

## GERODONTOLOGY MOOC – VIDEO NOTES

### AGEING OF THE ORAL TISSUES

#### Teeth

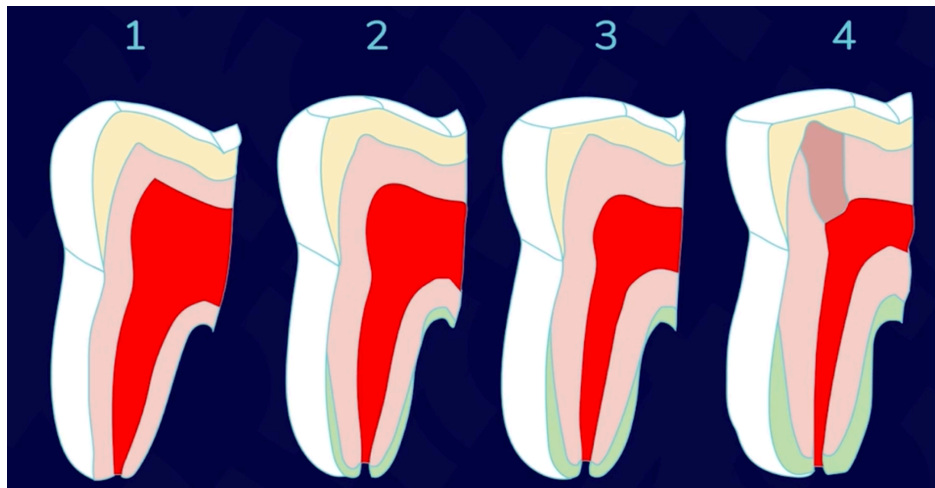


Figure 1: Changes to the pulp chamber and cementum with age

The concentration of fluoride in the enamel increases with age, which potentially changes the tooth's susceptibility to caries. However, lifestyle and risk factors may increase the likelihood of coronal and root caries.

With increasing age, dentine in the pulp chamber continues to be 'laid-down'. This often leads to a narrowing of the pulp chamber. This may also be coupled with a gradual calcification of the pulpal contents. Similarly, cementum, continues to grow through-out the life-course.

#### Bone

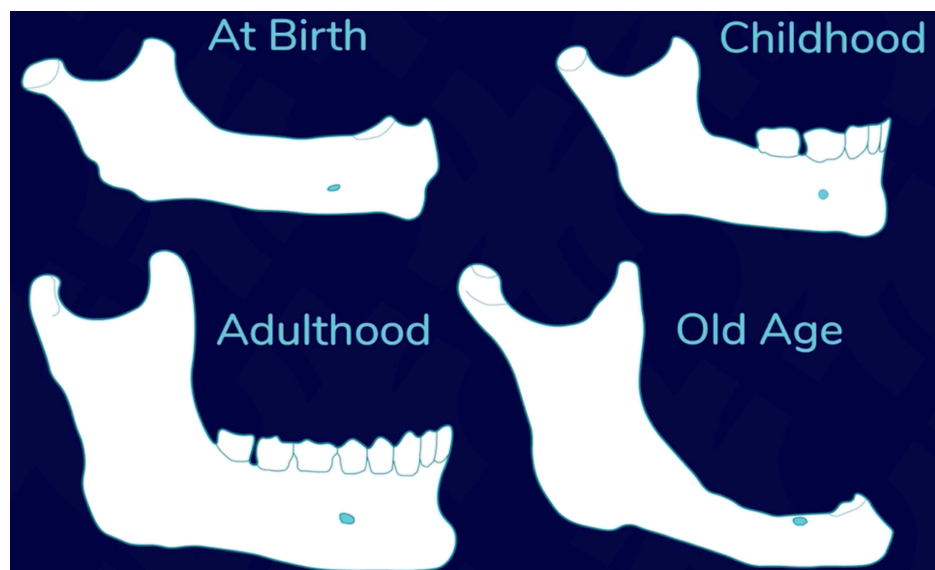


Figure 2: Changes to the mandible with age

The physical and chemical properties of bone changes with increasing age. Bones will typically see a reduction in strength with age, increasing the likelihood of fracture. Changes in the strength of bones are linked bone mineral density which declines with age. The reason for this decline is that bone does not recover, or remodel, as effectively.

The shape, or morphology, of bones also changes over time. Typically, the overall diameter of bones increases, while the outer layer (cortex) gets thinner. This process also contributes to the increased risk of bone fracture. This is more common in long-bones and many older people suffer from fractured thigh bones as a result of falls.

It is less common to see fractures occurring to the mandible and maxilla, but as bones are shaped by the muscles that support them, the shape of people's jaws can change as people lose their teeth. It is also common to see bone loss accelerated by missing teeth and poorly fitting dentures.

## Muscles

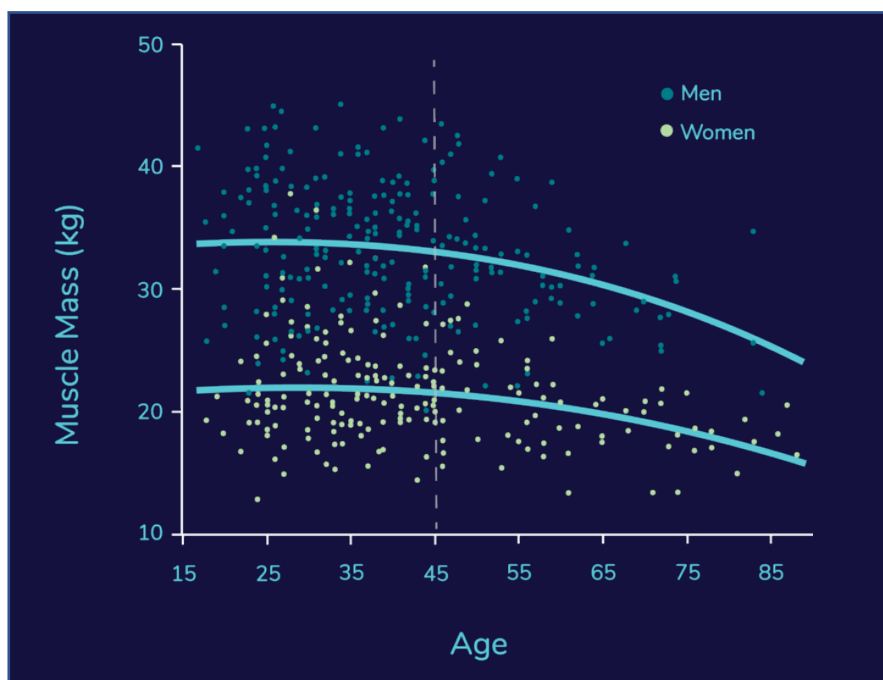


Figure 3: Reduction in muscle mass with age. Reproduced from Janssen I & Ross R., *J Nutr Health Aging*. 2005;9(6):408-419.

Muscles, like bones, lose mass with age. This reduction in mass will usually come with an associated loss of strength.

In the jaw, reduced muscle mass is often seen in edentulous patients.

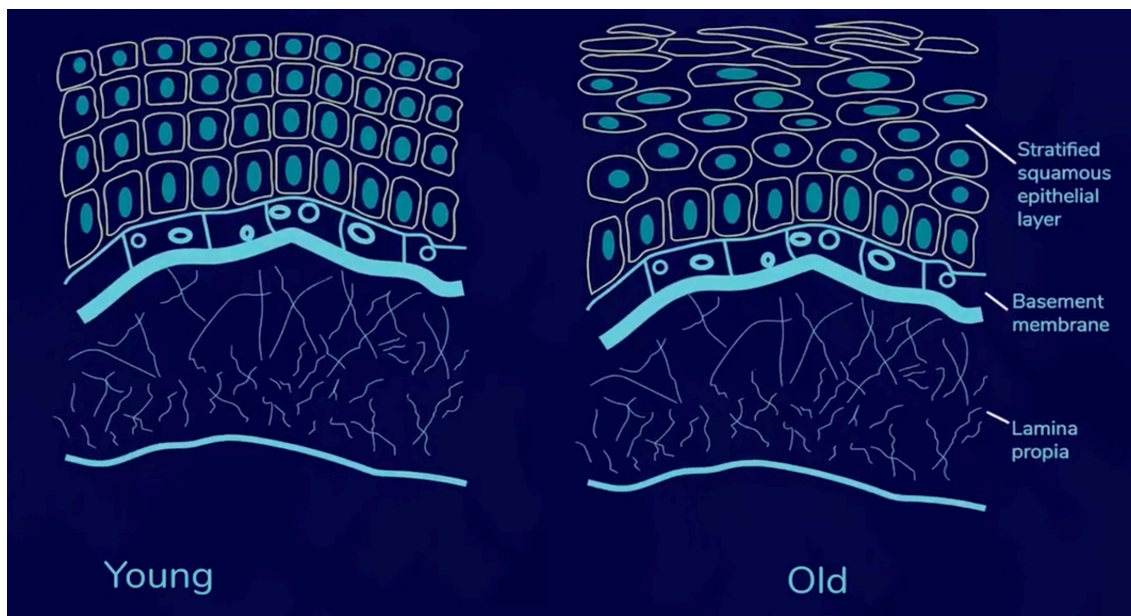
## Salivary Glands

A change in saliva production is often associated with ageing. This is particularly important in older people.

Approximately 25% of older people suffer from xerostomia (dry mouth).

Xerostomia can be caused by physiological ageing, however, one of the largest causes of xerostomia is medication use. Many medications have side-effects that cause a reduction in the activity of the salivary glands.

## Oral Mucosa



*Figure 4: Changes to the epithelium in the oral mucosa with age.*

Epithelial cells tend to become flatter and larger with age. This results in a reduction in epithelial thickness, which can often be difficult to see clinically.

The thinning of the oral mucosa can also make the mouth more susceptible to the known risk factors of oral cancer. The number of new cases of oral cancer (incidence rate) increases with age. Known risk factors include the use of tobacco and alcohol. When used together, the increase in cancer risk increases significantly.