Key Determinants of Health Influence the Overuse of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) Among Athletes: Regulations Recommended

Katlyn Scott, RN, BN

University of New Brunswick
Abstract
This paper explores how several determinants of health influence the overuse and abuse of non-steroidal anti-inflammatory drugs (NSAIDs) among athletes. The research findings supported the idea that athletes and other associated athletic personnel require education around the abuse and unsafe use of these medications. Athletes are influenced by their social support network which shares similar attitudes toward NSAID use. Athletes seem to be driven by financial motives and the ideology of masculinity and excellence which means health is not a primary concern. The author argues that regulation and prevention of unsafe NSAID use must consider the determinants of health that give rise to the abuse of NSAIDs in the athletic population.

*Keywords:* non-steroidal anti-inflammatory drugs, athletes, determinants of health

**Key Determinants of Health Influence the Overuse of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) Among Athletes: Regulations Recommended**

Side effects and injuries from sports such as baseball, cycling or any type of physical activity are inevitable and individuals are typically aware of these risks (Donnelly, 2004).
Injuries can range from pitching related bicep tendonitis to a compound fracture due to a road bike crash. NSAIDs are the most commonly used medication worldwide and are a typical treatment among injured athletes (Lanier, 2004). Ibuprofen, Toradol and Indomethacin are classified as NSIIDs that are often considered harmless and are sold-over-the-counter (Warden, 2010). These easily accessed drugs are known to relieve mild to moderate pain and decrease inflammation which makes them a common choice among athletes (Warden, 2010). NSAIDs were developed as a treatment for a “short term adjunct” (p. 549) and “alleviation of acute pain and inflammation” (p. 549), prolonged use of NSAIDs is not recommended due to harmful effects when taken at an unsafe level (Warden, 2009). Chronic use of NSAIDs causes a variety of side effects that range from decreased kidney function to increased myocardial workload. Furthermore Lanier (2004) attributed “gastrointestinal bleeding related to NSAID use as the 15th leading cause of death in the United States” (p. 132). Athletes need to re-evaluate their priorities in life, access appropriate social support networks and receive education about these drugs.

Athletes acquire a new perspective when playing a sport becomes a career, and several determinants of health encourage that change (Safai, Harvey & White, 2009). Determinants of health are complex factors beyond the health care system which contribute to the social health and well-being of an individual (Public Health Agency of Canada, 2011). The culture of athleticism, social support networks accessed, level of knowledge, and income and social status all influence athletes’ decisions about their health and medication use (Safai et al., 2009). Athletes place themselves at risk for development of chronic disease with overuse of NSAIDs therefore this topic requires further recognition from athletic directors, team physicians and athletes alike to reduce the use of NSAIDs at an unsafe level (Warden, 2009).

Lack of Education and Anti-Inflammatory Abuse
Health and wellness education, a vital health determinant, plays an integral role in the development of a professional athlete and decisions made around medication use (Warden, 2009). One area where college and professional athletes receive extensive education is the prohibition of performance enhancing drugs, narcotics and other illegal substances (Warden, 2009). Yet, similar education programs about the physical and psychological consequences NSAID overuse and abuse seems overlooked (Warden, 2009). The World-Anti-Doping Agency (WADA) has not added NSAIDs to their banned substances list as the organization believes NSAIDs do not have performance enhancing characteristics “and/or represent too great a health risk for athletes” (Warden, 2010, p. 1). Overdose or overuse of NSAIDs is common among athletes because they self-medicate, do not consult with the team physician and seldom read the proper dose information on the package insert (Holmes, Cronholm, Duffy, & Webner, 2013). Warden (2010) concluded that athletes should consult with a “qualified sports medicine professional” (p. 5) and limit NSAID use to the “minimal dose and duration” (p. 5) for short term treatment of acute pain and inflammation. Whether athletes use NSAIDs for prophylactic treatment or for an injury, many experts agree that “improved awareness and education of the sports medicine population is needed regarding the benefits but potential serious side effects of NSAID use” (Holmes et al. 2013, p. 285).

Financial Earnings and Anti-Inflammatory Abuse

Unsafe NSAID use allows for increased playing time which encourages professional athletes who are often driven by financial incentives (Cadwallader, De La Torre, Tieri & Botre, 2010). Bi-weekly paychecks are based on playing time and performance, not on time spent in the office with a physiotherapist; therefore athletes who struggle with an injury often push themselves to return to sport fulltime regardless of their health status (Holmes et al., 2013). As a
result, athletes may choose to self-administer medications to treat an injury in order to return to the field prematurely (Holmes, et al., 2013). In the same study 95.7% of student athletes admitted to oral anti-inflammatory use while as few as 27% of these athletes consulted with a team physician or coach prior to NSAID administration (Holmes et al., 2013). An international analysis of professional Italian soccer players indicated that 92.6% of athletes admitted to oral anti-inflammatory use and one principal motivator was to return to competition earlier (Taioli, 2007). According to Holmes et al. (2013), a mere 27% of student athletes consult a team physician prior to NSAID administration. The pain and inflammation associated with an injury is a normal body response, and NSAIDs alleviate these symptoms; this allows “tissue damage to initiate and/or progress…. particularly when NSAIDs are used as monotherapy in place of more active forms of rehabilitation” (Warden, 2010, p. 38). Athletes tend to rely on chemical agents to disguise their pain while Hume, Cheung, Maxwell & Weerapong (2004) recommended that best practice for athletes who sustain an injury would be “to reduce the intensity and duration of exercise for one to two days” (p. 110) to allow muscles and tissues to heal successfully.

**Social Support and Anti-Inflammatory Abuse**

Athletes often access social support networks within the confinement of the stadium or the arena and this network often rationalizes use of medications, including NSAIDs, at an unsafe level (Nixon, 1993). An athlete’s acceptance of pain has been blamed on their “sportsnet” (p. 128) a term Nixon (1992) developed to refer to the network of teammates, coaches and medical personnel. Whether a relief pitcher in baseball, or a three point shooter in basketball, athletes know their role on a team and often feel pressure from their “sportsnet” to play through injury for the sake of the team; which can encourage NSAID overuse and abuse (Nixon Warden, 2010). Media attention can influence desire to win and encourage athletes to play with injury often by
Prolonged Non-Steroidal Anti-Inflammatory use in Athletes

means of NSAID use to reduce symptoms (Nixon; Warden, 2010). Nixon (1994) found two-thirds of coaches encourage athletes to be risk takers and play despite injuries and pain. Coaches act as a role model to many athletes therefore this attitude can influence an athlete’s perception of health (Nixon). Athletes place an emphasis on their sport and health becomes a minor concern as they admire coaches and their athlete peers and often “follow in the footsteps of these idols” (Genuario & Carr, 2008, p. 63). Experts agree that these role models and “sportsnets” need to recommend and encourage use of medication use guidelines distributed by the team physician or manufacturer (Mehallo, Drezner & Bytomski, 2006).

**Cultural Influences and Anti-Inflammatory Abuse**

Another influence on athletes’ abuse of NSAIDs is the culture of athleticism which glorifies strength and invincibility (Genuario & Carr, 2008). Athletes are continually in competition to number one which encourages athletes to seek means to enhance their “competitive edge” (Cadwaller et al., 2010, p. 1). For unknown reasons injuries, risk taking and pain have become a norm and are accepted in the world of athleticism; according to Nixon (1993) the term “culture of risk” has been “deeply embedded in American sports” (p. 189). The mindset of athletes values masculinity which encourages sports participation despite injury and pain; these mentalities encourage unsafe NSAID use among athletes (Roderick et al., 2000).

**Conclusion**

As athletes continue to participate in sports, injuries will arise; therefore the unsafe use of NSAIDs needs to be regulated at both professional and amateur levels. Athletic directors, managers, and coaches need to become aware of the overuse and abuse of NSAIDs among the athletic population, and more importantly aware of the dangers and risks associated with these drugs (Warden, 2010). Greater awareness is needed of how the media and culture of athleticism.
Prolonged Non-Steroidal Anti-Inflammatory use in Athletes

affects these naïve, sport-focused athletes and, furthermore, how a positive support network can positively influence health decisions. Athletes need to value rehabilitation of their injuries to promote healing which will likely benefit their health and prolong their career (Warden, 2010). As team members and coaches develop greater awareness of the dangers of these medications, the social support networks accessed will be able to guide athletes to make better decisions (Hume et al., 2004). Athletes need to re-evaluate how NSAIDs can affect their future and consider the risk of chronic illness when NSAID overuse becomes part of their daily routine. Furthermore, regulation of these medications within organizations is strongly recommended to effect change (Mehallo et al., 2006).
References


