



Heads up:

There's no minor brain injury

By Michael A. Burman

March 14-20 is Brain Awareness Week, making brain injury awareness a timely topic for the February/March issue of York County Health and Wellness. Traumatic brain injury, or TBI, might already be on your mind with the recent Will Smith movie about concussions in the NFL as well as regular coverage in the news and growing public awareness about the risks of brain injury for long-term degenerative disorders.

Recently, I was thinking about this issue while riding the ski lift at a local mountain in the middle of a hard day of skiing. I have just recently returned to the sport after a 20-year hiatus. When learning to ski as a teenager, I fell, hit my head and lost consciousness. I regained awareness while being taken down the mountain by the ski patrol. A couple of days later, my concussion symptoms subsided – but not my fear of further injury. It kept me off the slopes for decades.

Traumatic brain injuries are surprisingly common. According to the

U.S. Center for Disease Control, there are at least 2.5 million TBIs each year that result in emergency room visits or hospitalizations, with many more that are treated elsewhere. More than 4 percent of enlisted soldiers have been diagnosed with a TBI, and approximately 4 to 5 million Americans are living with long-term residual effects.

TBIs range in severity. Symptoms from a concussion, like my injury, may come on immediately or be delayed by several days. They include dizziness, nausea and headaches as well as sensory or motor changes – spots in your vision, ringing in your ears or weakness in one arm. More severe traumatic brain injuries can result in immediate



and sometimes long-term loss of consciousness and significant brain damage resulting in permanent loss of function or death.

Importantly, sub-concussive impacts may result in no obvious immediate symptoms. However, evidence now suggests that they combine with more severe injuries to contribute to brain degeneration over time (called Repetitive Head Injury Syndrome or Chronic Traumatic Encephalopathy; known as CTE). Thus, as tragic and dramatic as severe brain injury is, in my opinion, there is no such thing as a mild brain injury.

One of the most difficult parts about brain injury is that the damage is hidden. It's hard for anyone, including the victim, to understand how severe the injury is. Injured joints swell; broken bones have casts. Brain injuries are not visible. Moreover, the brain is not a good judge of its own health. It often fails to realize how impaired it is. This is critical, because the brain is especially vulnerable while it recovers from an injury. A second trauma, even a relatively mild one, can sometimes result in catastrophic swelling and damage, a phenomenon called "second-impact syndrome." Proper diagnosis and rest are critical to avoid this additional damage, even if the patient feels able to return to normal activity.

Thankfully, many athletes and sports teams are starting to realize the importance of preventing brain injuries. We're seeing rule changes come forward in the NFL and elsewhere. Helmet technology is consistently under development. Concussion-prevention equipment is catching on in additional sports, such as soccer. Importantly, social norms are also shifting. We're questioning what level of risk is acceptable. Helmets are becoming standard for winter sports such as skiing and ice-skating. "Shaking off" or playing through an injury is no longer encouraged or celebrated. In addition, both athletes and training staff are realizing the importance of recognizing potential brain injury quickly and allowing the athletes time to recover.

Several groups are helping lead local efforts combating brain injury. The DANA Alliance for Brain Initiatives has three members in Maine, and all of us have agreed to engage the public on these critical issues. Furthermore, I am on the board of directors of the Michael T. Goulet Traumatic Brain Injury and Epilepsy Foundation in Saco. The foun-

ation serves to raise awareness about brain and helmet safety and the effects of traumatic brain injury through a variety of programs. At many public events across southern Maine, the foundation gives away properly fitted "love your brain" helmets.

The University of New England, where I work, is also actively engaged with brain safety in our community. The Center for Excellence in the Neurosciences has a host of cutting-edge laboratories, tackling issues from the effects of stress on the developing brain to the development of novel treatments for chronic pain. Our innovative K-12 outreach program has reached tens of thousands of local students, helping them understand how their brains work and why they should keep them safe.

We are opening these activities up to the community on March 18 - 19 at the Maine Science Festival in Bangor and on April 8, for our third annual Brain and Health Fair on our Biddeford Campus.

Probably the hardest question I face on this issue is when parents, friends or the media ask about individual decisions, such as whether certain sports are safe. This is a personal struggle for me too. Today, downhill skiing is one of my deep passions, and my life would be emptier without it. What has changed from the time of my injury and the decades I spent away from the mountains? Well, almost everything. Ski technology has changed, making it easier to stay in control. My attitude has changed; I make sure I stay within my limits. Most of all, I now wear a good helmet, as does almost everyone on the mountain. That was unheard of 20 years ago.

Brain injury is a serious issue. My risk for future cognitive decline, from conditions like CTE, is enhanced due to the concussions I suffered as a child. Nevertheless, my life would be emptier if I avoided the sports and activities that I love. Ultimately, each individual must make his or her own decisions. Some risk is necessary for a full life, but it is critical that we mitigate that risk to the highest degree possible. Luckily, advances in medical science, safety equipment and sporting rules are starting to have a positive impact.

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