

# Integrative approach to management of heart disease

## Is heart disease reversible?

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**Heart disease** was almost unknown before the beginning of the previous century. Paul White is regarded as the father of cardiology because he was the first to note the increasing incidence of heart disease around 1930. Since then coronary heart disease has increased exponentially and is now the most common cause of death and morbidity in industrialised countries. Most practitioners, when asked about the cause of coronary heart disease and myocardial infarct, will point to the underlying arteriosclerosis; nevertheless this needs to be recognised as only the immediate underlying pathology of a condition that has much deeper causes.

Many of the risk factors for heart disease are clearly described in the medical literature<sup>1</sup> and include bad food choices, smoking, inactivity, overweight, central obesity, stress and depression, hypertension, high cholesterol, diabetes, certain drugs such as cortisone and some diuretics. Yet when it comes to actual management in general practice, very few practitioners or specialists will spend much time discussing these risk factors, but will generally talk about drugs and possible surgery. The most important of the causes, however, still appear to be lifestyle factors which have probably been the main underlying causes of the development of the epidemic of coronary heart disease in the past century. Diabetes type 2 appears also to be related to lifestyle mismanagement, and here also the management very quickly moves towards the prescribing of drugs. Diabetes, obesity and heart disease are all lifestyle problems and yet few practitioners spend much time discussing this with their patients. Perhaps doctors think there is not much science to the role lifestyle changes have in reversing heart disease.

Surprisingly, the evidence for lifestyle changes in reversing heart disease is quite robust, especially for coronary heart disease. In 1999 the journal *Circulation* carried an article reporting that people who had already had one heart attack and followed a Mediterranean diet had a 70% reduction in all-cause mortality compared to controls.<sup>2</sup> The editor commented in his editorial that "I have encountered few cardiologists here who are aware of that study". He was referring to an earlier study by the same group that had basically shown similar results. He stated further that "it is heartening to see a well-conducted study finding that relatively simple dietary changes achieved greater reductions in risk of all-cause

and coronary heart disease mortality in a secondary prevention trial than any of the cholesterol-lowering studies to date".<sup>3</sup> These results were achieved without significant differences in the serum cholesterol between the control group and the test group.

This study does not stand alone. Dean Ornish, Clinical Professor at the University of California, as early as 1990 had already shown in a randomised controlled trial known as the Lifestyle Heart Trial that actual reversal of coronary vessel narrowing was possible using a plant-based diet which included fruits, vegetables, whole grains, legumes and soy products.<sup>4</sup> He followed patients with coronary angiograms to show this reversal. Most patients in the control group had narrower coronary arteries at the end of the trial than member of the study group. Those patients following the diet showed even further improvement at the end of four years than after one year.<sup>5</sup> Ninety percent of the patients who were eligible for bypass surgery or angioplasty were able to avoid the operation by following the diet programme and other lifestyle modifications. This constitutes an enormous saving in terms of cost for medical aids, and reduction of morbidity and even mortality for the patient.

These studies show that poor lifestyle management may be the cause of arteriosclerosis and that it is reversible; good lifestyle choices can reverse this problem. Denke<sup>6</sup> has estimated that reducing meat intake, increasing intake of antioxidant-rich fruits and vegetables, eating fibre-rich complex carbohydrates, and consuming low-fat dairy products can reduce cardiovascular disease risk by as much as 90%.

Perhaps whatever the bias we have directs the management of patients in a particular direction. Surgeons will move patients towards surgery and physicians towards increasing drug therapy. Clearly they are good at this but it seems to me that it falls on the family practitioner to point out to their patients that there are other options. Lifestyle changes really can make a difference not only by reversing narrowing of their blood vessels, but by preventing the development of diabetes type 2, a major aggravating factor for heart disease.

Both a vegetarian diet and the Mediterranean diet were able to reverse coronary narrowing, but as this included avoiding refined foods, oils and margarine and eating fresh foods it is possible that it was this

change that made the difference. The cardioprotective effects of the Mediterranean diet have been supported by other studies<sup>7,8,9</sup> and are now also recognised by experts from the American Heart Association<sup>10</sup> as the reference diet for the prevention of coronary heart disease. Stress management, weight reduction and exercise are essential to good health. If family practitioners don't offer the correct advice, then our patients will turn more and more to the internet and other health practitioners who can help them.

A number of nutrients have also been shown to be useful. Both coenzyme Q10 and the amino acid carnitine are essential for mitochondrial function and adenosine triphosphate production. The heart muscle has major requirements for both nutrients. What is not well known is that statins not only block the enzyme required for cholesterol production, but also the production of coenzyme Q10. A broad spectrum antioxidant will help to avoid free radical damage. *Craetagus* is a herb with a long history of use in cardiovascular disease. These nutrients and herbs improve function and support the health of the heart.

During the past decade important research has established the diet-gene interaction in health and disease. Chronic diseases such as diabetes and cardiovascular diseases are polygenic and result from the complex interaction between multiple genes and multiple environmental factors of which diet may be the most important factor. Nutrigenomics is the field of science that examines this interaction between the environment and the genome.<sup>11</sup> Nutrients can effect gene expression in multiple ways and even define the end points of that expression.<sup>12</sup> Nutritional guidelines have been a mainstay of the management of dyslipidaemia, a risk factor for coronary heart disease, yet there is a great variation in the response of plasma lipids to dietary modification. New research suggests that this is in part due to each person's genotype. Intuitively most have suspected that it is both the genotype and the environment that interact together to move the expression of disease in a particular way. The study of the polymorphic nature of each person's genetic makeup and the particular responses to vital nutrients will become essential as it becomes more and more necessary to individualise prescriptions for lifestyle changes.<sup>13</sup> Diet can influence gene function through a direct effect on gene expression, transcription, translation, post translational influence on gene products, epigenetic effects and DNA repair. Vitamins, for example, can act as powerful regulators of post-translational gene expression. These effects may be supportive to health or contribute to disease. Dietary fat and carbohydrate can regulate expression of the LDL phenotype. An integrated approach using nutrition, exercise, and stress management tools is more likely to optimise gene expression and reduce the risk of chronic cardiovascular disease and the burden of polypharmacy.

## Conclusion

Solutions to reducing the overall incidence of cardiovascular disease and death should not rely only on developing costly complex technological treatments and procedures to alleviate symptoms and treat the disease when other less invasive and supportive approaches are available.

Supporting health is the focus of integrative medicine. Ill-health is the result of a range of underlying causes which include poor food choices, lack of exercise, stress, pollution, overweight, smoking, micro-organisms, parasites, etc. Many of these causes can be removed, and healthy

choices can be put in place. Research is increasingly showing that these choices can reverse ill health and even reverse pathology. Spontaneous remissions and the placebo response will continue to show what the natural healing potential of the body can do. Family practitioners are often the point of entry for people seeking health rather than just the treatment of ill health and disease.

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