HEART OF THE MATTER

From getting more sleep to thinking positive there are real changes that you can make to improve the health of your heart.

Words by Sally Mathrick
The heart is the symbol of love and emotion. Love is a positive state of being that is health giving. While symbology doesn’t necessarily equate to actuality, it’s interesting to ponder when we consider that a third of humans die because of problems with the heart and circulatory system.

According to the Heart Foundation, 40 per cent of deaths in New Zealand and 34 per cent of Australian deaths each year are due to diseases of the heart and circulatory system. In America the rate is 35.3 per cent and the UK figure is similar.

Interheart, an international study on heart attacks in almost 30,000 people across 52 countries, suggested that cardiovascular disease could reach epidemic proportions in Africa, the Middle East and South Asia in the near future. The first presentation of heart attacks in people from these countries is an average 10 years younger than in people from Western (developed) countries. The majority of diseases of the heart and circulatory system are preventable.

ABOUT THE HEART AND CARDIOVASCULAR DISEASE (CVD)

Quietten yourself for a moment and sense your own heart beating. It’s pumping your freshly oxygenated blood through the large arteries to nourish your body, and simultaneously receiving deoxygenated blood and directing it back to the lungs.

The heart is a fist-sized muscular organ, an elaborate structure of chambers, valves and tubes through which blood surges, propelling it into the arteries and the body. The circulatory system is the vast network of vessels through which blood flows. From large arteries to narrower arterioles to tiny capillaries to venules and veins, the circulatory system is akin to a network that can deliver goods to every cell, or at least to a nearby depot.

Cardiovascular disease (CVD) is an umbrella term for chronic diseases that manifest in or because of problems in the heart or circulatory system. For example, the heart can have structural issues such as valves that don’t function properly. Or the fine vessels that supply blood to feed the heart musculature can be narrowed or blocked, impeding muscle function and creating disease or death of tissue. Other vessels of the circulatory system can build up plaques along their walls, which disrupt the regular flow of blood and results in inflammation. Varying types of excessive stress may also cause the whole cardiovascular system to run in top gear, causing high blood pressure.

Death from CVD can be due to myocardial infarcts (heart attack or cardiac arrest), congestive heart failure and thrombosis.

CONTRIBUTING FACTORS

The major lifestyle factors that contribute to CVD are well established. They include lack of exercise, smoking, highly stressful lifestyles and high-sugar and high-fat diets. Central obesity (also known as abdominal obesity) is when an accumulation of fat is stored around the organs within the body cavity as opposed to extra fat on top of muscles under the skin and is a significant indicator of CVD.

Based on information from the Interheart study, Jean-Pierre Després, PhD, of The Quebec Heart Institute, Laval Hospital Research Centre in Canada, suggests that abdominal obesity, which is measured through waist to hip ratio, is a more accurately determined risk factor than body mass index, which is based on weight and height.

Additionally, rather than testing your blood lipid levels, which fluctuate through foods ingested, Després recommends testing ApoA and ApoB levels. These are proteins that attach to fats in the blood and unlock the cell receptors that allow fats to enter cells. High levels of ApoB are associated with LDLs (bad cholesterol) and a higher risk of plaques forming on vessel walls, which leads to vascular and heart disease. High levels of ApoA are associated with the good HDL fats and are considered protective from cardiovascular disease.

Some additional contributing factors that have been identified include a lack of sleep, H.Pylori infection, genetic predisposition and not flossing teeth. Blood tests revealing elevated homocysteine, a protein that accumulates when the nutrients folate, vitamins B12 and B6 are deficient, also indicates an increase in the risk of cardiovascular disease.
Optimism at high levels may provide up to a 50% lowered risk of coronary heart disease.

Deficiencies in many other nutrients also contribute to a weakened vitality of the heart and vessels and a reduction in quality of the blood.

**PSYCHOLOGICAL INFLUENCES**
As early as 1628, the English physician William Harvey described how mental disturbances impair the function of the heart. Today, compelling evidence links psychological and emotional factors with the health of the heart. In fact, according to Laura Kubzansky, from the Harvard School of Public Health, the risk psycho-emotional factors contribute are comparable to the risks imposed by smoking (2007).

Kubzansky describes three major negative emotions associated with higher risks of coronary heart disease, a disease of the fine arteries feeding the heart muscle. These are anxiety, depression and anger. When the intensity of the emotion was high and for a long duration, the risk posed was greater.

The biological mechanisms of why and how these negative emotions create heart disease are not clear. Hypotheses include hyper-responsivity in the sympathetic (fight or flight) nervous system, altered autonomic control of the heart rate, injury to the vessel walls over time and reduced compliance with recommended health regimes.

Positive emotions may provide some protection against developing CVD. Being involved in positive social interactions and feeling a sense of belonging have been shown to promote resilience to stresses and improve cardiovascular outcomes. Joining one enjoyable social group statistically increases life expectancy by six years. Other studies have shown that optimism at high levels may provide up to a 50 per cent lowered risk of coronary heart disease.

**TRIALS AND TRADITION**
The scope of the scientific method to definitively analyse the effect of individual emotions on CVD is restricted. Scientific trials are slightly compromised, because the subjective, individual and transient nature of the emotions makes them difficult to fit within the traditional scientific method. There are a number of correlating themes to be observed between the recent scientific connections between emotional health and CVD and traditional medicinal approaches to mental emotional states and the health of the heart.

In Traditional Chinese Medicine (TCM) the heart is sometimes called ‘the master’. As well as controlling the blood and vessels, it is thought to be the house of the spirit or mind, a concept called ‘shen’. The emotional, mental and spiritual aspects of the individual are believed to reside in the heart.

It follows from this that the health of the heart and blood directly affect the functions of mental activities and emotions, the consciousness, thinking, and ability to sleep. TCM understands that an unhealthy heart and blood deficiency will create depression, poor memory, clouded thinking, restlessness and other mental health issues. Heart health also effects the development of intelligence. When the heart is strong and the blood is healthy, shen will be normal, regulated, balanced and clear.

In the Ayurvedic cosmology, the heart is associated with the anahata chakra. A chakra is an energy centre within the body. Anahata means unstruck or unbeaten, alluding to the transcendental sound created within it that can only be perceived by pure consciousness.

Anahata is the middle point of the seven major chakras. It acts as the conduit through which energy from the less conscious energy centres of the base, sexual and solar plexus move through to the centres of communication, intellect and spiritual wisdom, and vice versa. When in a harmonious flow, the heart imbues the energetic flow of the body with loving energy, which in itself confers health. When imbalanced it may lead to issues with breathing, high blood pressure and skin disorders.
MEDITATION AND RELAXATION THERAPIES

A nine-year, randomised control study undertaken by the Medical College of Wisconsin and the Maharishi University in Iowa, showed a 47 per cent reduction in deaths, heart attacks and strokes in African-Americans who meditated. This was compared to a control group who received educational classes about controlling traditional risk factors such as diet and exercise. The meditation group were asked to practice 20 minutes of transcendental meditation twice a day. At the end of the study, 80 per cent of the meditators were practicing at least once a day. In addition to reduced cardiovascular diseases, the meditation group had lower blood pressure and reduced psychological stress.

Research conducted by Roger Ulrich, PhD, provided evidence that scenes of nature could assist in reducing blood pressure and contribute to accelerated healing time in people recovering from operations. The studies consistently showed swift therapeutic benefit, both from actual operations. The studies consistently showed swift therapeutic benefit, both from actual operations. The solutions lies within our own hearts. This research will eventually help people who have lost heart muscle due to heart attacks or other cardiovascular diseases, and may reduce the number of heart transplants required.

Increasing fibre intake has shown to assist in slightly lowering cholesterol levels. Adding oat bran to your breakfast cereal may help. Fibrous whole foods also help to balance blood glucose levels, assisting in reducing generalised inflammation. Include multigrain bread, rolled oats, rice bran, brown rice and lots of vegetables in your diet. Eating large quantities of vegetables is more effective than certain drugs in reducing cholesterol and high blood pressure over a six-week period.

Dietary salt, predominantly hidden in refined or processed foods, is considered a major contribution to high blood pressure according to Dr Trevor Beard of the University of Tasmania. Excessive salt intake leads to fluid retention, which in turn increases blood pressure, which can lead to more disease of the cardiovascular system. Additionally, a high intake of processed foods often equates to a reduction in essential nutrients, particularly magnesium and the vitamin B complex.

Ultimately, it could be nutritional deficiencies, sedentary lifestyles, the stress of negative emotional states, isolation and loneliness or a combination of these factors that account for the high rates of CVD in the world. The solution might be looked for in the word cure, which derives from curare, the Latin word for ‘take care of’. If love and care are found in the heart, perhaps the solution lies within our own hearts.

NUTRITIONAL SUPPORTS

Modern diets are often rich in devitalised foods that are high in fat, salt and refined carbohydrates, which all contribute to poor cardiovascular health. There are many reasons to consume foods that are good for the heart.

Antioxidant-rich foods support the repair of vessels of the circulatory system and assist in preventing further damage. These include berries, cherries, grapes, ginger and turmeric, garlic, onion, and the cruciferous vegetables, particularly broccoli sprouts and organic broccoli. Supplements of CoEnzyme Q10, vitamins E and C, and selenium may also be of benefit. Drinking more than three cups of green tea daily repairs vessel walls and reduces bad cholesterol levels.

Good oils help to keep the blood fats in order and reduce inflammatory tendencies. Foods containing high levels of ‘good’ omega-3 essential fatty acids include sardines, salmon, tuna, mackerel and linseeds. Avocados, virgin olive oil, nuts, seeds and coconut oil also contain a healthy quota of affirming nutrients for healthy cardiovascular function.

Drizzle olive oil over foods to enhance flavour and enhance blood lipid levels. Reduce your consumption of deep-fried food and opt instead for cooking methods such as steaming, poaching, baking or slow cooking.

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STEM CELL USAGE FOR HEART REPAIR

Dr Jeremy Crook, director of stem cell medicine at the Bernard O’Brien Institute, is optimistic about what stem cells can offer in terms of cardiovascular health.

The cardiovascular research unit at the Bernard O’Brien Institute is researching a stem cell-derived, biological pacemaker. Essentially, they are reproducing the AC node, the cells responsible for triggering and maintaining the rhythm of the heart.

They are also researching how to make new heart tissues, by using a chamber seeded with stem cells. Essentially the chamber technology provides a niche within a living being to enhance cellular growth. It’s like a hot house for cells. The chamber is linked with the circulatory system to provide nourishment to the stem cells, so they can differentiate and grow into new cardiac tissue.

The focus in Melbourne is on using induced pluripotent stem cells, which are body cells genetically manipulated to become stem cells capable of becoming all manner of different cell types, in this case a heart muscle cell.

This research will eventually help people who have lost heart muscle due to heart attacks or other cardiovascular diseases, and may reduce the number of heart transplants required.

Dr Crook was reluctant to provide a definitive date for when these potentials will become realities, but suggested that within the next 10 years there will be plenty of exciting developments.