

SPORTS DENTISTRY NEWSLETTER



Academy for Sports Dentistry

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FIFTH SYMPOSIUM HELD IN IOWA CITY

The Fifth Symposium on Sports Dentistry was held June 13 and 14 at the University of Iowa. Additionally, a presymposium course was held on the fabrication of mouthguards on June 12. Following an introduction and welcome by Dr. William Olin; Dr. John Albright, an orthopedic surgeon, discussed head and neck injuries in college football. The most remarkable statistic was that many athletes demonstrate radiographic evidence of neck injuries prior to entering college. The use of screening radiographs show that many neck injuries may be unreported.

Dr. John Hildebrandt, an oral and maxillofacial surgeon, from Colorado Springs discussed his work with olympic boxers. His method of fabricating boxing mouthguards was demonstrated as well as an outline of the sport itself. The differences between amateur and professional boxing was stressed. These were that in amateur boxing the object is to score points, and not necessarily to injure the opponent.

Injuries to the eyes, maxilla, and mandible, were outlined by Drs. Ronald Keech, Bruce Gantz, and Kenneth Kempf respectively. The immediate treatment of injuries, as well as the definitive treatment and complications were outlined.

Dr. Sandra Madison discussed traumatic injuries to the dentition. Here various dental injuries were presented with appropriate treatment. Dr. Madison also offered many helpful techniques in dealing with the stabilization and restoration of fractured teeth.

The MORA appliance was discussed by Dr. Gary DiStefano. Gary related his experience with the MORA and his technique for its fabrication.

Dr. Donald Peterson presented his method of mass production of custom fitted mouthguards. The system that Dr. Peterson uses has been employed in the Ann Arbor area for over 20 years. In that community the mouthguards are fabricated for several schools in two days. The organization and cooperation are most impressive.

On Saturday June 14, Dr William Heintz opened the discussion by pointing out recent developments and ramifications of mouth protection in athletics. The video tape entitled "Preserving Tomorrows Smiles" was presented by Dr. Robert Morrow. It was also noted that this tape can be rented from the academy.

A presentation on the Iowa City Schools mouth protection program was presented by Mr. Robert White, and Mr. Edward Crowley presented Dental Care at the University of Iowa.

Dr. Christopher Squire discussed the effects of smokeless tobacco. Here the pathologic changes were shown in great detail as well as some rather alarming statistics.

The four papers presented were A MORA Alternative: The Bicuspid Buildup, by Dr. Walter Niemann. In-House Marketing Program for Intraoral Protective appliances, by Dr. Kieth Stillwell. Mouthguard Protection for Athletes Involved in Boxing, Dr. J. T. Boulton. An effecient Method for Determining Customized Vertical Dimension for Fabricating TMJ Sports Appliances, by Dr. Dan Bida.

The next Sports Dentistry Symposium is scheduled for June 1987 in Los Angeles.

REFLECTIONS ON THE SYMPOSIUM

THE FIFTH ANNUAL SYMPOSIUM ON SPORTS DENTISTRY WAS HELD LAST JUNE IN IOWA CITY. I FOUND THAT THE CAMPUS WAS QUITE MODERN AND BEAUTIFUL. NOT AT ALL THE WAY MICHIGAN STATE FANS DESCRIBE THE CAMPUS. I NOTED THAT THE DISCUSSIONS APPEAR TO BE MORE SOPHISTICATED THAN AT THE FIRST SYMPOSIUM. THERE IS LESS POLARITY IN THE DISCUSSIONS OF THE MORA. THIS WOULD TEND TO INDICATE THAT PERHAPS OUR DATA GATHERING IS LEADING TO SOME SCIENTIFIC CONCLUSIONS. ALTHOUGH THERE IS NO SPECIFIC DATA THAT CONFIRMS A BENEFICIAL EFFECT FROM THE MORA, MANY CLINICIANS ARE USING THEM TO SOME DEGREE OF SUCCESS.

I FEEL THAT FUTURE SYMPOSIA MAY UNLOCK SOME OF THE MYSTERIES OF THIS APPLIANCE. THE RATE OF INFORMATION GROWTH IN THE FIELD OF MEDICINE IS REMARKABLE. WE CAN SEE THAT IN DENTISTRY THE ADVANCES MADE IN THE PAST TEN YEARS ARE ASTOUNDING. APPLYING THESE ADVANCES TO SPORTS DENTISTRY, WE CAN EXPECT TO SEE SOME SIGNIFICANT CHANGES IN THE FUTURE. ONE AREA THAT I AM CLOSE TO IS THE TMJ. IN THE TEN YEARS THAT I HAVE BEEN IN THE SPECIALTY OF ORAL SURGERY, THE ABILITY TO DIAGNOSE AND SURGICALLY TREAT THE TMJ HAS IMPROVED TREMENDOUSLY. AT THIS POINT WE ARE BEGINING TO PERFORM ARTHROSCOPIC EXAMINATIONS OF THE TMJ. THE POINT IS THAT IN THE FUTURE WE MAY FIND THAT CERTAIN SPORTS MAY BE MORE INJURIOUS TO THE JOINT.

THERE ARE ALSO ADVANCES IN THE FIELD OF PHYSICAL THERAPY. THE TRAINERS AND PHYSICAL THERAPISTS HAVE TECHNIQUES AND EQUIPMENT THAT ARE VERY EFFECTIVE IN TREATING PAIN IN THE HEAD AND NECK. TO BE AN EFFECTIVE TEAM DENTIST ONE MUST TAKE THE TIME TO BE AWARE OF WHAT IS GOING ON IN OTHER DISCIPLINES. ANY DENTAL ASSISTANT CAN MAKE A DECENT MOUTHGUARD. WE HAVE TO BE OF SERVICE TO THE ATHLETE BY POSSESSING THE KNOWLEDGE TO BE ABLE TO INTERACT WITH THE PHYSICIAN, TRAINER, AND PHYSICAL THERAPIST. BY DEMONSTRATING THAT WE ARE ADEPT IN DIAGNOSING DENTAL, TMJ, AND HEAD AND NECK PROBLEMS WE WILL BE IMPORTANT MEMBERS OF THE MEDICAL TEAM, NOT JUST MOUTHGUARD TECHNICIANS.

NEW CONCEPT IN ABRASION RESISTANT MOUTH GUARDS

Richard M. Koppel, D.D.S., F.A.G.D.

Mouth guards may afford protection against concussions and neck injuries as well as protection of the teeth. Statistical results have indicated that the incidence of both bone and intracranial pressure were reduced when mouth guards were in place.

There are three basic types of mouth guards:

Stock mouthguards are made to be used in any mouth without alteration. They are made of resilient plastic. They are inexpensive and they may be prefabricated in various sizes.

Mouth formed mouthguards have a firm outer layer which supports a softer moldable layer. There are two types; the first of which is the thermoset. Here the material is softened with hot water and placed in the mouth where it adapts to the teeth. The second is the chemoset where the material is mixed and adapted to the teeth. The stock and mouth formed mouthguards have more bulk than is desired, which minimizes retention, comfort, and speech.

The custom type mouthguards are fabricated over a model of the mouth. Plastic resins such as polyvinylacetate-ethylene copolymer (PVAc-PE), polyvinyl chloride (PVC), natural rubber, polyurethane, and soft acrylic are used. These are either vacuum adapted or laboratory processed. Duplicate mouthguards can be fabricated from the same model in case of loss or wear.

ABRAISION RESISTANCE TECHNIQUE: THE KOPPEL COPING

The wear resistant technique reduces abrasion and eliminates the necessity of remakes.

Materials and Methods

The material used for the maxillary protector was PVAc-pe made by Buffalo Dental Manufacturing Co., Inc. mouth guard material item no. 62700. The method to reduce cusp friction is to place a thin skin of plastic over the mandibular teeth. The mandibular plastic must be extremely thin, durable, and retentive. The coping material was obtained

from the Ellman International Manufacturing Company of Hewlett, N.Y. An Ellman press form was used to fabricate the plastic mandibular skin. The Ellman press form kit was used.

My technique utilized an Omnivac machine. The material described is .020" thick and 5"x5" opaque sheets. The mandibular model is prepared by inscribing a 0.5mm groove into the stone cast at the cervical line. The material is molded on the mandibular model and festooned at the gingival margins, covering all of the teeth opposing the maxillary protector.

The technique utilizes an Omnivac machine to process the coping material on a stone model sprayed with Omnilube Silicone Spray.

1. Permit the silicone spray to dry.
2. The model must be horseshoe shaped and as flat as possible to reduce undercut areas.
3. The coping material is placed in the machine and the heating unit is turned on.
4. Once the material has drooped approximately 1.25", the material is vacuumed over the model.
5. With a #12 scalpel blade, cut the material along the gingival boarder.
6. Lift the material off the model carefully, lifting all of the sections simultaneously.
7. Place the material in water immediately. If it is allowed to dry it may warp.
8. Redefine the boarders with a fine curved shear and smooth the rough edges with a Shofu fine flame shaped white stone on a high speed hand-piece.
9. Demonstrate the insertion and removal to the athlete. Instruct the athlete to keep the coping in a denture bath in a solution of hydrogen peroxide 3%. No tooth brushing is

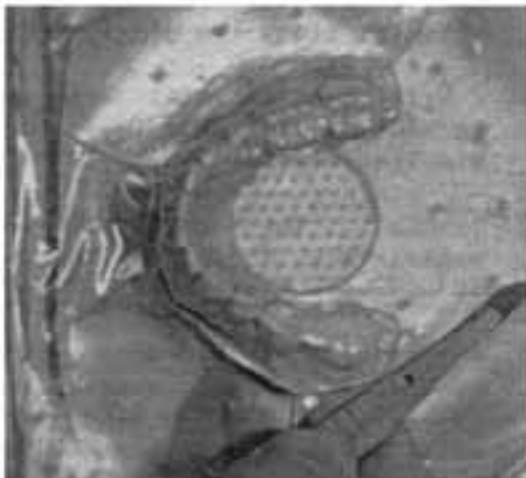
necessary, just rinse and wear. The solution should be changed once per week.

CONCLUSION

To date I know of none that have worn through. The coping occupies a very small vertical dimension of 1mm at the first molar region. The appliance has gained wide patient acceptance because it occupies little space, is not detectable to others, and the material is smooth and comfortable.

SUMMARY

The need for an occlusal protective device is well founded on an abundance of clinical experience. The types of mouth protectors and preferences have been discussed. The latest addition to mouth guard protection is the "Koppel Coping", to be worn on the mandibular teeth to reduce wear of the mouth protector. The need for remaking occlusal protectors is diminished. Further exploration is necessary to determine whether this appliance will aid in reducing destructive forces to the dentition and cranium.



HERE THE COPING MATERIAL HAS BEEN VACUUMED OVER THE MODEL AND WILL NOW BE TRIMMED.

NEWS

Dental Resources introduces orange mouthguard material.

The Minneapolis based company has offered orange mouthguard material this fall. This is being tried as a test of colored mouthguard acceptance. According to Dental Resources more colors could be available in the future should there be a demand. Additionally, Dental Resources has produced a slide series on marketing custom fabricated mouth protectors. This is directed to PTA groups and similar organizations to enlighten the parents of school age athletes on the advantages of custom made mouth protectors in general and the "PRO-FORM" products in particular.



THIS FIGURE DEMONSTRATES THE FINISHED COPING



DR. ARTHUR WOOD POINTS OUT THE PROTECTIVE FEATURES OF A MODERN HOCKEY HELMET



DRS. WILLIAM OLIN AND DON PETERSON



THE UNIVERSITY OF IOWA HEAD BASKETBALL COACH AND DR. SPIRO CHICONAS OUR NEW PRESIDENT



DR. GARY DISTEFANO



DRS. ROBERT MORROW AND WILLIAM HEINTZ



DRS. ROBERT SPEER, SPIRO CHICONAS, AND WILLIAM GODWIN



DR. WILLIAM GODWIN



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MINUTES OF ACADEMY FOR SPORTS DENTISTRY MEETING
JUNE 13, 1986
UNIVERSITY OF IOWA

President William Godwin presided at the business meeting. He opened the meeting by challenging the members present to improve rule compliance in the wearing of mouthguards. Hockey is the one sport which presents the most trouble in getting compliance, followed by basketball. Interest in the MORA led to the forming of the Academy for Sports Dentistry, which is now dedicating itself to more research. He recognized Ellen Wilkinson, who has authored articles on the problems of referee enforcement of wearing of mouthguards. Her most recent article recommends wearing colored mouthguards to make enforcement easier.

Last year the the Congress of Sports Medicine in Indianapolis, the academy had a booth. A taped interview from the meeting was shown.

Dr. Godwin discussed the way to test mouthguard material to check to see if it is being stretched too much. An eyeglass tester used to test lenses has been used to test the function of the material. He recommended that mouthguards not be too thin. A new material from World Dental in Florida is 14 times tougher than old material. No conclusion has yet been reached yet on an optimum thickness.

He described two new pamphlets printed by the American Dental Association, "Smokeless Tobacco" (W190) and "Mouth Protectors: Give Your Teeth a Sporting Chance" (W179). Godwin reminded the audience that the academy has taken a strong stance against smokeless tobacco.

He disucssed how Dr. Dan Bida is using a dynamometer to test the strength of mouthpieces. He described the use of a splint to lessen mouth, neck, and back pain. The splint was successful even though research has not proven if the succes was physiological or psychological. The opening on the splint was established with the use of the dynamometer.

Research on radiation is introduced into the system so that nuclear medicine goes to "hot" spots where pain occurs. The researchers are trying to correlate how rediation affects TMJ problems.

Dr. Godwin also emphasized how mouthpiece programs have to be constantly surveyed to make sure that they maintain high standards.



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He then introduced the past president, Dr. William Heintz, the current vice-president, Dr. Robert Morrow, the incoming president, Dr. Spiro Chaconas, along with the Executive Council: Dr. Art Wood, Dr. Hugh Gardy, Dr. William Olin, and Russell Miller.

Dr. Jim Gallman, Secretary-Treasurer, told the group of the resources available from the academy: a video tape on mouthpiece construction, a new tape on the use of mouthpieces, two slides series for purchase, and a reference list of sports dentistry articles for purchase.

The 1987 Academy for Sports Dentistry meeting will be held in Los Angeles at UCLA, (tentatively scheduled for June 19-20, 1987) and the 1988 meeting will be in Toronto. Dr. Lawrence Kerr made an informal offer of Colorado Springs for a meeting.

The suggestion was made that information be sent to all state athletic associations publicizing the academy.

The 1986-87 officers were introduced: president, Dr. Spiro Chaconas from UCLA; president-elect, Dr. Robert Morrow from UTHSC; vice-president, Dr. Hugh Gardy from New Jersey; and the Executive Council: Dr. William Olin from University of Iowa, Dr. Art Wood from Canada, Russell Miller from the University of Michigan, and Dr. Paul Flynn from the University of Michigan. The slate was approved.

There was no old business. As part of the new business, Dr. Robert Morrow recognized Dr. Jim Gallman for his work as secretary-treasurer and moved that Gallman receive \$500 annual stipend for his work. The motion passed.

The meeting was adjourned.

Jim Gallman, D.D.S.



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1986-1987

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A MESSAGE FROM THE SECRETARY/TREASURER

Some of the past members of our organization have been returning their dues statement stating that they are not receiving the \$35.00 that they invest in dues each year. While I agree that for the past three years, we have been in a state of organization where you probably have not actually received your money's worth back from the Academy, but I point out that because of that organizational state that we are currently in, we have just scratched the surface in what we can do in the future. To paraphrase John Kennedy, "Ask not what your organization can do for you; ask what you can do for your organization!"

I would like to ask the membership to help sign up one member each so that we can actually do what we had planned to do from the beginning:

- 1) Spread the word about mouthprotection so that all sports activities that might result in dental injuries can be protected properly.
- 2) Sponsor research, especially for undergraduate students, in the area of mouthprotection and in the effectiveness of the currently controversial MORA's, or athletic enhancement mouth splints.
- 3) Educate fellow dentists, parents, coaches, trainers, and players in the area of mouthprotection and use of oral tobacco.
- 4) Have the financial capabilities to do what we would like to do as a group.

When you think about it, \$35.00 per year is not much compared to the other things we can buy, and you can take pride in the fact that you have done something for the profession and your community as a whole.

We now have for sale the excellent set of slides that Dr. Chris Squier presented at the University of Iowa on smokeless tobacco. We also have the new video tape for laypersons from The University of Texas at San Antonio entitled "Mouthguards: Protectors of Future Smiles. See the order blank on the last page if you want a set for yourself. It would be an acceptable presentation for anybody--dentists, physicians, parents, coaches, or participants.

If you have not yet paid your dues for 1986, please do so today, and sign up one of your friends for the Academy for Sports Dentistry.

Sincerely,

Jim Gallman, D.D.S.

Jim Gallman, D.D.S.
Secretary/Treasurer



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MEMBERSHIP APPLICATION
THE ACADEMY FOR SPORTS DENTISTRY

Date _____
Name _____
Specialty/Title _____
Office Address _____
City/State/Zip _____
Office Telephone _____

My experience with sports dentistry includes:

Other comments:

Check one:

- DENTIST (\$25 initiation fee and \$35 yearly dues)
 STUDENT (\$10 yearly dues)
 AFFILIATE MEMBER (\$25 yearly dues)

Please fill out entirely and return with the appropriate fee in U.S. Funds to:

Jim Gallman, D.D.S.
Secretary/Treasurer
The Academy for Sports Dentistry
12200 Preston Road
Dallas, TX 75230
phone 214-239-7223



Jim Gallman, D.D.S.
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Dear Academy Member:

If you would like to:

- 1) Borrow the video tape from The University of Texas Dental School (which includes both mouthprotector construction and the new production on "Mouthguards: Protectors of Future Smiles"). Please note that a \$50.00 deposit is required for the video tape. It will be returned to you when you return the tape to us.
- 2) If you would like to purchase the slide sets (including the new one on smokeless tobacco).
- 3) An updated list of sports dentistry references, simply fill out the enclosed order form.

Thank you for your assistance.

ORDER FORM

Date _____

Name _____

Office Address _____

City/State/Zip _____

Please send the following (check one):

_____ video tape of custom fitted mouth protectors in (Circle: beta or VHS) format. I have enclosed a \$50 check which will be returned when I return my tape, and I am enclosing \$8.00 for all mailing costs.

_____ Slide series of sports dentistry. I have enclosed \$45.00 for duplication and mailing fees.

_____ Slide series on smokeless tobacco from Dr. Chris Squier (suitable professionals or laypersons). I have enclosed \$45.00 for duplication and mailing fees

_____ Reference list of sports dentistry articles (over 200 are included). I have enclosed \$15.00 for printing and mailing fees.

_____ Total amount enclosed in U.S. Funds only.

Please fill out entirely and mail this order form to Dr. Jim Gallman at the address given above.