

Letter from . . . Chicago

Sweet tooth maketh a sour disposition

GEORGE DUNEA

Most people now agree that a sweet tooth may have distasteful consequences. "I mean it, Watson," says young Sherlock Holmes in a recently published thriller. "You must watch your sugar intake. . . . You are bound to be a bit surly if you eat too many sweet things. . . . 'Sweet tooth maketh a sour disposition.' That is an old wives' saying, but I believe it to be true."

A sweet tooth may also sour the disposition of toothless men who cannot eat apples—men like George Washington who rarely smile for fear of being embarrassed by their false teeth or who cannot wear dentures at all and require *avant garde* procedures such as osteointegration and titanium implants. Historians have speculated that a sweet tooth brought down the Roman Empire because its leaders enjoyed the sweet taste of wine stored in lead caskets. A taste for sweet port formerly made Britain the world's centre for saturnine gout as well as souring the disposition of its victims. A curious paradox is a sweet tooth with no teeth at all—rather like aleukaemic leukaemia—wherein still edentulous Queensland babies developed chronic nephritis from licking the lead paint off the walls of their nurseries.

Professor Yudkin once coined the term saccharine disease for the sum total of the afflictions caused by eating too much refined sugar. He thought that when our ancestors descended from the trees to successively take up nomadic, pastoral, agricultural, and industrial vocations, they traded the sharp teeth required for hunting for the sweet tooth that makes us eat one chocolate bar during the television programme and another during the commercial. Usually there is new or classic Coca Cola and some sugar coated popcorn to complete the TV dinner. There is indeed a strong correlation between obesity and the length of time that teenagers watch television, accounting at least in part for the present day epidemic of obesity in that age group. Many more teenagers now come home after school to empty houses, their parents either working or divorcing, the note on the refrigerator door saying "feed yourself," and the advertisements on the television saying "eat me." So they spend the afternoon munching away, complacent because everybody on television remains thin no matter how much they eat, and unaware that their metabolic rates may drop substantially as they sit in a trance glued to their television sets. About 20% of United States teenagers are at least 20% overweight, and the incidence of obesity is on the rise as many young people take less exercise than formerly—with the exception of the minority who jog. Increasingly, the origins of obesity are being traced back to childhood, with heredity playing a part as shown by studies in which the weight of children correlated better with that of the biological parents than with that of the adoptive ones. Unfortunately, many children do not outgrow their puppy fat but become fat adults, some perpetually alternating between the extremes of dieting and overeating.

Half of America on a diet

It seems that at any one time about half of all Americans are on a diet. Weight consciousness is most marked among the affluent; and

obesity affects only 5% of upper class women but may be as high as 30% in the lower classes. Yet dieting itself seems to alter the metabolism, inducing the body to become more efficient in assimilating food, so that intermittent dieters may reach a state where they lose weight slowly and with difficulty but gain it back rapidly and on fewer calories than expected. The extreme eating disorder, bulimia, typically affects young women and is characterised by attacks of secret ravenous binging followed by self induced vomiting or the use of diuretics or laxatives. It is a psychological disorder but may be related to abnormalities of the serotonin and adrenergic systems, and may respond to treatment with imipramine. It may be complicated by amenorrhoea, gastric dilatation, oesophageal rupture, parotid enlargement, aspiration pneumonia, hypokalaemia, and ipecac intoxication. Repeated vomiting may cause erosion of the dental enamel, changing a sweet tooth into a painful one.

While the dietary habits of most people are less extreme, Americans in general are quite health conscious and thus likely to fall for various packaged foods promoted as natural or healthful but not necessarily being so. Conversely, they are likely to avoid foods that they think are high in calories, such as prunes, the consumption of which has declined 60% in the past 30 years even though they have a high fibre and iron content. It seems indeed that despite much talk about changing food habits most Americans consume pretty much the same diet as they did one or two decades ago. They still eat plenty of fat, sugar, and salt; the consumption of red meat has changed little despite disquietening news about bowel cancer; and even when they eat salads they prefer eggs and bacon and salad dressing to the leaves and fibrous legumes. What they consume less in eggs they make up by eating more cheese. "They talk salads but eat hamburgers." They order croissants, "deliciously light" but heavy with grease and fat; and there is a new fad for muffins—traditional, low fat, nutritious, "much healthier than even doughnuts," but often as full of calories as a large piece of cake.

They also have a liking for sweet drinks, though they do not care to admit it, especially the macho men, so that among manufacturers the motto has become "talk dry, taste sweet." Nor must they colour their sugary liquor pink, unless they want to sell only to ladies. But on the whole marketing studies indicate that Americans increasingly prefer sweeter wines; peach and strawberry schnapps have become best sellers; and colourless liquors, being more suitable for mixing with fruit juices and soft drinks, outsell brown bourbon or scotch. So far that lady's abomination of the 'fifties, the "whisky, lime, and soda" has mercifully not been resuscitated. But the shandy is making a comeback, being now imported from Malta. A sickly mixture of beer and lemonade, it is promoted as a drink that smells like beer, looks like beer, but tastes like a lemon soda.

Doctors entering the grocery business

For people desperately wishing to lose weight a variety of artificial foods are also available. Often promoted in a popular book by a successful diet doctor, they seem to follow one another with dizzying rapidity. Recently one manufacturer of such synthetic brews has been trying to bolster sales by having doctors sell their products in their offices. For doctors with falling incomes in these

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days of competition an entry into the grocery business could augur the beginning of better times. Patients could come to the office weekly to have their blood pressure, weight, urine, and electrolytes checked. The income for one new patient could amount to \$3000 a year and the patient will be delighted to lose weight while enjoying the rich flavour of low calorie milk shakes and chocolate bars.

It is indeed this desire to lose weight, combined with a sweet tooth, that has brought the human race (electively) and the rodent community (experimentally) into contact with artificial sweeteners. Lead being out of fashion and fructose corn syrup too fattening, it all boils down to saccharin, cyclamate, and aspartame. Reflecting the popularity of these agents is the statistic that each year some 70 million Americans consume more than \$4 billions worth of these agents in diet food and soft drinks, mainly as saccharin. Unfortunately, despite the many studies in which artificial sweeteners were given in various combinations, some rodents insist on developing cancers, albeit often at doses that would have turned Lot's wife into a pillar of "Sweet and Low." Then there are confusing studies showing that some sweeteners are safe when given alone but cocarcinogenic if taken in combination—so that a mixture of cyclamate and saccharin "may be associated with a small increase in risk of bladder cancer." The present position then is as follows. Saccharin is in, having been rescued in 1977 when the Congress forbade the Food and Drug Administration to take it off the market, a decision reaffirmed four times since—lastly in 1985. Aspartame is also in, though its manufacturers, the Searle Company, was later swallowed up after a sweetened takeover bid by Monsanto. Yet there were problems when some mice developed trouble with their pituitaries and consumer groups went protesting from court to court until they were finally rebuffed this April by the United States Supreme Court. Yet on that very same day a neurologist announced that 82 patients had had seizures from aspartame. Finally, cyclamate, though apparently safe, at least when taken alone, remains on the black list of the bureaucrats and needs to be imported periodically to undisclosed households from undisclosed overseas sources.

Law abiding citizens, however, can always fall back on sugar. Yet sucrose, and to a lesser extent glucose and fructose, enhances the growth of the carcinogenic *Streptococcus mutans*. This organism ferments sucrose to acids that dissolve dental enamel and also converts sugars to polysaccharides that allow bacteria to adhere to the teeth. All this contributes at least in part to there being some 19 million edentulous people in the United States. It seems that

brushing the teeth does not prevent the damage done by eating excess sucrose. Fluoridation, on the other hand, though cheap and shown more than 40 years ago to reduce the incidence of caries, is not always well accepted by a public suspicious of things being added to the water. There may be no fuss if the decision to fluoridate is made by municipal councils; but if the decision is challenged and put to the vote by public referendum fluoridation is likely to be voted down in over half of the cases. At present only 55% of the United States population drinks water that contains "dentally significant" amounts of fluoride—one part per million. Yet dental caries is an avoidable disease best prevented by lowering the sucrose intake below about 40 grams a day. That this can be achieved is shown by the statistic that 80% of dentists' children are free of caries.

Penalties of being a dentist

Yet for many dentists this may be small consolation for being unloved, unappreciated, hated, often deeply in debt at graduation, prone to suffer from the empty chair syndrome in hard times. Often less highly regarded than doctors, they are often suspected of wanting to have become doctors had they been able to do so. None the less they are expected to carry out perfect work, mistakes being less acceptable than with the medical profession. Dentists also work in the constant presence of pain and thus find themselves largely rejected. Unable to maintain an acceptably "safe" distance between themselves and their patients, constantly having to poke around in people's mouths, they work in uncomfortable positions that cause back strain, varicose veins, and foot problems. Furthermore, they are potentially at risk from exposure to the noise of their drills, the radiation of their x ray machines, and the agents they use for anaesthesia. All this is believed to result in a disproportionately high incidence of depression, divorce, drug addiction, and suicide. Yet dentists are still better off than the manufacturers of toothpicks, now that this once universally indispensable utensil has fallen out of favour. Yet the Babylonians picked their teeth around 3500 BC, and even the prophet Mohammed is said to have asked for a toothpick on his deathbed. But now there is competition from dental floss and "interdental cleaners," and the number of United States toothpick manufacturers has declined from 20 to three. Yet it may turn out after all that a siesta without toothpicks rather than a sweet tooth alone is indeed the principal cause of a sour disposition.

What is the best way to remove and to prevent dry hard skin on the feet?

The treatment of plantar hyperkeratosis will depend on its aetiology. Repeated pressure or friction, for example, from abnormal gait may lead to localised callosities which can be painful. Differentiation of callosities from plantar warts may be difficult but black dots from thrombosed vessels, most pronounced after paring the surface, and loss of skin lines are helpful differential signs. Inflammatory dermatoses may also lead to localised or more widespread hyperkeratosis—for example, eczema, psoriasis, or lichen planus; but evidence for these will usually be found elsewhere. There are also a group of hereditary conditions characterised by diffuse or focal thickening of the palms and soles, the most common of which is tylosis (diffuse palmoplantar keratoderma). Treatment, therefore, depends on the cause. Inflammatory dermatoses may require topical steroids and callosities secondary to an abnormal gait may be helped by appropriate orthopaedic measures such as metatarsal bars. General treatments are aimed at reducing symptoms by softening the keratin. Simple emollients such as aqueous cream BP, vaseline, or Unguentum Merck may be sufficient. The addition of 5-10% of salicylic acid to either white soft paraffin or Ung Merck makes an effective keratolytic, as are 40% salicylic acid plasters for more localised areas. Regular paring with scalpel blades or corn planes can also help to reduce pain which is essentially derived from walking around with a stone in the shoe. Pumice stones are not usually advisable. A good alternative for more diffuse thickening is 40% propylene glycol in aqueous cream applied at night under plastic occlusion.—J A MILLER, senior registrar dermatology, London.

How do you account for relapses in multiple sclerosis? Are they due to activation of "virus encage"? Have antiviral agents been used in the treatment of multiple sclerosis?

There is no evidence that relapses in multiple sclerosis are a consequence of reactivation of latent viruses such as those of the herpes group. In a prospective study, however, although clinically diagnosed virus infections were less common in patients than in a control group, approximately 25% of relapses were associated with an infection and approximately 9% of infections were related to relapses.¹ Such an association was not noted for bacterial infections.¹ Interferon is the only agent possessing established antiviral activity whose use has been reported in multiple sclerosis. Interferon possesses numerous other properties, however, which may be important such as its many effects on the immune system. Studies using intrathecal or intramuscular interferon have suggested some benefit but the trials have either not been placebo controlled or have contained few patients.² The problems of conducting appropriate placebo controlled studies have been discussed³ but the recent availability in large quantities of both lymphoblast produced interferon and interferon made by recombinant DNA technology will probably lead to further studies of its use in multiple sclerosis.—P MORGAN-CAPNER, consultant virologist, Preston.

1 Sibley WA, Bamford CR, Clark K. Clinical viral infections and multiple sclerosis. *Lancet* 1985;i:1313-5.

2 Knobler RL, Panitch HS, Braheny SL, et al. Systemic alpha-interferon therapy of multiple sclerosis. *Neurology* 1984;34:1273-9.

3 ISDA Dialogue. Trials of interferon therapy for multiple sclerosis. *J Infect Dis* 1982;146:109-15.