

## Out of the Box

Our esteemed Editor-in-Chief has composed a touching seasonal editorial on the impact of Mr and Ms Santa and the Santettes on our appreciation of obesity, which is also a theme of this column, together with the dieting that may be a secret new year resolution... I also have some more to say on tallness. At this time of goodwill to all, please take the gentle teases here in the spirit in which they are offered. Cheers!

### Christmas: honk, honk

I offer a variation on a well-known Yuletide jingle:

Christmas is coming,  
The folks are getting fat.  
Please to put ten million  
In the researcher's hat.

I am imagining you catching up on your reading, sat in your overstuffed sofa in front of the fire, fortified by plum pudding, brandy butter and a sextuple single malt, and thinking about 2008 and your life, work, and contribution to your career, profession and mission, and to the sustenance of the ecosphere, while your loved ones pull crackers, play video-games and watch television. This is not exactly the scene in Brazil; Christmas here is midsummer, the shopping centre Mr and Ms Santas sweat pints, there is no tradition of Yuletide gorging, and revelry introduces the New Year.

However, for readers in temperate zones, I offer a subject for your next round of collaborative research grant funding applications. Here is a Bariatrics Big One. *SCOFF: The Santa, Christmas, Overdoing it, and Fear of Fatness project. Cognitive dissonance among nutrition scientists, compared with the general population. Weight gain, increase of BMI points, and furtive consultation of dieting books, between 25 December and 3 January.* It might be a tad tricky to make this randomised, controlled, blinded, crossed over, and all that jazz, but hey, everything is possible. Listen, this is enormous. SCOFF could support a whole research centre department for ever. Christmas is not going to go away. Get in tune with the hundreds of millions of other families that do the full Charles Dickens – Prince Albert – Corporate Potlatch winter solstice number. Think big. Think very big.

### There's gold in them thar ills

As I write this item, I remember when I was last in the company of Hugh Trowell, who as you know invented the term 'Western disease' and whose definition of dietary

fibre still stands<sup>1</sup>. This was at a meeting on diabetes (type 2) in the late 1980s at the London Royal Society of Medicine. Hugh had the idea that diabetes is caused by processed starchy foods, such as milled and polished rice. He recommended taking a hammer to all the machines that rip the goodness off the rice grain and reduce it to mere starch. He told the audience that before mechanisation came to Asia, rice was characteristically parboiled and left to dry in the sun, a process that retains a substantial proportion of micronutrients. This is a fine example of the need for nutritionists and dietitians to know about food, technology, history and tradition.

There may or may not be something in what Hugh was advocating. That is not the point, to which I now come. During the lunch break in the magnificent RSM atrium, a smart young man came up to us, explained that he had started a career as a scientist specialising in diabetes, and after the usual pleasantries said of Hugh's thesis: 'I don't want to hear this'. Hugh assumed that intellectual battle had been joined; but no. The young man explained. 'If you are right', he said, 'I will be out of a job'. It was one of those jokes that is also serious.

In the second edition of the tome *Recent Advances in Obesity Research*, published 30 years ago<sup>2</sup>, George Bray averred: 'The study of obesity is alive and thriving. The chapters in this volume attest to this fact and promise a bright and rewarding future in this area'. Plus he celebrated the foundation of *The International Journal of Obesity*, initially co-edited by himself and by Alan Howard of the Cambridge Diet<sup>3</sup>.

At roughly the same time, John Rivers wrote a dis-obliging paper published by *Proceedings of the Nutrition Society*, our sister journal, which, if read at home during this gut-buster festive season, may still cause some spluttering on turkey leg, mince pie, or the aforementioned Glen Dollar. He said: 'The dispassionate objectivity of scientists is a myth. No scientist is involved in the single-minded pursuit of truth; he is also engaged in the passionate pursuit of research grants and professional success. Nutritionists may wish to attack malnutrition, but they also wish to earn their living in ways they find congenial. Although many people are killed by malnutrition each year, an increasing number of us are kept alive by it'<sup>4</sup>.

Now malnutrition comes in different shapes and sizes. George Bray and Alan Howard were indeed blazing new trails. Until the mid-20th century obesity was uncommon, except among materially rich people who enjoyed their food and who did not engage in physical work. In the UK the subject and the issue remained neglected until John

Waterlow, with support from Philip James, and John Garrow, weighed in during the later 1970s<sup>5,6</sup>.

### **Dieting: jingle, jingle**

But now almost all people in high-income countries lead sedentary lives, and have plenty to eat and drink. So obesity is common. So are international obesity journals: I now count up to ten, half founded in the 2000s.

You will know the generally agreed basic data. Between a half and two-thirds of all adults in most countries in Europe including Russia, and in North America, are overweight, of which roughly one-third are obese. The number of adults in the USA who are severely obese quadrupled between 1986 and 2000, from 1 in 200 to 1 in 50. In many countries, rates of overweight and obesity in children and young people have increased three- or fourfold since the 1980s.

Correspondingly, the dieting industry has boomed. In Europe and the USA two leading marketing firms<sup>7,8</sup> give advice to the industry, with annual reports that cost around \$US 5000 and €3000. One of these firms sees 'phenomenal growth in the market for weight loss products'. In the early and mid-2000s the reports estimated the total value of the dieting industry – meaning food, drink and supplements – in the USA at \$US 46 billion (yes, billion) a year; the estimate for Europe was €93 billion. It is safe to say that by now these figures are well over \$US 50 billion and €100 billion.

The annual sales of the dieting industry altogether are a lot more than those of Nestlé, the world's biggest food and drink firm. A media release issued by one of the marketing firms was headlined: 'Keeping dieters dieting the key to market growth'<sup>9</sup>. The new boom country for the dieting industry is China.

As you know, 'development' as in 'developed country' refers to turnover of money, so this is doing wonders for national development all over the world. You think that the minister of finance of your country wants to prevent obesity? Think again!

In any one year, around two-thirds of women and one-half of men in the richer countries in Europe, and in North America, try to lose weight. Few keep lost weight off. A representative of the European marketing organisation expressed concern: 'Overall, only approximately 1 per cent of dieters achieve permanent weight loss'<sup>9</sup>.

But here is the secret of success. What could be better for business than an industry whose products do not work, or work only for as long as you stay with them, but whose customers believe that they have no other basically different choice? Those with their life savings in Northern Rock can take their money and put it into property or under the mattress. People who try and then fail to lose weight on a dieting regime typically see no alternative but to try a new regime. And if obesity and its sequelae faded away, where would we be? In the refugee camps, maybe.

### **Vertical challenge**

You will not be surprised that the new WCRF/AICR report<sup>10</sup>, launched last month, finds strong causal links, identified as convincing or probable, between relatively high levels of body fatness and cancer, specifically of the oesophagus, colo-rectum, pancreas, breast, endometrium, gallbladder and kidney. One of the report's take-home messages is: don't get fat in the first place.

What may be more of a surprise, though the data have been around for a long time, is the link between adult attained height and cancer. The evidence that being tall increases your risk of cancers of the colo-rectum, pancreas, breast and ovary is judged in the WCRF/AICR report to be convincing or probable, which, in the protocol used by the expert panel responsible for the report, usually generates a public health recommendation.

Tom Samaras, whose compendium challenging the conventional wisdom that being tall is a Good Thing was published recently<sup>11</sup>, will be pleased. George Davey Smith<sup>12</sup> and other redoubtable champions of height<sup>13</sup> may be disconcerted (though I allow it would take a lot to discomfit George).

But what does this finding mean? Did the members of the WCRF/AICR report panel collectively recommend that all adults over a specified height should make a date with their physicians for referral to the sawbones, in order to be chopped off at the ankles or knees? No, they did not. Further, the panel carefully stated that the inherited, hormonal and other including nutritional factors that lead to greater birth weight, fast growth, early puberty and tall attained height, are complex and not yet well understood.

What follows is my personal view. Another striking finding of the WCRF/AICR report is that breastfeeding protects the mother against breast cancer, and that being breastfed protects the child against obesity, and therefore against diseases the risk of which is increased by obesity. In both cases the evidence is strong enough to generate a public health recommendation.

The report supports the WHO/UNICEF global strategy on infant and young child feeding<sup>14</sup>, including its recommendation that infants and young children be exclusively breastfed until 6 months, the first time as far as I know that this has been done in a report on the prevention of cancer. The panel also noted the evidence linking greater birth weight, fast growth and early sexual maturity in particular to breast cancer, as did the previous report published ten years ago<sup>15</sup>.

It seems to me that these findings are enigmatic only if you assume that the time period between carcinogenesis and clinically apparent cancer is short. But while this may sometimes be true, it's generally agreed that cancer may be occult for decades. The implication of the findings on tallness and cancer is that recommendations to prevent cancer, and indeed to prevent weight gain, overweight and obesity, should be directed primarily not at adults for

their own sake, but at adults for the sake of their children. The chief priority of public health nutrition needs to shift forward by a whole generation. I bet you did not find that adage in your Christmas cracker.

### The prime beef diet

Now back to you, the SCOFF project, and New Year resolutions. I promised a couple of columns ago that I would have a look at some dieting regimes, and so now is a good time to review the Big One that nutritionists and dietitians love to hate.

As you surely must know, in the first half of the 2000s the best-known dieting regime not only in the USA but worldwide has been that of the highest-profile 'diet doctor' Robert Atkins, whose 'diet revolution' book was first published 35 years ago<sup>16</sup> and whose 'new diet revolution'<sup>17</sup> has broken all records. He enjoyed having a go at the nutritional establishment; thus he says: 'Juicy broiled New York sirloin steak? English cut roast prime rib of beef? Poached salmon with béarnaise sauce? Crispy duck in a Chinese restaurant? Pan-fried chicken? Dig in'.

Global Atkins book sales are estimated at 25 million. It's said that, just before he himself died, 1 in 11 of all adults in the USA was 'doing Atkins', meaning a regime relatively and also absolutely high in protein and fat, and low in carbohydrate, and – although Atkins liked to portray himself as a *bon viveur* and played this down – also low in alcohol. The phenomenal success of the Atkins Diet has caused a cascade of 'me-too' books. Among these I admire the title of *The New High Protein Healthy Fast Food Diet*, for pressing seven buttons in eight words.

Dr Atkins did not invent the high-protein, high-fat, low-carbohydrate dieting regime. Nor did the other colourful US 'diet doctors' Herman Tarnower and Herman Taller, who preceded him<sup>18,19</sup>, and nor did John Yudkin of Queen Elizabeth College (now part of Kings College, London) who preceded them<sup>20</sup>. This version of macro-nutrient manipulation has a long pedigree. Its principles were first explained in some detail by Jean Anthelme Brillat-Savarin in 1826<sup>21</sup>.

### Brillat-Savarin's summer seltzer

The philosopher and gastronome points out that meat-eating animals never become fat: 'think of the wolves, jackals, birds of prey, crows, etc'. He further points out that herbivorous animals rarely get fat except sometimes in old age, but 'they gain weight quickly ... when they are forced to eat potatoes, grains, and any kind of flour'. And; 'All animals that live on farinaceous foods grow fat whether they will or no; man follows the common rule'.

Bingo! 'A more or less rigid abstinence from everything that is starchy or floury will lead to the lessening of weight'. His advice to a 'charming fat lady' includes: 'You love soup, so have it made *à la julienne*, with green

vegetables, cabbages, and root vegetables. I must forbid you to drink it made with bread, starchy pastes, and flour'. Prefer veal and poultry. 'Shun everything made with flour, no matter in what form it hides; do you not still have the roast, the salad, the leafy vegetables?'

He also gets the general point about carbohydrates, even before the term was coined. Writing at a time when consumption of sugar even among the rich was much lower than it generally is now, of obesity he says: 'starch produces this effect more quickly and surely when it is mixed with sugar'. And he notes the effect on appetite: 'The mixture of sugar with flour is all the more active since it intensifies the flavour' and 'we seldom eat sweetened dishes before our natural hunger has been satisfied'.

If you must eat bread, he says, choose that made from rye, on the principle that it is the least pleasant of all breads; of other breads eat only the crust. He also favours special foods and drinks; he commands 30 bottles of Seltzer water in the summer, with white wine from Anjou; 'shun beer as if it were the plague, and eat often of radishes, fresh artichokes with a simple dressing, asparagus, celery, and cardoons'. He died a few months after he published his book, so his advice, which he apparently saw no reason to follow himself, adapted a generation later in Britain in the smash-hit dieting regime devised by Prince Albert's undertaker William Banting<sup>22</sup>, did not make him rich.

### Dieting and the number-crunchers

So the fat folks have been on high-protein, low-carbohydrate dieting regimes, some high in fat and alcohol, some not, for centuries. Most modern versions are ecologically horrible. Nutritionists and dietitians hate regimes that are high in meat and fat because everybody knows that such diets are a cause of heart disease. But are they?

A trial conducted at Stanford University Medical School involving 311 overweight and obese women aged 20–50, published earlier this year<sup>23</sup>, compared the effects of the Atkins and Zone<sup>24</sup> higher-fat regimes with Kelly Brownell's LEARN regime following orthodox lower-fat dietary guidelines<sup>25</sup> and the very low-fat Dean Ornish regime<sup>26</sup>, over a period of a year. All the subjects were followed and checked for a year.

The dietary changes made by all groups were on average only a modest approximation to the recommendations of the regimes they were supposed to follow. But with the incentive given by being studied, the Atkins group did increase its fat consumption to almost 45% of total energy, and the Ornish group decreased theirs to 30%. On average all groups restricted their daily consumption of energy, from an initial 1850–1975 kcal to 1500–1650 kcal – a drop of around 300–400 kcal (1250 kJ) a day.

And the result? After two months all groups began to regain initial weight lost, but at 12 months the average weight loss of the women on the Atkins diet was 4.7 kg,

compared with 1.6 kg on Zone, 2.6 kg on LEARN and 2.2 kg on Ornish. The most intriguing finding was that the effect of the Atkins regime on blood fats and blood pressure, while small, was superior: 'those assigned to follow the Atkins diet had more weight loss and more favourable outcomes for metabolic effects'.

This is not an isolated result. It repeats those of other studies examining the effect of the Atkins diet on blood lipids, blood pressure, and other risk factors for heart disease<sup>27</sup>. Just fancy that! Could Robert Atkins just possibly ... be right? I am not here referring to the effect of any low-energy dieting regime on body weight and fat. Unless they become more physically active, the 311 fat ladies will for sure now be putting their body weight and fat back on again. But maybe what is now almost half a century of conventional wisdom about macronutrient composition of diets, heart disease and metabolic syndrome, is wrong. Maybe the overriding factor is dietary energy. Maybe David Kritchevsky, Roy Walford and others, who preach life-long energy restriction, have been right all along.

Enjoyed your stuffing?

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*Competing interests:* I am co-convenor with Claus Leitzmann of the International Union of Nutritional Sciences/World Health Policy Forum *New Nutrition Science project*, whose spiral motif accompanies this column. I made up my mind 25 years ago that dieting makes you fat, and am preparing a new book with that title, to be published next year. I am chief editor of the new WCRF/AICR report.

*Authorship responsibilities:* The original idea for *Dieting Makes You Fat* came from discussion at Stanford University with Jack Farquhar, Bill Haskell and Peter Wood. I trust that all sources are properly referenced. Original stuff, including teases, mottos, acronyms and contrarian musings, by

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### References

- Burkitt D. *Trowell. The Founders of Modern Nutrition (2)*. London: McCarrison Society, 1990.
- Bray G. Preface. In: *Recent Advances in Obesity Research. Proceedings of the 2nd International Conference on Obesity Research*. London: Newman, 1978.
- Howard A. *The Cambridge Diet*. Corby, UK: Cambridge Manufacturing Company (originally published 1985), 2004. Also see [www.cambridge-diet.org](http://www.cambridge-diet.org), [www.cambridgedietusa.com](http://www.cambridgedietusa.com).
- Rivers J. The profession of nutrition – an historical perspective. *Proceedings of the Nutrition Society* 1979; **38**: 225–31.
- Department of Health and Social Security/Medical Research Council. *Research on Obesity*. London: DHSS/MRC, 1976.
- Garrow J. *Energy Balance and Obesity in Man*. Amsterdam: Elsevier (first edition in 1974), 1978.
- See [www.datamonitor-market-research.com](http://www.datamonitor-market-research.com).
- See [www.mkt-data-ent.com](http://www.mkt-data-ent.com).
- Datamonitor. Keep dieters dieting the key to market growth. 2003. <http://www.nutraingredients.com/news/ng.asp?id=37340-keep-dieters-dieting> (accessed October 2007).
- World Cancer Research Fund/American Institute for Cancer Research. *Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective*. Washington, DC: AICR, 2007; available at [http://www.wcrf.org/research/second\\_wcrf\\_aicr\\_report.lasso](http://www.wcrf.org/research/second_wcrf_aicr_report.lasso).
- Samaras T. *Human Body Size and the Laws of Scaling. Physiological, Performance, Growth, Longevity and Ecological Ramifications*. New York: Nova Science, 2007.
- Davey Smith G. Commentary: The conundrum of height and mortality. *Western Journal of Medicine* 2002; **176**: 209.
- Waaler H. Height, weight and mortality. The Norwegian experience. *Acta Medica Scandinavica* 1983; **679**(Suppl. 1): 1–50.
- World Health Organization/United Nations Children's Fund. *Global Strategy on Infant and Young Child Feeding*. Geneva: WHO, 2004.
- World Cancer Research Fund/American Institute for Cancer Research. *Food, Nutrition, and the Prevention of Cancer: A Global Perspective*. Washington, DC: AICR, 1997.
- Atkins R. *Dr Atkins' Diet Revolution*. New York: Bantam, 1972.
- Atkins R. *Dr Atkins' New Diet Revolution*. New York: Avon (paperback 1999), 1992.
- Stillman I, Baker S. *The Doctor's Quick Weight-Loss Diet*. New York: Putnam, 1967.
- Taller H. *Calories Don't Count*. New York: Simon and Schuster, 1961.
- Yudkin J. *This Slimming Business*. London: MacGibbon and Kee, 1958.
- Brillat-Savarin JA. *The Physiology of Taste. Or, Meditations on Transcendental Gastronomy* [MJK Fisher, translator]. Washington, DC: Counterpoint (originally published in French, 1826), 1999.
- Banting W. *A Letter on Corpulence Addressed to the General Reader*; 3rd ed.; obtainable by Googling name and title.
- Gardner C, Kiazand A, Alhassan A, Kim S, Stafford R, Balise R, et al. Comparison of the Atkins, Zone, Ornish, and LEARN diet for change, in weight and related risk factors among overweight premenopausal women. *JAMA* 2007; **297**: 969–77.
- Sears B. *Enter The Zone*. New York: Harper Collins, 1995.
- Brownell K. *The LEARN Manual for Weight Management*. Dallas, TX: American Health Publishing Company, 2000.
- Ornish D. *Eat More, Weigh Less*. New York: Harper Collins, 2001.
- Foster G, Wyatt H, Hill J, McGuckin B, Brill C, Selma Mohammed B, et al. A randomised trial of a low-carbohydrate diet for obesity. *New England Journal of Medicine* 2003; **248**: 2082–90.