem than saturated fat. Together they are worse for CVD than either on its own. Sugar increases blood stickiness causing a clotting risk and increases resistance to insulin with the resultant diabetes and CVD. Sugar reduces your resistance to stress. Excess sugar that cannot be used or stored is converted to fat and stored as adipose tissue. Many individuals eating devitalized foods high in sugar and refined carbohydrates are setting themselves up for insulin resistance, diabetes and heart disease early in life. Expect to live a short life if you are on this kind of diet.

Processed and damaged fats

Margarine, heated and damaged fats used in fast foods, biscuits, pastries, chips etc. are all stimulants for creating heart disease. Trans fatty acids produced from heating and hydrogenating polyunsaturated omega 6 type fats are highly detrimental as they cause oxidative stress, they damage arteries and cause DNA mutation and toxin entry to cells and create chemicals that cause inflammation and disease. Avoid them!

Notes:

Alcohol

Moderate amounts of red wine may be good for you. It is not the total secret to the French dietary paradox however. The French also eat a lot less than the standard westerner or American it would seem. Total calorie intake is less. Red wine contains antioxidants called OPC. Alcohol causes dehydration, thickens blood and causes arteries to contract. Alcohol is high in calories and so promotes obesity. Moderation is the key.

Insulin resistance and diabetes: Causes of heart disease and how to prevent and reverse it

While insulin resistance and diabetes could comprise a separate paper on its own, no discussion on causes of CVD would be complete without reference to this risk factor (86). With today's diets and lifestyle of, excess refined sugars and carbohydrates, lack of exercise, obesity and poor antioxidant status, this has led to the condition known as insulin resistance or Syndrome X. This condition was first identified by Gerald Reaven, Professor of Medicine at Stanford University Medical school whereby he found as many as one in four people respond abnormally to eating carbohydrates by over-producing insulin.(84)

Glucose is present in the blood from breakdown of carbohydrates but the body's cells do not recognize the insulin, that is sending them messages for the glucose and fats to be taken into the cell to be metabolized. If sugar is not used or stored via the liver as glycogen, it is converted to fat and stored so leading to obesity and disease. The connection to heart disease is that sugar is a toxin and an oxidant just like smoking and this leads to a process called glycation. In glycation, arteries, nerves, eyes and kidneys are damaged leading to the ensuing disabilities, reduced quality of life and reduced lifespan caused by full blown type 2 adult onset diabetes. Alpha lipoic acid is an approved drug in Germany for treating and preventing the problems associated with glycation and specifically diabetic neuropathy (85). Lipoic acid is both water soluble and fat soluble making it a very useful antioxidant. Excess insulin inflames arteries and raises blood pressure which adds up to an increased risk of cardiovascular disease as a result of:

- Hypertension (50% of high blood pressure patients are insulin resistant)
- Poor cholesterol status and elevated blood triglycerides
- Increased fibrinogen (higher blood clotting risk and more viscous blood)
- Elevated uric acid (associated with gout)

Today's diets are excessively high in omega 6 and deficient in omega 3. This causes a switch in synthesis from anti-inflammatory prostaglandins to pro-inflammatory ones. These bad PGs inflame arteries and along with calcium cause atherosclerosis or hardening and thickening of these arteries. The bad prostaglandins are made directly from meat and milk and may explain why the above problems are higher in those with high consumption of these types of foods. Refinement, processing and storage of foods have stripped essential co-factors

required for normal metabolism of sugars and carbohydrates such as Cr, Mg, B1, B2, B6, niacin and biotin.

Chromium and magnesium, so important to correct sugar metabolism, have been reduced by 80-90% in white refined grain products.

Key B vitamins are all but missing due to modern milling refinement. B vitamins such as B1, B2, B6, biotin are essential for correct conversion of fatty acids and carbohydrates and these are also very depleted in processed and non-fresh foods. Those vitamins and minerals involved in protection against oxidation are also depleted. Deficiencies in these co-factors can create hidden hunger and bingeing where the body goes looking for the depleted nutrients. These are all reasons that help explain the increase in insulin resistance and the ensuing diabetes and heart disease explosion. Ironically, people with insulin resistance respond to deficient fatty acids and they appear to have omega 3 essential fatty acid deficiencies. Furthermore, people with insulin resistance respond to additions of conjugated linoleic acid (90, 91, 92) in the diet whereby they not only metabolise sugars better but they mobilize and burn adipose tissue and maintain or enhance lean muscle mass. This is a win-win and the only effective way to maintain yourself lean for life and to avoid yo-yo dieting. Loss of water and muscle mass appear to explain the weight lost in many programmes hence, they are set up to fail or for repeat business. A return to whole foods, less sugar, more complex carbohydrates low in glycaemic index score, with food combining with protein and fats, will see a reversal of this epidemic and many CVD risk factors.

A personal checklist: Are you insulin resistant or suffering from Syndrome X?

Section 1

- Do you have a family history of diabetes?
- Do you get indigestion after meals?
- Do you get sleepy after meals?
- Do you have high fat stores although not obese?
- Do you get odema (water retention)?
- Do you take regular anaerobic exercise?

Notes:

- Do you have cravings for carbohydrates and chocolate?
- Do you take birth control pills?
- Are you over 60 years of age?
- Do you drink four or more cups of caffeinated drinks daily?
- Do you sweat a lot or get excessively thirsty?
- Do you have increased fat stores inspite of exercise and low calorie diets but still have approximately normal weight for your height?
- Are you more than 7 kgs over your ideal weight?
- Are you tired and fatigued all the time
- Do you get irritable or angry without carbohydrates?
- Do you crave something sweet after meals?
- Do you have a sedentary lifestyle?

Section 2

- Do you have elevated fasting triglycerides?
- Do you have elevated cholesterol?
- Do you have low HDL levels?
- Do you have elevated LDL levels?
- Do you have elevated blood pressure?
- Do you have elevated levels of glycosylated Haemoglobin (HgBA1C) (sugar coating around red blood cells)?
- Do you have elevated fasting glucose levels?
- Do you have low DHEA levels (Adrenal hormone)?
- Do you have postural hypotension (i.e. your blood pressure drops upon standing)?
- Do you have an increased waist to hip ratio greater than 0.95?

Total Yes answers Section:1: Section 2:

How do you rate?

Section 1

Yes Answers	Category	Balance Status	Diabetes/CVD Risk
0-5	Category One	Stable blood sugar levels	Low Risk
5-10	Category Two	Some imbalances	Medium Risk
11-17	Cateryory Three	Marked imbalances	High Risk

Section 2

Yes Answers	Category	Balance Status	
0	One	Stable sugars likely	Low Risk
1-3	Two	Investigate further (likely category three)	Medium Risk
4-12	Three	See a Doctor/nutritionist	High Risk

Some Recommendations to reverse insulin resistance and minimize CVD risk

	Helpful or essential nutrients/supplements
increase antioxidants and anti-glycation nutrients	vitamins C, E, Se, Alpha Lipoic Acid, NAC, OPC tumeric, rosemary, green tea, garlic, onions
increase insulin cofactors	B6, zinc, magnesium, niacin, vitamin E, Cr
increase essential fatty acids	omega 3/flaxseed oils, oily fish conjugated linoleic acid (CLA)
increase fat mobilisers and utilize nutrients	CLA, carnitine, lysine, chromium, niacin
increase glyconutritionals	acemannan, aloe vera, mannoligosaccharides
increase glucose stabilizers	chromium, vanadium, zinc
increase anti-inflammatories	arginine, EPA/DHA, GLA, tumeric/curcumin
increase methylatoin modifiers (homocystine management)	folic acid, vitamins B6 and B12 and trimethylglycine

Recommendations and changes to lifestyle and dietary eating patterns

- Increase complex carbohydrates and select low glycaemic index foods
- Reduce total sugars and refined carbohydrates
- Check out grain allergies
- Eat essential fatty acids and protein with carbohydrates
- Eliminate hidden hunger and micronutrient cravings

Notes:

- Do regular aerobic exercise three times per week and daily walking
- Eat like king at breakfast, a prince at lunch and a pauper at dinner
- Avoid overeating late in the day
- Eat smaller meals more often
- Increase water intake to 2 litres per day
- Never shop when hungry
- Change your company to motivate and achieve success
- Reduce dairy and saturated, fatty, fried and trans fatty acid foods
- Minimise stress and stimulants
- Eliminate smoking and excess drinking
- Relax and enjoy yourself
- Cook with virgin olive oil or canola oil
- Eat less salt, use Celtic salt and potassium/magnesium substitutes
- Eat more fresh vegetables and fruit (5-10 serves per day)
- Eat 6 grapes per day and drink no more than 2 glasses of red wine per day
- Eat onions, garlic and tumeric three to four 4 times per week
- Eat oily fish 3 to 4 times per week
- Use flaxseed oil daily (1 tablespoon)
- Supplement with 1 to 2 grams CLA per day
- Exercise aerobically and use low resistance, highly repetitious weight work interchangeably three to four times per week. Exhaust yourself slowly not quickly
- Use bioimpedance technology (BIA) to ensure only fat is being lost and water and lean muscle (where fat is burnt) is maintained or increased.

Multiple and interactive cardiovascular risk assessment

A summary of risk factors for CVD are compiled here so as to assist in defining the degree of personal risk. Clearly the more numbers falling into the high risk brackets the greater the cumulated risk of CVD.

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