



Dr. Jeffrey S. Wascher • Dr. Eric G. Jackson

Picking up from our last newsletter, let's continue our discussion about dental mouthguards.

Dental Mouthguards: Part 2 of 3

By Eric G. Jackson, DD, MAGD, FICOI, FICD, FADI

Concussions have become one of the hottest topics in modern sports, primarily in football. From the NFL down to Pop Warner, the issue is on the forefront of research and discussion. It should be mentioned that the definition of a concussion according to the Illinois High School Association (IHASA) Concussion Protocol is defined as: "A concussion is a traumatic brain injury that interferes with normal brain function. An athlete does not have to lose consciousness (be "knocked out") to have suffered a concussion."¹ In May 2015 the Illinois High School Association (IHASA) announced new measures to protect student-athletes on the field by creating a Concussion Advisory Council. This group of individuals has been tasked with reviewing student athletic programs and making recommendations for safety improvements. The IHSA also created a website dedicated to concussion education and has called for better partnerships with the medical community when it comes to understanding the effect of concussions.² Among those on the advisory panel is Tregg Duerson, son of former Chicago Bears safety Dave Duerson, who took his own life in 2011. Dave suffered multiple concussions during his playing career and donated his brain to concussion research. Neurologists confirmed he had Chronic Traumatic Encephalopathy, a progressive degenerative disease caused by head injuries.³ Without question, athletes of all skill levels are bigger, stronger, and faster than ever before. Although the technology behind protective equipment is always evolving and improving, it must be used to be effective!!!

"In May 2015 the Illinois High School Association (IHASA) announced new measures to protect student-athletes on the field by creating a Concussion Advisory Council."

It should be noted that all concussion research with regards to dental mouthguards is still theoretical and not proven in the medical/dental literature. The brain is a very difficult organ to study, and one must realize that concussions will likely always occur in collision and contact sports, such as football. Many factors are involved in reducing athletes' vulnerability to concussion, including genetics, anatomy, force of the blows, mass of the players, other equipment and rule changes, playing surfaces, coaching techniques, players being in harm's way when a force is present, and increasing knowledge about what constitutes a concussion.⁴ Though anecdotal, there are three possible theories on the potential benefits of properly-fitting athletic mouthguards and the reduction of the incidence or severity of concussions:

1. Direct Dissipation and/or absorption of force of an upward blow to the jaw
2. Increased separation of the head of the condyle and glenoid fossa
3. Increased head stabilization by activating and strengthening

(Continue on Page 3)

In This Issue

Dental MouthguardsPage 1

President of the Chicago Academy of General Dentistry (AGD)Page 2

D.O.L.L.S. Fastpitch SoftballPage 2

Dr. Jackson Visits KindergartenPage 2

News Bites with LauraPage 3

Summer Word FindPage 6



Things I learned about _____

Harrison you

Dentist clen

fl

KINDERGARTEN

Read more about Dr. Eric's visit to a kindergarten class on page 2.

OFFICE NEWS...*Read all about it...*

Thank you Mr. President

On May 16th Dr. Jackson completed his year long term as President of the Chicago Academy of General Dentistry (AGD). He was presented with a plaque in front of AGD members in attendance for the annual meeting. His presidency is the culmination of an astonishing six years on the executive board of directors of the organization. Congratulations Dr. Jackson and put your feet up... you've earned it after six years!!



D.O.L.L.S. Fastpitch Softball Sponsor— June 29, 2016

On June 29th Dr. Jackson was honored at the Downers Grove DOLLS game held locally at the Washington Park field in Downers Grove as a thank you for being their team sponsor. He brought Gatorade (low sugar/carb of course!) and Chicago Bandits t-shirts for the players. He even got to throw out the ceremonial first pitch...a rather mediocre overhand curve especially when compared to the rockets being thrown by the DOLLS pitchers! LOL. A great time was had by all!



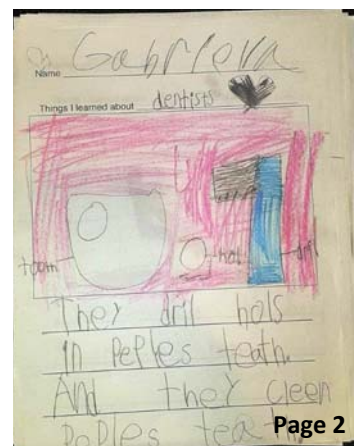
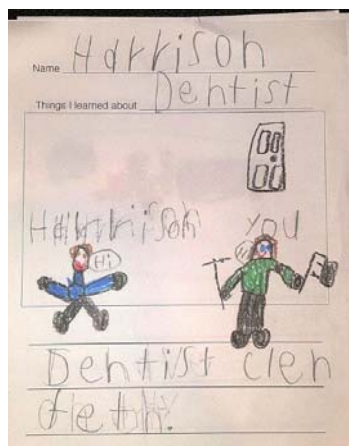
Downers Grove D.O.L.L.S. live in action.



Dr. Jackson seen here with the catcher of DGD D.O.L.L.S.

Dr. Jackson Visits Kindergarten - April 15, 2016

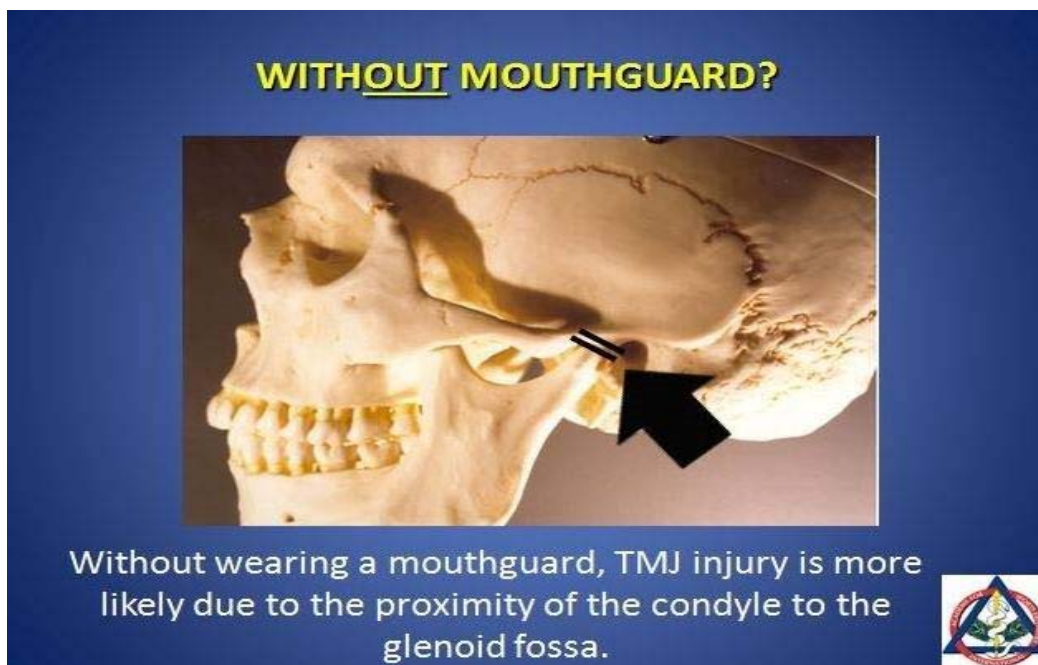
On April 15th, Dr. Jackson was sent back to Kindergarten!!! He was asked to visit his daughter's kindergarten class on career day to speak about what it's like to be a dentist! After he spoke to his daughter's class, he stayed and spoke to each of the other four classes as well. From the looks of how much fun both he and the students had, I think it's safe to say that Dr. Jackson LOVES visiting classes and hanging out with the kindergarteners!



neck muscles

A mouthguard must dance the delicate dance of being strong and durable while being soft enough to absorb impact energy and reduce force transmitted to the jaw. Concussions result from the sudden acceleration or deceleration of the brain because of either direct or indirect (e.g. rotational) forces. The strength of this force and its effect on the brain are directly related to the absolute value of the acceleration. Without turning this into a physics lesson, some of you may remember the Newtonian formula: $F = ma$ where "F" signifies the force applied, "m" signifies the mass of the object involved in the contact, and "a" the acceleration. When broken down, acceleration is really a function of initial velocity, final velocity, and the distance traveled during the acceleration. In other words, acceleration is Vin Diesel's car in The Fast & The Furious racing from 0mph to 100mph over a quarter mile stretch of street. If you'd like to be formal, you could list it as: $a = (v_2 - v_1) / 2s$. Combining the two yields the final equation: $F = m(v_2 - v_1) / 2s$.

Let's turn this equation into real world dental physics. When Jay Cutler takes a hit to the chin (let's all hope that happens a lot less this season...Go Bears!), his properly fitting custom-made mouthguard disperses the impact by spreading the force to as wide an area as possible because it intimately contacts all the teeth and gums. Being custom made, his mouthguard has the proper desired thickness and therefore creates a cushioned space between the head of the mandibular condyle (top part of the bottom jaw) and the glenoid fossa (bottom of the skull). The Academy for Sports Dentistry has several great illustrations of this cushioned space included below. Note the extra space between the lines illustrating the cushioned space. The mouthguard compresses before the total force reaches the base of the skull. It acts like a shock absorber on your car and ideally prevents the head of the lower jaw from "bottoming out" and striking the skull thereby transferring the force into the brain increasing the chance of concussion.

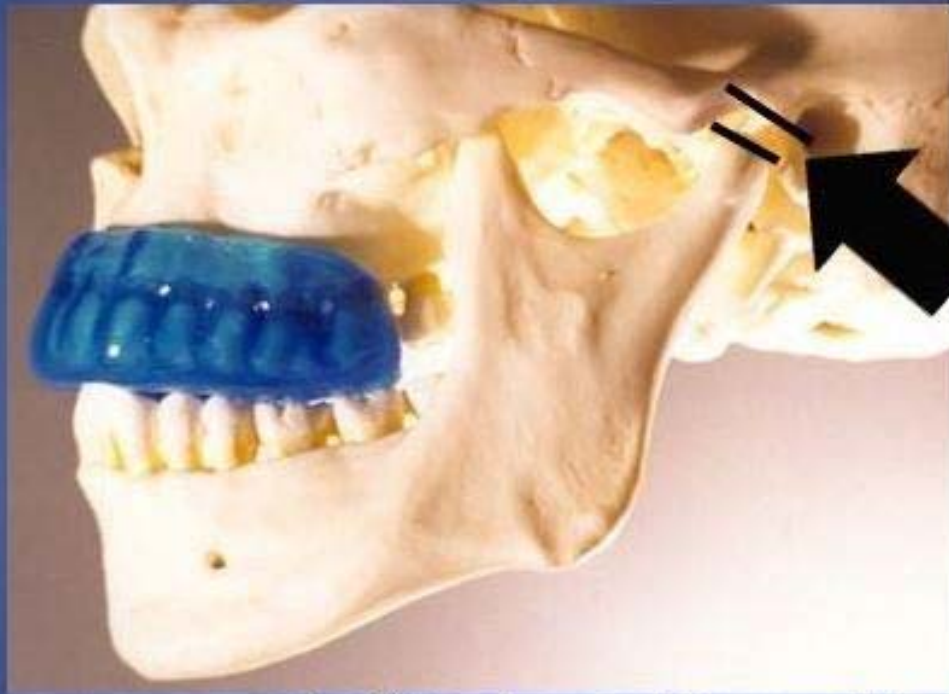


(Continue on Page 4)

News Bites with Laura - Back to School

If you or any family members are due for a visit with our hygienists, consider making an appointment before school starts in the fall, especially before your college students get ready to start their fall semester.

WITH MOUTHGUARD IN PLACE?



Wearing a properly fitted mouthguard helps protect the TMJ from injury by separating and cushioning the condyle and fossa.



According to prominent Canadian concussion researcher Dr. Karen Johnston, “The force required to concuss a fixed head is almost twice that required to concuss a mobile head.” What the heck is a mobile head you might ask?!? Dr. Johnston is referring to the third theory of how a mouthguard might reduce the incidence or severity of concussions. Back to good ol’ Jay Cutler again (sorry Jay). Let’s hypothesize that one of Jay’s offensive linemen gets beat by his man and the defenseman puts a solid hit on our quarterback. Some researchers have begun to show that by being able to clench down harder on a mouthguard, Jay’s head and neck muscles might “super-activate” and serve to stabilize the head by tensing the muscles. Increased head stabilization would hypothetically better absorb the force of impact and protect his brain from concussion. Even more interesting, some have further suggested that this effect might be in place whether or not Jay sees the impact coming. If any of these three mouthguard/concussion theories are ever empirically proven to be true, the constant requirement amongst all of them would be the fact that the athlete is wearing a custom-made mouthguard. Until then, my opinion is that they seem quite logical and plausible. We should always remember that the primary role of a dental mouthguard is to protect the teeth and gums. Unlike

(Continue on Page 5)

Reminder:

Illinois Schools require Dental Examinations Forms for children entering into kindergarten, grade 2 and grade 6. Remember to ask for your school dental forms when your children come in for their examinations.

The Dental Examiner



concussion protection, the role a custom mouthguard plays in protecting various dental structures is certain and scientifically proven. In my opinion any additional protection of the brain, theoretical or not, is a welcome possibility.

Shock Doctor Ultra Braces Mouthguard

Under Armour Mouthguards



Eric G. Jackson, DDS, MAGD is an authorized provider of Under Armour mouthguards



Also available at most sporting good stores in the mouthguard section

Custom Mouthguards made by Dr. Jackson



In our next, and final installment of the 3 part mouthguard series, we'll delve more into the differences between the 3 different types of custom-made mouthguards I make here at the office. Examples of these types are pictured above.

If you would like to speak about mouthguards, or any other sports dentistry topic, please feel free to call the office and schedule a complimentary appointment with me. Email and Twitter are also available options. I am extremely passionate about modern dentistry and love discussing it with patients, so don't hesitate to contact me.

Sincerely,
Eric G. Jackson, DDS, MAGD, FICOI, FICD, FADI
dreric@oralhealthcareprofessionals.com
@EjacksonDDS

¹ <http://ihsa.org/documents/sportsMedicine/Concussion%20Protocols.pdf>

² <http://ihsa.org/Resources/SportsMedicine/ConcussionManagement/SchoolResources.aspx>

³ <http://chicago.cbslocal.com/2015/05/12/ihsa-launches-new-initiative-to-address-concussions/>

⁴ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC162236/>

Summer Word Find

E T L A L Q S O A P J O K E L
 P I G Z E L B U I H U H N R N
 V R V O D J A B M T O I E O L
 A A X O U E E B D M H L I A Z
 U Q C L M J X O E S E T A D T
 G G Y A W N O O N S A R W T Q
 U L G P T R I U P C A A Q R L
 S O J A S I S E A F T B M I L
 T O U L Y O O V V E N U F P A
 X P N L L J Y N R I H C A E B
 N I E O B A W E E P R N V N T
 R E M L T Z Q P L Q E D P E F
 P O P S I C L E S A N D K V O
 P B Q G N I M M I W S A V P S
 I N T A N L I N E S L N T L N

WE ARE NOW ACCEPTING
NEW PATIENTS



Call (630) 963-6750 to Schedule an Appointment
Or visit our website to schedule at
www.OralHealthCareProfessionals.com

- | | | |
|--------------|----------|--------------|
| ALOHA | AUGUST | BASEBALL |
| BBQ | BEACH | DRIVEINMOVIE |
| FUN | HEAT | JULY |
| JUNE | LAKE | LOLLAPALOOZA |
| OUTDOORS | POOL | POPSICLES |
| ROADTRIP | SAND | SOFTBALL |
| STAYVACATION | SUMMER | SUNSHINE |
| SWIMMING | TANLINES | VACATION |
| WATER | | |

Follow us on Social
Media...



/oralhealthcareprofessionals



EricJacksonDDSMAGD



Channel: EJacksonDDS



@EJacksonDDS

Contact Us

Give us a call for more information about our services

Oral Health Care Professionals

Jeffrey S. Wascher, DDS

Eric G. Jackson, DDS, MAGD

2033 Ogden Avenue
Downers Grove, Illinois 60515

(630) 963-6750

Mail@OralHealthCareProfessionals.com

Visit us on the web at www.OralHealthCareProfessionals.com