



NEWSLETTER

VOL. 21, NO. 2



Back row from left to right:

Hans Stasiuk, Jeffrey Hoy, Howard Salob, Whitney Johnson, Michael Engel.

Front row: **Leslie Rye, Brett Dorney, Regan Moore.**

Photo taken at the 2005 Annual Symposium Recognition Luncheon.

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Academy for Sports Dentistry 2005-2006 OFFICERS AND DIRECTORS

PRESIDENT

Brett Dorney, BDS
P.O. Box 5
Pymble, NSW
Australia 2073
OFF: 61-2-91488755
FAX: 61-2-94887317
Email: bdorney@bigpond.com

PRESIDENT ELECT

Leslie Rye, DDS
1800 Michael Faraday Dr. #205
Reston, VA 20190
OFF: 703.437.8886
FAX: 703.435.4840
Email: leslierye2th@aol.com

SECRETARY

Whitney R. Johnson, DDS
2999 Regent Street, Suite 727
Berkeley, CA 94705
OFF: 510.845.3295
FAX: 510.845.7336
Email: berkeleyDDS@msn.com

TREASURER

Daniel G. Lysne, DDS
1322 S. 23rd Street
 Fargo, ND 58103
OFF: 701.232.3323
FAX: 701.293.9425
Email: Lyzdog@netzero.com

IMMEDIATE

PAST PRESIDENT

Alex M. Della Bella, DMD
7835 Remington Road
Cincinnati, OH 45242
OFF: 513.793.1977
FAX: 513.793.1943
Email:
DellaBella@wdbdentalhealth.com

ONE YEAR

BOARD MEMBER

Regan L. Moore, DDS, MSD
Univ. of Louisville
School of Dentistry
Louisville, KY 40292
OFF: 502.852.1290
FAX: 502.852.1317
Email: rlmoor03@gwise.louisville.edu

Howard S. Salob, DDS
10484 Campus Way South
Upper Marlboro, MD 20774
OFF: 301.350.0222
FAX: 301.350.1514
Email: sportsdent@comcast.net

TWO YEAR

BOARD MEMBER

Hans Stasiuk, DMD
Box 836
Portage La Prairie, MB
Canada R1W 3C3
OFF: 204.857.5041
FAX: 204.239.4777
Email: drhans@mb.sympatico.ca

Michael Engel, DMD
1318 Ashley River Road
Charleston, SC 29407
OFF: 843.571.3560
FAX: 843.571.3144
Email: capncrown@aol.com

THREE YEAR

BOARD MEMBER

Jeffrey Hoy, DDS
3440 W. Lomita Blvd., Ste. 340
Torrance, CA 90505
OFF: 310.326.7421
FAX: 310.326.2324

Gloria J. Roberts, DDS
12611 Antioch Road
Overland, KS 66213-1701
OFF: 913.685.9111
FAX: 913.685.8486
Email: groberts@gracedental.com

ADA LIAISON

Mr. John Klyop
ADA
211 East Chicago Ave.
Chicago, IL 60611-2678
OFF: 312.440.2751
FAX: 312.440.4640
Email: klyopj@ada.org

HISTORIAN EMERITUS

Dr. Arthur Wood
1271 Walden Circle, #407
Mississauga, Ontario
Canada L5J 4R4

EXECUTIVE SECRETARY

Ms. Shelly Lott
Meetings Accomplished
118 Faye St.
P.O. Box 364
Farmersville, IL 62533
OFF: 800.273.1788
OFF: 217.227.3431
FAX: 217.227.3438
Email:
sportsdentistry@consolidated.net

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The Academy for Sports Dentistry Newsletter is published tri-annually for its members. Comments and suggestions regarding the newsletter should be directed to Dr. Mark Roettger, Editor.

EDITOR

Mark Roettger, DDS
1940 Greeley St. So., Ste. 105
Stillwater, MN 55082
OFF: 651.430.1710
Fax: 651.430.8074
Email: roett003@tc.umn.edu

MANAGING EDITOR

Mary Byers
315 Bristol Rd.
Chatham, IL 62629
OFF: 217.483.8836
FAX: 217.483.4161
Email: mbyers@insightbb.com

ACADEMY E-MAIL:
sportsdentistry@consolidated.net
ACADEMY WEBSITE:
www.sportsdentistry-asd.org



A bright future for Sports Dentistry

Dr. Brett Dorney BDS, FRACDS, FASD

At the annual meeting of the Academy for Sports Dentistry in Miami in June 2005, Dr. Alex Della Bella moved from the position of President to immediate past President. Dr. Della Bella was the President of the Academy for Sports Dentistry for the past 2 years. During those 2 years Dr. Della Bella faced numerous difficulties and challenges. He has left the Academy for Sports Dentistry in a position of strength, with a new web site, positive student affiliations, and strong association with many international sporting bodies. The Academy for Sports Dentistry owes Dr. Della Bella a huge vote of thanks for his dedication and skill in listening to, then negotiating with, the numerous groups who proposed changes to the direction the ASD had taken with its 5 year strategic plan.

I am very honored to take over as President of the Academy for Sports Dentistry and follow in the footsteps of many of the leaders in sports dentistry whose names are recorded as past Presidents, honorary Fellows and Fellows of the Academy for Sports Dentistry.

Like many members of the Academy for Sports Dentistry, my association with the ASD began with a quest for knowledge and a desire to contact other like-minded sports dentists around the world. Today in the United States, and certainly in Australia, sports dentistry is recognized as a legitimate part of the sports medicine world. Time and time again I remember a quote from my sister, a physician specializing in microbiology, "To the medical profession, the mouth is a black hole!" There is no doubt that the treatment of dental injuries and related facial injuries is a specialized area and our role as sports physicians specializing in the oral cavity allows us to take these challenges and assist our sports medicine colleagues.

The highlight of any year for the Academy for Sports Dentistry is our annual meeting. At that meeting our members gather from around the world to listen to the excellent array of speeches, to renew friendships, and to exchange information on the challenges they have faced in the last 12 months. In June 2006 the annual meeting will be held at Santa Monica, Los Angeles, CA. Dr. Jeffrey Hoy is in charge of this meeting and is well known for his involvement with the sporting teams of Los Angeles. An exciting meeting is being prepared with new areas of sports

Dentistry being reviewed to stimulate our members and attract new members. The "Team Dentist" course will also return in a new format and occupy the first day of the Santa Monica meeting.

Sports dentists play a large role within our community. Our mission statement is clear: that we are there to prevent and treat dental facial athletic injuries. We are now playing a much larger role in helping the community to take the challenge of continuing physical activity through life. The evidence is accumulating that physical activity plays a crucial role in the prevention and management of a range of chronic diseases. The challenge of physical activity begins with young people and our role is to encourage and make sure when they play sports they are properly protected, will realize the benefits of participation and continue on with this challenge throughout their life. Despite all the knowledge that is known about the benefits of physical activity, only about half the adult population in Australia is sufficiently active for health benefit and 15% of all Australians are completely sedentary. Unfortunately, physical inactivity and corresponding levels of overweight and obesity are increasing dramatically in Australia which is now recorded as one of the



highest in the developed world. Unfortunately this problem is getting worse with a documented decrease in population levels of physical activity.

Reviewed scientific literature published between 2000 and 2003 looking at all causes of mortality from cardio vascular disease, diabetes, stroke, mental health, then reviewing falls, injuries and obesity, reinforces the evidence that regular moderate physical activity is important, particularly for cardio vascular and metabolic benefits. There is also strong evidence that physical activity can prevent the onset of type II diabetes from people who are already at risk and new evidence looking at the role of physical activity in the prevention of colon and breast cancer.

The evidence suggests that a single focus on schools, where children are to some extent a captive audience, is not as effective as strategies which combine school initiatives with family and community based strategies.

Reversing the current trend of decline in physical activity levels will require sustained and integrated efforts from policy makers and practitioners in a wide range of sectors, like health education, transportation, local government and age care. So this is another role we can fulfill as sports dentists, being part of the community thrust to make sure people are aware of the benefits of physical activity.

New information on physical activity and our role illustrates the dynamic nature of being involved in sport. As sports physicians we deal

with the wide diversity of our community mainly through our private practices but many of us through University connections, where we had the opportunity to champion the cause of sports dentistry. Unfortunately, in many undergraduate and graduate institutions, sports dentistry receives token acknowledgment and the critical role that we can play in treating dental/facial sporting injuries is not known by the young graduates.

The Australian Dental Congress in Adelaide, April 2005, looked at the epidemiological studies of Dental treatment needs within the community. One of the facts that stood out, was in general practice, 3% of your practice will be treated for trauma related injuries within one year. In our practice this statistic has been verified with at least one person per week attending for traumatic dental/facial injuries. The need to have the latest information to treat injuries reinforces the value of investing in a new, interactive, well-linked website, and the value of attending our annual meeting where the latest treatments will be available. As well, fellow practitioners can advise and assist each other from their experience gained over many years of involvement with sports dentistry.

It is another exciting year coming up and I am honored undertaking the role of President, but in that role I know I am part of a team who will put the best interests of the Academy and the sporting community first as we progress through 2005 and 2006.

Dr. Brett Dorney BDS, FRACDS, FASD
Email: bdorney@bigpond.com

Oral Cancer

FACTS AND FIGURES

- 95% of all head and neck cancers are squamous cell carcinoma
- Head and neck squamous cell carcinoma (HNSCC) is an aggressive malignancy that is the 6th most common malignancy in the world today.
- 40,000 new cases in the U.S. and 500,000 new cases of HNSCC worldwide are diagnosed each year.
- Long term survival for HNSCC has remained less than 50% for the last 50 years. This poor outlook is due to a number of factors. Most oral cancers are diagnosed in late stages. Early stage diagnosis results in an 80% 5 year survival rate, while late stage diagnosis results in a 19% 5 year survival.
- Early diagnosis is the key to long term survival of oral cancer patients.

Robbins and Cotran, Pathologic Basis of Disease 7th edition, 2005



EDITORIAL

To Replant or Not To Replant

By Mark Roettger, DDS, FASD

It's 7:00 PM Thursday evening, your cell phone rings, and on the other end of the line is a distraught mother who tells you that her 8 year old son has just had his front tooth knocked out in a baseball game. Upon further questioning you find out that everyone was too timid to replant the tooth at the scene, and it took them about 15 minutes to locate some milk. The tooth has now been in milk for another 15 minutes and you are 20 minutes from your office. What do you tell this mother? What is the best treatment for this patient? You are an ASD member and are expected to be knowledgeable in this area, but what do you really know regarding the science supporting what you are about to do? ASD members, we have a controversy brewing here, and we can't afford to ignore it.

Numerous guidelines and treatment protocols have been published by individuals and organizations, but are they giving us the best information available? On one side of the issue we have a group who would have us believe that it doesn't matter what has happened to the avulsed tooth as long as it is soaked in Hank's Balanced Salt Solution (HBSS), it can be replanted with a high expectation of success. On the other hand we have a group telling us that if a tooth has been dry for over 5 minutes following avulsion the chance for success is virtually zero. Still other experts' ideas reside somewhere in the middle. What is a sports dentist to do? Well, when in doubt, turn to science.



This forum will not attempt to answer the question at hand but only point out the need for the attention of academy members.

It is rather romantic to believe in a magic solution that could "reconstitute" PDL cells and make replantation a foolproof procedure. If cells could be reconstituted, this would be a very important concept in cell biology. Review of *The Dictionary of Cell and Molecular Biology*, Academic Press, 2003,

shows no mention of the words reconstitute or recondition. This could be a hint that this process does not occur when we soak dried PDL cells in HBSS. Conversely we know that desiccation affects all kinds of cells and it is not surprising that PDL cells would be affected by this process. Let's look at what we know and formulate realistic guidelines and protocols for the treatment of avulsion.

This is an oversimplification of the issue of replantation, but it begs our attention in the ASD. Research will show us our answers; we just have to look for them. The ASD should sponsor a panel at our next symposium to address this issue. We need to have experts from all sides of this issue come together and begin to hammer this out. Only through open discussion will we have a chance to solve this problem. We need science to tell us what to do when we get that phone call; "My 8 year old son just got his tooth knocked out in a baseball game..."

Annual Symposium SNAPSHOTS

SPECIAL THANKS TO ASD MEMBER DR. MICHAEL KURTZ FOR SUBMITTING THESE PHOTOS
FROM THE ANNUAL SYMPOSIUM JUNE 23-25, 2005 IN MIAMI, FLORIDA



Unmuban Tozoglu and Sinan Tozoglu from Turkey.



Brett Dorney, President (R), presents Alex Della Bella (L), Immediate Past president with a plaque for his service as president over the last two years.



Surendra Rampersad from Trinidad, West Indies



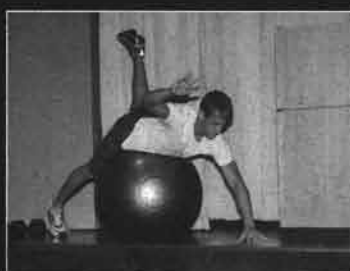
Dr. John Stenger (center), winner of the Distinguished Member Award, with his wife, Melvena (L) and daughter Mary Beth Brown (R).



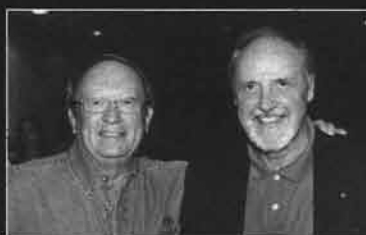
(L to R): Dan Lysne, Julie Lysne, Hans Stasiuk, Mike Engel, and Whitney Johnson.



Back row Leslie Rye, Mark Roettger, Enrique Amy; Front Row Ana Canal and Steve Mills, enjoying a drink at the Fellow Reception on Wednesday.



Bill Foran, the strength and conditioning coach from the Miami Heat, used live demonstration during his presentation.



Jack Winters and Regan Moore (L to R)



Hans Stasiuk Talking with Cori Hale from Glidewell Direct during the exhibit time.

New Members

Cecilia S. Ashton, DDS
Laurel, MD USA

BonaDent Dental Laboratory
West Melbourne, FL USA

Joseph P. Crowley, DDS
Cincinnati, OH USA

Danielle Greene, DDS
Atlanta, GA USA

Roger Hess, DDS
Lyndhurst, OH USA

Ty King, DDS
Rogers, AR USA

Alan D. Lucas, DMD
Hattiesburg, MS USA

Paul Mitsch, DMD
Augusta, KS USA

Barry R. Portnoy, DMD
Westboro, MA USA

Brent Robinson, DDS
Lynnwood, WA USA

Dennis Stiles, DDS
Gairthersburg, MD USA

Aldous B. Wilson, DDS
College Park, GA USA

Edward J. Ambis, Jr., DDS
Ithaca, NY USA

Edward E. Bowling, DMD
Vienna, VA USA

Michael P. Gibbons, DDS
Chicago, IL USA

Xavier J. Gutierrez, DDS
Fresno, CA USA

Steven J. Katz, DDS
Beachwood, OH USA

Jorge E. Landa, DMD
Boston, MA USA

Denise McGrade, DDS
Plano, TX USA

Miriam Perdomo, DMD
Madison, AL USA

Kurt N. Richeson, DDS
Culver, IN USA

Richard Salko, DMD
Jacksonville, FL USA

Jeremy C. Wiggins, DDS
Lewiston, ID USA

Lee D. Zuidema, DDS
Kentwood, MI USA



SAVE THE DATE!
ASD 2006 Annual Symposium
June 22-24, 2006
Loews Santa Monica Beach Hotel
1700 Ocean Avenue ~ Santa Monica, California

ORAL PRESENTATIONS

These oral presentations were given at the 2005 ASD Annual Symposium in Miami, Florida.

Photocured Thermoset Thiol-Enes for Sports Dental Applications

Gould TE*, Piland SG, Cole MC, Hoyle CE, Nazarenko SI, Wei H, Phillips BE, Fos PJ (The University of Southern Mississippi, Hattiesburg, MS)

Purpose: The use of light cured thin section unfilled composite resin materials is common practice in dentistry. The purpose of the current investigation is to develop the method for photocuring thick section thiol-ene systems and test the physical and mechanical properties for use in sport dental applications (e.g., impact resistant mouthguards).

Methods: We combined multifunctional thiol and ene monomers to develop formulations that can be photocured to yield materials with an incredible range of physical and mechanical properties far exceeding those of cured methacrylates. Processing protocols have been developed using low intensity lamps.

Properties of the cured, crosslinked thermosets were evaluated by dynamic mechanical analysis and impact tests.

Results: The glass transitions of the thick thermoset thiol-enes were all narrow indicating that the materials have extremely uniform crosslink density. High energy storage upon impact leads to restitution values of up to 0.9 and 0.6 for rubber and glass thermosets respectively. Several particularly unique samples were highly energy dissipating according to impact analysis with restitutions of less than 0.05.

Conclusion: Our results suggest that the novel thiol-ene based thermoset materials are crosslinked and do not lose their shape upon exposure to high impact stresses. Such materials have tremendous potential to exceed the current standards (Academy for Sports Dentistry, American Society for Testing and Materials, and Standards Australia International) for athletic mouthguard materials. Further investigation into the complete mechanical properties of these thiol-ene thermosets and their potential applications for use as mouthguard materials is warranted.

Factors Influencing Mouthguard Thinning.

Del Rossi, G* and Leyte-Vidal, MA # (*University of Miami, Department of Exercise and Sport Sciences, Coral Gables, FL; #University of Miami, Team Dentist, Coral Gables, FL)

Purpose: The purpose of this study was to evaluate the contribution that various dimensional characteristics of the dental arch and the height of the stone model would have on mouthguard thinning.

Methods: Fifteen subjects participated in this investigation. Alginate impressions from each subject were used to produce three replicas of the maxillary dentition with only the height of the base varying amongst them. The total height of the three models were 20, 25, and 30 mm. A single mouthguard was produced using each of the stone models. The material thickness of the mouthguard was assessed at the

labial and occlusal surfaces. Additionally, the dimensions of the stone models were documented. Pearson product moment correlation coefficients were calculated to determine the linear relationship between material thickness and 1) the height of the stone models, 2) the arch length, and 3) the area covered by the stone model.

Results: Statistical tests performed using the mean thickness values collected from the incisors and canines revealed a high negative correlation between the height of the stone model and material thickness ($r = -.82$). In addition, a low to moderate positive linear correlation was noted between arch length and occlusal thickness at the molars ($r = .57$) and between the area of the stone model with the occlusal thickness ($r = .49$).

Conclusions: The results of the present study indicate that the height of the model used to fabricate custom mouthguards should be kept as low as possible but still allow for the production of a properly fitting mouthguard.