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Coaching the Female Athlete: Developing Your Performance Environment

It can be argued that advances have been made in acknowledging and understanding the differences between females and males when it comes to effective, productive, and safe coaching. Nevertheless, the dropout rates from the ranks of young female athletes remain troublingly high. Retention, then, must be a major concern of coaches. Clearly, modification of the training environment is not only called for; it is essential. Vicki Harber, an acclaimed authority on making a difference in female sport performance, first identifies three categories of injuries. She then describes techniques that can enable coaches to avoid these potentially career-ending injuries. The ultimate goal, she notes, is to create "performance environments [that] can support the widespread benefits of regular physical activity and sport for girls and women." Her article is a significant addition to the body of knowledge around female sport performance. —*Sheila Robertson*, Journal Editor

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By Vicki Harber

Introduction: The Benefits of Quality Sport and Physical Activity

Many reports indicate that active or athletic girls and women are more likely to display positive body weight management skills, have increased potential to develop leadership skills, show determination and are less reliant on others to establish their self-worth. Other reports show reduced rates of teenage pregnancy, depression, and suicide. Sounds pretty good, right?

Many of these sport or physical activity-related benefits have been attributed to the landmark legislation of Title IX, a section of the United States Education Amendments of 1972. Although its origin was in the US, this equal opportunity Act has had remarkable impact in Canada. As a result, 1972 has become a convenient starting point where we can compare before and after the implementation of Title IX and examine the influence of this legislation. One finding shows that by 1978, the number of girls participating in high school sports increased over 600% compared to 1971. Another highlight shows a change in representation of women at the Olympic Games; in 1900, 19 women (1.9% of total participants) were first included in the Paris Games and their sports were limited to lawn tennis, croquet, and golf. It was not until the 1976 Games in Montreal that the percentage of female participants exceeded 20%. While women are now allowed to participate in boxing (2012) and ski jumping (2014), women still have not exceeded 45% of the total participants in the Olympic Games, so work remains to be done in this area.

Aside from a large increase in sport participation rates, other impacts of Title IX include lower BMI, increased completion rates of college or university, more opportunity for higher earning jobs, and less likelihood of engaging in "risky" sexual behaviours, smoking, and illicit drug use. While the evidence demonstrating improved physical, mental, emotional, and social health is overwhelming, we continue to observe declining participation rates of girls in organized sport and physical activity. Common reasons cited for girls leaving organized sport include lack of fun, lack of appropriate skill acquisition and

challenge, too expensive for the family budget, and too demanding of time. Are we unable to address these reasons and change the way we deliver sport in Canada? Currently for girls, we often fail to implement strategies that create early and positive sport and physical activity experiences.

Why Should You Read this Article?
This article describes ways the training environment can be modified to reduce the persistent decline in sport participation rates seen in Canadian girls. Unknowingly, coaches may be delivering a training program that is not developmentally appropriate and may lead to elevated risk of injury for their participants. While the valuable benefits of quality sport cannot be ignored, there are potential risks associated with sport and physical activity participation. For the young female athlete, the risks are often linked with "striving to win at all costs". Sports are known to be the leading cause of injury and visits to the emergency room in adolescents. Injuries are obstacles for an athlete's training and competition schedule and may also lead to an early exit from sport.

So can these injuries be prevented? Much of the evidence suggests most injuries are preventable. A critical step is to ensure the quality of training programs and competition structures (that is, the performance environment) meet the developmental needs of the athlete. The performance environment needs to be managed by the coach to ensure athlete development is supported. Athlete development needs to consider planned programs for the training, monitoring, and assessment of physical, technical, tactical, mental, social, emotional, cognitive, moral, and lifestyle components. Training programs in particular are not a "one size fits all", yet most club-based programs are not adjusted for differences in developmental readiness or sex. It is common, for example, that male-developed training programs are applied to females, and adult training programs are applied to children and adolescents. The assumption that the same training program will equally enhance performance in females, children, and adolescents is flawed.

What Types of Injuries are Common?
This article briefly outlines recommendations for building a comprehensive training program for female athletes that can increase recruitment and retention while reducing injury and elevating performance. Before we continue, consider the definition of "injury". *Webster's Dictionary* defines injury as "hurt, damage or loss sustained". Typically we view injuries as those of musculoskeletal origin, such as damage to ligaments, bones, and muscle. These MECHANICAL injuries are most often the result of accidents, sudden impact, overuse, or poor technical execution and usually lead to loss of participation and elevate the risk of re-injury.

There are two other types of injury to consider that may stretch your thinking about athlete development! The first is ENERGETIC. These injuries are most often the result of insufficient energy intake, low energy availability (intake does not meet the energetic demands of training and basic needs), or disordered eating. Some female athletes struggle to balance the needs of their body with the energetic and psychological demands of their sport. Many bodily systems suffer, but major consequences of these energetic insults include impaired reproductive function such as amenorrhea, which is the absence of a menstrual cycle for three consecutive months, and reduced bone mineral density.

The other type of injury to consider is related to the "HEART" or the "emotional state" of the athlete. These injuries are most often the result of the athlete not being accepted into her program or club or not being given the opportunity to acquire skills and create social connection. Feelings of "not good enough" or "I don't belong" emerge and may lead to girls and women leaving sport.

How Can We Avoid These Injuries?
Mechanical: A common yet devastating mechanical injury experienced by female athletes is the non-impact anterior cruciate ligament (ACL) injury. Women will incur two to six times the number of non-impact ACL injuries compared to men when matched for age, sport, and level of competition. This injury occurs during movements such as deceleration, that is, slowing from a high-speed manoeuvre; a change in direction such as pivot or sharp cut; and landing from a jump. The underlying reasons for this injury in female athletes are multifaceted yet the implementation of neuromuscular training has shown injury reduction rates of 50-80%! Adding this kind of training is essential for all female athletes. A handful of

successful programs have been developed. For an example of this type of training, visit FIFA 11+ (www.f-marc.com/11plus).

Energetic: Injuries of energetic origin are due to an energy deficit that may be intentionally or unintentionally planned by the athlete. Well-known outcomes of this energy deficit include disappointing or lacklustre performances, poor recovery, and impaired physical and mental health. An additional outcome is impaired reproductive function. Healthy reproductive function (onset of menarche and regular menstrual cycles) requires energy so in the presence of an energy deficit, the body will divert fuel to those functions essential for survival such as cell maintenance, circulation, neural activity while non-essential processes such as reproductive function become expendable. Lower levels of estrogen are a key feature of impaired reproductive function and this leads to lower bone mineral density and increased risk of stress fractures. The link between this energy deficit, impaired reproductive function, and poor bone health is called the "Female Athlete Triad". Providing athletes with information about positive fuelling practices is essential for them to learn how to make wise choices around their eating habits and how best to match the energy demands of their performance requirements. For more information about this condition, visit www.femaleathletetriad.org.

"Heart": Creating a climate of acceptance and social connection within the training environment can prevent injuries of the "heart". While being a student of your sport is important, it is also important to know your athletes, develop a positive rapport with your athletes, and understand the various factors that influence their performance. As athletes, they have family and friends; they are typically students with academic responsibilities, and have other influences in their lives. Delivering stage-appropriate progressions that provide a suitable magnitude of challenge for skill acquisition is imperative. In addition, providing positive informational feedback to your athlete while emphasizing effort, persistence, and improvement is necessary. Achieving new skills within a training environment that permits athletes to make choices contributes to building confidence and encourages sensible risk-taking in sport. Finally, consider integrating athlete role models into your training environment on a regular basis. Athlete role models can often be recruited from your own club or community or school. For more information about this area of coaching the female athlete, check out "Actively Engaging Women and Girls", a Canadian Sport for Life supplementary document written in partnership with the Canadian Association for the Advancement of Women and Sport and Physical Activity (www.caaws.ca).

In conclusion, coaches who employ best practices in their performance environments can support the widespread benefits of regular physical activity and sport for girls and women. Injuries of mechanical, energetic, and "heart" origin may sideline our female athletes and weaken our athlete pool. These injuries can be prevented. Reflect on your own training environment and the quality of your coaching. The recommendations provided in this article will help you become a better student of your sport and deliver quality sport and physical activity experiences for your female athletes!

About the Author

Vicki Harber is Professor Emeritus from the University of Alberta in the Faculty of Physical Education and Recreation. She is passionate about quality athlete development and lifelong participation in physical activity. As an academic, her research examined the physiological adaptations to regular physical activity in women, while her teaching focused on the application of these findings into real-world environments. She is a member of the Canadian Sport for Life Leadership team and is helping to advance physical literacy and shape athlete development programs for young females across Canada. She contributes her time to several municipal and provincial committees that aim to improve the quality of sport and physical activity for Canadians. Her combined experiences from Olympic rowing teams in 1980 and 1984, life as an academic, coaching an elite girls' soccer team, and being a mother of two children have fuelled her passion to work with those who can make a difference in the performance of girls and women.

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