

Understanding Second Impact Syndrome

Perhaps thanks to professional sports leagues, concussions have become a hot-button issue within the medical community. Rules changes in the National Football League were enacted to protect players not only from concussions, but from further injury after suffering a concussion. Beginning with the 2010 season, NFL players who were diagnosed with a concussion during a game were not allowed to re-enter the game and were subjected to thorough testing in the days following to determine if they were allowed to play the following week. If they failed the tests, they were not cleared to play.

Though protecting its players was at the core of that rule change in the NFL, a condition known as second impact syndrome might have also played a role in the league's decision. A rare condition in which a second concussion occurs before a first concussion has healed, second impact syndrome causes severe and rapid brain swelling. Fans of the NFL, and other sports where the risk of head injury looms large, as well as parents of athletes and athletes themselves can educate themselves about second impact syndrome to get a better idea of just how important it is to emphasize safety when it comes to head injuries.

Who is most at risk?

Due to the nature of certain sports, athletes, and particularly young athletes, are most at risk for second impact syndrome. According to BrainandSpinalCord.org, an online resource for brain injury and spinal cord injury survivors, second impact syndrome is most common among young people who play football, hockey and baseball as well as those who ski or box. These sports can be especially violent, even for youngsters.

How soon can second impact syndrome occur?

A second impact injury can occur within minutes of a first concussion. Such a reality



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Young athletes, particularly those who play football, are susceptible to second impact syndrome.

only highlights the importance of the NFL's decision to keep players from returning to games in which they have suffered a concussion. Athletes young and old should never return to a competition if they have suffered

a concussion. In order to avoid further damage, players must be removed from the competition and stay on the sidelines until fully healed. A second impact injury might also occur days or even weeks after the first concussion, and the impact does not have to be severe for a second impact injury to occur.

What are the symptoms of second impact syndrome?

Symptoms of a second impact injury typically occur immediately after the injury. Some of the more common symptoms include:

- Dilated pupils
- Loss of eye movement
- Appearance of being stunned
- Unconsciousness
- Sudden collapse
- Respiratory failure

After an initial brain injury, the brain is so vulnerable that even minimal impact can cause irreversible damage. When the injury occurs, the brain struggles to control the amount of blood volume to the brain and, as a result, a second impact injury can lead to rapid brain death, which occurs in as few as three to five minutes in certain instances. Such rapid brain death is one reason for the high fatality rate among young athletes who have suffered a second impact injury. Long-term effects of second impact syndrome are similar to those of severe traumatic brain injury. Speech, cognitive ability, sensory ability, perception, and social and emotional interactions may be permanently affected after a second impact injury.

Athletes who complain of or demonstrate any of the symptoms of second impact syndrome should be pulled from their competition immediately and visit a sports medicine physician for follow-up care. The worst thing to do is minimize the significance of a concussion or its symptoms, especially if it's a second impact injury.

Audiologist Attends Convention in San Diego

Yankton Medical Clinic, P.C. Clinical Audiologist, Jason R. Howe, MS, FAAA, CCC-A, recently attended the American Academy of Audiology Annual Conference in Chicago, IL. This meeting is designed for clinical audiologists, dispensing audiologists, educational audiologists, industrial audiologists, and research audiologists interested in hearing, hearing loss, dizziness, tinnitus, and hearing aids. Topics included: Auditory evaluation in patients treated with chemotherapy and chemoradiotherapy; Effects of different polarities on high intensity tone-pips in auditory brainstem response threshold measurements; Normative data on vestibular evoked myogenic potential in children; Grand rounds in adult hearing aids; Vestibular rehabilitation in an



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audiology clinic; Benefits and limitations of advanced hearing aid design; Benefits and limitations of extended-wear hearing aids; Interpretation of vestibular function tests; Ethics in audi-

ology; Healthcare and regulatory issues; and Preservation of spatial hearing with new hearing aid technologies.

Howe offers audiology evaluations and services for pediatric through adult patients. Appointments may be scheduled at Yankton Medical Clinic, P.C. by calling (605) 665-1722; or at Vermillion Medical Clinic by calling 605-624-8643.

Nephrologist Joins YMC Staff

Yankton Medical Clinic, P.C. is pleased to announce the association of Nephrologist Byron S. Nielsen, M.D.



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Dr. Nielsen is a graduate of The University of South Dakota School of Medicine. He completed his Internal Medicine residency training and his nephrology training at the University of Iowa Hospitals and Clinics in Iowa City, Iowa.

Dr. Nielsen will provide the diagnosis and treatment of adult kidney diseases including but not limited to those associated with underlying medical ailments, genetic disorders, autoimmune diseases and vasculitis. He also specializes in the treatment of hypertension, electrolyte disturbances, the medical man-

agement of kidney stones, and provides both inpatient and outpatient dialysis.

The Clinic is pleased to bring a Nephrologist to our medical community as well as to the many patients he will serve. Please join us in welcoming Dr. Nielsen and his wife, Stacey, and their two sons, Bailey and Cade, to Yankton.

Dr. Nielsen will be beginning seeing patients on August 1, 2011. For an appointment please 605-665-1082.

Does Late-Night Eating Cause Weight Gain?

The correlation between late-night eating and weight gain has been studied and debated for quite a while. Although common sense might suggest there is a connection, there is no statistical proof to confirm the claim.

Many of the studies involving late-night eating have been conducted on lab mice or on people who are deemed "late sleepers," not necessarily on people who routinely eat the biggest or most caloric meals late in the day.

Those who are dieting are routinely told to cut off meals after 7 or 8 p.m. to improve metabolic rates and reduce weight gain. Although it would seem to be good advice, there is no definitive scientific research that equates eating at night to weight gain.

The speculation behind the eating and weight gain connection has to do with metabolism and human evolution. Humans evolved from situations where they ate and foraged between sunrise and sunset. There were no video games to play at night, no TV shows,

and certainly no refrigerators to raid for late-night snacks. The body simply adapted to getting the bulk of its caloric intake in between daylight hours. Furthermore, people tended to be their most active during the day, when calories consumed could be burned off through exercise or daily activity. At night people tended to simply be lying around relaxing or sleeping. The calories can't be burned off.

Others debate that this is a myth, that calories consumed are simply calories. They do not weigh more if they are eaten at night or during the day. Furthermore, the body's metabolism never stops working, organs are functioning and energy is being used even as one sleeps. Opponents to the "late night eating equals weight gain" theory state that it's not what is eaten at a specific time that matters, but it's how many calories are consumed over a week or month. As anyone who has tried to diet knows, one day of dietary

changes will do little, if anything, to influence a person's weight. Weight loss is a process instead of a quick fix.

Limiting caloric intake -- no matter what time it occurs -- will help a person lose weight. That's because it limits the number of calories a person will need to burn off. Routinely eating several small meals a day can stave off hunger pangs and reduce the propensity for overeating or eating out of boredom at night. Foods consumed at night, including comfort foods, tend to be high in calories and fat anyway. Some people do find that eating a light snack about an hour before bed, such as a few crackers with cheese, can induce sleep and keep the body satiated until morning.

There's no strong evidence that eating late at night plays a role in weight gain. It's rather the number of calories and types of foods eaten as part of a normal diet.

Strike A Pose For Better Sleep

Health experts have long been professing the "back is best" mantra to new parents. As it turns out, the back also may be best for adults.

Placing an infant to sleep on his or her back is essential to reducing the risk for Sudden Infant Death Syndrome and has been part of the advice given to new parents for decades. Sleeping on one's back can also be ideal for improving the health of older children and adults, offer sleep experts. Misalignment of the body during sleep can put strain on different areas of the body, most especially the spine, neck, shoulder, hips and jaw. Stressing these areas can affect how you feel the next day. People who cannot find a comfortable sleeping position also may have trouble drifting off to sleep in the first place.

Although mattress and pillow comfort, room temperature, noise levels, and the level of darkness play a large role in getting a good night's sleep, sleep position can also help or hinder the quality of sleep.

Sleeping on the back is the preferred position if a person wants to improve personal health. The advantages to resting on the back are numerous. Sleeping on your back enables the spine, head and neck to remain in a neutral position, alleviating or preventing strain on these areas of the body. Those with acid reflux may find sleeping on their backs helps reduce symptoms, especially if the head is slightly elevated with a fluffy pillow.

Back sleeping is also good for preventing premature wrinkling. That's because nothing -- like a pillow or mattress -- is pressing up against the face for a long period of time. Some medical experts also say that sleeping on the back supports a woman's breasts.

Sleeping on the back is not good for everyone, however. Heavy snorers or people who suffer from sleep apnea should avoid this position because the tongue can fall inward and block the breathing passage. It isn't advisable for pregnant women to sleep on their backs, either. This is because the weight of the uterus when lying on the back is placed on a large blood vessel called the inferior vena cava, reduc-

ing the flow of blood back to the heart. This in turn may staunch blood flow to the fetus. It is best for pregnant women to sleep on their left sides, or at least place a pillow under the right hip to slightly angle the body toward the left, which promotes stronger blood flow. Side sleeping is the next best position if the back is not comfortable.

According to experts, the worst positions for sleeping are the fetal position or on the stomach. This is because these positions cause the body to be curved in unnatural shapes that can strain the spine and neck. Arthritic people may be in agony the next day.

Although people spend significant portions of their lives asleep, few give sleep much thought until it becomes a problem in their lives. The Better Sleep Council says sleep is essential to health, and people should strive to get 7.5 hours of sleep every day.

There are tips for promoting better sleep, which include maintaining a consistent sleep schedule, avoiding eating or exercising close to bedtime, and reducing factors that diminish one's ability to fall asleep. Choosing a more healthy sleep position can be one of the things people do to get a better night's sleep.



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Sleeping on your side is the second-best sleep position behind sleeping on your back for optimal health.

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