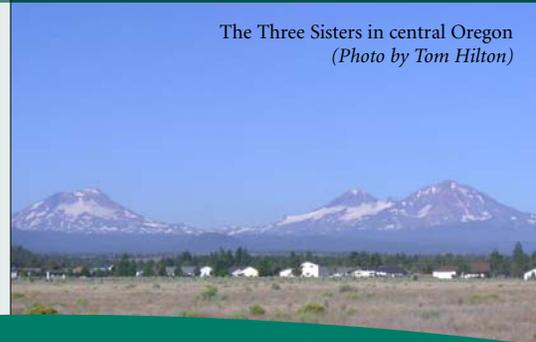


An OHSU-sponsored dental research group in Oregon and SW Washington.

The Three Sisters in central Oregon
(Photo by Tom Hilton)



Message from the Director

It is our pleasure to present you with the first newsletter for the OHSU Practice-based Research in Oral Health (PROH) network. We are mailing this to all dentists in Oregon and southwest Washington, so some of you may not be familiar with PROH.

PROH is a practice-based research network (PBRN) established to perform a wide variety of oral health research in a diversity of practice settings. It is designed to address some of the current shortcomings in clinical research. Controlled clinical trials performed at a university do not duplicate how various procedures are performed in routine practice, and so do not provide information about the typical outcomes to be expected within a practice-based population of clinicians. This discrepancy can significantly affect conclusions regarding oral health care outcomes. Therefore, there is a need for practice-based clinical studies that can reach a large and diverse population, while maintaining an adequate level of control of the design and conduct of the study, to provide “real world” research results to the profession. PROH is also designed to be a “practitioner centric” organization: study topics are solicited from the participating dentists. A majority of the network Steering Committee are practicing dentists, who review and approve all research projects taken on by PROH.

PROH has been in existence for more than three years now. The first two years were used to develop our infrastructure, recruit dentists to participate, and solicit input on research topics from the practitioners. We are now entering an exciting new phase where we are starting to execute research projects. We completed our first study this summer: A survey on cracked teeth. Forty-eight PROH practices participated, allowing us to gather data on more than 14,000 teeth. The ability to generate such large numbers for study is

just one of the many advantages of practice-based research. We are getting ready to start three new studies: one on the effect of a chlorine dioxide rinse on mild to moderate periodontitis, one on a new posterior composite, and a third on a new temporary crown system. More information on these studies is included in this newsletter (see page 5). In addition, Steve Hokett, D.D.S., is designing a study evaluating platelet-rich plasma (PRP) used in implant sites.

Another great PROH success has been our request for extracted teeth. We use a *lot* of extracted teeth in laboratory research projects at the School of Dentistry, and keeping usable teeth in stock has proven quite a challenge. We put out a call to our PROH practitioners, and you have done a wonderful job of helping us to regain our supply. We thank you for your help, and ask that you continue to use your practices and/or your referral offices to supply us with extracted teeth. One reminder: We need to store these teeth in a special solution after they are extracted so if you are willing to help out, let us know and we will send you a jar with the necessary storage media (see page 6 for contact information).

It’s been a great year for PROH, with even bigger and better things ahead. For those 125 dentists who are PROH affiliates, we thank you for your participation. If you are not yet part of PROH and would like to be, please contact any of the individuals listed on the back page and we will be happy to provide you with more information. Finally, all of us wish all of you the very best for 2007.

Thomas J. Hilton, D.M.D., M.S.
PROH Director, hiltont@ohsu.edu



Tom Hilton, D.M.D., M.S.

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3rd Annual PROH Conference & Continuing Education Courses

The third annual Practice-based Research in Oral Health (PROH) conference at the World Trade Center on Friday, Nov. 10, was a big success. Two great Continuing Education (CE) courses were presented, which PROH dentists attended at half price, as one of the many perks of belonging to PROH. The morning CE course had three fact-filled, hard-hitting presentations based on a "Top 10" theme regarding Oral Pathology/Oral Medicine Issues. Presenters were OHSU faculty Jeff Stewart, D.D.S., M.S., John Smith, Ph.D., and Brett Ueek, D.M.D., M.D. The afternoon session was the always popular Steve Beadnell, D.M.D., presenting his "Medical Emergencies Update" course. Total attendance for the two courses exceeded 80 individuals.

Over a business lunch, thirty-one PROH practitioners gathered to discuss pressing issues regarding PROH. This meeting marked significant progress for PROH. In the previous two conferences, most business topics revolved around research training and discussion of future study ideas. This year, discussion centered on recently completed or soon-to-begin research projects. Results of the Cracked Tooth Survey (see pages 3 and 4) completed over the summer were presented. Upcoming studies to be started early in 2007 include the effects of a chlorine dioxide rinse on mild-to-moderate periodontitis, performance of a new temporary crown system, and evaluating a new posterior composite and self-etch adhesive. Steve Hokett, D.D.S., also updated everyone on the platelet-rich plasma (PRP) study to be conducted by periodontists in PROH.



Network members at PROH business lunch



PROH Director Tom Hilton introducing an upcoming research project during business lunch

Steering Committee Members

Private practitioners:

Mark Driver, D.M.D.,
Roseburg
Mark Jensen, D.M.D., Bend
Walt Manning, D.M.D.,
Albany
Jean Martin, D.D.S., M.P.H.,
Canby
Marvel Walker, Portland
Tom Walker, D.M.D.,
Portland

OHSU faculty/staff:

Cindy Barnes, R.D.H., M.B.A.,
PROH Network Manager
LJ Fagnan, M.D., ORPRN
Director
Jack Ferracane, Ph.D., PROH
Investigator
Tom Hilton, D.M.D., M.S.,
PROH Director
Theresa Madden, D.D.S.,
Ph.D., PROH Investigator
Cindy Morris, M.D., Ph.D.,
OHIP Director

Meet Your Steering Committee

In each edition of the PROH Newsletter, we would like to introduce you to one of the Steering Committee members. Walter Manning, D.M.D., lives in Corvallis and works in Albany. He is one of the six practitioners from the network that sits on the committee to represent your interests. Walt received his bachelor of science degree in general science from Oregon State University in 1977. He completed dental school in 1981 at Oregon Health & Science University's School of Dentistry and then spent a year in the general practice residency at Rhode Island Hospital. He has been in private practice since 1982.

His professional activities have included the board of directors of the Oregon Academy of General Dentistry (AGD), the Southern Willamette Dental Society, including one term as president, and the Oregon Dental Association where he is currently serving as a trustee. His study club memberships include Tucker Study Club, Southern Willamette Dental Study Club and the AGD oral medicine study club. When asked why he is participating in PROH, he enthusiastically notes, "It seemed like a natural fit to harness the collective wisdom of those of us in practice to improve our day-to-day service."

Walt's wife, Julie, does community relations for Good Samaritan Hospital in Corvallis. They have one son in high school and one in college. This year, Walt's rowing team placed first and third in national events.

Thanks, Walt, for assisting in guidance of the PROH network!



Walter Manning, D.M.D.

PROH Completes First Study

Forty-eight PROH Practices Participate in Cracked Tooth Survey

After two years of getting organized, putting infrastructure into place, recruiting participating practices and getting dentists trained, the Practice-based Research in Oral Health (PROH) network completed its first study. In PROH's first two annual conferences, a lot of interest was expressed in various clinical concerns regarding cracked teeth. The purpose of this practice-based study was to obtain baseline data on cracked teeth through a brief survey that we hope will serve as a foundation for further study.

Methods: Practitioners (in PROH) were asked to complete a scannable survey on 50 randomly selected adult patients. The survey was designed to obtain information regarding the following on first and second molars of adult patients: presence/absence of cracks, surfaces with cracks, restoration type, restoration surfaces, crack connected with restoration, wear, and tooth sensitivity. Descriptive statistics were performed on all variables and presented as frequencies and percentages for categorical variables. Data was analyzed with logistic regression, univariate and multivariate analysis, using Bonferroni correction for multiple comparisons ($p \leq 0.05$).

Results: A total of 14,346 molars were analyzed with the following distribution of restorations: amalgam (46%), gold (27%), none (11%), composite (10%), glass ionomer (9%), ceramic (1%). Ten percent of the teeth studied were sensitive to temperature and/or biting. When a tooth had a crack, it was most often on the lingual surface (33%), followed by facial (22%), distal (22%), mesial (14%), and occlusal (9%). Of all tooth surfaces analyzed, 10% of lingual surfaces had a crack, followed by facial (7%), distal (7%), mesial (4%), and occlusal (3%). When a tooth was restored, the number of restored surfaces was 1(20%), 2(20%), 3(12%), 4(6%), and 5(32%). The odds ratio of a crack in a tooth by restoration type versus no restoration were: amalgam (7.7, i.e., a tooth with an amalgam restoration was 7.7 times more likely to have a crack than a tooth with no restoration), composite (4.0), ceramic (0.42), and gold (0.34). The reason for the teeth restored with ceramic (which included PFM restorations) or gold having less chance of exhibiting a crack versus a tooth with no restoration was most likely due to these teeth being restored with crowns. A tooth exhibiting moderate wear was 1.8 times and a tooth with severe wear was 2.2 times more likely to have a crack than a tooth with no wear.

Conclusions: Restored and worn teeth had cracks more often than non-restored and non-worn teeth. While no cause and effect relationship can be inferred from these results, teeth restored with amalgam and composite had a significantly higher incidence of cracks than teeth with no restorations.

Presentation/Publication: This study has been accepted for presentation at the March 2007 annual meeting of the International Association for Dental Research and it will be submitted for full-length publication to appropriate journals.

Costs: Research is expensive. This was a simple study, expenses were limited, and no salary support or investigator reimbursement was provided. Despite this, the study still incurred costs of \$6,770 (printing, data scanning, statistical analysis, etc.) which was absorbed by PROH. This is a great example of how important it is for PROH studies to obtain outside funding sources.

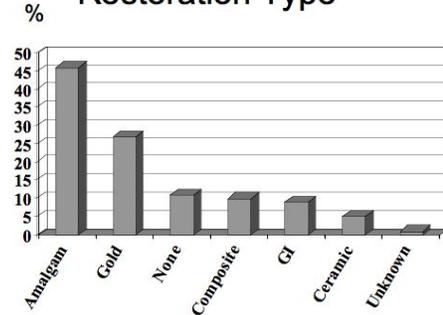
The following dentists and their staff participated in the Cracked Tooth Survey:

Kinley Adams, D.M.D.
Alan Anderson, D.D.S.
Gregory Atack, D.M.D.
Margaret Boone, D.M.D.
Claire Campbell, D.M.D.
John Chirgwin, D.M.D.
Tim Eilers, D.M.D.
Barry Evans, D.M.D.
Katherine Farrell, D.M.D.
Gary Genzer, D.M.D.
Robert Grew, D.M.D.
Gary Haight, D.M.D.
Lillian Harewood, D.M.D.
Brock Herriges, D.M.D.
Steven Hokett, D.D.S.
Fay Gyapong Holman, D.M.D.
Mark Jensen, D.M.D.
Richard Knight, D.M.D.
Dan Laizure, D.M.D.
Walter Manning, D.M.D.
Bradley Marineau, D.M.D.
Jean Martin, D.D.S., M.P.H.
Melvin Matsuda, D.D.S.
John McComb, D.M.D.
George McCully, D.M.D.
Steven Murata, D.M.D.
Michael Naughton, D.M.D.
Richard Naughton, D.D.S.
Scott Nicholson, D.M.D.
Jill Price, D.M.D.
Robert Rose, D.M.D.
Eugene Sakai, D.M.D.
Mehdi Salari, D.M.D.
Shane Samy, D.M.D.
Daniel Saucy, D.M.D.
Ronald Selis, D.M.D.
Steve Simmons, D.M.D.
Ryan Sparks, D.M.D.
Frances Sunseri, D.M.D.
Steven Timm, D.M.D.
Scott Travelstead, D.M.D.
Ronald Trotman, D.M.D.
Sue Walker, D.M.D.
Tom Walker, D.M.D.
Albert Wedam, D.M.D.
Karen Weliky, D.M.D.
Kimberly Wright, D.M.D.
Lynn Yu, D.D.S., Ph.D.

Results

- Patient demographics:
 - Mean age: 49 ± 16
 - Male: 44%, Female: 56%
 - Total valid surveys: 1,962
 - Total teeth analyzed: 14,346
 - Total sensitive teeth: 192
 - Total dentists who participated: 48

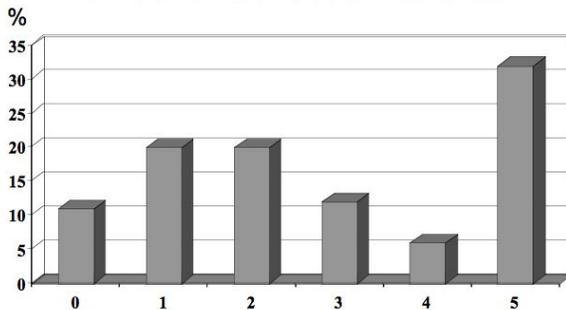
Results Restoration Type



Note: Percentage of study teeth with NO restorations = 11%

Results

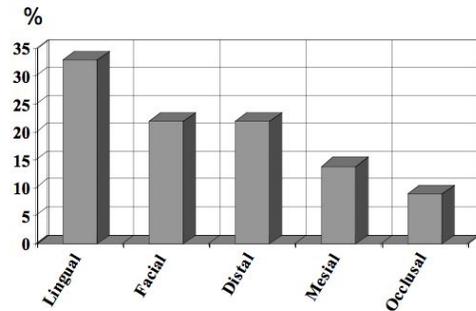
Number of Surfaces Restored



The percentage of teeth with the noted number of surfaces restored.

Results

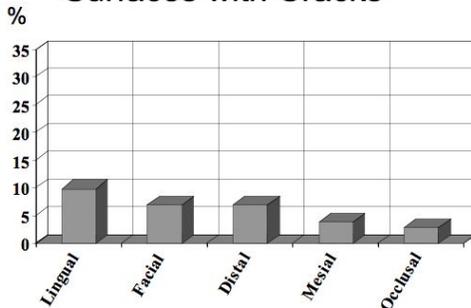
Surfaces with Cracks



When a tooth had a crack, on what surface did it occur?

Results

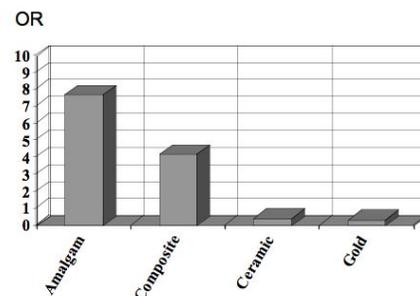
Surfaces with Cracks



What percentage of the time did a particular surface have a crack?

Results

Odds Ratio (OR): Risk of Crack by Restoration Type (vs. No restoration)

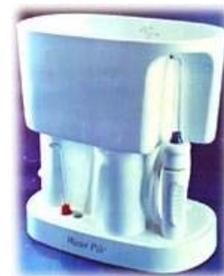


NB: This does not imply a **cause and effect** relationship, i.e. because there is a higher risk of cracks in teeth with amalgam restorations, it does **not** mean that amalgam caused the cracks. The cracks could be due to preparation factors, undermined tooth structure, residual or secondary caries, etc.

Rowpar, Inc.: Let the Study Begin!

At long last, the study supplies for the Closys II/WaterPik periodontal pocket irrigant have arrived! On board to conduct this study are the practices of Kimberly Wright, D.M.D., Lillian Harewood, D.M.D., Gene Sakai, D.M.D., Tom Walker, D.M.D., and Greg Atack, D.M.D. Although a few of the practice personnel were trained last year (and prior to delays in the study start date) we are now finalizing the practice training.

Assisting Theresa Madden, D.D.S., Ph.D., will be Rose McPharlin, D.D.S., newly hired by the OHSU Department of Restorative Dentistry. During this five-week study protocol, patients with a few deep periodontal pockets will be enrolled for in-office and home subgingival delivery of the test antibacterial rinse. Clinical measurements will be taken for the following variables: bleeding on probing, a gingival index, a plaque index, probing depth, clinical attachment level and subgingival plaque sample/microbial activity. Will ClosysII significantly improve clinical periodontal measures and reduce pathogenic subgingival bacteria? Let's find out!



Upcoming Studies

	3M Temporary Crowns	Premise Posterior Composites
Purpose	To clinically evaluate a new temporary crown material.	To clinically evaluate Premise composite (Kerr) in Class 1 and 2 restorations over 24 months
Practice Requirements	10 PROH practices Each must complete 10 temporary crowns in 1 month.	5 PROH practices Each must complete 10 Class 1 or Class 2 composites in approx. 1 month.
Patient Requirements	>18 years old Require a full crown on a posterior tooth in occlusion with at least 1 proximal contact.	>18 years old Require a posterior composite restoration on a permanent tooth in occlusion with at least one proximal contact.
Data Acquisition	Both at time of temporary and permanent crown placement, temporary crown will be evaluated for sensitivity, plaque and gingival index, surface color and smoothness, anatomic form and marginal integrity. At time of placement, ease of placement will be evaluated compared to the dentist's normal technique.	Data collection will be done at three time points: baseline (2-3 weeks after restoration placement), one and two years. Each restoration will be evaluated for sensitivity, marginal staining and integrity, surface color and smoothness, color match, and anatomic form. A PVS impression and a digital photo will be taken of restoration at each time period.
Time Commitment	Time in operatory for procedure itself will increase minimally.	Time in operatory for procedure itself will increase minimally.
Study Supplies	All study supplies will be provided, including temporary crowns and temporary cement. 3M/ESPE will donate a Freelight 2 LED curing light to each practice.	All study supplies will be provided, including composite, adhesive, and PVS impression material. Kerr will donate a Demetron 501 curing light to each practice.
Patient Compensation	\$25 to be applied to crown fee	\$75 to be paid incrementally at recall appointments.
Practice Compensation	\$250/temporary crown	Approximately \$425/ restoration

Contact PROH	Online Training	Notes
<p>Thomas J. Hilton, D.M.D., M.S. PROH Director 503.494.8672 hiltont@ohsu.edu</p> <p>Jack L. Ferracane, Ph.D. PROH Investigator 503.494.4327 ferracan@ohsu.edu</p> <p>Theresa E. Madden, D.D.S., Ph.D. PROH Investigator 503.494.0558 maddent@ohsu.edu</p> <p>Cindy G. Barnes, B.S.D.H., M.B.A. PROH Network Manager 503.418.1410 barnesc@ohsu.edu</p>	<p>For those of you who have not yet completed the online HIPAA and Responsible Conduct of Research training, you can access both at: http://www.ohsu.edu/cc/ed/bb/</p> <p>Once at the Web site, you will need to register if you haven't done so already. Use the "Non-OHSU Researcher or Collaborator" option and enter "SOD PROH Network" in the "Description of Affiliation" box.</p> <p>The two courses you need to take are:</p> <ul style="list-style-type: none"> • HIPAA-Privacy and You • RCR Involving Human Subjects. <p>For step-by-step instructions, contact Cindy at 503.418.1410 or barnesc@ohsu.edu.</p>	<ul style="list-style-type: none"> • We continue to need extracted teeth for use in various laboratory studies. Please contact Cindy at 503.418.1410 for details. Thanks to all of you who have already sent us teeth and for referrals to other dentists (e.g., oral surgeons). • PROH once again plans to have a courtesy booth at the Oregon Dental Association conference, April 12-14. Stop by and let us know what you would like to see in future issues of the PROH Newsletter! • Submit your favorite seasonal photo – digital photos preferred! – to be used on the front cover of an upcoming PROH Newsletter.



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Newsletter of the Practice-based Research in Oral Health network

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