

provide sufficient fluoride for all physiological requirements, as far as they are known; this includes optimal calcification of the teeth with increased resistance to dental caries. Such conditions, however, do not prevail in the civilized diet of modern times, and may be described as highly desirable but unrealistic and impracticable.

That is all we have to say about fluorides in the diet; as you all know, the Ministry of Health has just published the results of a five-year study on fluoridating the water in three districts of England, and has claimed up to 50 to 60 per cent reduction in dental caries. However, it is possible to have too much fluoride in the diet and in the drinking water, and when this happens it can produce not only a decreased resistance to dental caries but also actual damage to the teeth with mottling.

DISCUSSION

Question: It is not apparent at what stage fluoride affects the teeth. Nutrition can only affect teeth before they are fully developed and in breast-fed babies one notices that the teeth are longer in the gum before they erupt, and therefore longer under the influence of maternal nutrition. Presumably, if the mother is getting sufficient fluoride, it is getting to the immature infant in that way. Is that in fact established?

Mr Cannell: I believe so. If an adult receives fluoride in drinking water or from another source, it does not appear to make an appreciable difference to the caries resistance of his teeth other than is achieved through the actual process of drinking a glass of water and therefore subjecting the teeth to a wash of fluoride, but that is only for a few seconds. It is definitely established that the amount of fluoride the mother takes in bears a relation to the hardness of the infant's teeth, in that fluoride forms a sort of fluorapatite in the enamel, and this is of increased density and of increased resistance to caries. However, I would also point out that fluoride appears to inhibit or delay eruption slightly, and the more fluoride one gets the more eruption is delayed; therefore, the more fluoride these teeth are getting before they ever see the light of day, the more likely it is to achieve endemic fluorosis or tooth mottling.

Dr Toller: I do not feel that fluoride content of the diet, including the water, is of great importance after the eruption of the teeth.

It has been found quite recently that other fluoride salts are much more effective afterwards. A lot of work has been done on stannous fluoride, which is much more readily absorbed by the enamel of teeth and is much more effective than the forms of fluorine you can put in water or rinse your mouth with. It has been put in tooth-paste commercially. There is some evidence that it is taken up by teeth, and there is work going on with chewing gum, but I do not think there is much evidence that drinking water has an effect topically on erupted teeth.

Question: One thing we general practitioners can do is to apply to our water undertakings, to find out what the local fluoride level is and publish this in our surgeries. I have done this. Our own water has a fluoride content of 0.8 ppm., which is a reasonable level and not one that would need augmenting.

OBESITY

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The Physiological Approach

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There is a school of thought, mainly in America, which holds that one cannot get fat without over-eating, or in other words that obesity and gluttony are the same thing. The evidence for this is said to be that one cannot cheat the laws of thermodynamics. Of course one cannot, and I do not think anyone wants to, but energy requirements vary enormously from one person to another, and what is gluttony in one person or at one time of life can be perfectly normal at another. You all know that a young woman who has found that the price of having babies has been to turn her into a shapeless lump of fat is not interested in the first law of thermodynamics, the law of conservation of energy. She knows that before she was married she could eat pretty well anything that she wanted, and that she cannot do this any more. To tell her that she is fat because she eats more than she needs, although it is perfectly true, is about as useful as telling an alcoholic that he drinks too much. What matters to the patient is why she used to be able to regulate her appetite to fit her energy expenditure whereas now