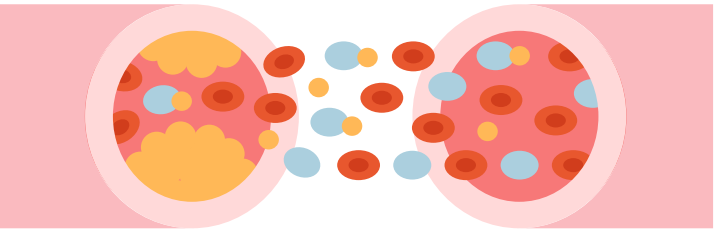

THE CHOLESTEROL CONTROVERSY – PART II

Saturated fats, which are solid at room temperature, such as butter, lard and suet, had been regularly used for centuries for frying and to make many foods, including pastries and biscuits. When saturated fat became scientifically unacceptable, due to the claimed association with blood lipids and atherosclerosis, the food industry had to find a palatable substitute.

The substitute was margarine, a totally artificial fat made by chemically altering the polyunsaturated fatty acids of vegetable oils, making them solid at room temperature. The margarine manufacturing process also changes the chemical structure of the polyunsaturated fatty acids into so-called trans fatty acids (trans fats). The partial hydrogenation manufacturing process, which turns a vegetable oil into "vegetable cream", also produces trans fats.

There were doubts about the possible health consequences of trans fats from the very beginning,[1] but the food industry effectively countered any research claims that alerted consumers on the risks of trans fats. However, Dutch research published in 1990 signalled the beginning of the end for trans fats by showing that a diet rich in trans fats not only raised blood LDL but also lowered HDL cholesterol.[2]

In 2003, the Food and Drug Administration called for trans fats to be included in food labels and eventually banned them in 2014. At the time when FDA issued its ruling, about 43,000 foods in the US alone, contained trans fats. Because the idea that saturated fat is bad is so deeply ingrained in medical and popular belief, the food industry has found it impossible to go back to it, and have therefore had to find a suitably palatable substitute. Food manufacturing science has come up with so-called interesterified fats, which may eventually prove just as bad as trans fats. Furthermore, heating these chemically unstable polyunsaturated vegetable oils might produce toxic substances in fried foods. Some wonder whether atherosclerosis might be more linked with such substances in adulterated oils than any other dietary element. It all sounds like one mass uncontrolled dietary experiment after another.

The saturated fat-heart disease hypothesis has also meant that around the world diets have come to include much more carbohydrate, including sugar and high fructose corn syrup. The latter is very cheap, extremely sweet and has been described as a "calorie source but not a nutrient",[3] and there is current controversy whether or not it increases the risk of metabolic syndrome development. There is increasing scientific suspicion that the overabundance of refined carbohydrates is driving the global pandemic of obesity, diabetes and non-communicable diseases.[4,5]

The idea that we gain weight simply because "energy in exceeds energy out" is being disputed and replaced by the hypothesis that carbohydrates trigger an insulin hormonal response that drives energy consumed to storage as adipose tissue. This hypothesis suggests that poor people tend to be fat not because they overeat or are lazy, but because they consume the cheapest energy source (refined carbohydrates).[6]

The diet advocated by US cardiologist Robert Atkins, drastically restricting carbohydrates but allowing any amount of protein and fat, was a rediscovery of the diet promoted by a London undertaker, William Banting, in his best-selling *Letter on Corpulence* (1864). Banting described how, in his early 50s, obese and in poor health, he had consulted London surgeon William Harvey who advised him to eat meats and not carbohydrates. Harvey's advice was based on French medical claims that such a diet was good treatment for diabetes, and Harvey had noted that farmers fattened their livestock before market by feeding them refined carbohydrates. Banting describes how he lost a lot of weight on such a diet and his health improved, dying in his late 80s. His *Letter on Corpulence* was widely recommended by medical authorities until the 1950s.[7]

This diet was recently tested in the A TO Z Weight Loss Study in 311 overweight or obese premenopausal women over a year against three other diets, including that advocated by Dean Ornish, another US cardiologist, which requires that fewer than 10% of energy comes from saturated fat. **Women on the Atkins (high protein and fat / low carbohydrate) diet lost more weight and experienced more favourable metabolic effects, including a fall in diastolic blood pressure of 4.4mm Hg against 2.1mm Hg for those on the Ornish diet (very low saturated fat).[8]**

The scientific search for the dietary basis of obesity and cardiovascular disease have therefore more recently been moving away from saturated fat and honing in on sugars and refined carbohydrates. Furthermore, the health consequences of unstable polyunsaturated fatty acids in vegetable oils adulterated during commercial food preparation or by home cooking (heating and frying), is now under some suspicion.

The successful attempt to reduce saturated fat in the diet of Americans and others around the world has been an uncontrolled experiment which, as with all experiments, may have led to bad outcomes and, unfortunately, more uncontrolled global nutritional experiments are continuing. Weak science, strong personalities, vested interests and political expediency have initiated these experiments.

REFERENCES CAN BE ACCESSED ON THESYNAPSE.NET