Is Pesky, Beaked Animal Beacon of Hope for Concussion Prevention?

On behalf of Johnston, Moore & Thompson

- October 31, 2011

With the endless hours that researchers spend in the lab, it seems that one of the places where we can find answers is in our own backyard. Woodpeckers have a habit of banging their heads, but somehow they manage to escape head injury. How? And more importantly, is it possible for human beings to take a chapter from the woodpecker's book and use that information to prevent head injuries?

By translating the components that seem to keep woodpeckers safe despite their pecking into the design of helmets for high-risk sports such as football and hockey, many brain injuries might be avoided. Not using this knowledge to make the safest helmets may mean we are ignoring simple safety messages that nature has sent us.

The woodpecker's protection reportedly comes from three different sources. The bird has a bone that encompasses the bird's skull and decreases movement caused by the impact of a peck. The uneven structure of the bird's upper and lower beak reduces the amount of impact that a peck has on the brain. There is also a spongy structure at certain points of the woodpecker's brain that reduces impact and protects the birds from brain injuries.

Head injury prevention has been a point of recent legal interest due to former NFL athletes suing the league and a popular helmet maker for their sports-related brain injuries. Plaintiffs and some health professionals question whether professional football helmets do everything they promise to prevent brain injuries.

History shows that we can learn a lot from nature. If research into woodpeckers can be used to enhance the design of football helmets, it sounds like researchers are barking up the right tree. A more effective design for helmets could potentially save football players from the effects of concussions, but it could also benefit bicyclists, motorcyclists and hockey players.

Source

BBC News: "How woodpeckers avoid head injury," Jason Palmer, Oct. 27, 2011