

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Community Dentistry Third class



Indices for root surface caries



Root caries

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Root caries is a common problem among the **elderly**.

Root caries can be **defined** as a soft irregularly shaped lesion either totally confined to the root surface or involved the enamel at the cemento- enamel junction but clinically indicating that the lesion is initiated on the root surface.

The most commonly used **clinical signs** to describe root caries utilized visual (color, contour, surface cavitation) , and tactile (surface texture) specifications. There are no reported clinical symptoms of root caries although **pain** may be present in advanced lesions.

The criteria for diagnosis of root caries:

Banting et al (1980) identified root caries as:

- 1.** A discrete well defined and discolored soft area.
- 2.** An explorer enters easily and displays some resistance.
- 3.** the lesion is located either in the cemento-enamel - junction or wholly on the root.

Risk factors for Root surface caries (RSC)

Intra- Oral Factors:

- Diminished salivary flow.
- Gingival recession.
- Calculus.
- Elevated salivary *S. mutans*.
- Elevated salivary *Lactobacillus* counts.

- Elevated salivary *Candida albicans* counts.
- Over denture abutments.
- Retained root tips
- Reduced masticatory ability.
- Removable partial denture.

Extra- oral factors:

- Advanced age.
- Lower educational level.
- Gender .
- Smoking.
- Physical debility.
- Use of medications that decrease salivary flow.
- Limited exposure to fluoridated water.
- Frequent ingestion of sucrose containing food.

Root Caries Index (RCI)

The root caries index (RCI) was developed by Ralph Katz in 1984 intended to make the simple **prevalence** measures for root caries more specific by including the concept of teeth at risk for root caries . The RCI is specifically designed for **analytical epidemiological studies** in which risk factors and causes of disease are being studied ; it is also appropriate for **basic descriptive epidemiology**.

A tooth was considered “ **at risk** ” if enough gingival recession had occurred to expose part of the cemental surface to the oral environment.

Root Caries Index (**RCI**)

RCI is based on the requirement that gingival recession must occur before root surface lesions begin. Therefore, only teeth with gingival recession are included.

1. All teeth are examined in both the lower and upper arch.
2. To obtain the RCI, each of the four surfaces the mesial, distal, buccal (labial), and lingual, of a root are examined for a single tooth.

Table 12.14: Root Caries Index

M

D

B

L

R-N

R-D

R-F

No-R

Root Caries Index (RCI)

The root caries index was calculated for each subject as follow:

$$\text{RCI} = \frac{(R-D)+(R-F)}{(R-D)+(R-F)+(R-N)} \times 100$$

R-D: recession with decay root surface.

R-F: recession with filled root surface.

R-N: recession with a sound root surface(normal)

Root surface caries severity Index

Billing et al 1985

According to **severity** it is classified in to:

Grade 1: is characterized by an incipient lesion , the surface texture is soft and irregular and can be penetrated with a dental explorer, there is no surface defect and pigmentation variable light tan to brown.

Root surface caries severity Index

Billing et al 1985

Grade 2: is characterized by a shallow lesion, the surface texture is soft, irregular and rough and can be penetrated with a dental explorer, there is surface defect (less than 0.5 mm in depth) and pigmentation variable from light tan to dark brown.

Root surface caries severity Index

Billing et al 1985

Grade3:

is characterized by cavitation of the surface texture which is soft and can be penetrated with a dental explorer. There is a penetrating lesion and cavitation is present (greater than 0.5 mm in depth) however there is no pulp involvement, pigmentation is variable ranging from light brown to dark brown.



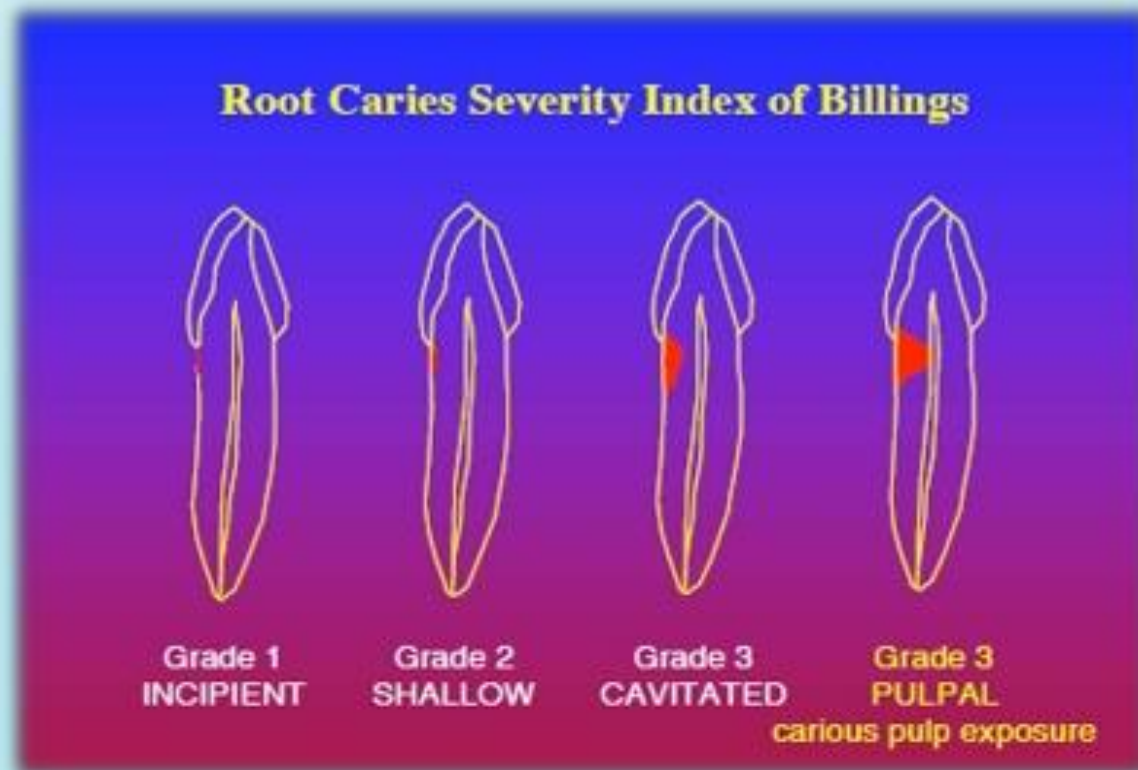
Root surface caries severity Index

Billing et al 1985

Grade4:

is characterized by pulpal involvement, there is a deeply penetrating lesion pulpal or root canal involvement, pigmentation is variable ranging from brown to dark brown.

- There is a protocol for treatment of root caries that had putted by Billings in 1985 called (Index of Billings for root caries severity treatment) as following:
 - I. Grade 1: Incipient; no surface defect; need remineralizing therapy.
 - II. Grade 2: Shallow; surface defect $<0.5\text{mm}$; need recontouring.
 - III. Grade 3: Cavitation; surface defect $>0.5\text{mm}$; need filling.
 - IV. Grade 4: Pulpal carious pulp exposure; need RCT + filling.



THANK
YOU