



nznutrition FOUNDATION

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Welcome to Issue 25 of our Bulletin, updating you on issues of importance or topical interest relating to nutrition and physical activity of older people. In this issue we look at the important issue of nutrition and dental health, especially as what we can eat depends on the integrity of our oral health!

Good oral health is important throughout life, and no less as we age. It affects general health, wellbeing and quality of life. The condition of your mouth and teeth affect your comfort, communication, smiling, socialising and self-confidence, and if you cannot chew food adequately, there is the risk of becoming malnourished. A study conducted in Baltimore in the USA some years ago looked at the relationship between denture use, malnutrition, frailty and mortality in community living older women and found that those who wore dentures and had difficulty chewing and swallowing had a higher risk of malnutrition¹.

Around 60 years ago, it was common for people to expect to lose their teeth and have dentures; in fact to have your teeth removed for a 21st birthday present was supposedly a way to get round ongoing dental health issues and costs as you aged! One hundred years ago, before leaving NZ for Egypt to fight in WW 1, many men were encouraged to have their teeth pulled out as the army doctors thought this was the best way to get no dental problems on the battlefield. Troops lining up for the Korean War in 1950-57, received similar advice. But there has been a positive trend towards decline in tooth loss among adults and older people, while there will still be a substantial number relying on dentures. American figures suggest about 25% of those over 65 have no natural teeth (edentulous). The number of edentulous older people is projected to decrease over the next 20-30 years.

As people age, they experience higher rates of chronic diseases, take more medications associated with dry mouth (xerostomia) and other oral conditions. Natural ageing of the teeth, such as gradual loss of normal hard surfaces due to chemical processes, wear and tear of the biting surfaces of teeth, abrasion due to excessively vigorous tooth-brushing and exposure of the dentine layer, causing pain and discomfort, can also be problematic for the older person. Teeth may become brittle and darker in colour or stained, and the supporting tissues, including bone, may break down or diminish, causing teeth to become loose.

Tooth loss with ageing is not inevitable; good oral hygiene and regular visits to the dentist help keep teeth and gums in good condition. Dietary factors both prevent and contribute to tooth decay. The bacteria in plaque present in every mouth metabolise dietary sugar to produce acid. If the plaque is not removed by regular brushing, the acid attacks and demineralises the tooth surface, causing decay. A balanced and varied diet and chewing food well to maintain a healthy flow of saliva help keep teeth and gums in good condition. The use of fluoride protects against dental caries, and using fluoridated toothpaste twice daily is recommended.

Primary dietary factors and eating patterns associated with risk of dental caries²

Dietary factors associated with increased risk:

- Sugar-sweetened beverages, such as fizzy drinks, fruit drinks, energy drinks, sweetened tea and coffee
- Naturally sweet fruit juices which are concentrated sources of fruits – e.g. a glass (250 ml) of orange juice has about double the amount of sugar of one orange.

- Sticky foods, such as raisins
- Slowly dissolving confectionery
- Sugary starchy snacks, such as biscuits, cakes, etc.
- Free* sugars including all sugars (white, brown, caster, etc), honey, golden syrup
- Carbonated drinks, including 'diet' drinks have phosphoric and carbonic acid which are associated with tooth decay.

Dietary factors associated with decreased risk:

- Fresh fruits and vegetables
- High-quality protein foods, such as meats, eggs, cheese, fish, beans and legumes
- Whole-grain, low sugar breads and cereals
- Sugar-free gum, mints and other confectionery

Eating patterns associated with increased risk:

- Frequent and prolonged intake of foods high in simple sugars
- Eating sticky, retentive foods alone
- Sipping sugar-sweetened beverages for prolonged periods

Eating patterns associated with decreased risk:

- Space frequency of food and beverage intake at least 2 hours apart
- Select fresh, whole, unprocessed food to stimulate salivary output
- Chew sugarless gum for a brief period immediately after a meal or snacks

Adapted from: Academy of Nutrition and Dietetics: Position Paper on Oral Health and Nutrition

Denture-related conditions

Denture use is associated with a loss of chewing capacity and an altered selection of foods, such as a reduction in the intake of vegetables, fruits, meats and other hard-to-chew foods. The study by Semba et al¹ referred to above, found that denture use in older women was associated with lower serum carotenoids (found in vegetables and fruits). They also tended to consume more fat and cholesterol, compared with those not using dentures. Edentulism was also associated with a higher body mass index and weight gain, compared with controls. This may bear some significance to the fact that soft, easier-to-chew foods in many cases are higher in energy than the harder fruits and vegetables.

It's important that dentures are checked regularly. They may need relining, repairing, refitting, or even replacing. Properly fitting dentures are essential to promote the intake of a wide variety of foods, particularly those from the fruits and vegetables and meat food groups. Good oral and denture hygiene is crucial.

Salivary flow and dry mouth (xerostomia)

Saliva provides a natural cleansing action in the mouth; it lubricates the mouth, flushes food and debris, neutralises acid and helps strengthen tooth surfaces. It also facilitates dietary intake; salivary flow increases before eating when people smell, expect to eat and see food. As the body ages, salivary composition changes and flow decreases, especially when there are age-related diseases and the use of common drugs. Dry mouth (xerostomia) is often a consequence. There are over 500 drugs that cause salivary gland dysfunction, with many of these influencing salivary secretion, directly or indirectly. When some are given in combination, the side effects can be problematic. The list of drugs found to have these unpleasant side effects includes anticholinergics, diuretics, antihypertensives, antidepressants, antihistamines, analgesics (especially opiates), sedatives and tranquilisers, cytotoxics and antiparkinsonian drugs.

* 'Free' sugar is any sugar that is added to foods by the manufacturer, plus that naturally present in honey, syrups and fruit juices. It does not include sugar naturally present in milk or whole fruits and vegetables. You do not need to limit these foods because of their sugar content.

People with xerostomia may complain of difficulty in eating, speaking and swallowing, reduced taste sensation, and limited tolerance to dentures. This can lead to loss of appetite and inadequate nutritional intake. There is increased susceptibility to dental caries, gum disease and oral infections. Bad breath is also associated with dry mouth. People with dry mouth should be encouraged to drink plenty of water, or frequent sips of water, and to avoid sweets, tobacco, alcohol and caffeine. Addressing issues of reduced salivary flow and dry mouth is critical from a nutritional aspect, as these conditions do make eating and swallowing difficult and will invariably have an impact on dietary intake. There are a variety of prescriptions and over-the-counter saliva substitutes that can be used as a rinse or spray.

Strategies to enhance nutrition and oral health

- Twice daily brushing using fluoridated toothpaste, and a soft toothbrush. Have a good routine for cleaning dentures.
- Minimise high sugar foods and beverages outside of mealtimes. Sweet treats are best served with a meal, as the mixed meal 'tones down' the impact of pure sugar on its own.
- Make sure protein requirements for older people are met – you need at least two servings cooked protein (e.g. meat, fish, chicken, eggs, legumes) per day; this may be best served as smaller portions at two or three meals, rather than one large serving. Milk and milk products (2-3 serves per day) can be included as a beverage, cream soup, milk desserts, yoghurt, or cheese.
- Cheese is a good snack food. Not only is it a good source of protein and calcium, it has been found to provide protection from dental caries.
- For people with problems chewing and swallowing, choose to eat softer foods such as stews, tender meats, well cooked and/or mashed vegetables, soups, soft fruit and milk based desserts. Enjoy soft raw fruits, or cut fruit into bite-sized pieces. Take time over meals, and clear your mouth before embarking on the next mouthful.
- For people with an altered sense of taste, try adding more herbs and spices to your food. Curry pastes are ideal.
- For those who have been prescribed oral nutritional supplementation (ONS) containing carbohydrates, such as Ensure or Fortisip, there is an increased risk of dental caries³. Your nutrition is important, and paying special attention to oral health and regular tooth-brushing is therefore essential.
- For people with dry mouth, frequent sips of water or ice chips can help remedy reduced saliva flow.
- Sudden reduction in amount eaten and consequent weight loss needs investigation – check for oral infection or ulceration.

Because good oral health is a pre-requisite to a healthy and varied diet, and consequential overall well-being, the importance of this aspect of in the day-to-day routine of older people cannot be overemphasised. With the number of people with dentures now declining, care of natural teeth becomes critical – so we can still chew our vegetables and fruits!

References

* Semba RD, Blaum CS, Bartali Q-L, et al. Denture use, malnutrition, frailty and mortality among older women living in the community. J Nutr Health & Aging 2006;10(2): 161-7.

² Academy of Nutrition and Dietetics: Position Paper on Oral Health and Nutrition, Journal of the Academy of Nutrition and Dietetics 2013;113(5):693-701,

³ Kelly G, Jones V, Davies R. All Wales Special Interest Group/Special Oral Health Care. Dysphagia and oral health. September 2014 <http://www.sigwales.org/wp-content/uploads/sig-dysphagia-guidelines1.pdf>

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www.nutritionfoundation.org.nz/about-us/Healthy-Ageing and <http://agewelleatwell.com/>