Peri-implant soft tissues

UK IMPLANTOLOGY YEAR COURSE
Module 5
13th October 2017

STUART ELLIS BDS MFGDP(UK) DPDS MSc
Course Director
Cavendish House Implant Centre
Cambridge

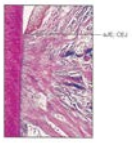
Aims & Objectives

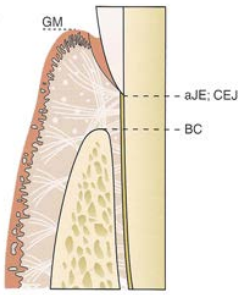
- Comparison with teeth
- Peri-implant tissues in health
- Biology of soft tissues
- Pathology of soft tissues
- Biological width

Periodontal soft tissues

Teeth:

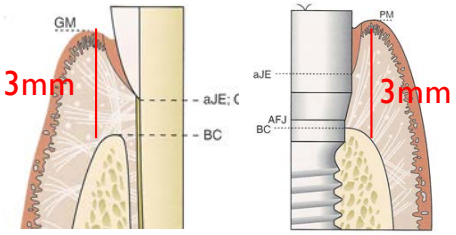
Unique structures





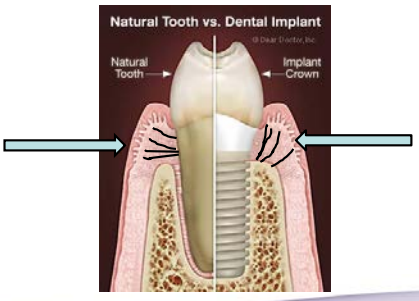
Comparing teeth and implants – similarities

Berglundh *et al* (1991):



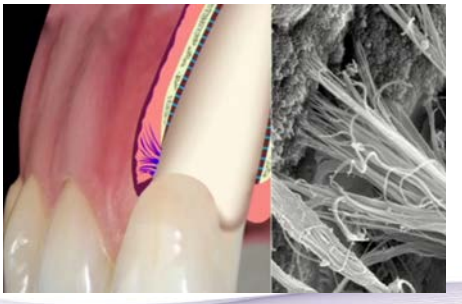
Comparing teeth and implant

Berglundh *et al* (1991):



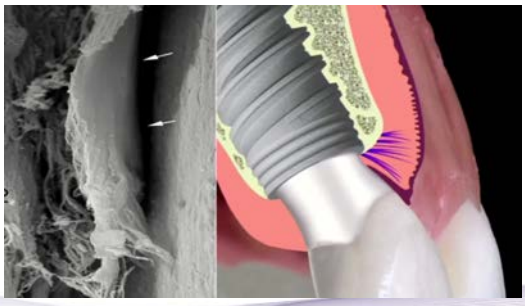
Comparing teeth and implant

TEETH:

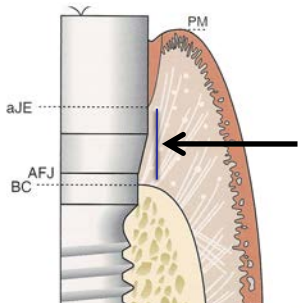


Comparing teeth and implant

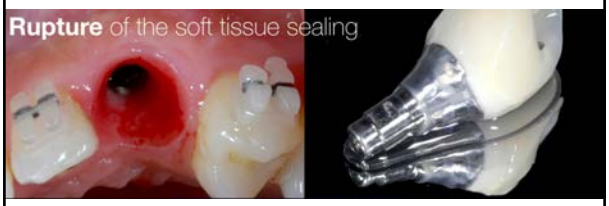
IMPLANTS:



Peri-implant connective tissue interface

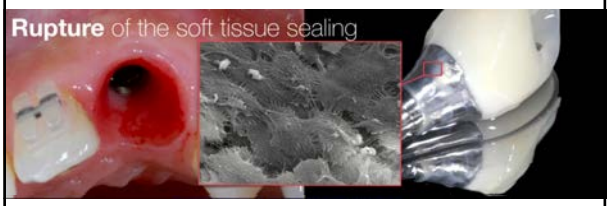


Peri-implant connective tissue interface



FRANCE LAMBERT

Peri-implant connective tissue interface

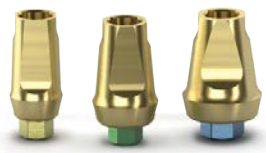


FRANCE LAMBERT

Abutments – does material matter?

Abrahamsson *et al* (1998):

Ti – good mucosal seal



Gold – poor mucosal seal

Abutments – does material matter?

Abrahamsson *et al* (1998):

Zirconia – good mucosal seal

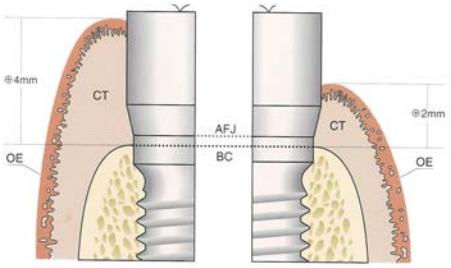
Porcelain – poor mucosal sea

Abutments – does material matter?

Crown margins with zirconia:

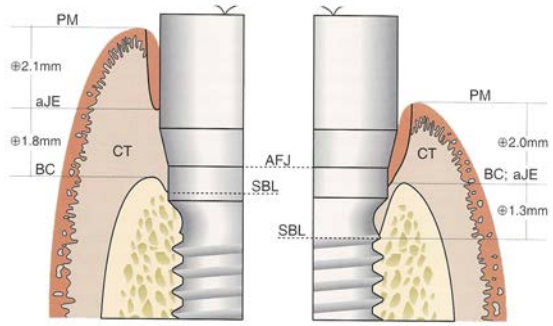
Biological width

Berglundh & Lindhe (1996):



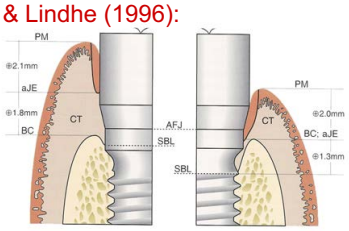
Biological width

Berglundh & Lindhe (1996):



Biological width

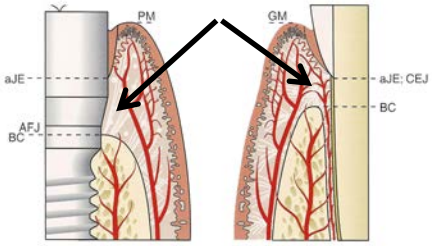
Berglundh & Lindhe (1996):



'A certain minimum width of the peri-implant mucosa is required and that if this is not achieved bone resorption may occur to allow the proper soft tissue attachment to form'

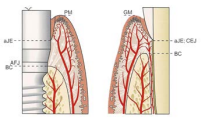
Comparing teeth and implant – blood supply

Berglundh *et al* (1994):



Comparing teeth and implant – blood supply

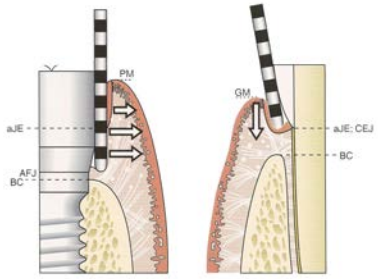
Berglundh *et al* (1994):



Does this indicate that peri-implant soft tissue may have impaired defense capacity against exogenous irritation such as bacterial plaque????

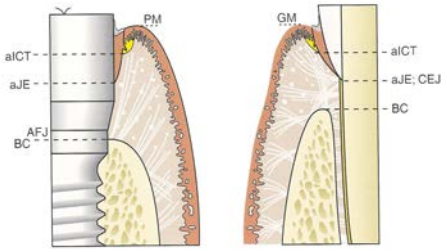
How good is the seal around implants?

Berglundh *et al* (1994):



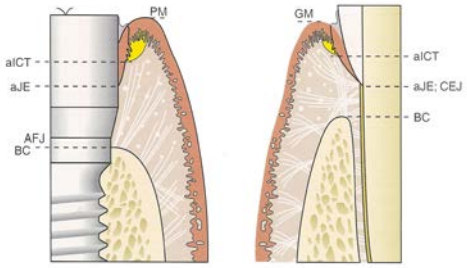
Short term plaque response

Pontoriero *et al* (1994):



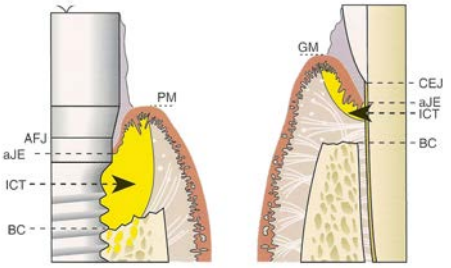
Longer term plaque response

Pontoriero *et al* (1994):



Longer term plaque response

Pontoriero *et al* (1994):



Conclusions for peri-implant soft tissues

- Ideal soft tissue attachment is about 3mm (Biological Width)
- Consists of approx 2mm Junctional Epithelium and 1mm Connective tissue
- Important for protection of zone of osseointegration from bacterial plaque
- Differs in regard to collagen fibre orientation to teeth
- Differs in vascular supply to area apical of junctional epithelium with teeth
- Has a weaker attachment to abutment than cementum of teeth
- Has the characteristic of 'scar tissue'

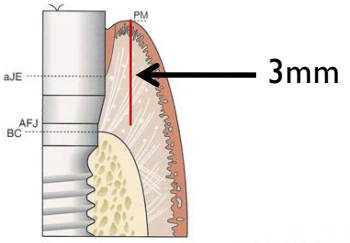
Practical implications

Need for excellent oral hygiene measures

24

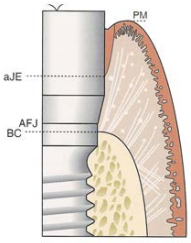
Practical implications – biological width

Placement of implant-abutment junction – to allow at least 3mm of overlying soft tissue



Practical implications – biological width

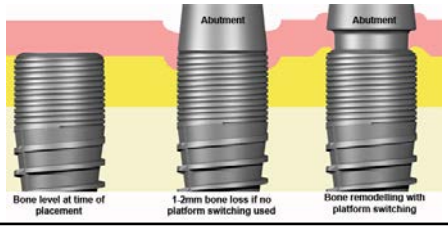
Sometimes means the implant head has to be placed below bone crest level



Practical implications – platform shifting

The join between implant and abutment may result in microgap – allowing bacteria to colonize and result in bone loss.

1.Narrow platform brings this join away from margin bone
2.Also allows thicker overlying soft tissues (biological width)



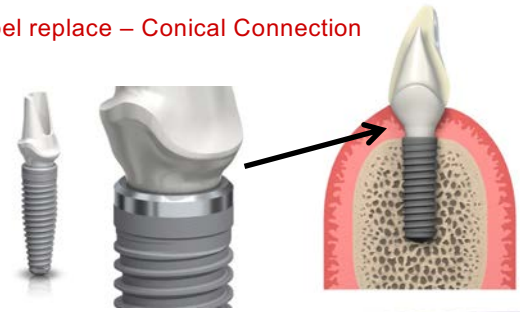
27

Practical implications – platform shifting

Nobel Replace – RP Conical Connection

Practical implications – platform shifting

Nobel replace – Conical Connection



THE END