CAMBRA Caries Management by Risk Assessment – is a Current Concept in Carious Prevention Cases Studies

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Introduction

Everything you do to the tooth has consequence; short term or long, its cascade of events determines the survival of the tooth.

Operative dentistry not only requires technical expertise and an in-depth understanding of materials science, but knowledge in cariology and pulp biology is also essential.

Treatment Goals

Eliminate Disease, Restore Occlusion, Esthetics and Function

Treatment Designed to Decrease Long Term Risk and Treatment with Dental Materials that have Proven Long Term Survival.

Build Your Practice in Powerful Way: You Are not Just A Dentist. You Are A D M D. A Doctor of Medicine in Dentistry.

Dental caries is a biofilm-mediated, diet modulated, multifactorial, non-communicable dynamic disease resulting in net mineral loss of dental hard tissues. It is determined by biological, behavioral, psychosocial, and environmental factors.


Dental caries is a common, but preventable disease (World Health Organization 2017).

Detection-diagnosis-decision making, Sound or diseased, Degree(severity) of disease, Initial D1,D2,D3 and Treatment.

Factors to take into consideration when deciding upon treatment: Caries activity, Future caries risk, Cavity formation, Progression rate, Expected cooperation and possibilities for follow-up.

Treatment of deep caries lesions approaching a healthy pulp presents a significant challenge to the practitioner the traditional management of carious lesions of any kind dictates the removal of all infected and affected dentin to prevent further cariogenic activity and provide a well mineralized base of dentin for restoration.
The primary outcome
Overall success of maintaining pulpal health (both clinically and radiographically) An important priority in the treatment of deep caries lesions is to preserve pulp vitality.

The goal of this study is to clarify the Contemporary operative caries management by consensus recommendations on minimally invasive caries removal.

CAMBRA PROTOCOL is an evidence-based approach to preventing and managing cavities at the earliest stages. The risk of nonselective removal of carious tissue in comparison with selective removal and stepwise. Stop the disease process and maximizing the healing potential of the teeth according to systematically review & meta-analysis.

Current Concepts in Carious Tissue Removal Which technique should be used?
Current concept: Dental caries is a biofilm-based and lifestyle-mediated disorder. Dentists should not attempt to “heal” carious teeth by removing bacteria and should not manage carious lesions by invasively removing all presumably infected (contaminated) dental hard tissues.

The aim is to control the composition and activity of the dental biofilm within the cavity.

The activity at the tooth surface can be controlled through regular biofilm removal (tooth brushing) supported by dietary sugar regulation.

The importance of managing the cause of the disease at a patient level and managing the carious lesion at the tooth level, cannot be overemphasized and must be part of the overall treatment plan.

The most Common reason for treatment failure is not the quality of the treatment, it is the Incorrect Diagnosis.

The philosophy of CArries Management by Risk Assessment, or CAMBRA®, represents a paradigm shift. Integrating Caries Management by Risk Assessment (CAMBRA) and Prevention Strategies into the Contemporary Dental Practice.

In many dental practices throughout the world, the CAMBRA philosophy has been completely incorporated into the practice routine and embodied by the entire patient care team, including dental assistants and hygienists.

This guide was originally published in the January 2019 issue of the Journal of the California Dental Association.

CAMBRA protocols facilitate integration of caries management by risk assessment into everyday practice.

The CAMBRA concept provides the dental professional with scientific, evidence-based solutions to approach treatment of dental caries disease. Understanding of the caries balance, the process of demineralization and remineralization of tooth structure, caries risk assessment, and the different levels of caries risk.

CAMBRA Treatment Recommendations Based on Risk Assessment Level

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Extreme Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>• OTC toothpaste with fluoride (1000 to 1000 ppm fluoride), 2x daily</td>
<td>• OTC toothpaste with fluoride (5000 to 1000 ppm fluoride), 2x daily</td>
<td>• Xyitol candies or gums, 4x daily</td>
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</tr>
<tr>
<td>• OTC fluoride rinse (0.05% NaF), daily</td>
<td>• Xyitol fluoride rinse, 3x daily</td>
<td>• Chlorhexidine gluconate (0.12%) rinse 1x daily for 1 week, every month until the next POE, then reassess</td>
<td>• Xylitol fluoride rinse, 3x daily</td>
</tr>
<tr>
<td>• Xyitol candies or gums, 4x daily</td>
<td>• Xyitol fluoride rinse, 3x daily</td>
<td>• Fluoride varnish applied at first visit and at each POE/CAMBRAC recall</td>
<td>• Chlorhexidine gluconate (0.12%) rinse 1x daily for 1 week, every month until the next POE, then reassess</td>
</tr>
<tr>
<td>• Alternative regimen: Xyitol candies or gums, 4x daily Plus: Prescription 5,000 ppm fluoride toothpaste, 2x daily</td>
<td>• Baking soda rinse, 2 tsp. in 8 oz. of water, 4x to 6x daily</td>
<td>• Fluoride varnish applied at first visit and at each POE/CAMBRAC recall</td>
<td>• Fluoride varnish applied at first visit and at each POE/CAMBRAC recall</td>
</tr>
</tbody>
</table>

The CAMBRA system has been shown to be highly predictive

Clinical study on application of CAMBRA Protocol in group of students in 6-month follow-up shown is a conservative and evidence-based approach to preventing or treating dental caries at the earliest stages.

Aim of study
It’s a Proven method for preventing decay, protecting teeth and developing treatment preventing plans for managing and early on, the cavities Imbalance Caries uses the model “SAFE” to acronym the following describe protective four Saliva and factors: sealants.

Antimicrobials or antibacterial (including xylitol), Fluoride and other products that enhance remineralization and Effective lifestyle habits.
In corporation with Person-centered care in health care, person-centered care is where the patients actively participate in their own medical treatment in close cooperation with the health professionals. Sometimes relatives are also included in creating the health plan. The person-centered model of health care is used both for in and out patients, emergency care, palliative care as well as in rehabilitation.

### Materials and Methods

Female patients age 18-45 years old, inclusion criteria: Examination & history of complains caries risk assessment is a valuable tool for the prevention and management of dental caries.

50 cases (high caries risk patient) follow up for 6 months implement CAMBRA Protocol: Take a dental and medical history and conduct a clinical exam to assess caries risk factors.

The assessment tool is a part of an overall approach to prevent and treat the caries infection and is composed of the following sections

- Caries disease indicators – low SES (socioeconomic status); development problems; and presence of cavities, white spots, and restorations placed in the previous 3 years.

- Caries risk factors – type and quantity of Mutans streptococci (MS) and lactobacilli (LB); visible plaque; exposed roots; saliva reducing factors and inadequate saliva flow; frequent snacks; deep pits and fissures; and orthodontic appliances.

- Caries protective factors – systemic and topical fluoride sources; adequate saliva flow; and regular use of chlorhexidine, xylitol, and calcium and phosphate paste.

Clinical examination – presence of white spots, decalcification, restorations, and plaque; and bacterial culture and saliva flow tests.
caries risk factors, which include acid-producing bacteria, frequent eating/drinking of fermentable carbohydrates, and abnormal saliva flow and function.

Manage caries risk factors by optimizing protective factors using both behavioral approaches and chemical treatments. The treatment plan might include

Remineralization through the use of fluoride and/or antibacterial therapies such as chlorhexidine and xylitol minimally invasive restorative procedures to conserve tooth structure and regular patient follow-up.

**Results**
91% of high caries risk patients reduced caries risk and give them instructions of moderate and low caries risk patients these findings would imply that by application of CAMBRA® protocol, represents a paradigm shift.

The CAMBRA concept provides a scientific, evidence-based solutions with which to approach treatment of dental caries disease. Products to treat the caries infection.

Fluorides OTC and prescription toothpastes, 0.2% and 0.05% sodium fluoride rinse, CariFree maintenance rinse, 5% sodium

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<table>
<thead>
<tr>
<th>CAMBRA Protocol (Caries Management by Risk Assessment) Patient work sheet</th>
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<tbody>
<tr>
<td><strong>High Caries Risk Patient</strong> (Visiting a Dental Clinic For a Periodic Checkup&amp; evaluate the improvement of oral health of the patient )POE (Periodic Oral Examination)</td>
</tr>
<tr>
<td><strong>DIET ANALYSIS &amp; MODIFICATION</strong></td>
</tr>
<tr>
<td><strong>ANTIMICROBIAL</strong></td>
</tr>
<tr>
<td>1 Chlorhexidine gluconate (0.12%) mouthwash 2x daily for one week, every month until the next POE</td>
</tr>
<tr>
<td>1 OTC (Over –The- counter) fluoride rinse NaF0.05% daily don’t use it at the same time with Chlorhexidine gluconate mouth wash</td>
</tr>
<tr>
<td>1 OTC toothpaste with fluoride(1,000 to 1,100 ppm fluoride), 2x daily</td>
</tr>
</tbody>
</table>

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<tr>
<th>Moderate Caries Risk Patient</th>
<th>Low Caries Risk Patient</th>
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<td>Alternative regimen: Xylitol candies or gums, 4x daily</td>
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</tbody>
</table>
fluoride varnish, Sealants resin-based or glass ionomer, Saliva tests CariRes Risk Test (CRT) bacteria, CRT buffer, Bacteria tests CariRes Risk Test (CRT) bacteria, Cariscreen Caries Susceptibility Test, XylitolEpic, Spary, Omni Theragum, Ice Breakers Cubes, Buffering products – sodium bicarbonate toothpastes, mouthwash and gum, CariFree boost breath spray, Chlorhexidine gluconate – Peridex, Perigard, Palliative products for xerostomia – Salivart, Optimoist and Probiotics.

This study represents the current understanding of the caries balance, the process of demineralization and remineralization of tooth structure, caries risk assessment, and the different levels of caries risk. Adequate treatment protocols specifically related to the remineralization of non-cavitated lesions.

This study supports the implementation of the current caries risk assessment and management protocol (CAMBRA). It details the current risk factors, techniques and devices for assessing them and, interventions that should be considered in order to address the risk. Study shown that one CAMBRA treatment can reverse many roots caries lesions, cavities on the root surface of teeth, usually below the gums and which occur more frequently in patients.

Conclusion
Modern dental care focus on patients as a whole rather than just their teeth. CAMBRA caries management by risk assessment – is a Current Concept in Carious Tissue Management.

We Practice at the belief level. We are A D M D. A Doctor of Medicine in Dentistry.

Preventing carious lesions means managing the disease, the caries process with inputs from both the oral healthcare team and the patient. For existing lesions, dentists, alongside and leading their oral healthcare teams, should work with the patient to manage oral health and as a consequence to control disease activity.

CAMBRA protocol Proven method for preventing decay, protecting teeth

A research-based strategy for assessing risk factors and developing treatment plans for preventing and managing cavities early on. Minimally invasive, evidence-based processes of care have been identified as key strategies to prevent disease life-long and include the following aspects: Assessment; Determination of Risk; and Formation of Treatment/Prevention Strategies.

Risk assessment and disease management are considered standard of care, and therefore an ethical and legal requirement for today’s dental providers. The CAMBRA approach is a scientifically proven, evidence-based approach to the assessment, prevention, and treatment of dental caries that is patient specific it is a Current Concept in Carious Tissue Management.

References
4. Loesche WJ. Clinical and microbiological aspects of chemotherapeutic agents used according to the specific plaque hypothesis. J Dent Res. 1979; 58: 2404-2412.

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