

CARIES RISK ASSESSMENT FORM FOR AGE 0 TO 5 YEARS

Instructions on reverse

Patient Name: _____ I.D. # _____ Age ____ Date _____

Initial/baseline exam date _____ Recall/POE date _____

Respond to <u>each</u> question in sections 1, 2, and 3 with a check mark in the yes or no column		Yes	No	Notes
1. High Risk Factors**				
(a)	Mother or primary caregiver has had active dental decay in the past 12 months			
(b)	Child sleeps with a bottle, or nurses on demand			
(c)	Bottle contains fluids other than milk or water			
(d)	Obvious white spots, decalcifications, or obvious decay are present on the child's teeth			
(e)	Recent dental restorations completed (less than two years)			
(f)	Child's gums bleed easily and/or plaque is obvious on the teeth			
(g)	Frequent (greater than three times) between meal snacks of sugars/cooked starch			
(h)	Appliances present, fixed or removable: e.g., space maintainers, obturators, etc.			
(i)	Visually inadequate saliva flow (measuring saliva flow with young children is not possible)			
(j)	Saliva-reducing factors are present, including:			
	1. hyposalivatory medications (i.e., some for asthma or hyperactivity)			
	2. medical (cancer treatment) or genetic factors			
(k)	Child has developmental problems			
2. Protective Factors				
(a)	Lives in fluoridated community			
(b)	Mother or caregiver cleans child's teeth twice a day with fluoridated toothpaste (small amount)			type _____
(c)	Child has had a dental exam combined with oral hygiene instruction for the parent/caregiver			type _____
(d)	Salivary flow visually adequate			
(e)	Mother or caregiver with moderate to high ms counts use xylitol gum or lozenges (4x per day)			Type _____ and % _____
(f)	Mother/caregiver has no caries activity			
**If yes to any of 1 (a) - (g), perform bacterial culture on mother or caregiver*		High Count* Date: _____	Moderate Count* Date: _____	Low Count* Date: _____
(a)	Mutans streptococci			(Place a check in the box below the count)
(b)	Lactobacillus			(Place a check in the box below the count)
Child's caries risk status	High	Moderate	Low	Circle High, Moderate or Low
Recommendations given: yes _____ no: _____ Date given: _____ or Date follow up: _____				
*Indicates that test descriptions for these procedures are on the following pages				

CARIES RISK ASSESSMENT FORM FOR CHILDREN AGE 0 TO 5 YEARS

Instructions

1. Respond to questions 1(a) through 1(j) and 2(a) through 2(f) with yes or no answers. You can make special notations such as the number of caries present, the severity of the lack of oral hygiene, the brand of fluorides used, the type of bottle contents used, the type of snacks eaten, or the names of medications/drugs that may be causing dry mouth.
2. If the answer to any question in section 1 is yes for children old enough to spit (probably 4 or 5 years old), then a bacterial culture (**CRT bacteria test***) should be taken, as described below. For children not old enough to spit (3 years or younger), the bacterial levels of the parent/caregiver should be used as a rough estimate of the child's likely bacterial challenge. Saliva samples are taken from the mother or caregiver using the **CRT bacteria test*** (Vivadent) – see below. Children age 0 to 3 years are difficult to culture reliably in the fashion described below. However, an approximate indication for the child can be obtained by using a cotton swab to sample the surfaces of all teeth and gums in the mouth, thoroughly dispersing the sample in about 1-2 ml of water, and coating this on the test media strips as described below for saliva samples. Make an overall judgment as to whether the child is at high, medium, or low risk depending on the balance between the pathological factors (section 1) and the protective factors (section 2). **Note! Determining the caries risk for an individual child requires evaluating the number and severity of the risk factors. Certainly, a child with caries presently or in the recent past is at high risk for future caries. A patient with low bacterial levels would need to have several other risk factors present to be considered at moderate risk. Some clinical judgment is needed while also considering the protective factors to determining the risk. Note! Children with developmental problems or low socioeconomic status are automatically at high risk.** Place the completed form in the patient's chart.
3. Provide the parent/caregiver with recommendations based on your clinical observations and the responses to the questions and discuss strategies for caries control and management. Give the parent/caregiver the sheet that explains how caries happens and the sheet with your recommendations. Copy the recommendations and place in the patient's chart.
4. Inform the parent/caregiver of the results of any tests. Showing the parent the bacteria grown from their mouth (CRT test result*) can be a good motivator, so have the culture tube handy at the next visit (or schedule one for this purpose – the culture keeps satisfactorily for some weeks), or give/send them a picture. If the parent/caregiver has high cariogenic bacterial counts, then work with them and their own dentist to bring them to low caries risk and get their caries under control to eliminate this source of infection and re-infection for the child.
5. After the parent/caregiver/child has been following your recommendations for three to six months, have them back to re-assess how well they are doing. Ask them if they are following your instructions – how often. If the bacterial levels were moderate or high initially, repeat the bacterial culture to see if bacterial levels have been reduced. Make changes in your recommendations or reinforce protocol if results are not as good as desired or the patient is not compliant.

*Test procedures – Caries Bacteria Testing

Bacterial testing: CRT bacteria test: In the United States, the currently available chairside test for cariogenic bacterial challenge is the Caries Risk Test (CRT) marketed by Vivadent (Amherst, N.Y.). It is sufficiently sensitive to provide a level of low, medium, or high cariogenic bacterial challenge. It can also be used as a motivational tool for patient compliance with an antibacterial regimen. Other bacterial test kits will likely be available in the near future. The following is the procedure for administering the CRT test. Results are available after 48 hours.

The kit comes with two-sided selective media sticks that assess mutans streptococci on the blue side and lactobacilli on the green side.

- a) Remove the selective media stick from the culture tube. Peel off the plastic sheet covering each side of the stick.
- b) Pour the collected saliva over the media on each side until it is entirely wet.
- c) Place one of the sodium bicarbonate tablets (included with the kit) in the bottom of the tube.
- d) Replace the media stick in the culture tube, screw the lid on, and label the tube with the patient's name, registration number, and date. Place the tube in the incubator at 37 degrees Celsius for 48 hours. Incubators suitable for a dental office are also sold by the company.
- e) Collect the tube after 48 hours and compare the densities of bacterial colonies with the pictures provided in the kit indicating relative bacterial levels. The dark blue agar is selective for mutans streptococci, and the light green agar is selective for lactobacilli. Record the level of bacterial challenge in the patient's chart as low, medium, or high.

PARENT/CAREGIVER RECOMMENDATIONS FOR CONTROL OF DENTAL DECAY IN CHILDREN 0 TO 5 YEARS

Daily Oral Hygiene/Fluoride Treatment (These procedures reduce the bacteria in the mouth and provide a small amount of fluoride to guard against further tooth decay, as well as to repair early decayed areas)

- wipe baby's teeth with a small smear of fluoride toothpaste on a soft cloth (for babies)
- brush child's teeth with a fluoride-containing toothpaste (small smear or pea-sized amount) twice daily (for children old enough to have their teeth brushed by parent or caregiver)
- selective daily flossing of areas with early caries (white patches)
- other _____

Diet (The most important thing is to reduce the number of between-meal sweet snacks that contain carbohydrates, especially sugars. Substitution by snacks rich in protein, such as cheese, will also help)

- OK as is
- limit bottle/nursing (to avoid prolonged contact of milk with teeth)
- replace juice or sweet liquids in the bottle with water
- limit snacking (particularly sweets)
- replace high carbohydrate snacks with cheese and protein snacks
- other _____

Xylitol (Xylitol is a sweetener that the bacteria cannot feed on. It limits the transfer of decay-causing bacteria from parent/caregiver to baby/toddler. Parents/caregivers with dental decay place their children at high risk. Parent/caregiver requires antibacterial treatment [see below]. Using xylitol-containing chewing gum or mints/lozenges is a way that parents/caregivers of high-risk children can reduce the transfer of decay-causing bacteria. This is most effective when used starting shortly after the child's birth.)

- Parents of children 3 and younger with high bacterial levels should use xylitol mints or xylitol gum 3-4 times daily

Antibacterial rinse (parents/caregivers)

- Parents/caregivers of children 3 years and younger with high bacterial levels should rinse with 10 ml of chlorhexidine gluconate 0.12% (**Periogard, Peridex, Oral Rx** by prescription only). Rinse at bedtime for 1 minute 1X/day for 2 weeks. Stop for two months. Repeat rinsing for 2 weeks.

Practitioner signature _____ Date: _____

Parent/caregiver signature _____ Date: _____

PATIENT INFORMATION ON TOOTH DECAY

How Tooth Decay Happens

Tooth decay is caused by certain types of bacteria (mutans streptococci and lactobacilli) that live in your mouth. When they attach themselves to the teeth and multiply in dental plaque, they can do damage. The bacteria feed on what you eat, especially sugars (including fruit sugars) and cooked starch (bread, potatoes, rice, pasta, etc.). Within about five minutes after you eat or drink, the bacteria begin producing acids as a byproduct of their digesting your food. Those acids can penetrate into the hard substance of the tooth and dissolve some of the minerals (calcium and phosphate). If the acid attacks are infrequent and of short duration, your saliva can help to repair the damage by neutralizing the acids and supplying minerals and fluoride that can replace those lost from the tooth. However if your mouth is dry, you have many of these bacteria, or you snack frequently; then the tooth mineral lost by attacks of acids is too great and cannot be repaired. This is the start of tooth decay and leads to cavities.



Methods of Controlling Tooth Decay

Diet: Reducing the number of sugary and starchy foods, snacks, drinks, or candies can help reduce the development of tooth decay. That does not mean you can never eat these types of foods, but you should limit their consumption particularly when eaten between main meals. A good rule is three meals per day and no more than three snacks per day.

Fluorides: Fluorides help make teeth more resistant to being dissolved by bacterial acids. Fluorides are available from a variety of sources such as drinking water, toothpaste, over-the-counter rinses, and products prescribed by your dentist such as brush-on gels used at home or gels and foams applied in the dental office. Daily use is very important to help protect against the acid attacks.

Plaque removal: Removing the plaque from your teeth on a daily basis is helpful in controlling tooth decay. Plaque can be difficult to remove from some parts of your mouth, especially between the teeth and in grooves on the biting surfaces of back teeth. If you have an appliance such as an orthodontic retainer or partial denture, remove it before brushing your teeth. Brush all surfaces of the appliance also.

Saliva: Saliva is critical for controlling tooth decay. It neutralizes acids and provides minerals and proteins that protect the teeth. If you cannot brush after a meal or snack, you can chew some sugar-free gum. This will stimulate the flow of saliva to help neutralize acids and bring lost minerals back to the teeth. Sugar-free candy or mints could also be used, but some of these contain acids themselves. These acids will not cause tooth decay, but they can slowly dissolve the enamel surface over time (a process called erosion). Some sugar-free gums are designed to help fight tooth decay and are particularly useful if you have a dry mouth (many medications can cause a dry mouth). Some gums contain baking soda, which neutralizes the acids produced by the bacteria in plaque. Gum that contains xylitol as its first listed ingredient is the gum of choice. If you have a dry mouth, you could also fill a drinking bottle with water and add a couple teaspoons of baking soda for each 8 ounces of water and swish with it frequently throughout the day. Toothpastes containing baking soda are also available from several companies.

Antibacterial mouthrinses: Rinses that your dentist can prescribe are able to reduce the number of bacteria that cause tooth decay and can be useful in patients at high risk for tooth decay.

Sealants: Sealants are plastic coatings bonded to the biting surfaces of back teeth to protect the deep grooves from decay. In some people, the grooves on the surfaces of the teeth are too narrow and deep to clean with a toothbrush, so they may decay in spite of your best efforts. Sealants are an excellent preventive measure for children and young adults at risk for this type of decay.

CARIES RISK ASSESSMENT FORM FOR CHILDREN 6 YEARS AND OLDER/ADULTS

Instructions on reverse

Patient Name: _____ I.D. # _____ Age ____ Date _____

Initial/baseline exam date _____ Recall/POE date _____

Respond to <u>each</u> question in sections 1, 2, and 3 with a check mark in the yes or no column				Notes
	Yes	No		
1. High Risk Factors**				
(a) Visible cavitation (carious) or caries into dentin by radiograph				
(b) Caries restored in past three years				
(c) Readily visible heavy plaque on teeth				
(d) Frequent (greater than three times daily) between meal snacks of sugars/cooked starch				
(e) Saliva-reducing factors:				
1. Hyposalivatory medications				
2. Radiation to head and neck				
3. Systemic reasons, e.g. Sjögren's				
(f*) Visually inadequate saliva flow. (If yes, measure) less than 0.7 ml/min by test= low salivary flow or dry mouth				Amount: _____ ml/min
(g) Appliances present, fixed or removable, e.g. orthodontic brackets/bands/retainer or removable partial denture(s)				
2. Moderate Risk Factors				
(a) Exposed roots				
(b) Deep pits & fissures/developmental defects				
(c) Interproximal enamel lesions/radiolucencies				
(d) Other white spot lesions or occlusal discoloration				
(e) Uses recreational drugs				
3. Protective Factors				
(a) Lives /works/school in fluoridated community				
(b) Uses fluoride toothpaste daily				type _____
(c) Uses fluoride mouthwash/rinse/gel daily				type _____
(d*) Salivary flow visually adequate >1 ml/min by test				
(e) Uses xylitol gum or mints 4 x day				Type _____ and % xylitol _____
(f) Mother/caregiver has no caries activity				Brand _____ Frequency _____
**If yes to 1 (a) or any two of 1 (b)-(g), perform bacterial culture*	High Count Date: _____	Moderate Count Date: _____	Low Count Date: _____	
(a) Mutans streptococci				(Place a check in the box below the count)
(b) Lactobacillus				(Place a check in the box below the count)
Caries risk overall* (see over)	High	Moderate	Low	Circle High, Moderate or Low
Recommendations given: yes _____ no: _____ Date given: _____ or Date follow up: _____				
*Indicates that test descriptions for these procedures are on the following pages				

CARIES RISK ASSESSMENT FORM FOR CHILDREN AGE 6 YEARS AND OLDER/ADULTS

Instructions

1. Respond to questions 1, 2, and 3 with yes or no answers. You can make special notations such as the number of caries present, the severity of the lack of oral hygiene, the brand of fluorides used, the type of snacks eaten, or the names of medications/drugs that are causing dry mouth.
2. If the answer is yes to question 1(a) or any two of questions 1(b) through 1(g), then a bacterial culture should be taken using the **CRT bacteria test*** (Vivadent) – see below. Make an overall judgment as to whether the patient is at high, medium, or low risk depending on the balance between the pathological factors (sections 1 and 2) and the protective factors (section 3). **Note! Determining the caries risk for an individual requires evaluating the number and severity of the risk factors. Certainly, an individual with caries presently or in the recent past is at high risk for future caries. A patient with low bacterial levels would need to have several other risk factors present to be considered at moderate risk. Some clinical judgment is needed while also considering the protective factors to determining the risk. Note!** Children with developmental problems or low socioeconomic status are automatically at high risk. Place the completed form in the patient chart.
3. Provide the patient with recommendations based on your clinical observations and the responses to the questions and discuss strategies for caries control and management. Give the patient the sheet that explains how caries happens and the sheet with your recommendations. Copy the recommendations for the patient chart.
4. Inform the patient of the results of any test results. Showing the patient the bacteria grown from their mouth (CRT test result*) can be a good motivator, so have the culture tube handy at the next visit (or schedule one for this purpose – the culture keeps satisfactorily for some weeks), or give/send them a picture.
5. After the patient has been following your recommendations for three to six months, have the patient back to re-assess how well he or she is doing. Ask if he or she is following your instructions – how often. If the bacterial levels were moderate or high initially, repeat the bacterial culture to see if bacterial levels have been reduced. Make changes in your recommendations or reinforce protocol if results are not as good as desired or the patient is not compliant.

*Test procedures – Saliva Flow Rate and Caries Bacteria Testing

- *1. **Saliva flow rate:** Have the patient chew a paraffin pellet (included with the CRT test – see below) for three to five minutes and spit all saliva generated into a cup. At the end of the three to five minutes, measure the amount of saliva (in milliliters) and divide that amount by time to determine the ml/minute of stimulated salivary flow. A flow rate of 1 ml/min and above is considered normal. A level of 0.7 ml/min is low, and anything at 0.5 ml/min or less is dry, indicating a high-risk situation. Investigation of the reason for the low flow rate is an important step in the patient treatment.
- *2. **Bacterial testing: CRT bacteria test:** In the United States, the currently available chairside test for cariogenic bacterial challenge is the Caries Risk Test (CRT) marketed by Vivadent (Amherst, N.Y.). It is sufficiently sensitive to provide a level of low, medium, or high cariogenic bacterial challenge. It can also be used as a motivational tool for patient compliance with an antibacterial regimen. Other bacterial test kits will likely be available in the near future. The following is the procedure for administering the currently available CRT test. Results are available after 48 hours.

The kit comes with two-sided selective media sticks that assess mutans streptococci on the blue side and lactobacilli on the green side.

- a) Remove the selective media stick from the culture tube. Peel off the plastic cover sheet from each side of the stick.
- b) Pour the collected saliva over the media on each side until it is entirely wet.
- c) Place one of the sodium bicarbonate tablets (included with the kit) in the bottom of the tube.
- d) Replace the media stick in the culture tube, screw the lid on, and label the tube with the patient's name, registration number, and date. Place the tube in the incubator at 37 degrees Celsius for 48 hours. Incubators suitable for a dental office are also sold by the company.
- e) Collect the tube after 48 hours and compare the densities of bacterial colonies with the pictures provided in the kit indicating relative bacterial levels. The dark blue agar is selective for mutans streptococci and the light green agar is selective for lactobacilli. Record the level of bacterial challenge in the patient's chart as low, medium, or high.

PATIENT RECOMMENDATIONS FOR CONTROL OF DENTAL DECAY (AGES 6 AND OLDER/ADULT)

Daily Oral Hygiene (Aimed at reducing the overall bacteria in the mouth, especially at sites likely to decay. Choose the recommendations based on the danger sites and the condition of the mouth)

brush twice daily (with fluoride toothpaste, all patients) floss daily

interproximal brush Stimudents toothpick Superfloss

other: _____

Diet (The most important thing is to reduce the number of between meal sweet snacks that contain carbohydrates, especially sugars. Substitution by snacks rich in protein, such as cheese will also help)

OK as is limit snacking limit sodas other _____

Fluorides (All patients should use a fluoride toothpaste twice daily. Additional fluoride products should be added, depending on whether the risk level is medium or high. These fluoride products must be used daily to be effective)

fluoride-containing toothpaste 2X/day (all patients regardless of caries risk status)

fluoride rinse (0.05% NaF, **Act** or **Fluorigard**) 1X or 2X/day (use in addition to toothpaste. Patients at medium risk should rinse in the morning or last thing at night. For high risk patients use twice a day, once in the morning and once last thing at night. Continue long term with older patients or those who need or want extra protection)

Prevident "brush-on" nightly, **OR** gel (**Prevident**) in custom tray 10 min./night (For high-risk patients, especially those with low saliva flow, or root caries, or active cavities. Continue until the risk status is lowered, then revert to fluoride as above)

fluoride lozenges (**Lozi-Flur** or **Fluor-a-day**) 1X/day (use for high-risk patients with with low saliva flow, such as radiation xerostomia. By dissolving in the mouth, these lozenges provide a concentrated fluoride reservoir to protect against mineral loss and to enhance repair by remineralization. Dissolve slowly in mouth by holding the lozenge in a convenient place)

Sugar-free gum/mints (recommend for high risk patients, especially those with low saliva flow, and/or those who need to reduce in between meal snacking. The gums or mints that contain xylitol also have an antibacterial effect against the decay-causing bacteria. Preferably use a xylitol-containing gum.)

Chew after meals when you cannot brush (xylitol preferred). Use Xylitol mints 3-4 times daily.

Antibacterial rinse

Chlorhexidine gluconate, 0.12% (**Periogard, Peridex, Oral Rx**, available on prescription). Rinse with 10 ml at bedtime for 1 minute, 1X/day for 2 weeks. Stop for two months. Repeat rinsing for 2 weeks. Use fluoride rinse (see above) every day during the weeks in between.

For dry mouth

baking soda tooth paste with fluoride baking soda gym – **Dental Care Gum** (Arm & Hammer. It contains baking soda and xylitol) or similar product. Chew frequently throughout the day.

rinse frequently with baking soda suspension during the day (fill sports water bottle with water and add 2 teaspoons of baking soda for each 8 oz. of water.)

Practitioner signature _____ Date: _____

PATIENT INFORMATION ON TOOTH DECAY

How Tooth Decay Happens

Tooth decay is caused by certain types of bacteria (mutans streptococci and lactobacilli) that live in your mouth. When they attach themselves to the teeth and multiply in dental plaque, they can do damage. The bacteria feed on what you eat, especially sugars (including fruit sugars) and cooked starch (bread, potatoes, rice, pasta, etc.). Within about five minutes after you eat or drink, the bacteria begin producing acids as a byproduct of their digesting your food. Those acids can penetrate into the hard substance of the tooth and dissolve some of the minerals (calcium and phosphate). If the acid attacks are infrequent and of short duration, your saliva can help to repair the damage by neutralizing the acids and supplying minerals and fluoride that can replace those lost from the tooth. However if your mouth is dry, you have many of these bacteria, or you snack frequently; then the tooth mineral lost by attacks of acids is too great and cannot be repaired. This is the start of tooth decay and leads to cavities.



Methods of Controlling Tooth Decay

Diet: Reducing the number of sugary and starchy foods, snacks, drinks, or candies can help reduce the development of tooth decay. That does not mean you can never eat these types of foods, but you should limit their consumption particularly when eaten between main meals. A good rule is three meals per day and no more than three snacks per day.

Fluorides: Fluorides help make teeth more resistant to being dissolved by bacterial acids. Fluorides are available from a variety of sources such as drinking water, toothpaste, over-the-counter rinses, and products prescribed by your dentist such as brush-on gels used at home or gels and foams applied in the dental office. Daily use is very important to help protect against the acid attacks.

Plaque removal: Removing the plaque from your teeth on a daily basis is helpful in controlling tooth decay. Plaque can be difficult to remove from some parts of your mouth, especially between the teeth and in grooves on the biting surfaces of back teeth. If you have an appliance such as an orthodontic retainer or partial denture, remove it before brushing your teeth. Brush all surfaces of the appliance also.

Saliva: Saliva is critical for controlling tooth decay. It neutralizes acids and provides minerals and proteins that protect the teeth. If you cannot brush after a meal or snack, you can chew some sugar-free gum. This will stimulate the flow of saliva to help neutralize acids and bring lost minerals back to the teeth. Sugar-free candy or mints could also be used, but some of these contain acids themselves. These acids will not cause tooth decay, but they can slowly dissolve the enamel surface over time (a process called erosion). Some sugar-free gums are designed to help fight tooth decay and are particularly useful if you have a dry mouth (many medications can cause a dry mouth). Some gums contain baking soda, which neutralizes the acids produced by the bacteria in plaque. Gum that contains xylitol as its first listed ingredient is the gum of choice. If you have a dry mouth, you could also fill a drinking bottle with water and add a couple teaspoons of baking soda for each 8 ounces of water and swish with it frequently throughout the day. Toothpastes containing baking soda are also available from several companies.

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Sealants: Sealants are plastic coatings bonded to the biting surfaces of back teeth to protect the deep grooves from decay. In some people, the grooves on the surfaces of the teeth are too narrow and deep to clean with a toothbrush, so they may decay in spite of your best efforts. Sealants are an excellent preventive measure for children and young adults at risk for this type of decay.