

**WOMEN'S INTERAGENCY HIV STUDY  
ORAL PROTOCOL  
FORM OP 11: CORONAL CARIES ASSESSMENT**

**COMPLETING THE FORM**

**GENERAL INFORMATION**

Affix the Participant ID label in the space indicated.

Record the visit number which should be the same as the WIHS core visit .

Be sure the form version is the current version date.

Record your initials.

Record the date.

**SECTION A - D :**

If participant is edentulous (OP6 #1 is coded as 1) form OP11 is left blank.

The remainder of the form is divided into four sections, A, B, C, and D. Each section refers to a quadrant of the mouth and is labeled as such; UPPER LEFT, UPPER RIGHT, LOWER LEFT and LOWER RIGHT, respectively.

The teeth in each quadrant are labeled in the columns in the order in which they should be assessed from left to right across the page (CE to M3).

For each tooth, circle the appropriate lettered tooth call (i.e., S, C, U, M, Y, ER, MR, or SI) at line **a**. Circle one code only. The code "SI" (surface code indicated) is separated to differentiate it from the other tooth codes: if "SI" is coded, the examiner should call (and the data management system will expect) one or more surface calls for the tooth.

For each tooth where a surface code is indicated, circle the numbered surface code(s) for each affected tooth surface. Line **b - f** list each of the surfaces (b=occlusal; c=lingual; d=buccal; e=mesial; f=distal). The first column (X, 0, 1, 2, 3) indicates caries on the surface; the second column (5, 6, 7, 8, 9) identifies restorations on the surface **Remember, caries codes take precedent over restorations for each surface**. Hence, if a given surface exhibits both caries and a restoration, only the caries is recorded.

If no surface calls are indicated, proceed to the next tooth.

## EQUIPMENT

- Dental Mirror
- Number 23 Explorer

## PROCEDURE

The examiner starts with the **Maxillary Left** quadrant beginning with the central incisor through the left third molar, followed by the **Maxillary Right** quadrant, **Mandibular Left** quadrant, and the **Mandibular Right** quadrant in the same sequence.

The anterior tooth sites are examined in the following order: lingual, facial, mesial, distal. The posterior tooth sites are examined in the following order: occlusal, lingual, buccal, mesial, distal. The third molar is scored as present or absent.

It is not advisable to call out individual surface diagnostic codes as each tooth surface is examined, as this can be confusing to the recorder. It is better for the examiner to mentally accumulate surface diagnoses for a given tooth until all surfaces have been examined before dictating the diagnostic codes to the recorder. **For any given tooth surface, caries takes precedence over restorations.**

## CORONAL CARIES SCORING KEY

### Tooth Codes

Sound		S
Full Crown		C
Unerupted		U
Extracted due to Disease		E
Missing due to trauma or ortho		M
Exclude		Y
Extracted and replaced		ER
Missing and replace		MR
Deciduous		D
Surface Codes Indicated		SI
Third molars		
Present	1	
Absent	0	

### Surface Codes

Caries		
Occlusal		X
Lingual		0
Buccal		1
Mesial		2
Distal		3
Restorations		
Occlusal		5
Lingual		6
Buccal		7
Mesial		8
Distal		9

## GUIDELINES FOR CORONAL CARIES ASSESSMENT

### Decayed Tooth Surfaces (The "D" component of the index)

Advanced lesions are detected as gross cavitation and thus present few problems in diagnosis. Early lesions, on the other hand, are more difficult to diagnose consistently. Early lesions may be subdivided into three categories according to location, each with the following special diagnostic consideration:

Pits and fissures on occlusal, buccal and lingual surfaces: These areas are diagnosed as carious when the explorer catches after insertion with moderate, firm pressure and when the catch is accompanied by one or both of the following signs of caries:

- (1) Softness at the base of the area
- (2) Opacity adjacent to the area providing evidence of undermining or demineralization.

In other words, a deep pit or fissure in which the explorer catches is not in itself sufficient evidence of decay; it must be accompanied by at least one of the above signs.

Smooth areas on buccal (labial) or lingual surfaces: These areas are carious if they are decalcified or if there is a white spot as evidence of subsurface demineralization and if the area is found to be soft by:

- (1) Penetration with the explorer, or
- (2) Scraping away the enamel with the explorer.

These areas should be diagnosed as sound when there is only visual evidence of demineralization.

Proximal surfaces: For areas accessible to direct visual and tactile examination, as when there is no adjacent tooth, the criteria are the same as those for smooth areas on buccal or lingual surfaces. For areas not available to direct examination, other criteria must be applied. In anterior teeth, transillumination can serve as a useful aid in discovering proximal lesions. Transillumination is achieved by placing a mirror lingually and positioning the examining light so that it passes through the teeth and reflects into the mirror. If a characteristic shadow or loss of translucency is seen on the proximal surface, then this is indicative of caries on the surface. Ideally, the actual diagnosis should be confirmed by detecting a break in the enamel surface with the explorer; however, clear visualization of a lesion by transillumination can justify a positive diagnosis. In posterior teeth, however, visual evidence alone, such as undermining under a marginal ridge, is not sufficient proof for diagnosing a proximal lesion. A positive diagnosis is made only if a break in the enamel surface can be detected with the explorer.

### **Missing Tooth Surfaces** (the "M" component of the index)

This component usually includes only those permanent teeth which have been extracted as a result of caries. It is essential to distinguish between teeth extracted because of caries and those extracted or missing for other reasons. The code "E" is used to indicate teeth extracted because of caries or perio, and "ER" is used for teeth extracted because of caries or perio and subsequently replaced with a fixed or removable appliance. A different code, "M", is used for teeth missing due to trauma, orthodontic treatment, or other non-disease related causes. "MR" is used for teeth missing due to trauma, orthodontic treatment, or other non-disease related causes and subsequently replaced with a fixed or removable appliance. Unerupted or congenitally missing teeth (code "U") must also be correctly identified.

### **Filled Tooth Surfaces** (the "F" component of the index)

The "F" component represents a tooth surface that has been filled with either a permanent or a temporary restoration as a result of caries involvement. Here also it is necessary to distinguish between surfaces restored for caries and those restored for other reasons, such as trauma, hypoplasia or malformation.

### **Guidelines for Diagnosing Coronal Caries**

The following conventions have been adopted in the interest of achieving diagnostic consistency:

Third molars are not scored. When examining second molars it is important to be aware that a drifted third molar may occupy the space of a missing second molar. In such cases, the diagnosis and score must relate to the status of the missing second molar, not the third molar. If the second molar, for example, was extracted due to caries and the space is now occupied by a sound third molar, the second molar is scored as extracted and not replaced (E), and the third molar is scored as present or absent.

If both a deciduous and a permanent tooth occupy the same tooth space, only the permanent tooth is scored.

A tooth is considered to be in eruption when any part of its crown projects through the gum. This criterion is easier to standardize than one based on a more advanced stage of eruption.

In the case of supernumerary teeth, only one tooth is scored for the tooth space. The examiner must decide which tooth is the "legitimate" occupant of the space.

Incisal edges of anterior teeth are not considered to be separate surfaces. If a lesion or restoration is confined solely to the incisal edge, its score should be assigned to the nearest adjacent surface. Thus, anterior teeth have only four scorable surfaces (mesial, distal, labial, and lingual). The inclusion of the occlusal surface for posterior teeth gives those teeth five surfaces. Therefore, a total of 128 surfaces are examined and diagnosed for each subject.

When a caries lesion extends beyond the line angle onto another surface, the other surface is also scored as affected. However, a proximal filling on an anterior tooth is not considered to involve the adjacent labial or lingual surface unless it extends at least one-

third of the distance across the labial or lingual surface. The reason for this criterion is that tooth structure on adjacent surfaces must often be removed to provide access for the restoration of a proximal lesion on anterior teeth. Also, to guard against a similar possibility for overestimating the amount of disease in posterior teeth, a proximal restoration should extend at least a millimeter past the line angle before it is considered to involve the adjacent buccal or lingual surface.

If a permanent tooth has a full crown restoration placed because of caries, the tooth will be coded as "C," which represents the maximum number of surfaces for the tooth type, i.e., four surfaces on anterior teeth and five surfaces on posterior teeth. By convention, all crowns on posterior teeth, including abutment teeth for fixed or removable prostheses, are considered to have been placed as a result of caries. If a tooth has been restored with less than full coverage, all surfaces not involved should be scored in the usual manner. On anterior teeth, however, the examiner should make a determination of the reason for crown placement. If the crown was placed for any reason other than caries, such as fracture, malformation or esthetics, the tooth is coded "Y". This rule applies only to those anterior teeth with full crowns or jackets. If a tooth has been restored with less than full coverage, all surfaces not involved should be scored in the usual manner.

Retained carious roots of posterior teeth should be called X, 0, 1, 2, 3. In the coronal caries assessment, carious roots of anterior teeth should be called 0, 1, 2, 3.

Teeth that are banded or bracketed for orthodontic treatment are examined in the usual manner and all visible surfaces are scored.

Certain teeth, notably first bicuspid, may have been extracted as part of orthodontic treatment. These teeth are coded "M" and will be excluded from the DMFS analysis. The examiner must make the determination that the teeth were in fact extracted for orthodontic reasons, although this is not usually difficult because of the typically symmetric pattern of these extractions. For the sake of uniformity, all orthodontically extracted bicuspid are scored as first bicuspid. Teeth other than bicuspid may also be extracted for orthodontic reasons. In many cases, the subject will have good recall of the reason for the extractions, and can help in making the correct determination.

Non-vital teeth are scored in the same manner as vital teeth. If, however, a restoration on a non-vital tooth was placed solely to seal a root canal and not for caries, that restoration is not scored. If no other lesions or restorations are present, the tooth will be called sound (code "S").

Hypoplastic teeth are scored in the usual manner. However, for anterior teeth, if it can be determined that a restoration on such a tooth was placed solely for esthetic reasons and not for caries, that restoration is not scored. If a hypoplastic tooth is restored with a full crown, it is coded "Y".

Malformed teeth are scored in the usual manner except when they have been restored with a full crown for esthetic reasons, in which case they are coded as "Y".

When the tooth surface is both carious and filled, only the caries is scored.

Fractured or missing restorations are scored as if the restoration were intact unless caries is found to be present. In that case, the involved surface is scored as carious rather than restored.

Stain and pigmentation alone should not be regarded as evidence of caries as either can occur on sound teeth.