

Preserving Male Fertility in Sports Activity

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Have you ever watched boys at high school sports or professional sports and “felt the pain” when a player takes a hit in the groin? You should. It hurts and has some serious potential effects on the testicle. Not only does it cause a player to double over in pain, but it can cause an injury to the testicle and affect the reproductive and urinary system. These issues can lead to problems with men fathering children. This may not be of concern to young men who feel that they are indestructible and feel that they are forever strong. In fact not getting a sexually transmitted infection is usually more to them than having children at some point. In these situations, an injury earlier in life can be tragic to the hopes of a couple that is trying to conceive. This can cause serious distress in a relationship and change hopes for the future. It is mainly because of this potential danger that many specialists feel strongly that prevention of injury is needed through education about protection of the male genital organs.

Education of boys and young men at the time of sports physicals is essential. The content includes testicular self-exams to detect a cancer of the testicle that will be curable in almost all cases especially if found in the early stages; education about contraception and prevention of sexually transmitted diseases as well as recommendations to prevent sports injury. This is also important because most males who play sports are in their fertile years; in an age group with the highest risk of risky, dangerous and care-free behavior; as well as the age group most likely to develop cancer of the testicle. A number of studies have revealed that young males lack knowledge of the effects of damage of the male genitals and possible problems with having a child later in life. Young women from an early age with earlier sexual development and the start of their “period” are educated about birth control and cervical cancer screening. There is no equivalent reason to see a medical provider for boys and young men, which is why the sports physical becomes an important time and place to start preventative health care.

A study in 2005 showed that half of young athletes did not understand why a genital examination is done. Most were unaware of the risk of cancer of the testicle and did not appreciate the difference in urgency of seeking medical treatment of painless versus painful testicular swelling. Routine male genital examination during the preparticipation physical evaluation, including testicular and hernia evaluation, is recommended by the American Academy of Family Physicians (AAFP), American Academy of Pediatrics, American College of Sports Medicine, American Medical Society for Sports Medicine, American Orthopedic Society for Sports Medicine, and American Osteopathic Academy of Sports Medicine. This is somewhat concerning because the United States Preventive Services Task Force (USPSTF) in 2008 made a recommendation against routine screening for testicular cancer in asymptomatic adolescents and adults. The USPSTF consensus has been that testicular self exam does not provide any benefit over potentially waiting until a young man feels a lump in his testicle and has pain. The problem is that Dr Congeni and colleagues from Akron, Ohio showed in 2005 that only one in three young men reported they would ask for medical care even for a painful testicular swelling. They also showed that only about 1 in 10 athletes were able to

understand the urgent need of seeking medical treatment of a **painless** testicular swelling. Only one in three knew that young men had the highest risk of testicular cancer. Most believed that older men have the highest risk. This highlights the problem and stresses the need for improved education in junior high schools, high schools and colleges, as well as in organized sports teams. This is very concerning because self exams are free and are easy to perform in privacy. Testicular cancer is curable in almost all cases, especially if caught early. We strongly encourage adolescents and young men to continue to perform self exams on a regular basis such as once a month like women do for breast examination for breast cancer. Delay in diagnosis usually results in more therapy that is harmful to patient's health and fertility. Lance Armstrong is a classic example of someone who left his testicular cancer alone for too long because it had spread into his belly, lungs and even brain. He was lucky to have survived. Now he promotes "Livestrong" but he should also promote "Live Smart". The added issue in testicular cancer treatment is that the later the diagnosis, the more aggressive the treatment with more aggressive surgery and chemotherapy. All of these therapies have an increased risk of impairing later fertility. Thus, aggressive treatment increases the risk of damaging later fertility permanently.

Regarding injuries to the genitals, prevention is the best approach. The National Electronic Injury Surveillance System (NEISS) showed that between 1990 and 2000, 883 sports-related genital injuries occurred in males less than 26 years old requiring a visit to the emergency department. Blunt trauma (such as being hit by a bat, ball or hockey puck in the genitals without breaking through the skin) accounts for most of the injuries, and penetrating trauma (punctures the skin and underlying organs) accounts for a small percentage. Blunt testicular injuries can be managed with either close monitoring or repair depending on the situation. Early surgery for blunt trauma leads to improved results. Most blunt trauma to the testicles is minor and usually requires only close observation. However, many times the injury is worse than it initially appears. In one study up to nearly half of patients presenting with blunt scrotal trauma required surgery and were found to have major injury to the testicle that with treatment resulted in a better result. The NEISS showed that serious injuries to the genital area were most commonly seen with baseball, followed by basketball and football. In another study, approximately one in five visits to the emergency department for sports-related genital trauma had a risk of permanent injury, and a small number resulted in staying in the hospital overnight or transfer to a more advanced trauma center. Football had the highest risk of resulting in being admitted to a local hospital or transfer to a trauma center for genital injury.

When it comes to protection against injury, a study in 2005 showed that about half of the men playing sports did not wear genital protection during sports. Overall, only one of three football players wore a cup versus double that number among baseball players. There are no clear statements or recommendations by any medical organizations on the issue. Protection is recommended based on the degree of contact and risk for injury. For example, players in certain sports (e.g. football, ice hockey and baseball) and at certain positions such as goalie and catcher have a high risk for genital injury. Overall, cups are often not worn by players because of the uncomfortable nature when wearing it, especially during fast motion sports. The latter is an important focus of public awareness, specifically with coaches, local recreational committees, college and

professional leagues etc. It is important to educate players on the need to prevent injuries by wearing their cups.

Other sports or fitness activities like bicycle riding or spinning can result in testicular pain. Repeated or prolonged bike riding without coming off the seat and remaining in a forward leaning position can cause loss of sensation of the groin and in some cases affect the ability to get and maintain an erection. All these issues can potentially compromise male reproductive health, especially with repeated injury. Extreme sports like skate boarding to BMX and motor cross have been associated with urological injuries, especially between the legs and damage to the male urethra which can result in scarring (narrowing) which make urinating and ejaculation difficult. Even recreational sports such as paintballing have resulted in testicular injuries and hospitalization.

Excess exercise can represent a physical stress that affects fertility. The beneficial effects of exercise are well known, but there is evidence of exercise-related short- and long-term consequences concerning male reproductive function with extreme exercise, such as marathon or triathlon participation. This can result in such problems as hormonal (chemical) disturbances of the brain or effects directly on the testicles. Sperm and erectile function can be affected. Training intensity, duration and type of exercise, and the level of fitness of individuals will influence these effects. Although current research overall has not been conclusive, it is important that physicians and the general public pay attention to extreme exercise as a possible cause of male infertility

Other injuries such as neck injuries, spinal cord injuries and concussions from high contact sports like football are not rare and associated with a number of health issues, with some of the most extreme being inability to move arms and/or walk (paraplegia and quadriplegia). All these issues can affect fertility, ejaculation and erections. This discussion brings up the issue of neck supports and of course helmets that have been discussed more recently in connection with concussion risk/injuries. All these issues do not take into account other effects of sports on male reproduction such as the misuse of anabolic steroids. This is the focus of a **separate topic** in this series.

Overall, sporting activities highlight the need to discuss men's health issues at pre-participation physicals at all levels, but also in schools starting from an early age. In addition, these activities represent "teachable moments" or opportunities to reinforce information such as the need for protection of the male genitals during sports. At present, there is a lack of adequate information provided to young men and also inadequate technology to make such protection comfortable to wear. More work is needed to educate sports equipment companies and sporting leagues of the importance of this issue, and now is the time to improve devices that offer genital protection. Great advances have been made with bike seats through better knowledge and health promotion. We urge boys and men who participate in sports on a regular basis to help and educate themselves to ensure a successful reproductive life and good long term men's health.

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