



BASCD Trainers' Pack for Caries Prevalence Studies

Updated: June 2014

*for UK Training & Calibration
exercise for the Deciduous Dentition*

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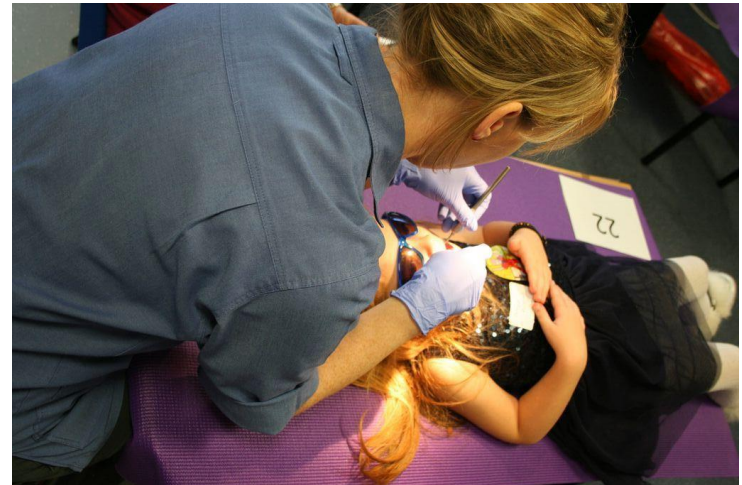
Background

- The British Association for the Study of Community Dentistry (BASCD) has co-ordinated and provided the standards for a programme of dental health surveys for many years.
- The caries training pack is located at: https://khub.net/web/phe-national/public-library/-/document_library/v2WsRK3ZIEig/view/177090810?_com_liferay_document_library_web_portlet_DLPortlet_INSTANCE_v2WsRK3ZIEig_redirect=https%3A%2F%2Fkhub.net%3A443%2Fweb%2Fphe-national%2Fpublic-library%2F-%2Fdocument_library%2Fv2WsRK3ZIEig%2Fview%2F174089826

- **This presentation is designed to support the training of dental examiners in the assessment of dental caries undertaken in the surveys.**

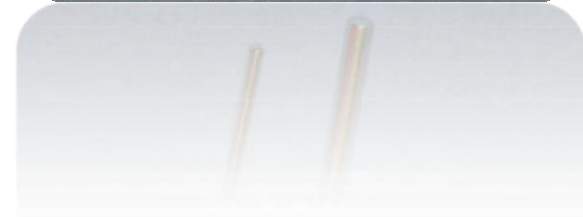
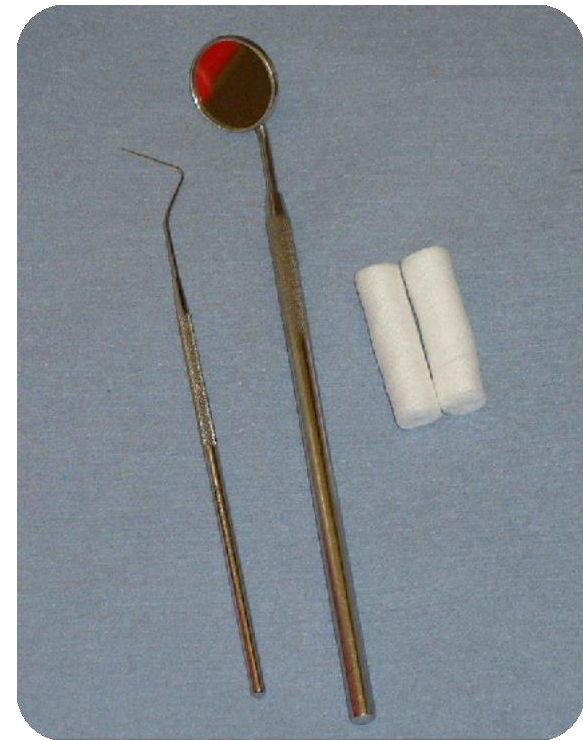
The Examination

- Dentist seated behind child
- Child lying supine on table covered with soft mat and water proof covering
- Child wears shaded glasses
- Recorder seated next to dentist
- Dentist can clearly see chart



Dental instruments

- **Recommended dental instruments are:**
- **Plane mouth mirror**
- **Blunt ball-ended probe (CPITN) with an end diameter of 0.5 mm.**
- **Cotton wool rolls or cotton buds for drying teeth**
- **Fresh set of previously sterilised instruments for each subject.**



Lights

- **BASCD recommend a purpose built inspection light yielding 4000 lux at 1 metre**
- **Examples of acceptable lights are:**
- **Brandon Medical Company MT608BASCD**
- **Daray X100 with PivotD desk mount**
- **Ensure light is at highest setting**



Drying Teeth

- **BASCD recommend cotton wool rolls, gauze or cotton wool buds.**
- **For caries and fissure sealant diagnosis drying is recommended wherever diagnosis is in doubt and surfaces are obscured with saliva.**

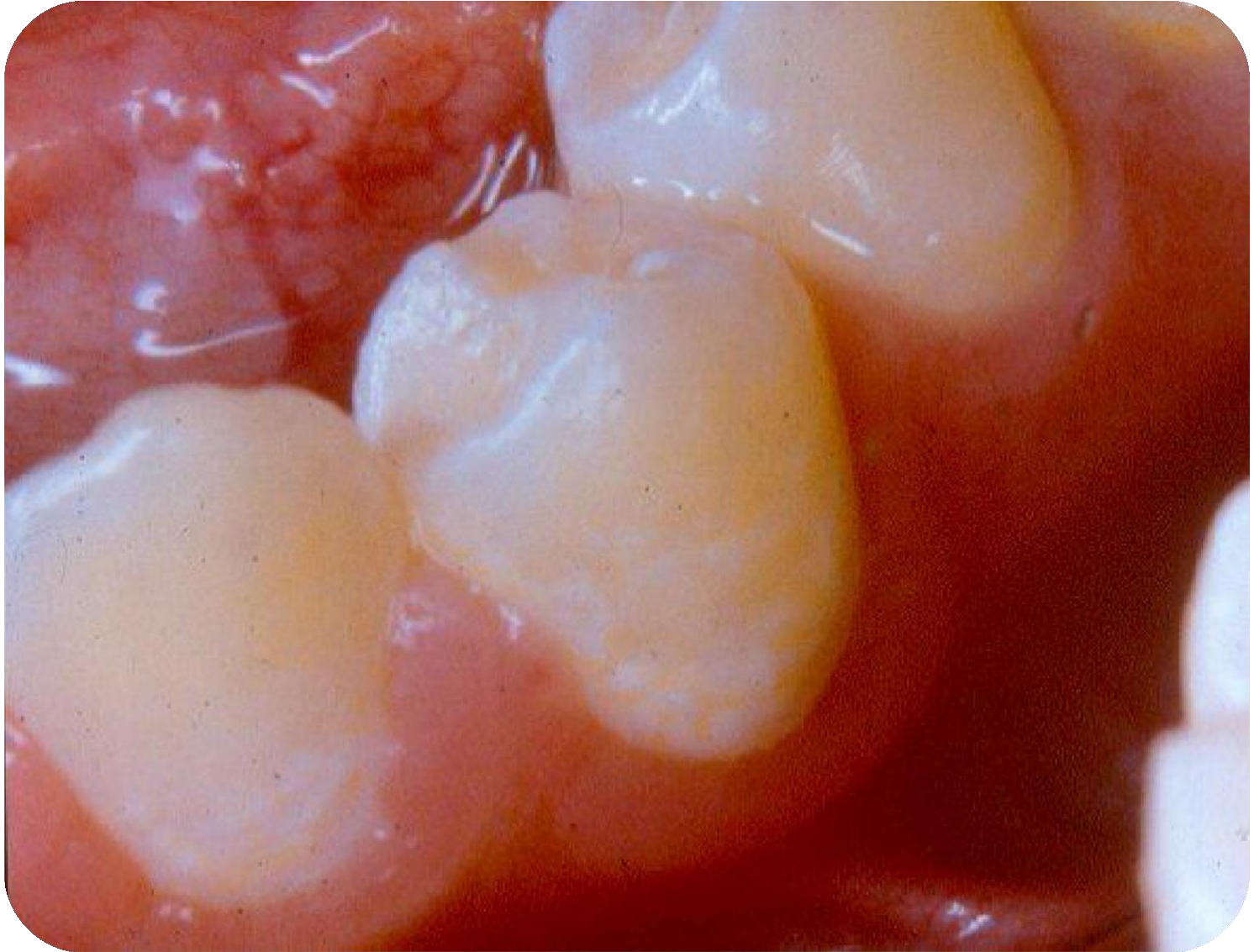


Use of Probe

- **NOT a diagnostic aid.**
- **Probe is used for:**
- **Removing plaque and debris**
- **Checking for fissure sealants and tooth coloured fillings**

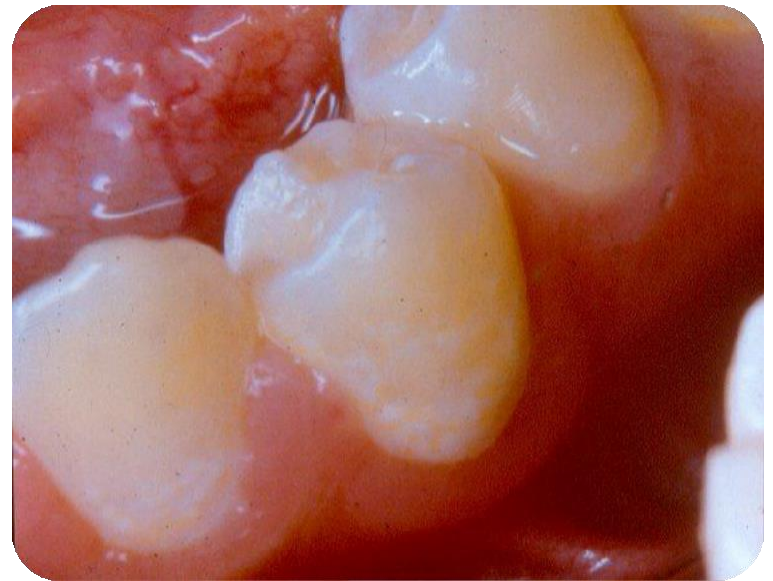


Plaque Removal



Plaque Removal

- **LL3 and LL4 –buccal surfaces of these teeth covered with plaque**
- **Visibility is obscured**
- **Therefore, plaque should be gently removed with the blunt ball-ended probe.**



Caries examination Conventions for surveys of 5 yr olds (1)

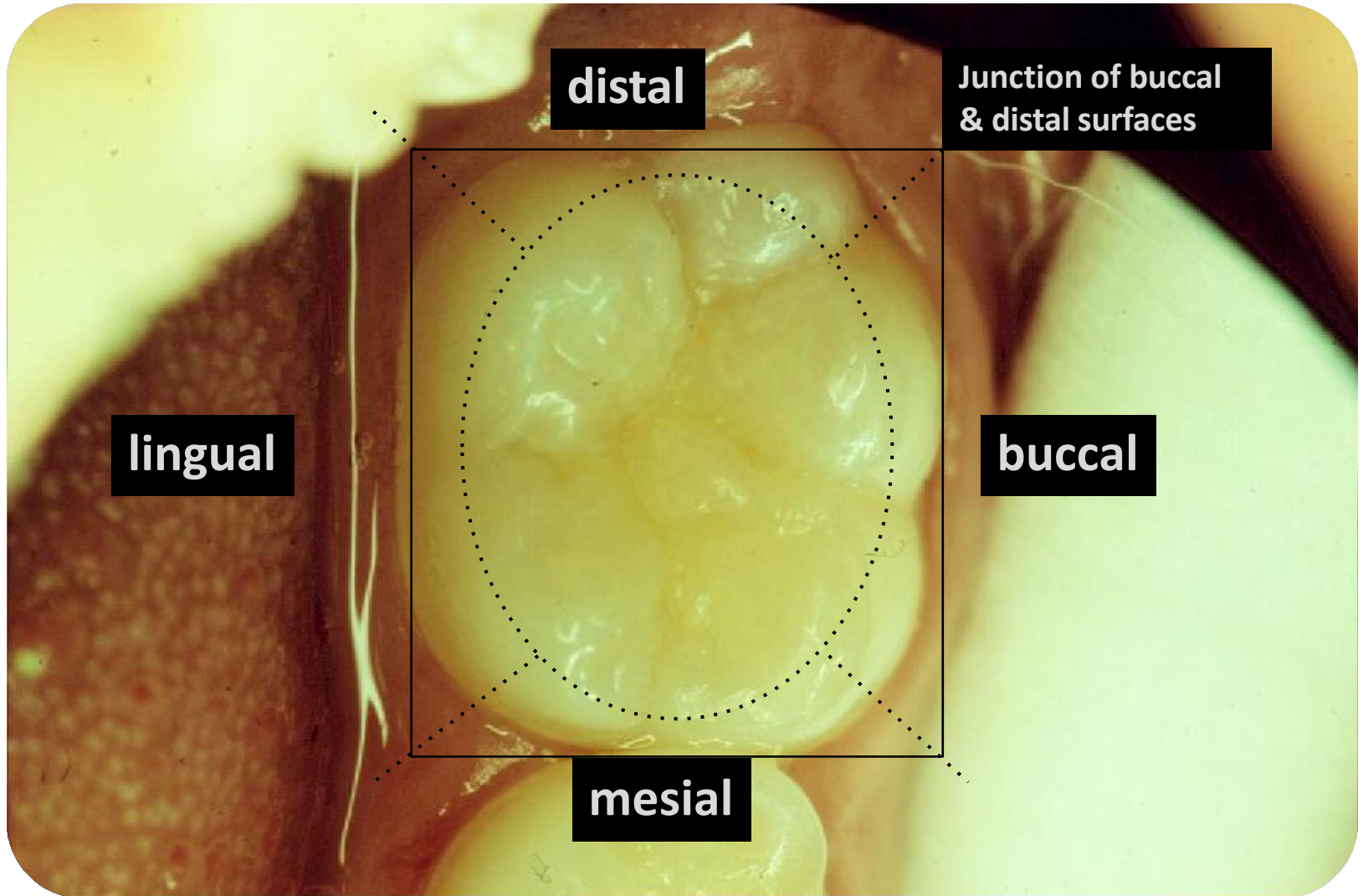
- **To facilitate accurate recording, examine and score teeth in a consistent order**
- **Only deciduous teeth are scored**
- **Missing deciduous incisors are assumed exfoliated and coded Tooth Code 8**
- **Where the permanent incisors have erupted, score as missing deciduous incisors Tooth Code 8**

Caries examination conventions (2)

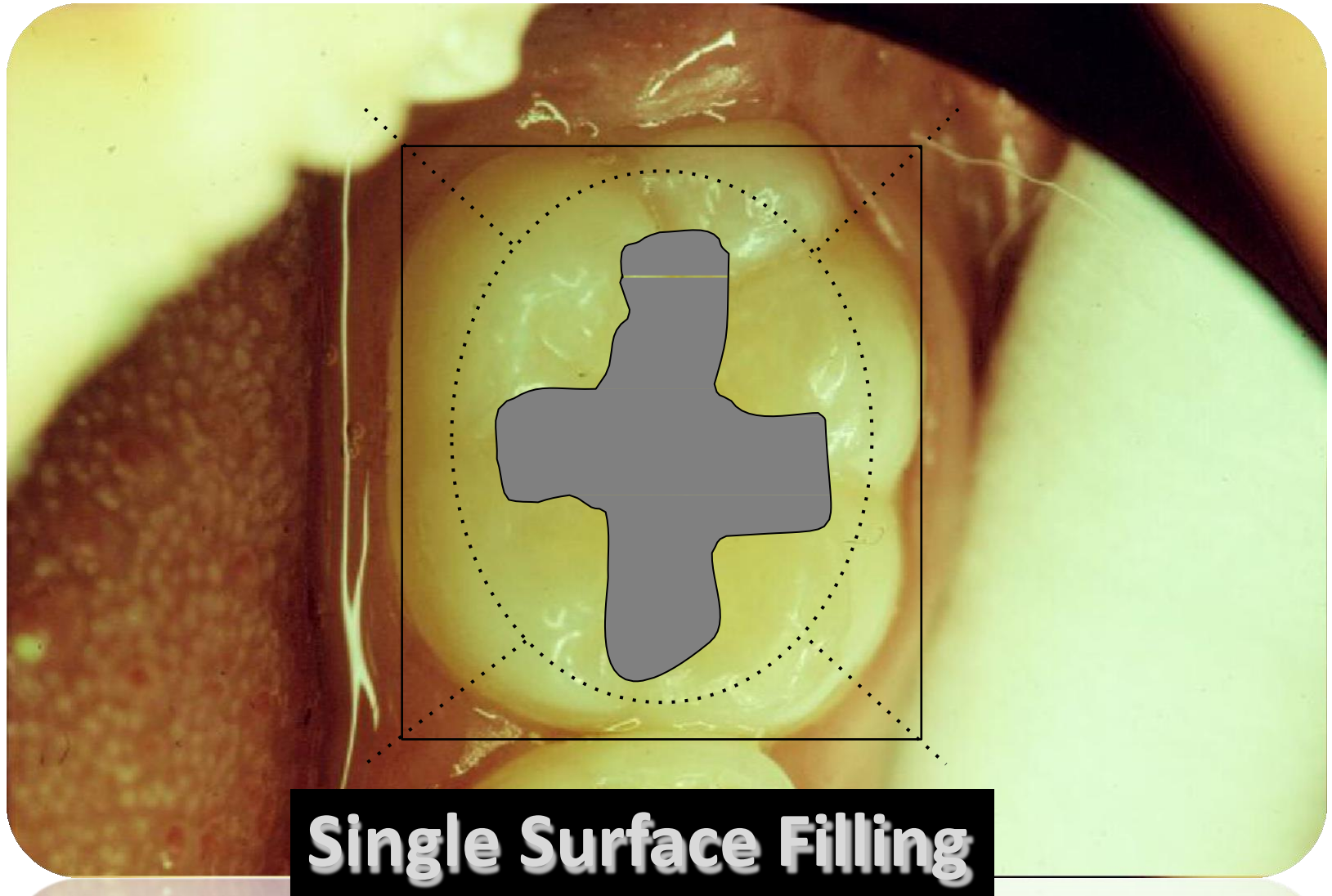
- **Carious roots are coded 3 for all surfaces**
- **Caries takes precedence over non-carious defects, e.g. Trauma**
- **The threshold for recording lesions as caries is dentine involvement (d₃)**

**The next set of slides show
different tooth and surface
conditions and the associated
codes used in surveys**

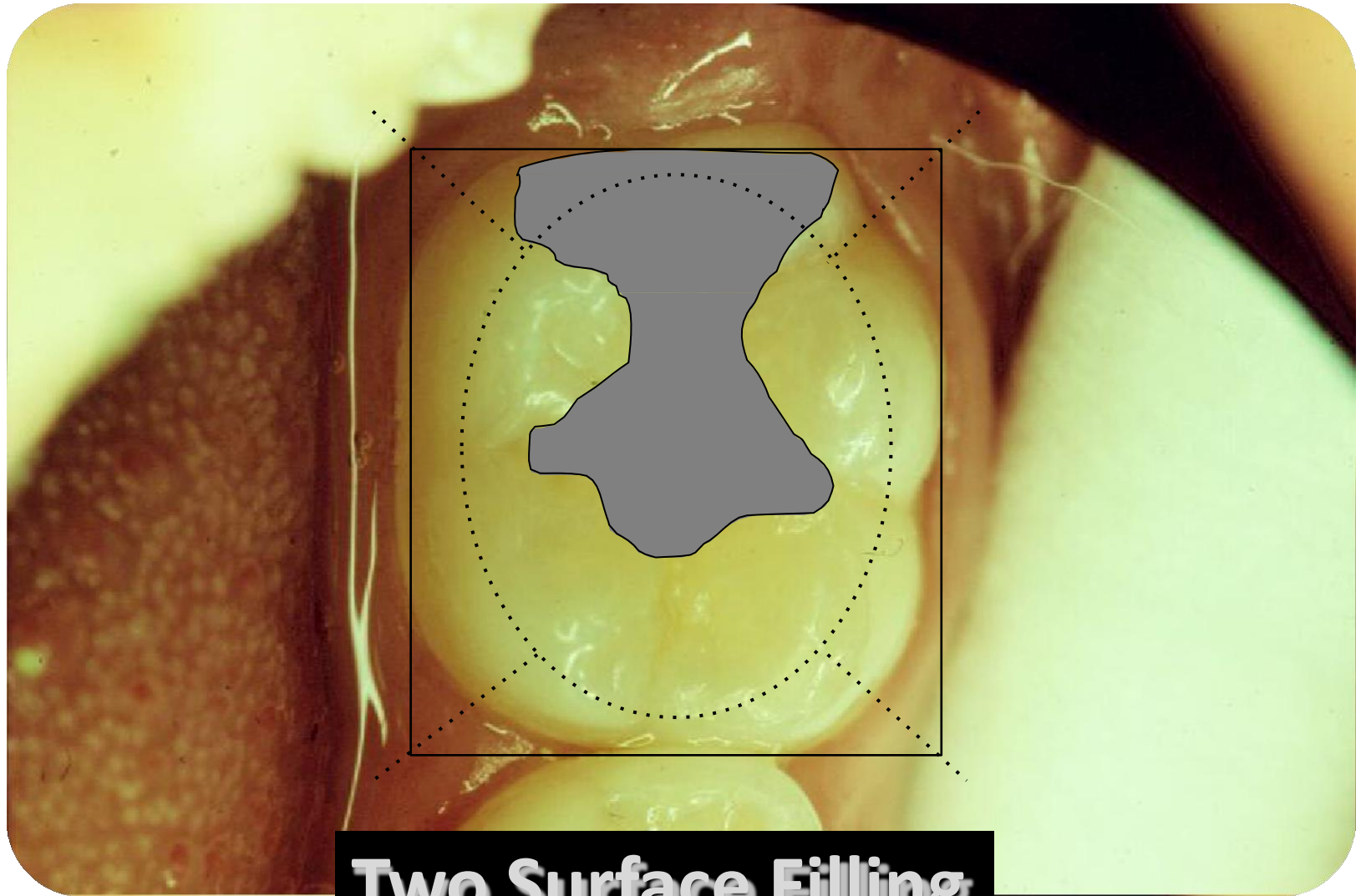
Surface boundaries viewed from occlusal



Surface boundaries viewed from occlusal

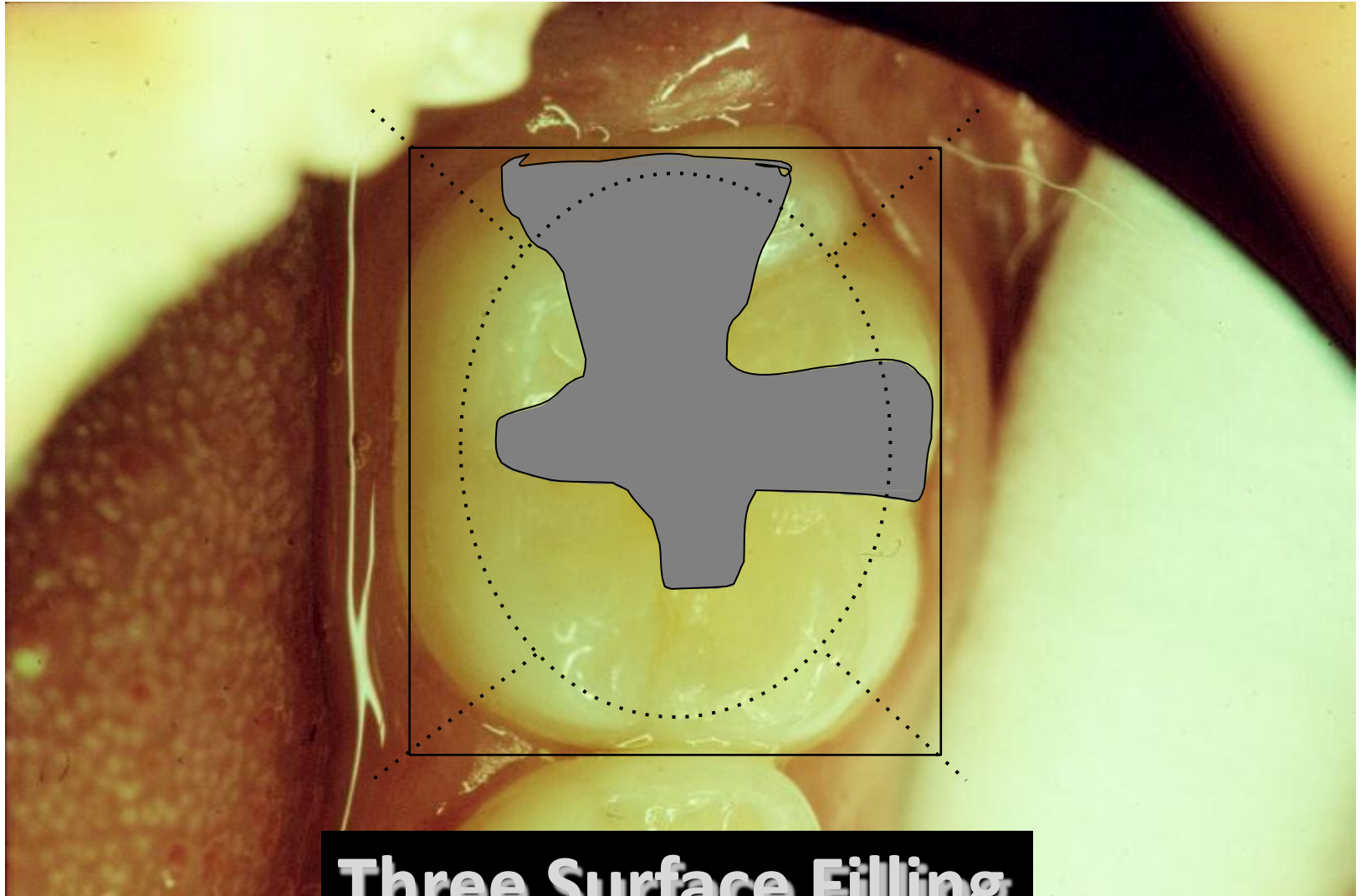


Surface boundaries viewed from occlusal



Two Surface Filling

Surface boundaries viewed from occlusal



Three Surface Filling

The next series of slides presents examples of teeth which would be coded as trauma (code T)

Surface code T – trauma



Surface code T – trauma

- UR1 – mesial and buccal surfaces are fractured.
- Fracture involves dentine
- View from all sides to determine which other surfaces are traumatised
- Surface code is T - trauma.

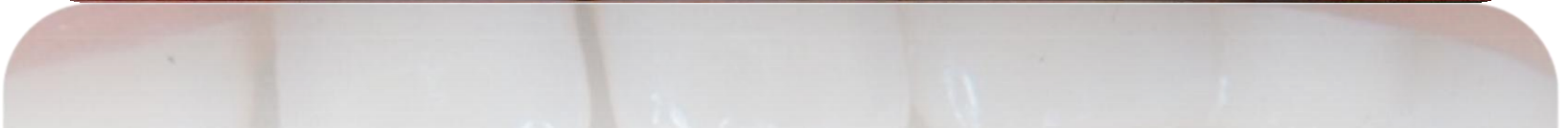
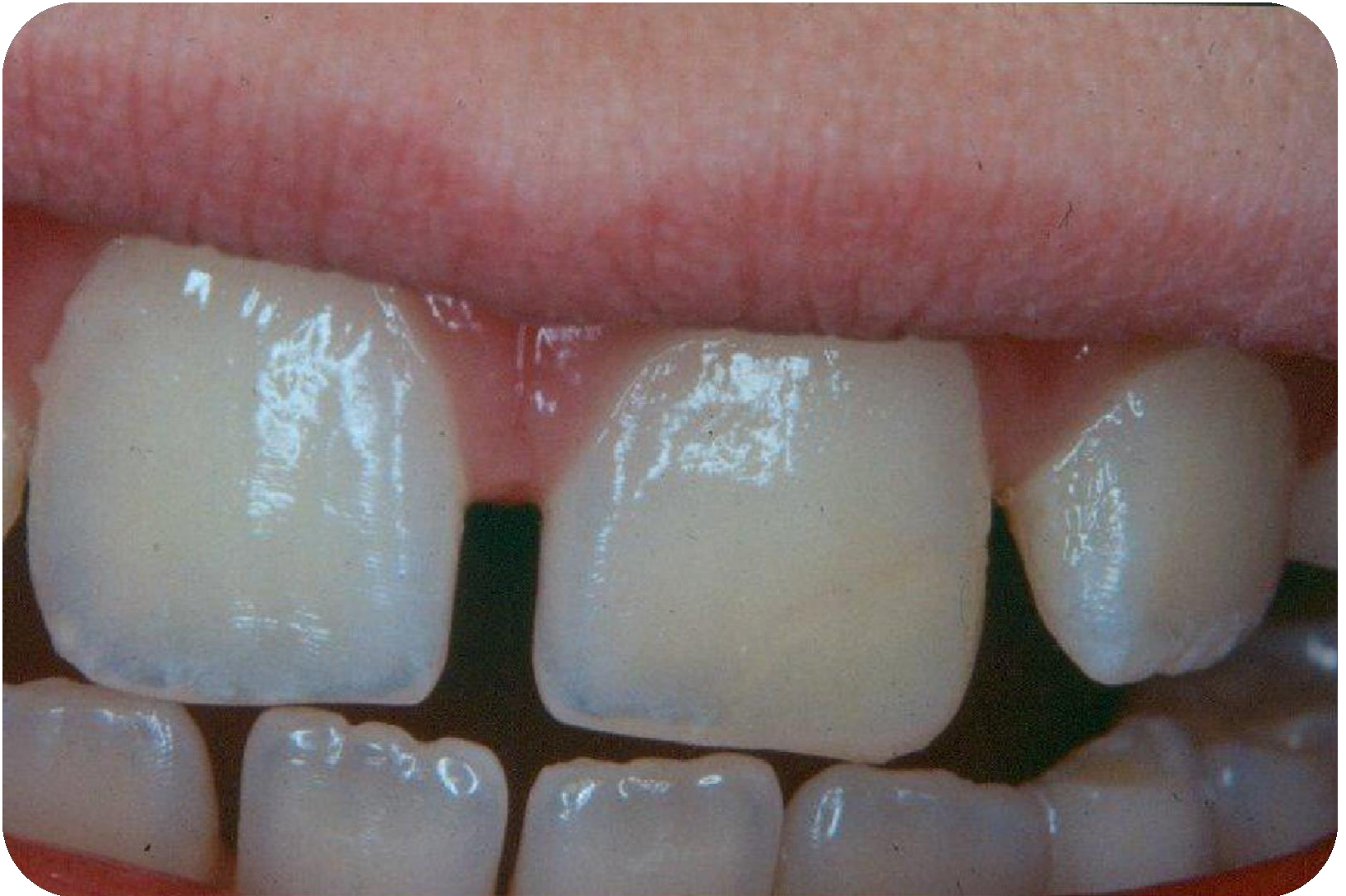


NB. If caries into dentine was also present on these traumatised surfaces, surfaces would be coded for caries as appropriate.

Surface code T – trauma

- **Where an examiner is confident a tooth is missing due to trauma, all surfaces should be coded T**
- **Discoloured, non-vital incisors, without caries or fractures should be scored T for trauma on all surfaces**
- **At present the BASCD standardised criteria does not discriminate between these trauma codes**
- **Sepsis will be recorded as part of the examination**

Surface code T – trauma



Surface code T – trauma

- **UL1 –tooth has been traumatised and repaired**
- **Restoration involves the distal and buccal surfaces (that are visible from this photo.)**
- **These surfaces would be coded as T.**



NB. Surface code T includes both untreated and treated trauma. Trauma code only used in absence of treated or untreated caries

**The next series of slides present
examples of teeth which would be
coded as sound (code 0)**

Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- **ULE –occlusal surface is sound and is coded as 0.**



Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- **UL2 & UL3 buccal surfaces –white spot lesions in a band around the gingival 3rd**



NB. These lesions represent one of the early stages of caries and are excluded from the caries scores, which record at the "caries into dentine" diagnostic threshold, therefore, these surfaces are scored as sound.

Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- In these deciduous teeth, the demineralised areas probably correspond with plaque coverage at the original gingival margin.



Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- **LL5 & LL6 buccal surfaces – white spot lesions around the necks of the teeth giving a band-like appearance.**
- **Surfaces are scored as sound.**



Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- **Stained fissure/enamel caries**
- **Stained pits or fissures in the enamel not associated with a carious lesion into dentine are coded as sound.**



Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- **UL2 – lingual surface has stained pit.**
- **No visible evidence of caries into dentine**
- **Surface scored as sound.**



Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- **Distal fissure of molar has a small carious lesion in enamel**
- **No visual evidence of dentine involvement**
- **Scored as sound**



Surface code 0 – present and "sound"

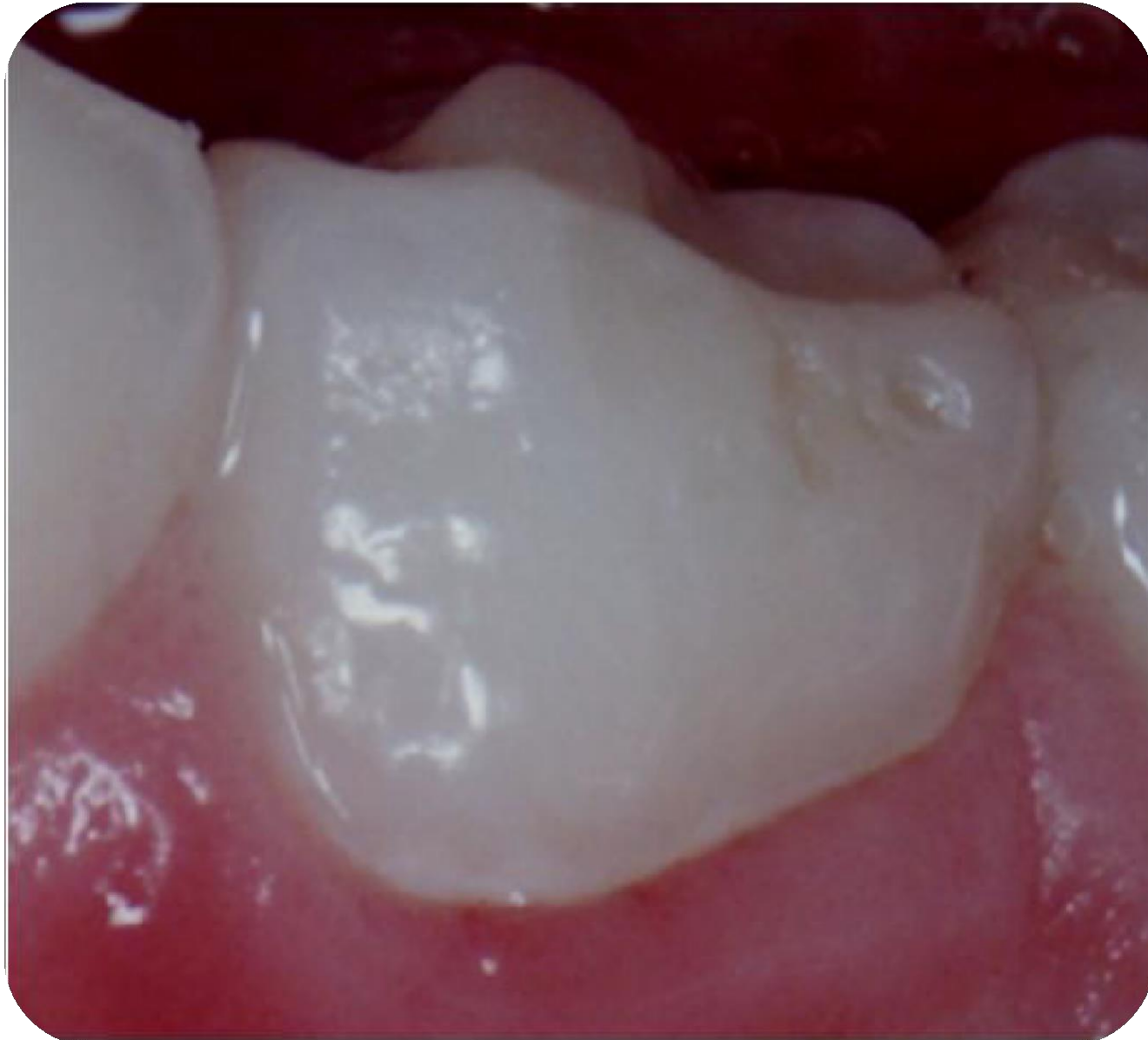


Surface code 0 – present and "sound"

- **UL4 –lingual surface has enamel loss and an orange/brown lesion.**
- **This is hypoplasia, a developmental defect of the enamel.**
- **Surface is scored sound.**

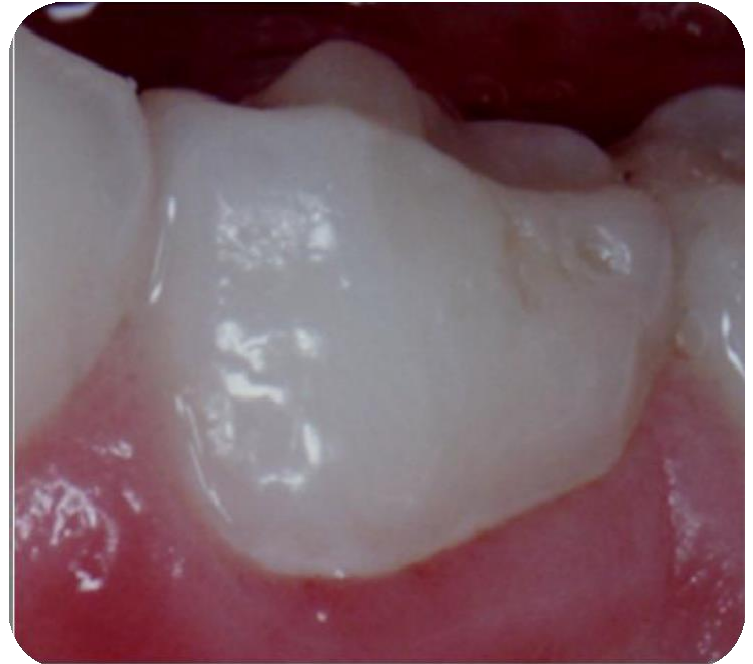


Surface code 0 – present and "sound"



Surface code 0 – present and "sound"

- Deciduous molar has a hypoplastic pit on the buccal surface.
- This is scored sound.



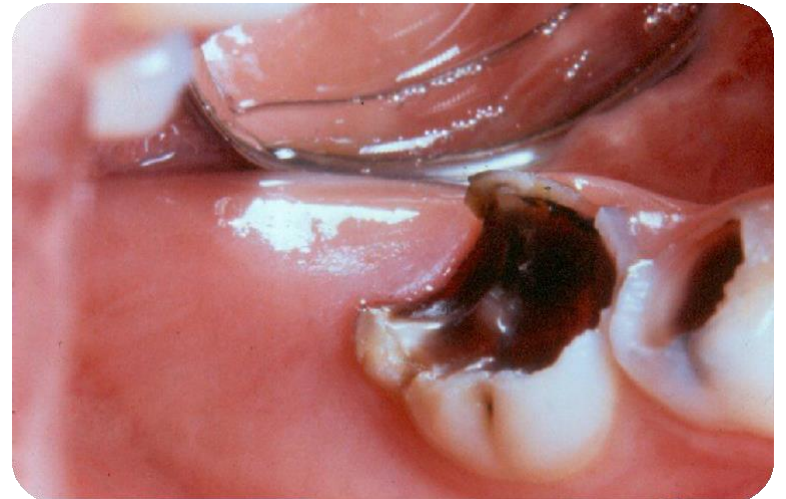
**The next series of slides illustrate
surfaces with decay**

Surface code 1 – arrested dentinal decay

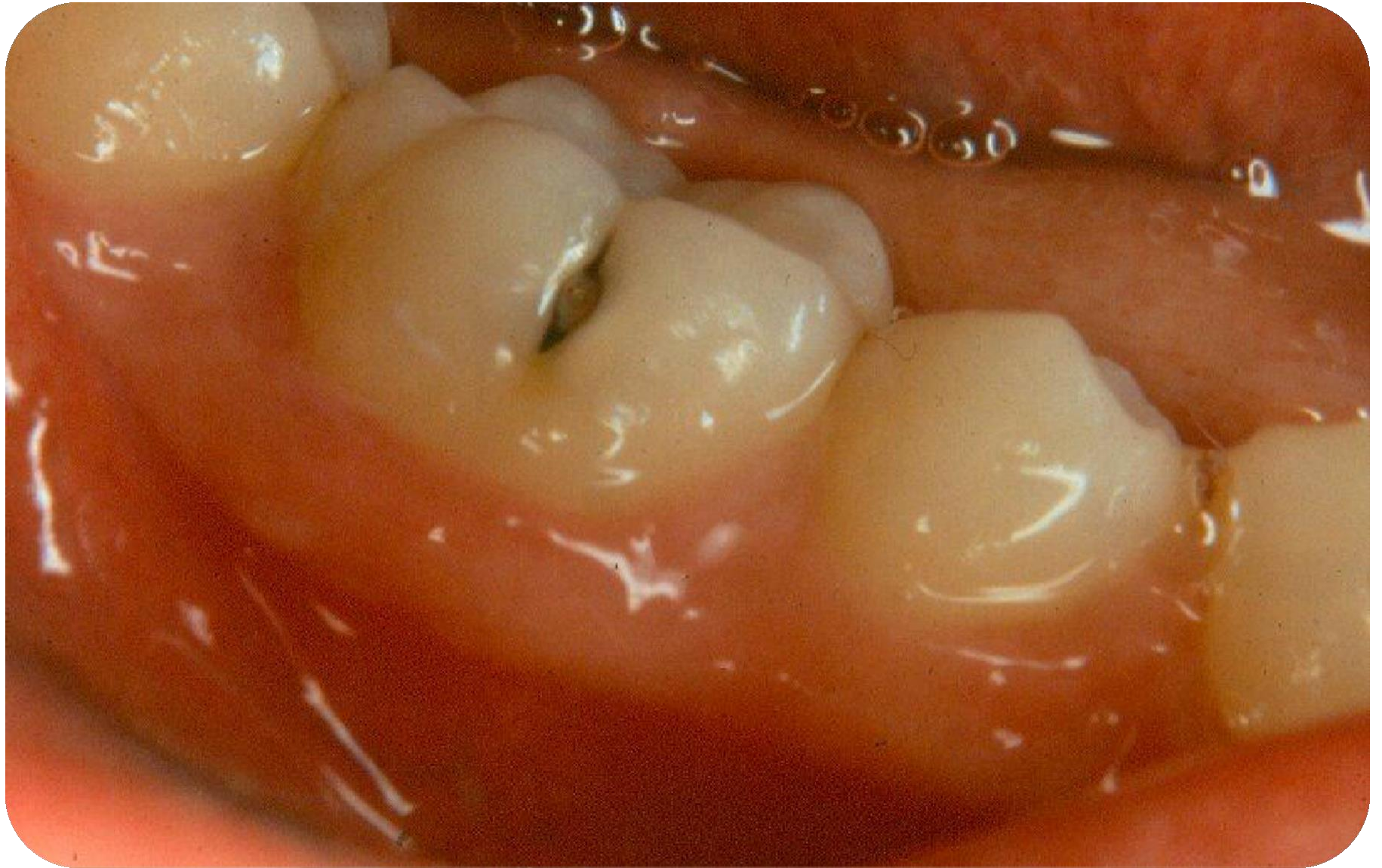


Surface code 1 – arrested dentinal decay

- URE –occlusal surface has arrested dentinal caries
- Distal, lingual and buccal surfaces would also be coded as 1.

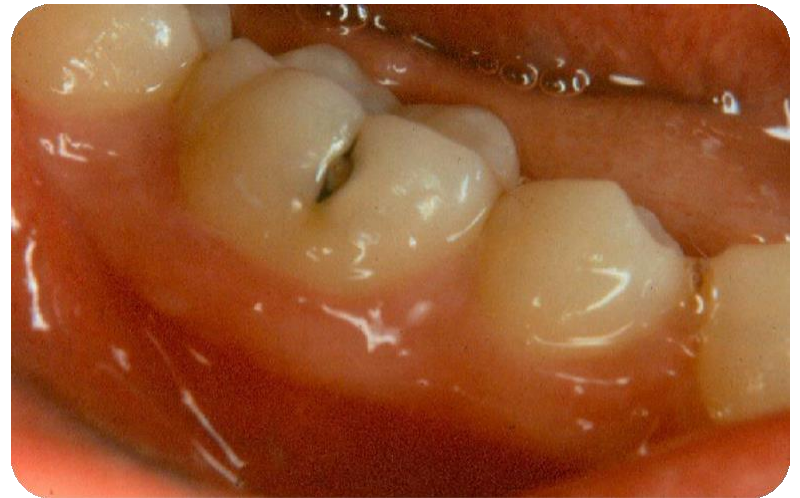


Surface code 2 – decayed into dentine

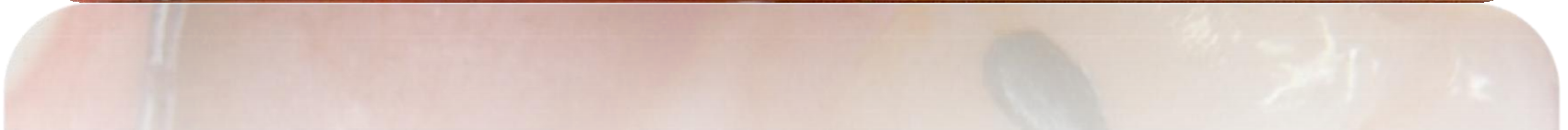


Surface code 2 – decayed into dentine

- LR6 –buccal surface has a visible carious lesion within fissure
- Surface is cavitated into dentine
- Creamy shadowing beneath enamel (mesial aspect)
- Grey shadowing beneath enamel (distal aspect)
- Both areas are undermined enamel indicating extent of carious lesion into dentine.



Surface code 2 – decayed into dentine

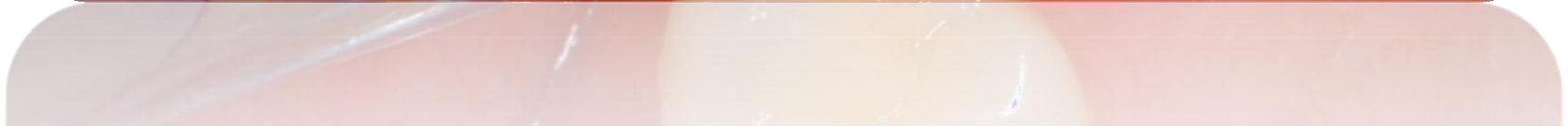


Surface code 2 – decayed into dentine

- LR7 - buccal surface has an oval lesion at the base of the fissure.
- Lesion extends into dentine and is coded 2.
- LR6 –buccal surface has intact filling in fissure with no decay or loss in adequacy of filling material
- This surface would be coded as 5 – filled with no decay



Surface code 2 – decayed into dentine

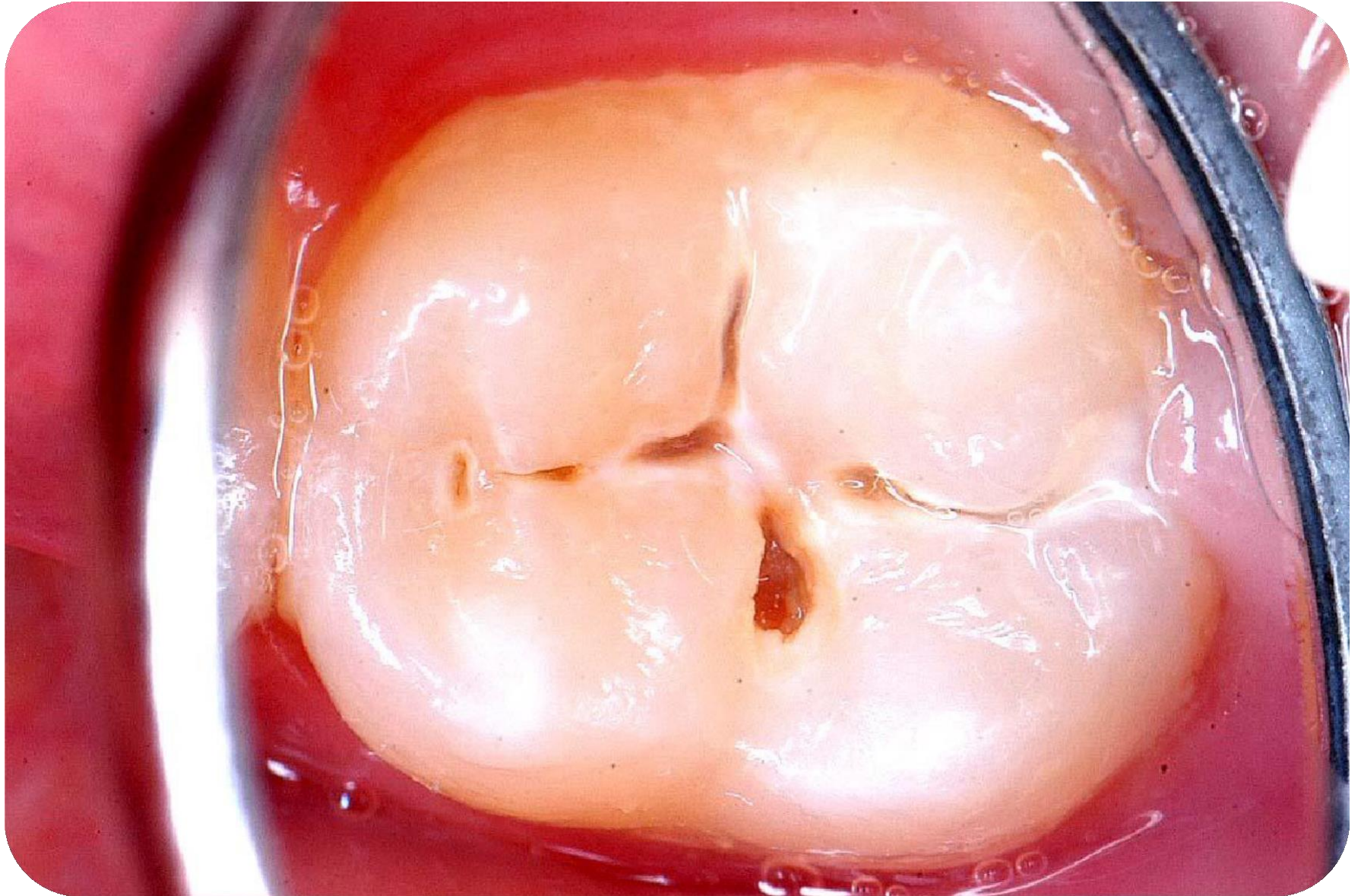


Surface code 2 – decayed into dentine

- **Distal fissure has**
 - Break in enamel
 - Widened fissure
 - Grey shadow beneath the enamel
- **Lesion scored as 2 – decayed into dentine**



Surface code 2 – decayed into dentine

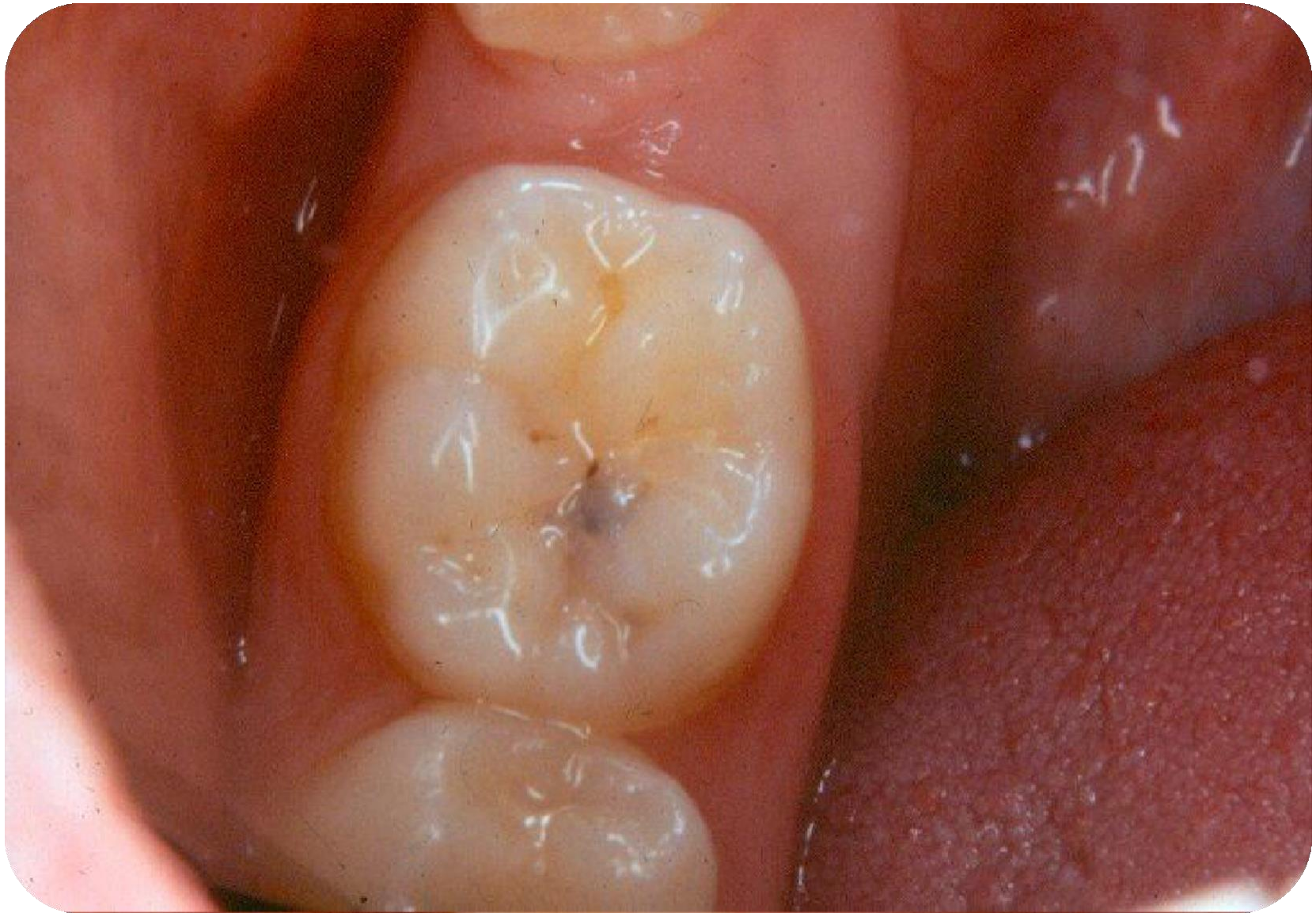


Surface code 2 – decayed into dentine

- Molar has several areas of cavitation extending into dentine



Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- LL6 –occlusal surface has no evident cavitation but has grey shadow beneath the enamel
- This lesion would be scored as code 2 – decayed.



Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- **UL2 mesial surface –dark shadow beneath the enamel**
- **Shadowing continues beyond the ADJ and into the dentine**
- **This surface would be coded as 2.**



Surface code 2 – decayed into dentine - discuss



Surface code 2 – decayed into dentine - Discuss

- Surface needs to be dried
- Grey opacity beneath the mesial marginal ridge
- Creamy opacity along ADJ
- Appears to be caries into dentine
- Occlusal and mesial surfaces both scored 2



Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- **NB Surface is covered with saliva which can make diagnosis more difficult. Examiners are encouraged to dry surfaces with gauze, cotton wool rolls or cotton wool buds when visibility is obscured.**



Surface code 2 – decayed into dentine

- LL6 occlusal surface –lingual aspect has deeply stained fissure and dark shadowing beneath the enamel.
- Mesial and distal aspects of the occlusal surface have lesions with cream and grey shadows beneath the enamel surface.
- Surface would be coded as caries into dentine code 2
- Smaller lesion into dentine also present on buccal aspect of the occlusal surface.



Surface code 2 – decayed into dentine

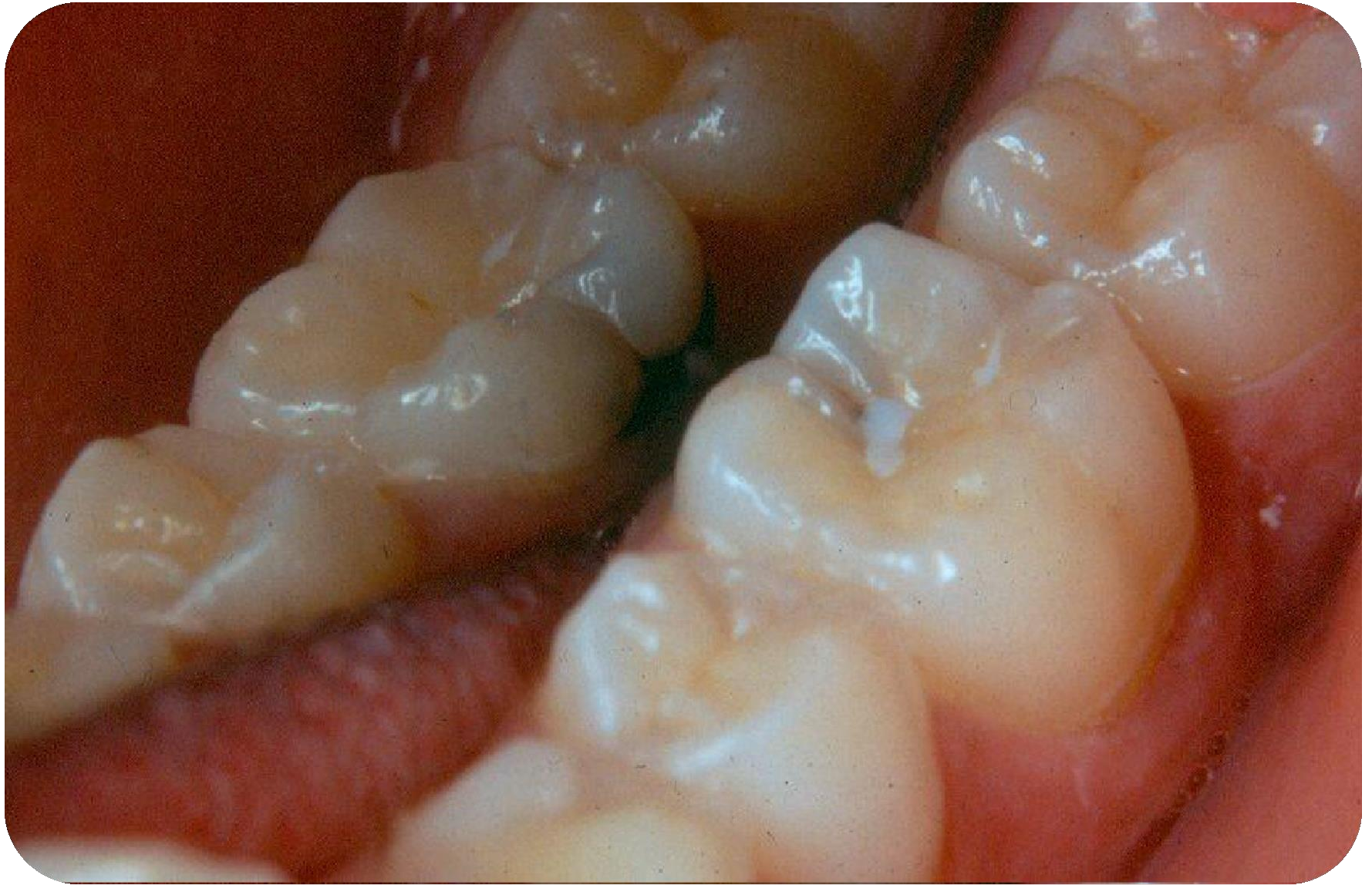


Surface code 2 – decayed into dentine

- Carious lesions involving dentine on lingual surfaces of upper lateral incisors
- Upper left central incisor has heavily stained pit
- No apparent break in enamel of UL1, no opacities beneath enamel which are present in lesions on laterals

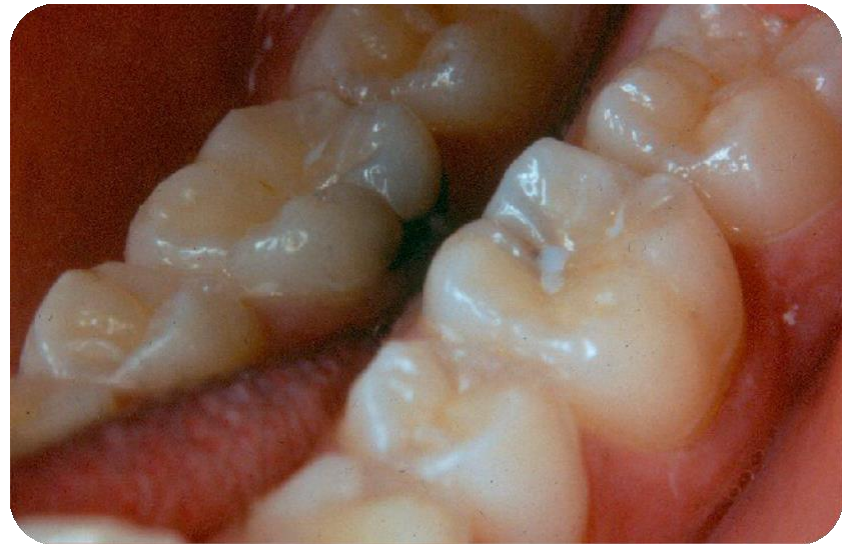


Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- **LL6 lingual and occlusal surfaces – look at lingual surface in mirror view first**
- **Large carious lesion within the gingival 3rd extending around base of lingual surface**
- **Presents as dark lesion cavitated into dentine with large associated area of grey shadowing beneath the enamel**



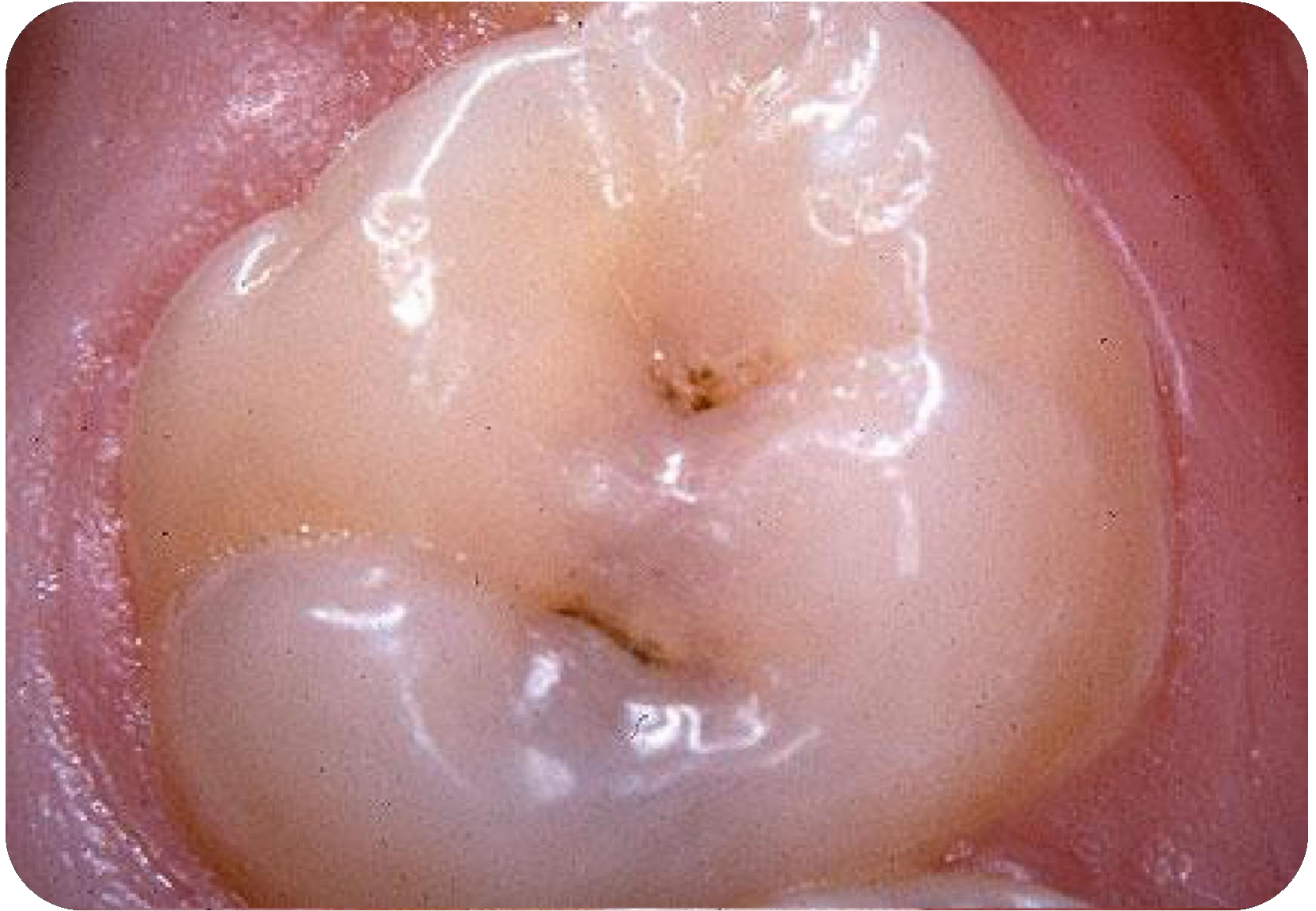
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Surface code 2 – decayed into dentine

- **Grey shadowing extends to involve the occlusal surface.**
- **Occlusal surface has remnants of fissure sealant, but caries takes precedence and both lingual and occlusal scored as code 2.**



Surface code 2 – decayed into dentine

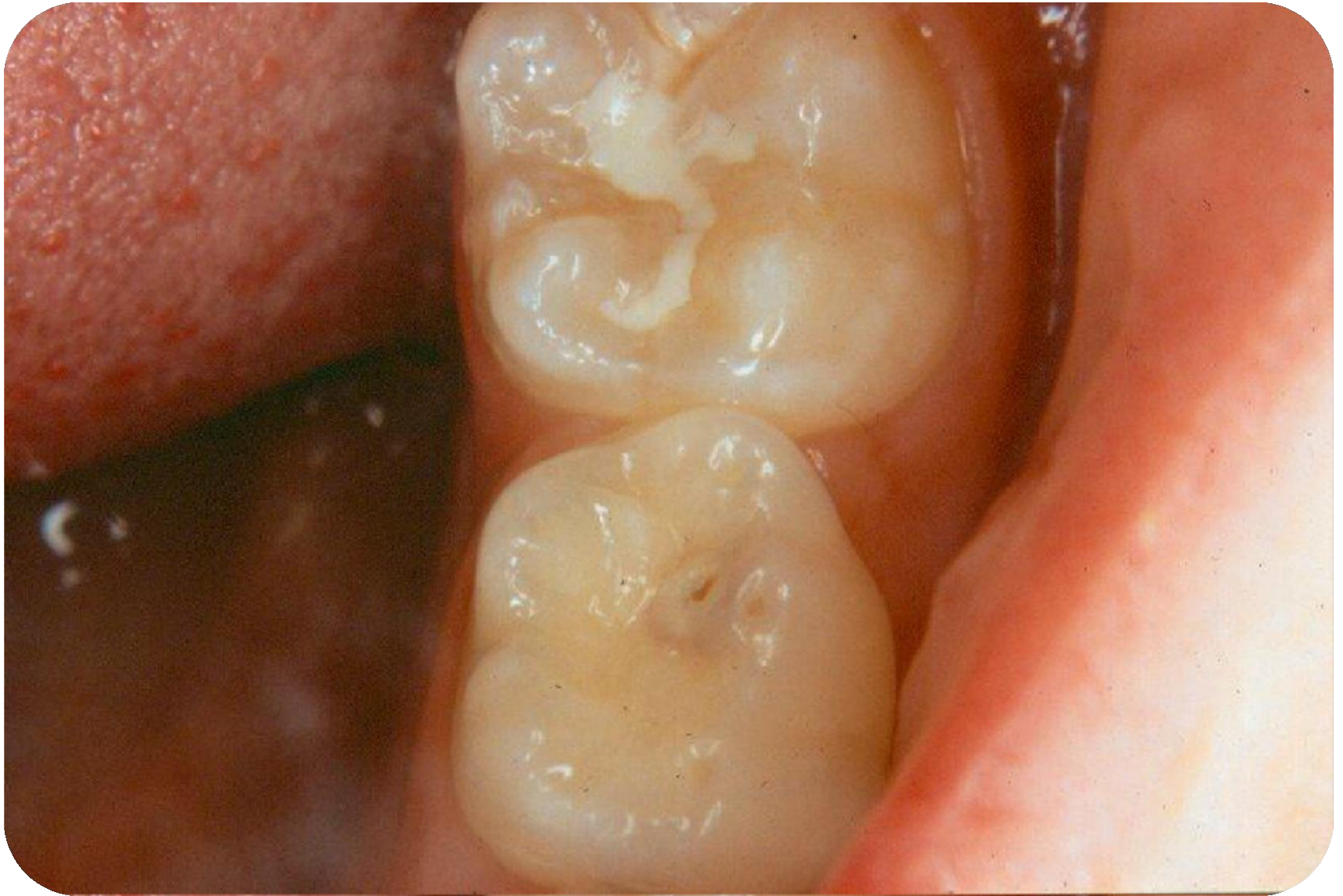


Surface code 2 – decayed into dentine

- On the occlusal surface there is a grey shadow extending across into the distal
- Both surfaces scored as code 2

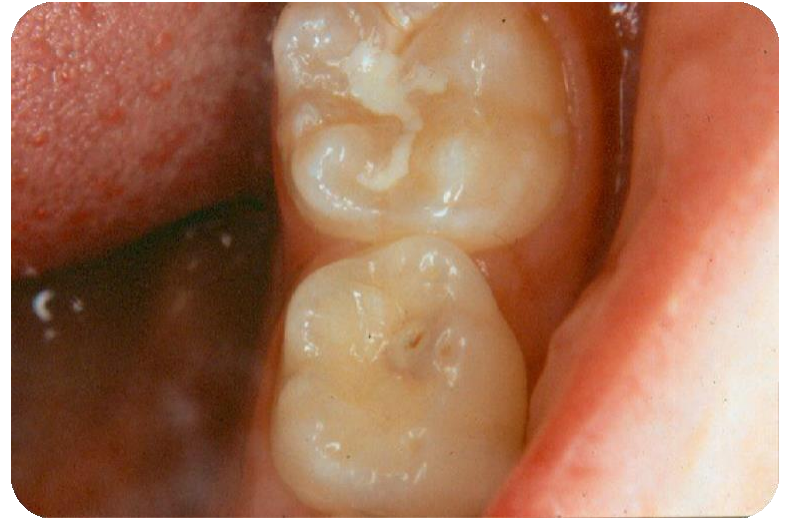


Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

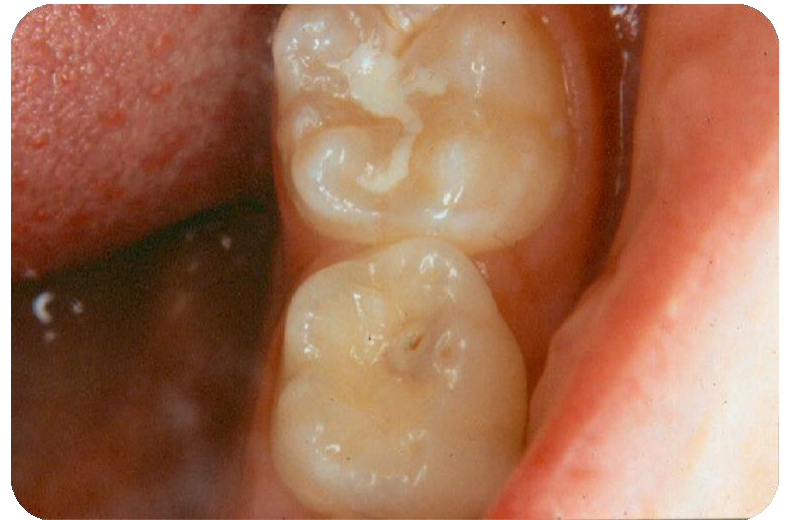
- **LLE –occlusal surface has a carious lesion into dentine**
- **Lesion presents with small cavitated area in the centre surrounded by cream and grey shadowing beneath the enamel**
- **Note that the tip of the cusp is worn and this would be regarded as normal.**



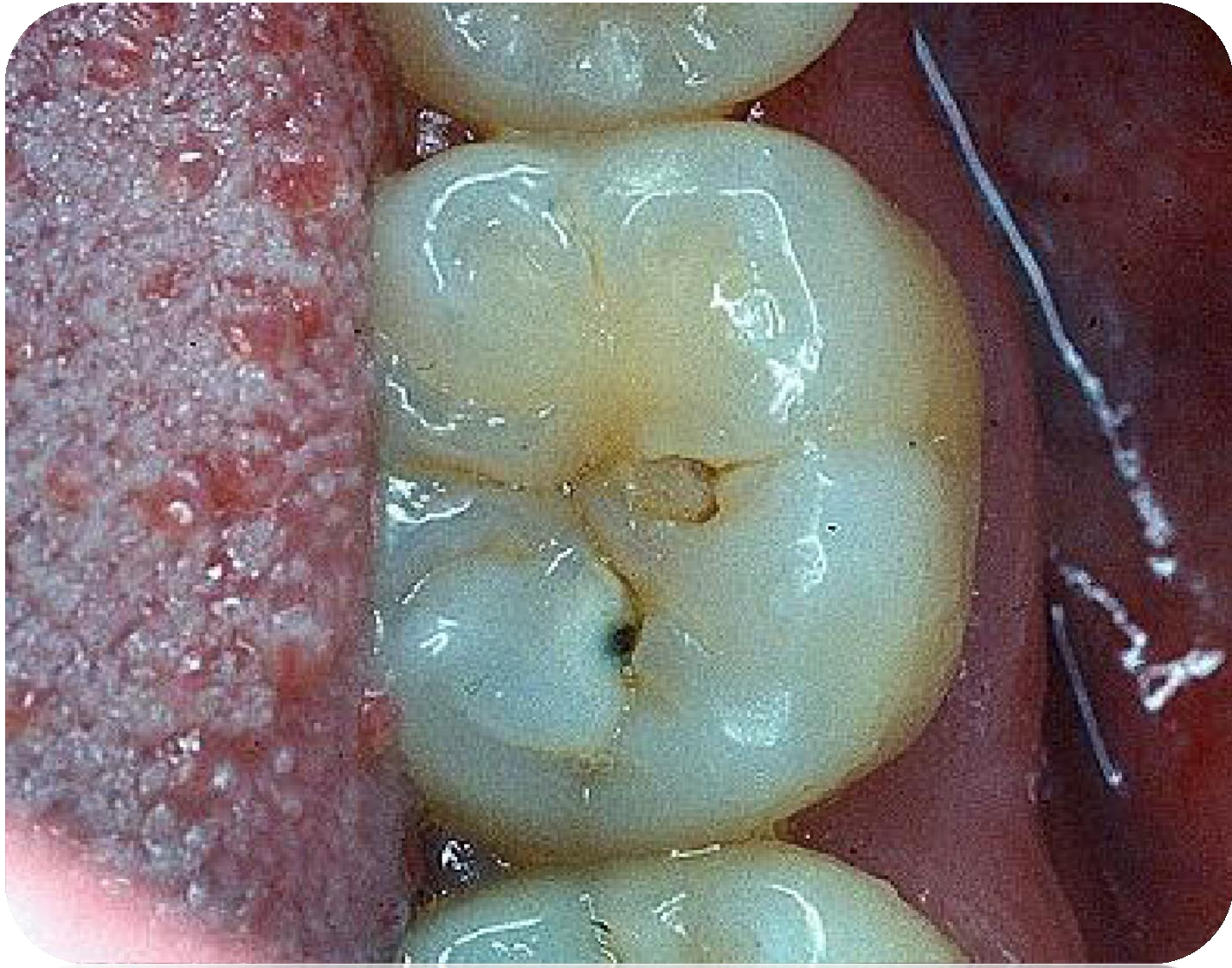
Continued on next slide

Surface code 2 – decayed into dentine

- **LL6 – occlusal surface has a fissure sealant in place**
- **Sealant is incomplete in that the distal part of the fissure is unsealed.**
- **However, as no caries into dentine or fillings are present, this surface would be coded as "\$ - sealed surface, type unknown"**

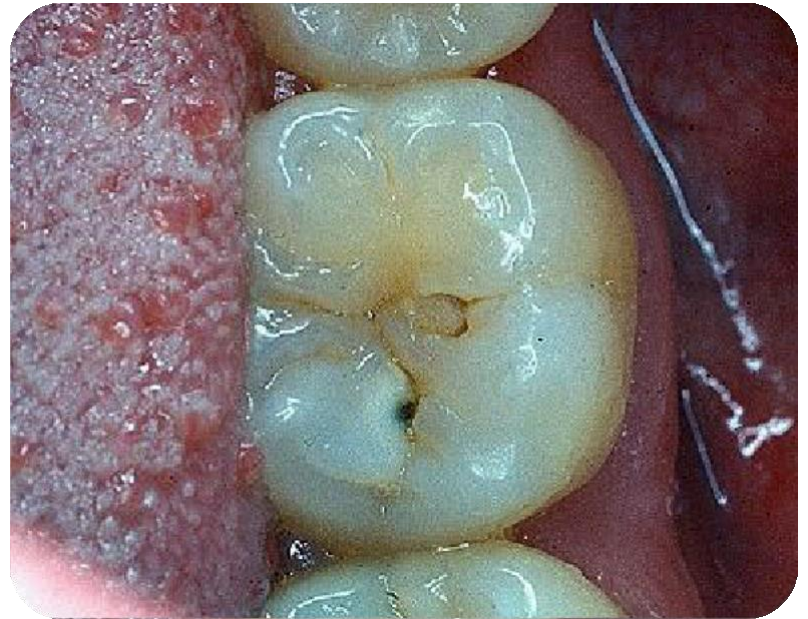


Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- LL6 occlusal surface has a break in the enamel extending into dentine and a creamy shadowing
- Occlusal code 2



Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- LLE is retained roots
- LL6 has fissures which are widened due to carious breakdown
- Occlusal scored 2



Surface code 2 – decayed into dentine



Surface code 2 – decayed into dentine

- URE - glass ionomer material on the occlusal surface
- fissure sealant + large carious lesion into dentine
- occlusal and mesial both code 2 - decayed
- URD has grey shadow within distal surface, dry and check before coding

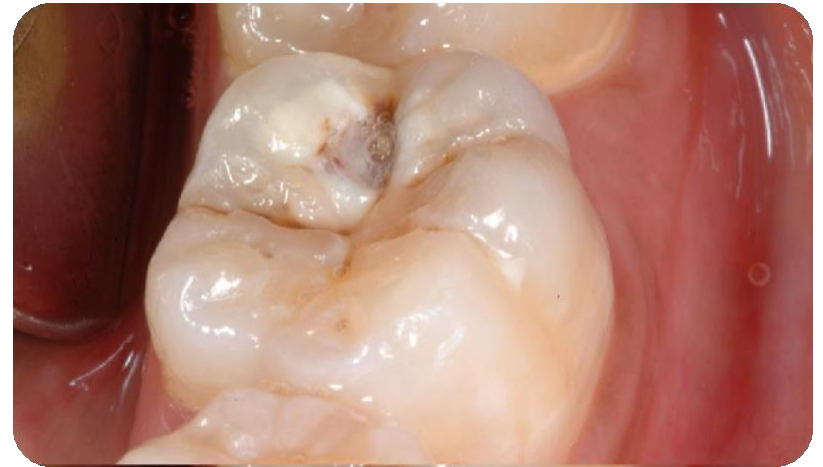


**Surface code 2 into dentine OR
code 3 decay with pulpal involvement ?- Discuss**



Surface code 2 into dentine OR code 3 decay with pulpal involvement? - Discuss

- Very large carious lesion into dentine
- Large area of cavitation
- Creamy opacity on lingual occlusal aspect
- Grey shadowing involving most of disto-buccal cusp



Surface code 3 – decay with pulpal involvement

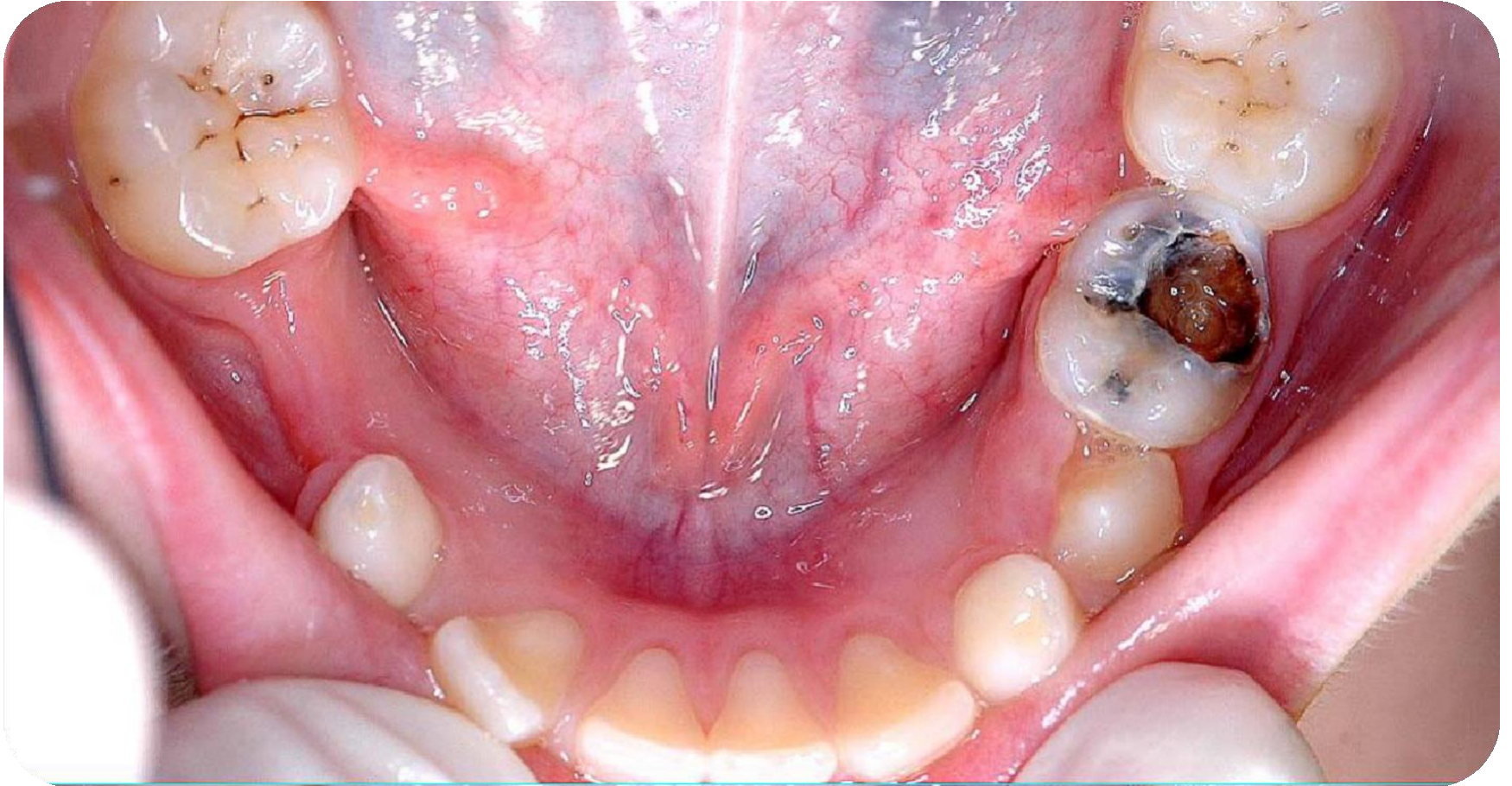


Surface code 3 – decay with pulpal involvement

- **Upper anterior deciduous teeth decayed into dentine**
- **Mesial surfaces of central incisors likely to be decayed with pulpal involvement, Code 3**



Surface code 3 – decay with pulpal involvement



Surface code 3 – decay with pulpal involvement

- **LLE is extensively decayed**
- **Occlusal, buccal and distal code 3**

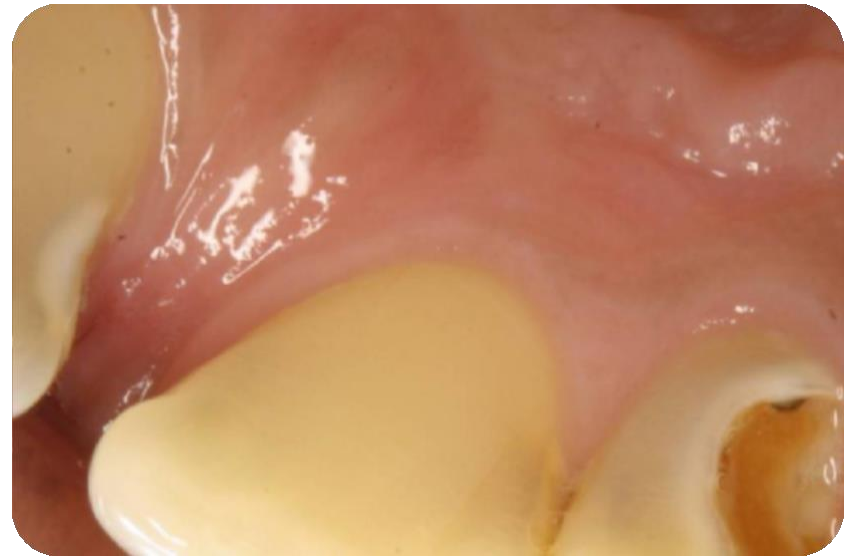


Surface code 3 – decay with pulpal involvement

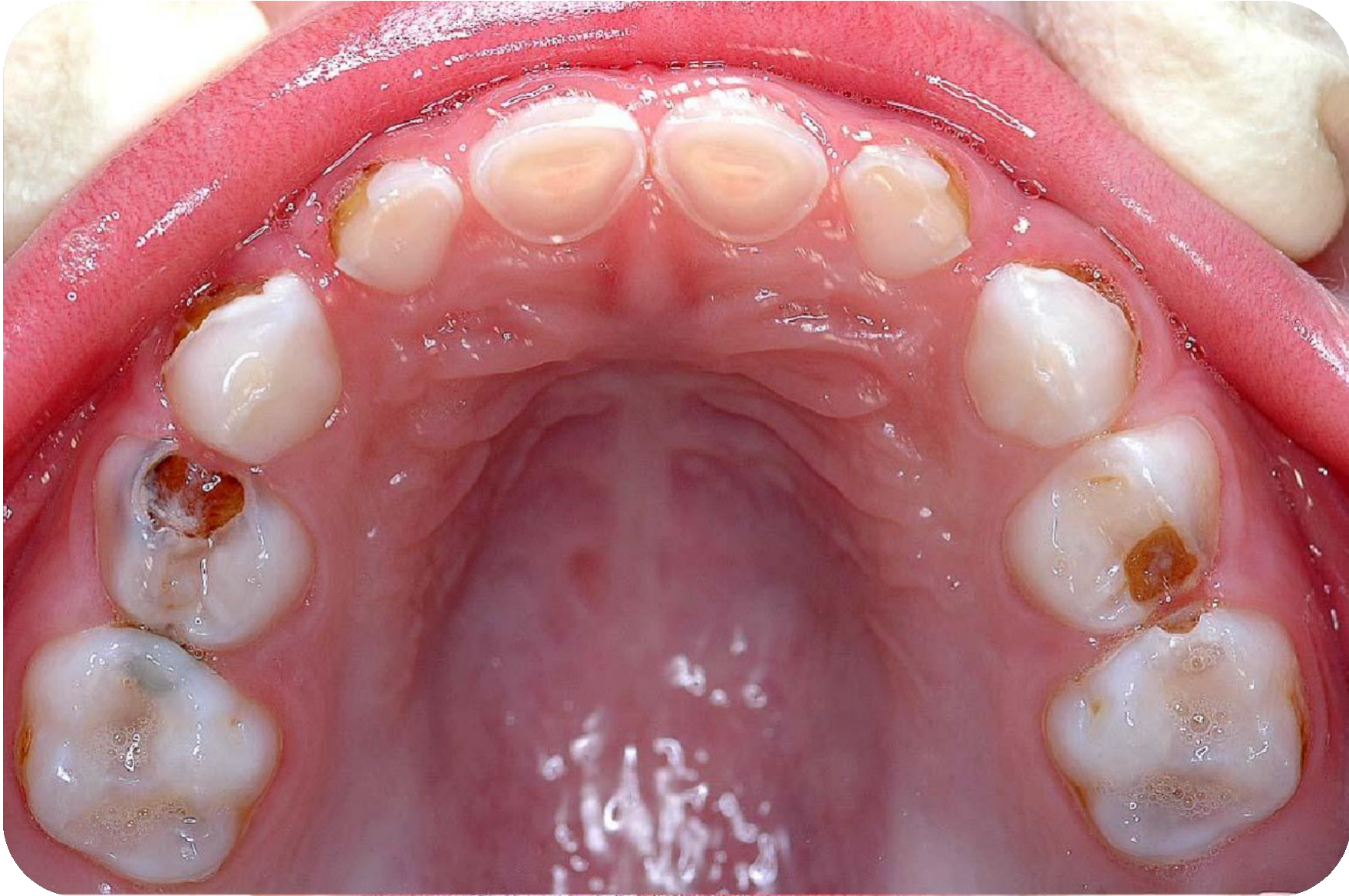


Surface code 3 – decay with pulpal involvement

- UR2 has a large carious lesion on the lingual and distal surfaces, code 3
- Caries into dentine is present on adjacent teeth



Surface code 3 – decay with pulpal involvement



Surface code 3 – decay with pulpal involvement

- URD occlusal and mesial code 3
- Discuss the many carious lesions on other teeth



Surface code 3 – decay with pulpal involvement



Surface code 3 – decay with pulpal involvement

- Lower molars all have lesions with pulpal involvement
- Several lower incisors have approximal caries



Surface code 3 – decay with pulpal involvement



Surface code 3 – decay with pulpal involvement

- **Crown of LRE is decayed to gingival margin**
- **All other teeth (except upper As) have carious lesions into dentine**



Surface code 4 – filled and decayed



Surface code 4 – filled and decayed

- **LL6 occlusal surface has been restored with amalgam which is fractured**
- **There are 4 separate areas of secondary caries, i.e. caries associated with the filling.**
- **Two of the carious areas are in the distal and disto-buccal parts of the fissure and are characterised by cavitation into dentine.**



Continued on next slide

Surface code 4 – filled and decayed

- **Lingual aspect of occlusal surface has caries associated with the filling**
- **This stained fissure has creamy shadowing beneath the enamel**
- **Buccal aspect of occlusal filling has a cavitated area of secondary caries.**
- **Surface is coded 4 – filled and decayed.**



NB. If no caries was present and this filling presented with the complete fracture, the surface would have been coded R, which is filled needs replacing.

Surface code 4 – filled and decayed



Surface code 4 – filled and decayed

- LL6 –occlusal surface is filled with amalgam.
- Amalgam is chipped and fractured to expose the cement lining.
- Lingual aspect of occlusal surface has creamy shadowing adjacent to the lost amalgam
- Secondary caries associated with the filling – code 4



Surface code 4 – filled and decayed

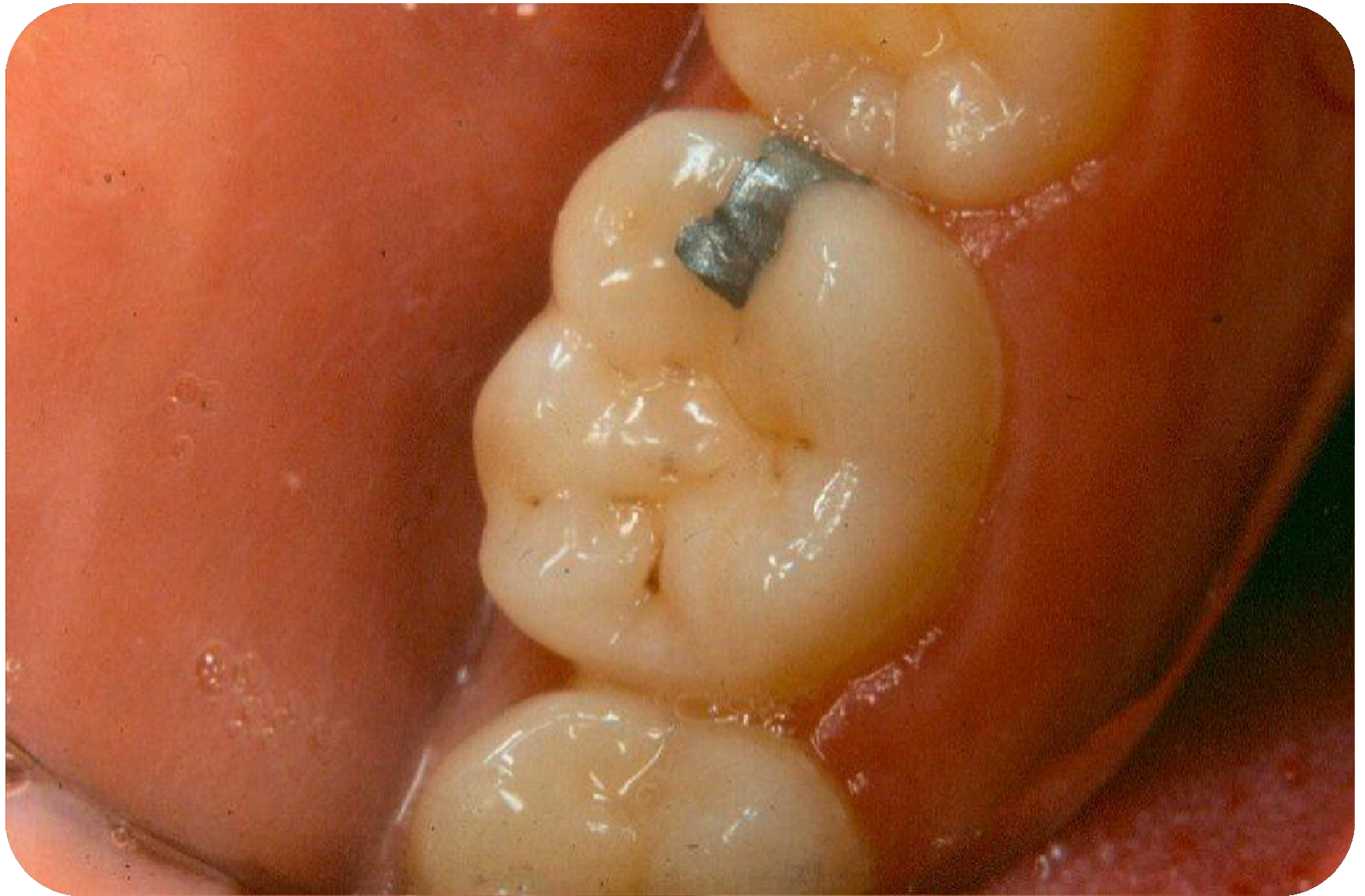


Surface code 4 – filled and decayed

- **LL6 –occlusal surface has an amalgam filling**
- **Filling is intact and there has been a separate second attack of caries on this surface**
- **There is a small cavitated area with a cream shadow beneath the enamel indicating the extent of the lesion into dentine**
- **Surface will be coded 4 – filled and decayed**

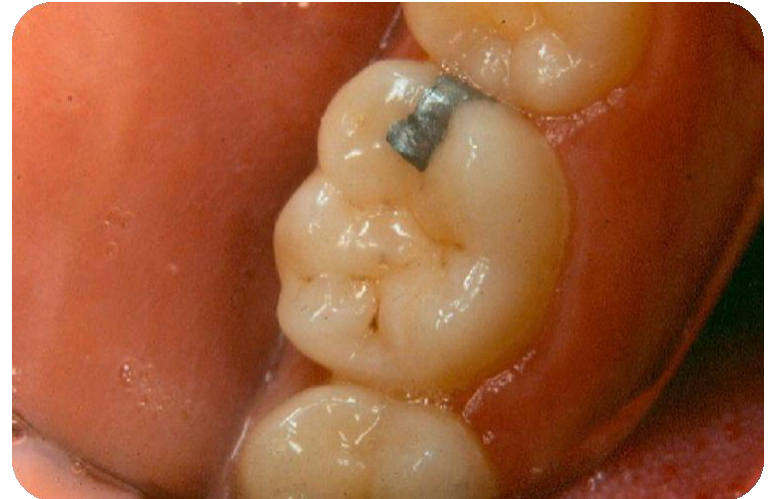


Surface code 5 – filled with no decay



Surface code 5 – filled with no decay

- **LL6 –amalgam filling on the mesial and occlusal surfaces**
- **Filling is intact and there is no evidence of secondary caries.**
- **Occlusal fissure system has areas of staining only.**



Surface code 5 – filled with no decay



Surface code 5 – filled with no decay

- LR6 –occlusal surface has a conventional tooth coloured filling.
- No evidence of decay and filling appears intact.
- Occlusal surface will be coded 5.
- Filling extends on to buccal surface but from this view, no judgement could be made as to the state of the filling and this surface would need to be viewed and scored separately.



Surface code 5 – filled with no decay



Surface code 5 – filled with no decay

- LR2, LR1, LL1 & LL2 – several intact tooth coloured fillings are present
- e.g. mesial of LL2, distal of the LL1, distal of the LR1.

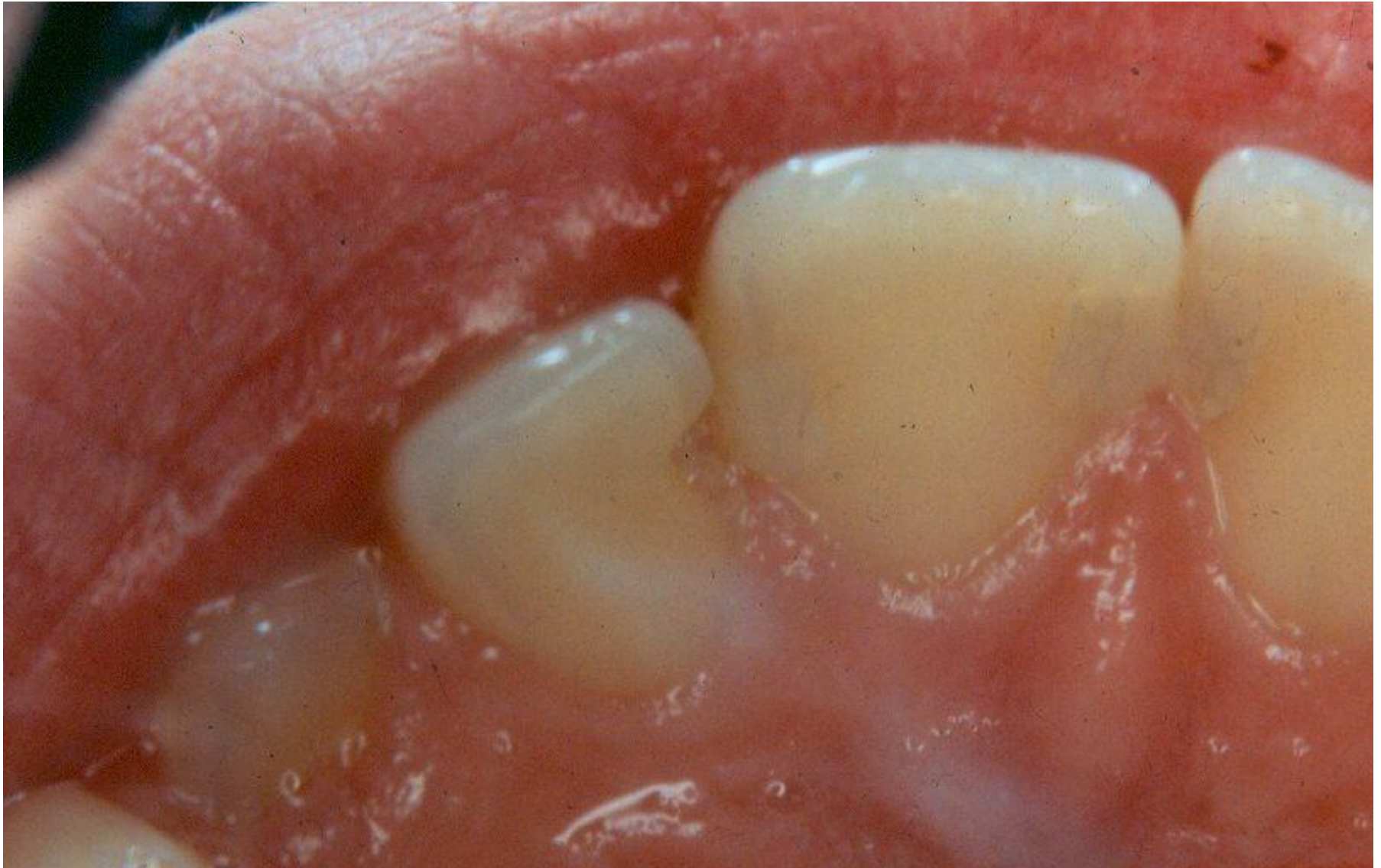


NB This slide should be used to emphasise the need for a careful systematic examination to avoid missing tooth coloured fillings and the call of “3 to 3 all surfaces sound” should be discouraged.

Surface code R – filled, needs replacing (not carious)

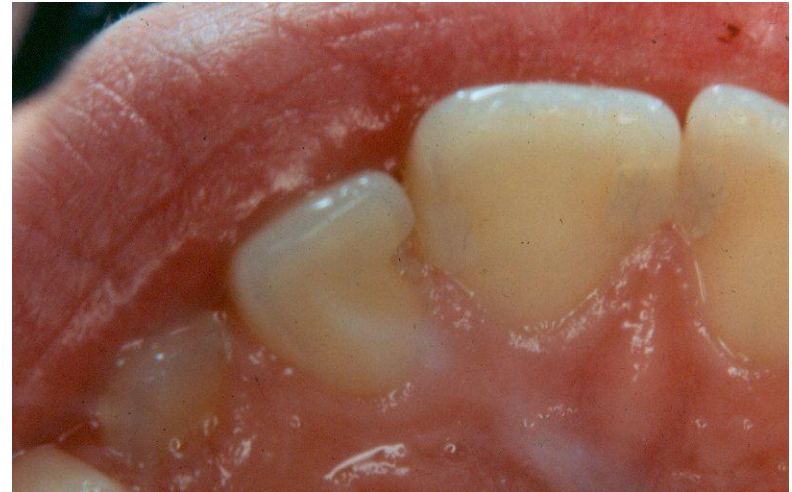
- **A filled surface which is judged to need replacing (not carious) is recorded as code R**
- **Temporary dressings, with no decay into dentine present, are recorded as code R**
- **Temporary dressings, with decay into dentine present, are recorded as code 4, filled and decayed**

Surface code R – filled, needs replacing (not carious)

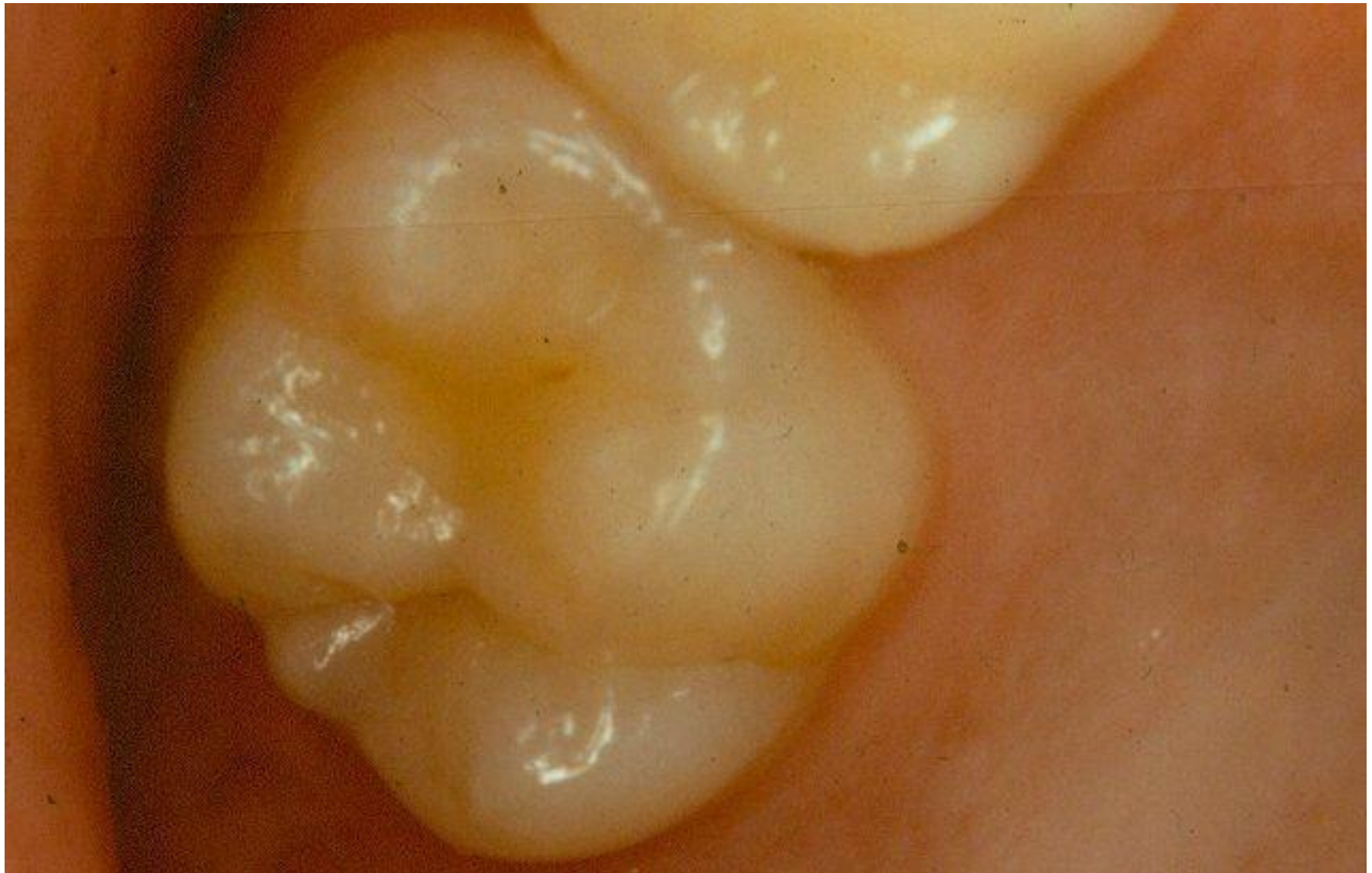


Surface code R – filled, needs replacing (not carious)

- UR2 –mesial surface has had a filling which is completely lost
- This is the most extreme form of a “defective” filling and would be scored as code R.
- Additional features on this slide:
- UR3 – all surfaces coded as sound.
- UR1 – has a composite restoration on mesial surface -careful examination is needed to avoid missing these restorations.

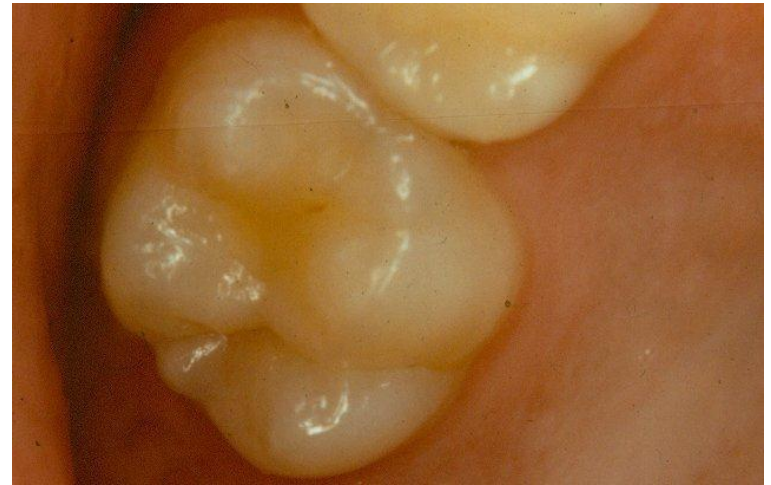


Surface code \$ - sealed surface, type unknown



Surface code \$ - sealed surface, type unknown

- **UR6 –anterior part of the occlusal fissure has been sealed with a tinted sealant**
- **Surface would be coded \$**
- **Sealant appears to be lost from the posterior occlusal fissure.**



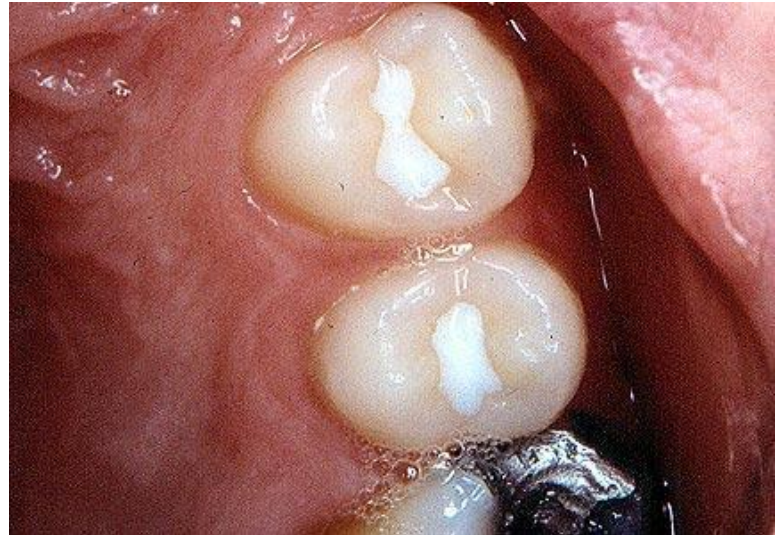
NB Sealants can be difficult to distinguish from enamel and diagnosis may be aided by the use of drying and/or tactile use of the ball-ended probe.

Surface code \$ - sealed surface, type unknown

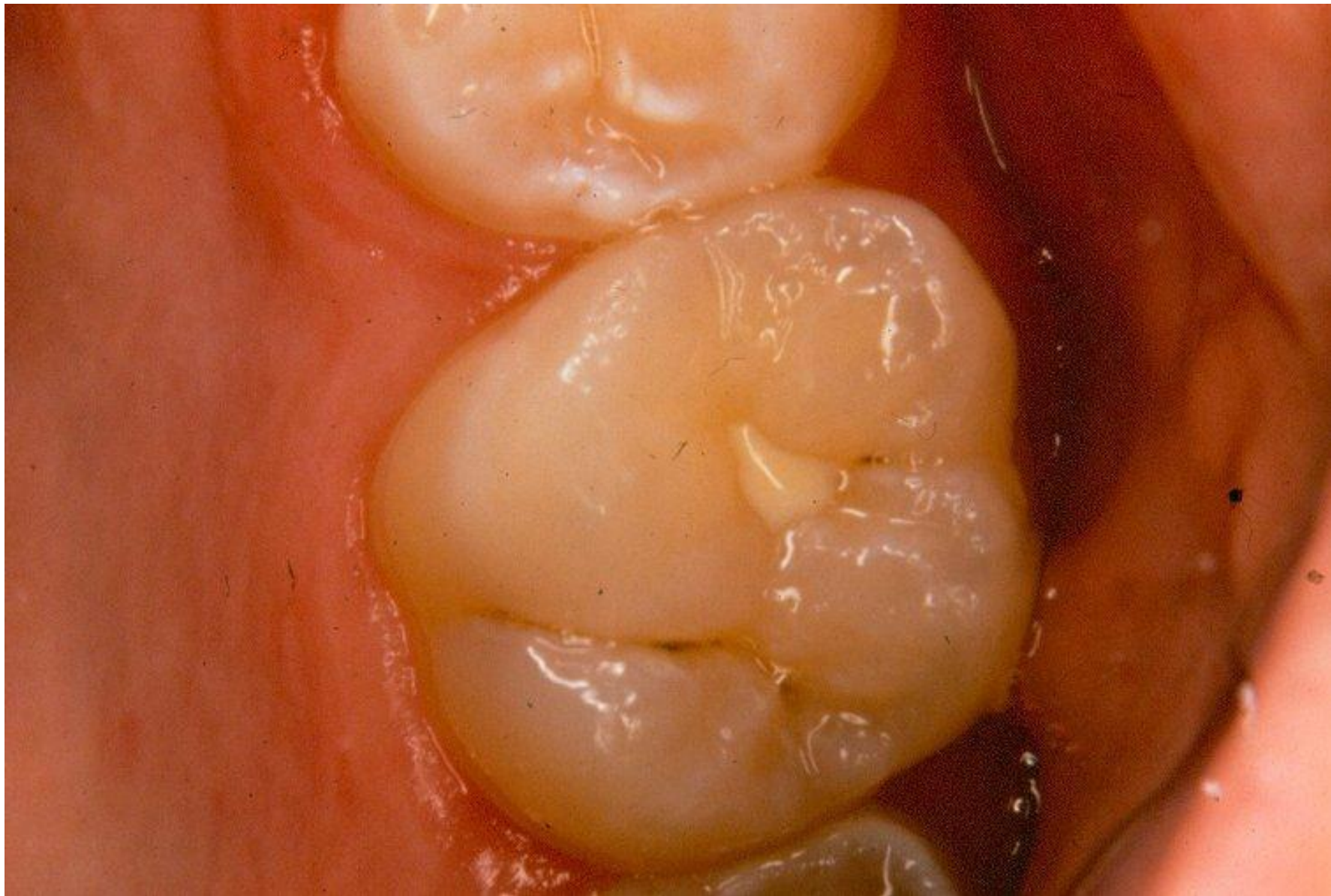


Surface code \$ - sealed surface, type unknown

- **UL4 & UL5 –occlusal surfaces have been sealed**
- **Surfaces would be scored \$**
- **It is impossible to be certain from a visual examination that no caries was removed before placement of the sealant.**
- **However, there is no evidence of a defined cavity margin and therefore, the surfaces are coded \$.**



Surface code \$ - sealed surface, type unknown

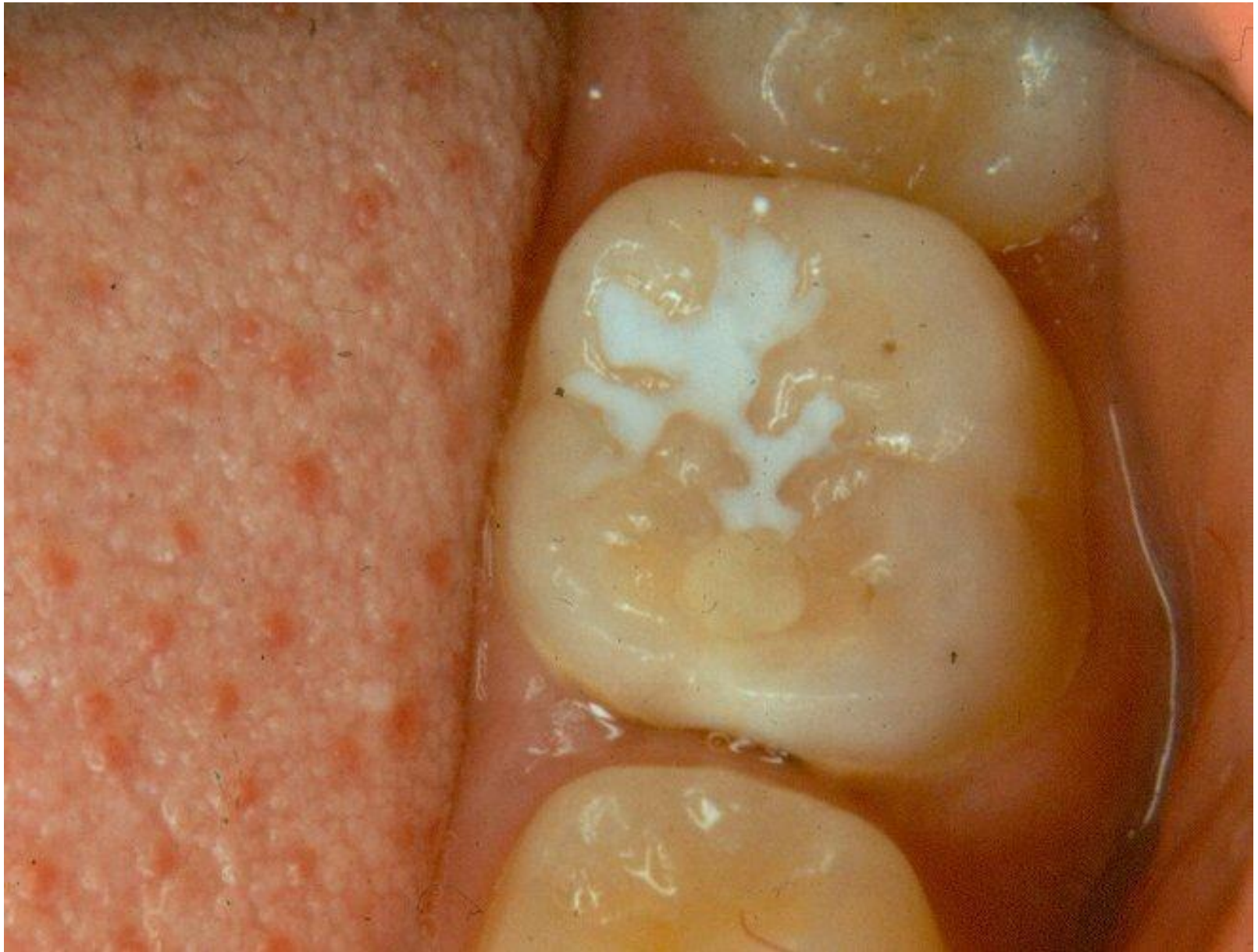


Surface code \$ - sealed surface, type unknown

- **UL6 –occlusal surface would be scored as \$ because there is evidence of a sealant in part of the anterior fissure**
- **In the distal part of the occlusal fissure, staining is evident**
- **However, there is no evidence of caries into dentine and occlusal surface would therefore be scored as \$.**



Surface code N – obvious sealant restoration



Surface code N – obvious sealant restoration

- **LL6 –occlusal surface has a sealant restoration**
- **Anterior part of occlusal fissure has a tooth coloured filling material which has been placed and there is evidence of a defined cavity margin.**
- **The rest of the fissure system is sealed.**



NB Mesial surface has a carious lesion into dentine and would be scored as 2. Lesion presents as cream shadow beneath the enamel extending from the marginal ridge. Physical cavitation can be seen at base of lesion on the mesial aspect.

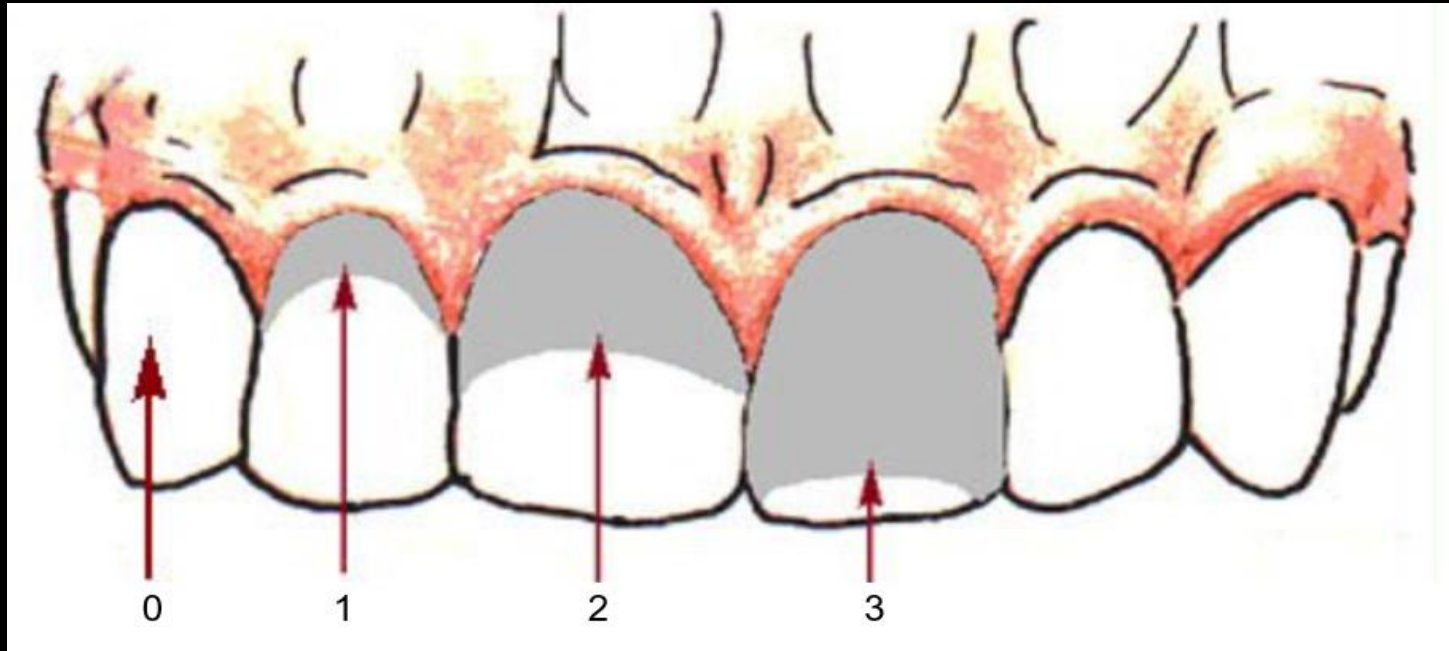
Code C, crown

- **Crowned teeth are scored all surfaces code C**
- **A deciduous tooth covered with a stainless steel crown is recorded as all surfaces Code C, not Code 5**

Plaque examination

- **Ask child to bite together**
- **Lift upper lip**
- **Look at buccal surfaces of upper canine to upper canine**
- **Only record easily visible plaque**
- **Ignore food debris**

Plaque



Code 0 : Teeth appear clean

Code 1 : $\leq \frac{1}{3}$ labial surfaces

Code 2 : $> \frac{1}{3}$ and $\leq \frac{2}{3}$ labial surfaces

Code 3 : $> \frac{2}{3}$ labial surfaces

Code 9 : No assessment could be made

Enamel Caries

Mouth code - enamel caries absent

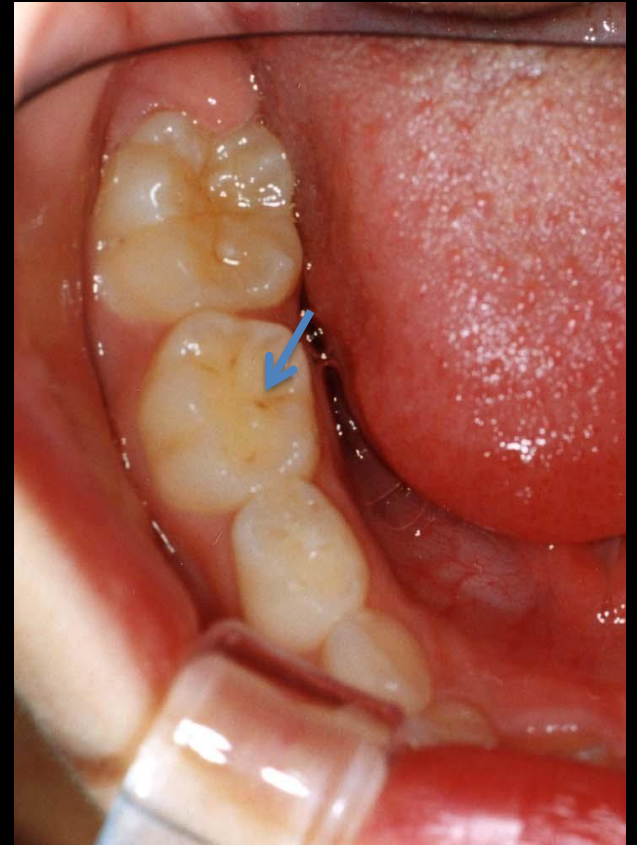
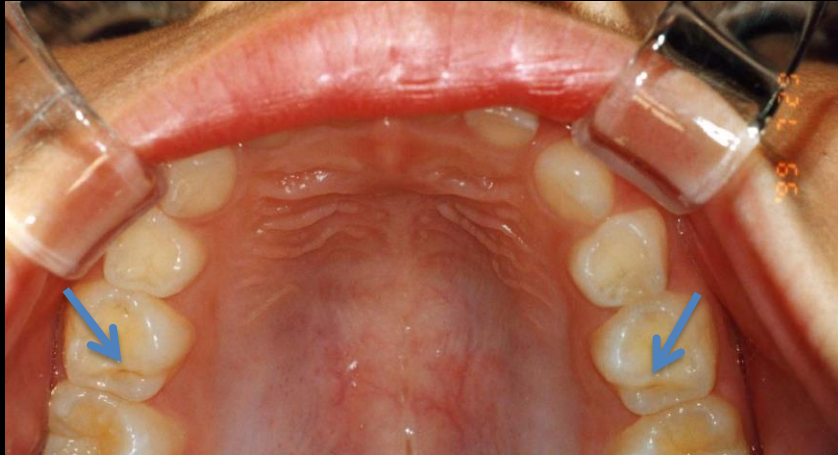


Mouth code - enamel caries absent

The arrows are pointing to developmental defects of the enamel. They are positioned in areas of the tooth surface which would not typically be prone to caries. In the absence of enamel caries in the rest of the teeth, the mouth should be coded as no enamel caries



Mouth code - enamel caries present

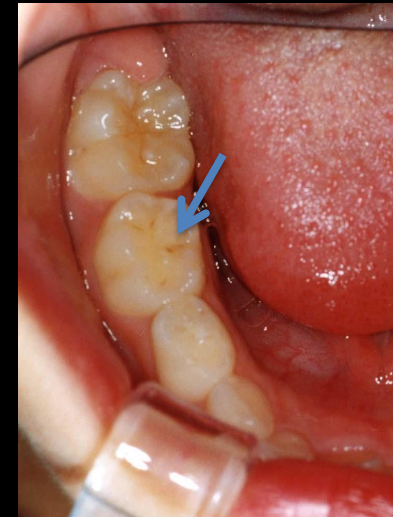
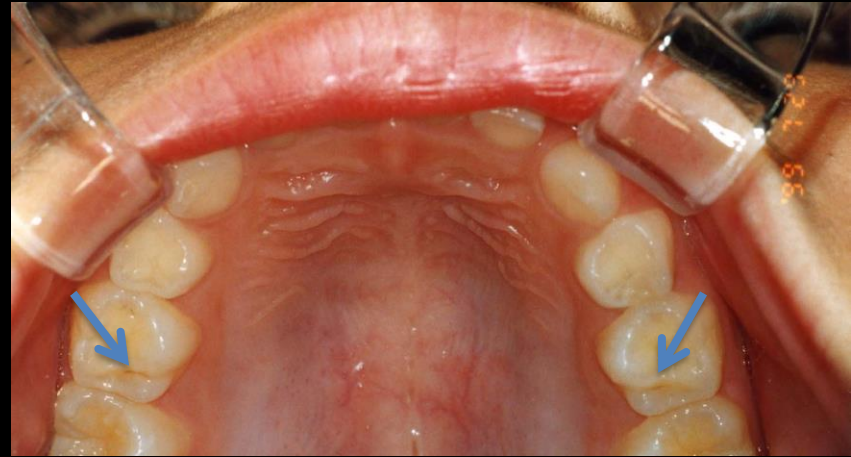


Mouth code - enamel caries present

All the arrows are pointing to enamel caries lesions which have picked up dietary staining and are brown. The mouth should be coded as enamel caries present.

Note that simple staining of the fissures of sound teeth tends to be seen in most of the pits and fissures and may also be seen on surfaces not prone to caries such as the palatal surfaces of anterior teeth or areas away from the gingival margin on smooth surfaces.

If in doubt as to whether it is simple staining or enamel caries, score low and assume it is not caries.



Mouth code - enamel caries present

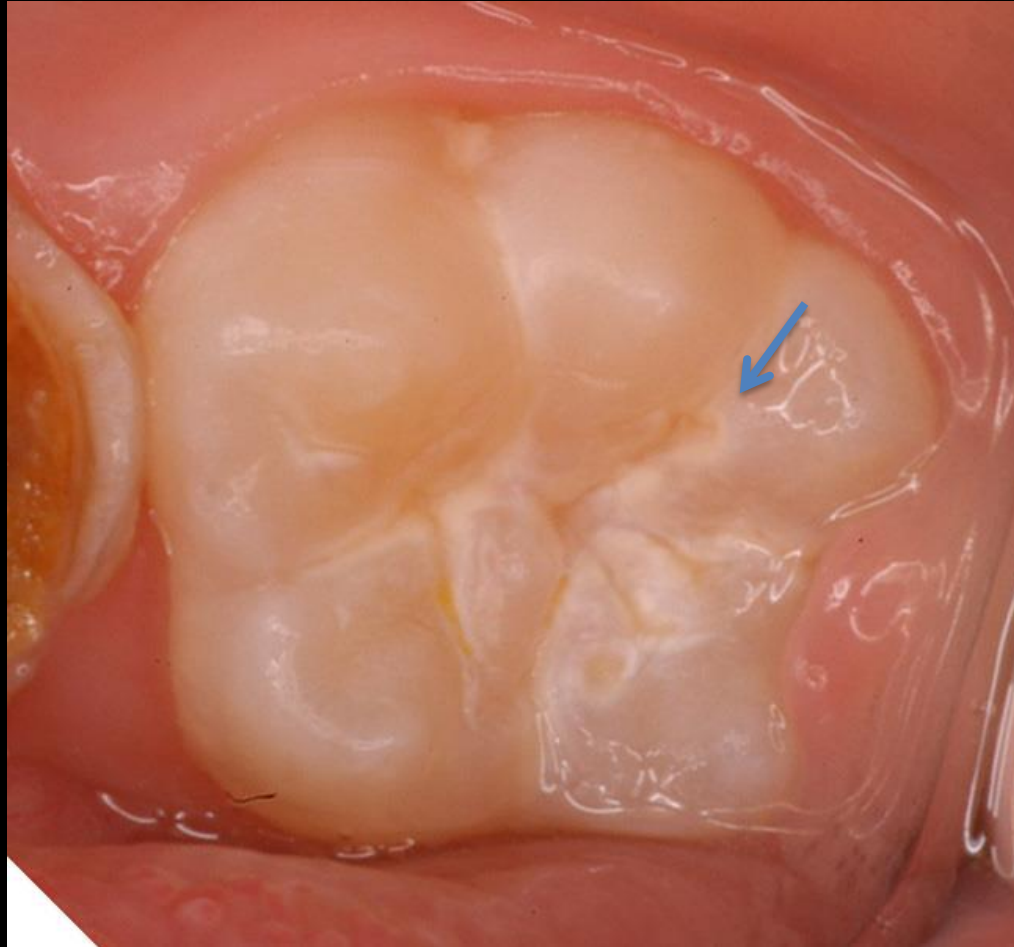


Mouth code - enamel caries present

The arrow is pointing to enamel caries. This approximal location beneath the contact area is prone to caries and more easily seen when there has been loss of an adjacent tooth. The mouth should be coded as enamel caries present

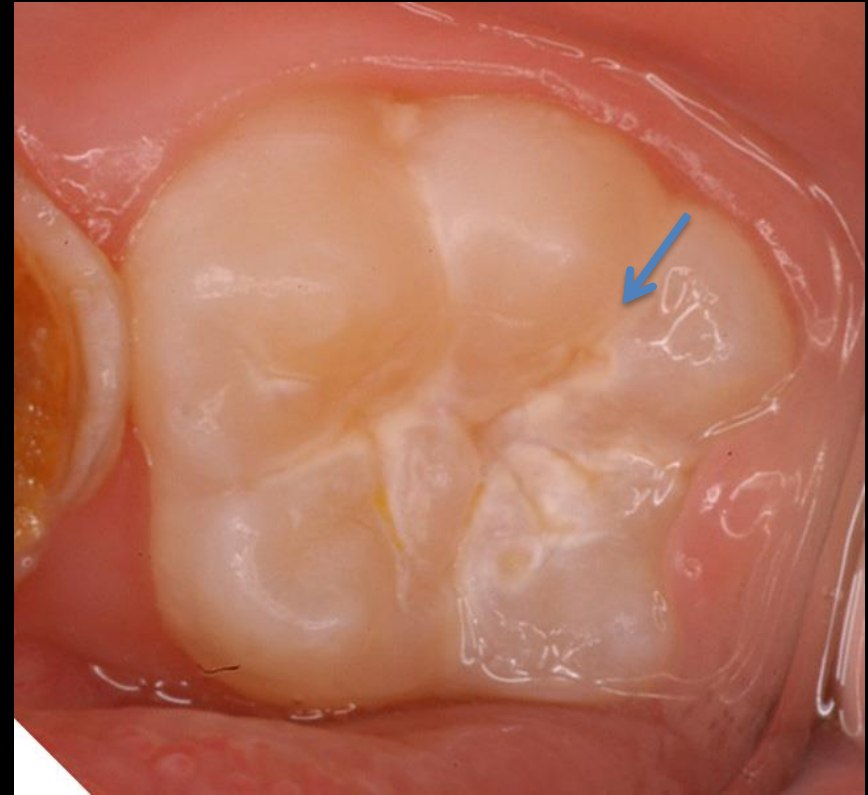


Mouth code - enamel caries present



Mouth code - enamel caries present

The arrow is pointing to enamel caries. You can see that the white spot lesions are in and around the pits and fissure areas where plaque has accumulated over time in an erupting tooth. Enamel caries always forms where plaque has been left alone for a while. The mouth should be coded as enamel caries present



Mouth code - enamel caries present

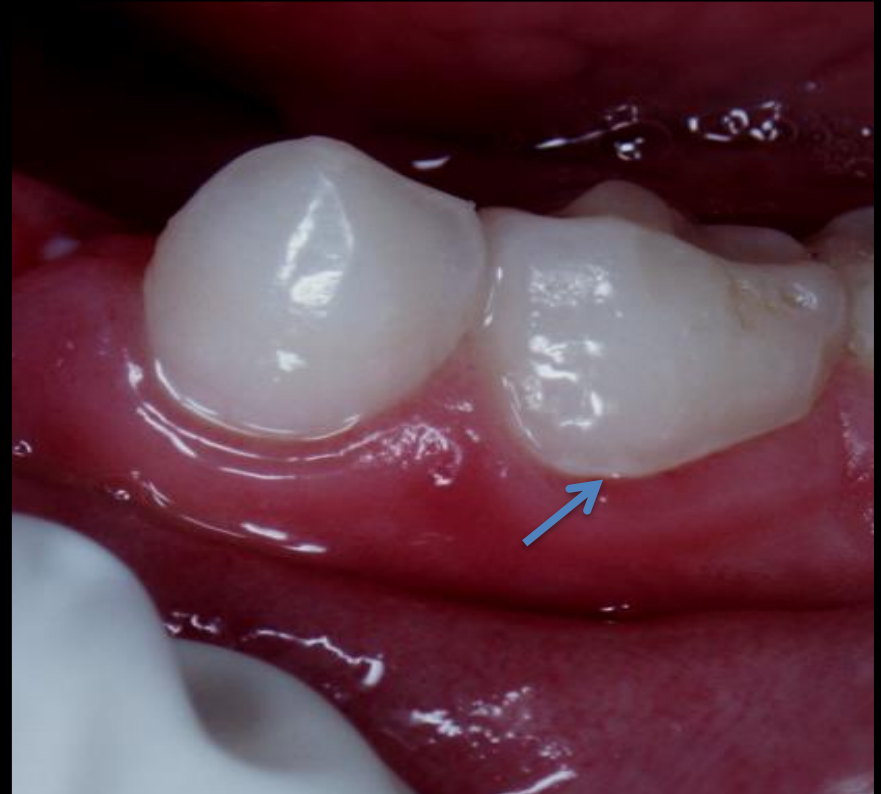


Mouth code - enamel caries present

The arrow is pointing to enamel caries at the gingival margin, another area prone to plaque accumulation. Enamel caries is often seen along with marginal gingival inflammation.

Look carefully at gingival margins, in and around pits and fissures and where visible, approximal surfaces around the contact point and gingival margins.

The mouth should be coded as enamel caries present.



Mouth code - enamel caries absent



Mouth code - enamel caries absent

Arrested enamel caries.

If the white line is **distinctly** distant from the gingival margin, this should not be scored as enamel caries present.

In this photograph, the white line is a 'scar' on the tooth from earlier enamel caries when the tooth was not fully erupted.

We do not want to count such scars along with active enamel caries as they typically would not benefit from preventive care and would overestimate treatment need.



pufa - Pulp



pufa - Ulceration



pufa - Fistula



pufa - Abccss



The examination completed

- Please remember that at the end of every diagnostic decision on every tooth is a child
- Call the child by their name, thank the child and as the examination is completed, talk to the child until the next examiner is ready



The examination completed

