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Less food for thought

Food, together with fight, flight and fertility, are often quoted as being the 'big four' Fs of Darwinian human factors for survival. For most of history humans have struggled to obtain sufficient food for survival or for civilisations to flourish. Calories apart, the other ingredients of food are equally important for optimal health. South Africa owes its earliest Western settlements to the need for fresh food supplies to prevent sailors on the sailing ships rounding the Cape to trade with the East developing scurvy.

South Africa has provided important research into the effects of nutritional deficiencies such as kwashiorkor, or excesses such as iron overload resulting in haemochromatosis. Currently food excesses are fuelling the great new worldwide epidemic of obesity and its related maladies such as diabetes and hypertension. Some medical research and teaching may have contributed to this scourge.

Vast industries help fuel the obesity epidemic. Another industry feeding off these excesses provides promises of reduced weight and desirable body shapes. This is the weight loss industry. It has spawned books by the dozen, countless magazine articles, many dietary programmes, and the usual range of useless or outright dangerous products peddled by the unscrupulous to those susceptible to appealing but unproven claims.

In his book *The Lore of Running*, the 'bible' for runners, Tim Noakes, Professor of Exercise and Sports Science at the University of Cape Town, advocated the carbohydrate loading that was the firm belief at the time. However, finding that he was pre-diabetic, he embarked on reviewing the literature on foods and has undergone a dietary belief conversion. He now preaches a different message: out go the carbs, and in come fats (a heresy given former views) and more protein. Furthermore, *The Lore of Running* and his autobiography, *Challenging Beliefs*, are to be updated to reflect this radical change of understanding. The fact that Noakes has lost a great deal of weight, and that his blood chemistry parameters and running capacity have improved, is insufficient proof of his new understanding. This requires much more evidence, much of which he claims is already in the literature.

The academic literature is also full of contradictions concerning the cause and remedies of obesity. And as with all academic matters, turf is jealously guarded. However, it is the nature of science to challenge its perceived beliefs and to change them if proved wrong. Difficulty in changing perceptions is a human frailty – we are prone to confirmation or disconfirmation bias, and use evidence to shore up our beliefs rather than to embrace the necessary change. Initially new evidence and understanding tend to encounter great resistance, but ultimately the weight of evidence and increasing supporting persons tends to tip the balance towards the new truth. Food, the fuel of our existence, is no exception.

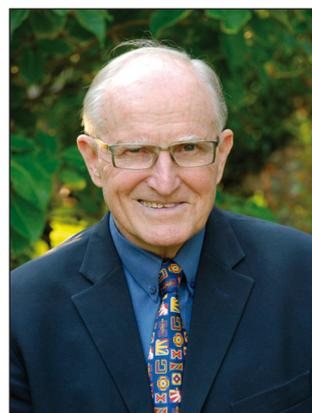
In general, dieting to lose weight is not very successful. Most diets result in people losing weight only to put it on again shortly afterwards. Reasons for the lack of success of diets are that we are dealing with complex social, mental and physical interactions. Most diets and exercise programmes fail simply because they induce hunger, not weight loss. Interventions are therefore required at many levels.

Perhaps a useful insight is to appreciate that like other substances (e.g. drugs) and behaviours (e.g. gambling or sex) food is addictive, and that some foods are more addictive than others. Carbohydrates are rapidly absorbed, raise the blood sugar concentration and result in the outpouring of insulin, which lowers blood sugar levels, again triggering a hunger response. This up-and-down response becomes addictive and ultimately leads to insulin resistance. Hence one has a mind and a biochemical fix. Changing the biochemical responses by eating slowly absorbed carbohydrates or foods rich in protein and fat which produce satiety greatly assists in changing the amount one eats, rather than changing the mind, which is more difficult. That has been the success of diets such as the 'Atkins diet' or the Swedish equivalent, the low-carbohydrate high-fat (LCHF) diet, discredited by many authorities who often discount its beneficial weight loss and improved biochemical effects.

At a macro level, policy is required to assist in changing behaviours. Smoking of cigarettes in many developed countries has declined markedly owing to increased taxes, prohibiting of smoking in public places, and general encouragement of its social non-acceptance. Similarly, policies targeted at reducing the use of the more culpable foodstuffs should be considered. In the USA the ready availability of 'soda' drinks and high-carbohydrate foods via vending machines at schools has been identified as such a target for intervention.

It is easy to identify the main food culprits as sugar and refined flour and products derived from them (sugar in tea or coffee, sweets, cold drinks, ice cream, cookies, cakes, breads, pasta, pizzas, etc.). However, what to do about them is much more difficult. They are ubiquitous, very cheap and convenient, and emotionally and biochemically irresistible, indeed addictive. Evidence is accumulating that polyunsaturated omega-6 fatty acid-rich vegetable oils, found in margarines, processed foods and shortening and used for frying foods, are especially harmful for health, whereas omega-3-rich fish oils are protective. But harmful foods are backed by big and small competitive businesses that will throw all into the fight to prevent reduced consumption of their products – businesses after all aim to grow rather than shrink.

For optimal health, focusing on diets to lose weight is less effective than strategies to change the social environment and personal lifestyles. Professor Lionel Opie, an authority on heart disease, examined the evidence in his book *Living Longer, Living Better: Exploring the Heart-Mind Connection*. He provides evidence that what we eat (a prudent diet) and exercise are both vitally important.



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