

# Caries Risk Assessment and Care Pathways: Foundational Articles and Consensus Recommendations, 2020

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**Featherstone JDB, Chaffee BW.** The evidence for caries management by risk assessment (CAMBRA). *Adv Dent Res* 2018; 29: 9-14.

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## IAPD Consensus Recommendations

The goal of caries risk assessment is to deliver preventive and restorative care optimized to a specific individual patient. Presently, however, few studies so far have determined how the application of caries risk assessment affects individual dental health outcomes. Dental caries care pathways are based on an understanding of risk indicators as applied to a specific child. Children at high caries risk require intense prevention to prevent caries initiation and arrest caries progression. Care pathways also

assumes that there will be little benefit of advanced preventive therapies for those children who are at low risk for dental caries (see Table for care pathways).

**1.** The best caries risk indicators are previous caries experience and the longitudinal evaluation of lesion progression (increased dimension/ cavitation of white spot lesions or presence of new lesions) at recall visits. Other useful caries risk indicators useful in children are: whether the mother/caregiver has active caries,

the socioeconomic status of the family, and whether the child consumes fermentable carbohydrate at high frequency (see Table for caries risk indicators).

**2.** Besides determining caries risk at initiation of therapy, ongoing reassessment of a child’s caries risk at recall visits allows for refinement of decisions. If at a recall visit existing lesions or white spot lesions have not progressed, caries risk may be considered to have decreased. Conversely, new lesions may indicate risk status may have increased.

**3.** Decisions to surgically address carious lesions should include visual detection of a cavitation in the enamel, visual identification of shadowing

under the enamel, and/or radiographic recognition of enlargement of lesions over time.

**4.** The term of “active surveillance” considers the careful monitoring of caries progression and the preventive program, instead of definitive decisions regarding the treatment of a lesion at the first sign of disease. A positive outcome of active surveillance is that a carious lesion shows no evidence of progression at a periodic recall.

**5.** Along with other information, the likelihood of a patient returning for periodic recalls and compliance with preventive therapy, is important for considering active surveillance strategies for an individual patient.

**Table: Dental Caries Care Pathways Based on a Child’s Caries Risk Assessment**

	<b>Low Risk</b>	<b>Moderate Risk</b>	<b>High Risk</b>
<b>Caries Risk Indicators</b>	<ul style="list-style-type: none"> <li>• Child has no caries</li> <li>• No new lesions in 1 year</li> <li>• No white spot lesions</li> <li>• High SES</li> </ul>	<ul style="list-style-type: none"> <li>• Child has/had 1 or more lesions</li> <li>• 1 or more lesions/year</li> <li>• Infrequent white spot lesions</li> <li>• Middle SES</li> </ul>	<ul style="list-style-type: none"> <li>• Child has/had 1 or more proximal lesions</li> <li>• More than 2 new lesions/year</li> <li>• Enamel defects, or white spot lesions</li> <li>• Mother/caregiver has active caries</li> <li>• Low SES</li> <li>• Appliances in mouth</li> <li>• High frequency sugar consumption</li> </ul>
<b>Diagnostic Procedures</b>	<ul style="list-style-type: none"> <li>• Exam interval 12 months</li> <li>• Radiograph interval 12-24 months</li> </ul>	<ul style="list-style-type: none"> <li>• Exam interval 12 months</li> <li>• Radiograph interval 12-24 months</li> </ul>	<ul style="list-style-type: none"> <li>• Exam interval 3 months</li> <li>• Radiograph interval 6 months</li> <li>• Diet analysis</li> </ul>
<b>Preventive Therapy</b>	<ul style="list-style-type: none"> <li>• Brushing with F toothpaste twice daily</li> <li>• Sealants</li> </ul>	<ul style="list-style-type: none"> <li>• Brushing with F toothpaste twice daily</li> <li>• Professional topical fluorides tx every 6 months</li> <li>• Sealants</li> </ul>	<ul style="list-style-type: none"> <li>• Brushing with F toothpaste twice daily</li> <li>• Systemic fluoride supplements**</li> <li>• Professional topical fluoride tx every 3 months</li> <li>• Sealants</li> <li>• Brushing with high potency F gel (over age 6)</li> </ul>
<b>Restorative Therapy</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Active surveillance of white spot and enamel proximal lesions enamel proximal lesions</li> <li>• Restoration or SDF*** tx. of progressing lesions</li> <li>• Restoration or SDF tx. of cavitated lesions</li> </ul>	<ul style="list-style-type: none"> <li>• Active surveillance white spot lesions</li> <li>• Restoration of enamel proximal lesions</li> <li>• Restoration or SDF tx. of progressing lesions</li> <li>• Restoration or SDF tx. of cavitated lesions</li> </ul>

\*SES = socioeconomic setting

\*\*Age and water supply considerations

\*\*\* SDF = silver diamine fluoride topical treatment