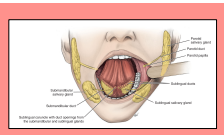

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ADHA HYPOSALIVATION with XEROSTOMIA SCREENING TOOL PROJECT

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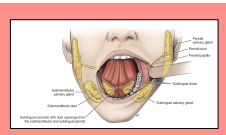

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Project Overview

- The tool was created for the **dental hygienist in private practice** by funding from GSK, and utilizes ADHA *Standards for Clinical Dental Hygiene Practice* regarding the assessment, etiology, and management of conditions. [1]
- The tool comes to a conclusion or **overall susceptibility to hyposalivation with xerostomia**, using a simple grading scale ranging from low to moderate to high risk.



|| Low Risk Case || Moderate Risk Case || High Risk Case ||

- The tool allows an assessment or **dental hygiene evaluation of risk** for hyposalivation with xerostomia that **allows for planning and implementation of interventions** per risk level by the dental hygienist and rest of the dental team.
- The tool was **presented to the ADHA members** via an article in their *Access* magazine (see Handout); it also has been highlighted on the ADHA website since publication. [2]
- The purpose of the project is the **validation of the screening tool** in a clinical setting so it can be used in dental practices as an aid to provide greater awareness and accuracy in the screening, assessment, and management of hyposalivation due to increased number of xerostomia cases.

Preliminary Screening Tool Review

Linda Choquette, RDH, MSHS, CCRP, is a Clinical Research Associate at the Multidisciplinary Head and Neck Cancer/Oral Oncology Program, University of Connecticut Health Center. After trying it on high-risk patients, she felt that it met her needs to importantly discern between moderate-risk and high-risk patients and could be accomplished in under 3 minutes with familiarity.

Philip C. Fox, DDS, FDS, RCSEd, is a visiting scientist at the Department of Oral Medicine Carolinas Medical Center, an independent biomedical consultant focusing primarily in the area of clinical trial design and analysis, a diplomate of the American Board of Oral Medicine, and he established the first Sjögren's Syndrome Clinic, Molecular Physiology and Therapeutics Branch, NIDCR. As the author of the ADHA continuing education course on xerostomia, he felt overall that it met the needs of the dental community but its validation would serve to confirm this. [3]

Proposed Validation Methods and Measurements

One hundred participants in a selected clinical setting with the **primary symptom of xerostomia** are instructed not to drink, eat, smoke, perform oral hygiene or put anything into their mouths for 90 minutes before the appointment. [4, 5, 6]

1. Each participant is first **evaluated using the developed Screening Tool** by a dental hygienist to determine the participant's risk level for hyposalivation.
2. Next **unstimulated saliva is collected** after asking the participant to swallow any saliva in their oral cavity first, then stay motionless and allow the saliva to drain passively for five minutes over the lower lip into a preweighed 15 ml test tube fitted with a 55 mm diameter funnel, avoiding any further swallowing. After the five-minute collection period, the participant is asked then to void the mouth of saliva by spitting into the funnel. [9, 10]


|| Evaluation || Collection ||

3. Next **stimulated saliva is collected** after asking the participant to chew on a piece of paraffin wax at approximately 45 chews per minute. The participant will void the mouth of saliva by spitting into another similar collection tube every minute for a total of five minutes.
4. Both collection tubes are **weighed chairside** after each collection with the numbers entered **using the Saliva Collection Form** (see Form to right).
5. Later the participant's **salivary flow rate** for both the unstimulated and stimulated flow is calculated by **dividing the amount** (weight) of collected saliva **by the duration** of the collection period (five minutes).

The responses to the tool and salivary flow rates for each patient would **undergo data analysis** in comparison to known values to determine the validity of the Screening Tool to adequately evaluate the risk level for hyposalivation.

Known Values for Flow Rates for Whole Saliva *

Salivary Flow Rates (ml/min)		
	Normal	**Low**
Unstimulated (resting) Whole Saliva	0.3 - 0.4 ml/min	≤ 0.1 ml/min
Stimulated Whole Saliva	1 - 2 ml/min	≤ 0.7 ml/min

* Whole saliva is the total output from the major salivary glands; no general agreement about what constitutes a 'normal' salivary flow rate

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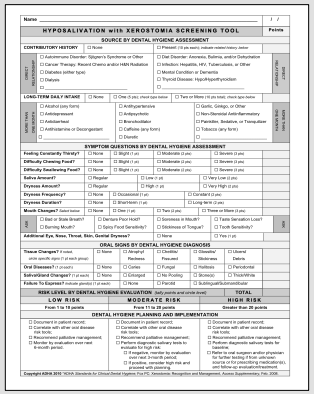
Screening Tool



Name _____ / /

HYPOSALIVATION with XEROSTOMIA SCREENING TOOL — Points

SOURCE BY DENTAL HYGIENE ASSESSMENT

CONTRIBUTORY HISTORY ☐ None

☐ Present (10 pts each; indicate related history, below)

CHRONIC: ☐ Autoimmune Disorder: Sjögren's Syndrome or Other; ☐ Cancer Therapy, Recent Chemo and/or H&N Radiation; ☐ Diabetes (either type); ☐ Dialysis; ☐ _____

ACUTE/PAST: ☐ Oral Disorder: Anorexia, Bulimia, and/or Dehydration; ☐ Infection: Hepatitis, HIV, Tuberculosis, or Other; ☐ Mental Condition or Dementia; ☐ Thyroid Disease: Hypo/Hyperthyroidism; ☐ _____

LONG TERM DAILY INTAKE ☐ None; ☐ One (5 pts); chart spa below; ☐ Two or More (10 pts total); check spa below

SUPPLEMENTS: ☐ Alcohol (any form); ☐ Antidepressant; ☐ Antiobarbital; ☐ Antihistamine or Decongestant; ☐ _____

MEDICATIONS: ☐ Antihypertensive; ☐ Antipsychotic; ☐ Bronchodilator; ☐ Caffeine (any form); ☐ Diuretic; ☐ Gastric, Ginkgo, or Other; ☐ Non-Steroidal Anti-Inflammatory; ☐ Painkiller, Sedative, or Tranquilizer; ☐ Tobacco (any form); ☐ _____

SYMPTOM QUESTIONS BY DENTAL HYGIENE ASSESSMENT

Feeling Constantly Thirsty?	☐ None	☐ Slight (1 pts)	☐ Moderate (2 pts)	☐ Severe (3 pts)
Difficulty Chewing Food?	☐ None	☐ Slight (1 pts)	☐ Moderate (2 pts)	☐ Severe (3 pts)
Difficulty Swallowing Food?	☐ None	☐ Slight (1 pts)	☐ Moderate (2 pts)	☐ Severe (3 pts)
Saliva Amount?	☐ Regular	☐ Low (1 pts)	☐ Very Low (2 pts)	
Dryness Amount?	☐ Regular	☐ High (1 pts)	☐ Very High (2 pts)	
Dryness Frequency?	☐ None	☐ Occasional (1 pts)	☐ Constant (2 pts)	
Dryness Duration?	☐ None	☐ Short/Month (1 pts)	☐ Long term (2 pts)	
Mouth Changes? *Select below*	☐ None	☐ One (1 pt)	☐ Two (2 pts)	☐ Three or More (3 pts)

LIPS: ☐ Bad or Stale Breath? ☐ Burning Mouth? ☐ Dentists Poor Hx/Dx? ☐ Sensitive to Spicy Food Sensitivity? ☐ Soreness in Mouth? ☐ Stickiness of Tongue? ☐ Taste Sensation Loss? ☐ Tooth Sensitivity? — SKIN

Additional Eye, Nose, Throat, Skin, Genital Dryness? ☐ None ☐ Yes (1 pt)

ORAL SIGNS BY DENTAL HYGIENE DIAGNOSIS

Tissue Changes? *If noted, write specific signs (1 pt each group)*	☐ None	☐ Atrophy/ Redness	☐ Cracked/ Fissured	☐ Swollen/ Stickiness	☐ Ulcerat/ Debris
Oral Diseases? *(1 pt each)*	☐ None	☐ Caries	☐ Fungal	☐ Halitosis	☐ Periodontal
Salivd/Gland Changes? *(1 pt each)*	☐ None	☐ Enlarged	☐ No Pooling	☐ Stones(s)	☐ Thick/White
Fidkets: Tic Expires? *Indicate grade(s) (1 pt each)*	☐ None	☐ Nose	☐ Parotid	☐ Sublingual/Submandibular	

RISK LEVEL BY DENTAL HYGIENE EVALUATION *Sum points and circle level* — **TOTAL**

LOW RISK	MODERATE RISK	HIGH RISK
From 1 to 10 points	From 11 to 20 points	Greater than 20 points

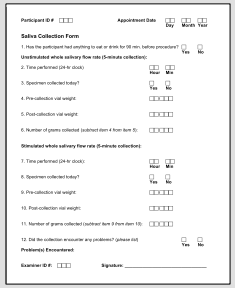
DENTAL HYGIENE PLANNING AND IMPLEMENTATION

☐ Document in patient record; ☐ Correlate with other oral disease risk; ☐ Recommend palliative management; ☐ Monitor by evaluation over next 6-month period.

☐ Document in patient record; ☐ Correlate with other oral disease risk; ☐ Recommend palliative management; ☐ Perform diagnostic salivary tests to confirm dx; ☐ If negative, monitor by evaluation over next 3-month period; ☐ If positive, consider high risk and treat with other risk.

☐ Document in patient record; ☐ Correlate with other oral disease risk; ☐ Recommend palliative management; ☐ Perform diagnostic salivary tests to confirm dx; ☐ Refer to oral surgeon and/or physician for further testing if from unknown cause; ☐ Consider medical consult, and follow-up evaluation/treatment.

Saliva Collection Form



Participant ID # ☐☐☐ **Appointment Date** ☐☐ Day ☐☐ Month ☐☐ Year

Saliva Collection Form

1. Has the participant had anything to eat or drink for 90 min. before procedure? ☐ Yes ☐ No

Unstimulated whole salivary flow rate (5-minute collection):

2. Time performed (24-hr clock): ☐☐ Hour ☐☐ Min
3. Specimen collected today? ☐ Yes ☐ No
4. Pre-collection vial weight: ☐☐☐☐
5. Post-collection vial weight: ☐☐☐☐
6. Number of grams collected (*subtract item 4 from item 5*): ☐☐☐☐

Stimulated whole salivary flow rate (5-minute collection):

7. Time performed (24-hr clock): ☐☐ Hour ☐☐ Min
8. Specimen collected today? ☐ Yes ☐ No
9. Pre-collection vial weight: ☐☐☐☐
10. Post-collection vial weight: ☐☐☐☐
11. Number of grams collected (*subtract item 9 from item 10*): ☐☐☐☐
12. Did the collection encounter any problems? (*please list*) ☐ Yes ☐ No

Problem(s) Encountered:

Examiner I.D #: ☐☐ **Signature:** _____

Updated Project References

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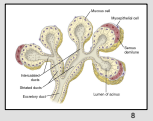

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If I spit, they will take my spit and frame it as great art.
~ Pablo Picasso

Project Author

Margaret is a Dental Hygiene Education Consultant, Oral Biologist, and Dental Science Technical Writer residing in Seattle, WA. She has obtained her Certificate in Clinical Research from the University of Washington School of Dentistry. She is the recent recipient of both the ADHA *A.C. Fones Award* (2013) and *Award of Excellence* (2009). She can be reached at www.dhed.net or margaret@dhed.net

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