SMARTER COACHING:

ISSUES IN TRAINING THE FEMALE ATHLETE

by David Mayo, CSCS

Should women be trained like men? This is a question that has made it's way in and out of strength and conditioning discussions for quite some time. As more and more women participate in sports and as female college and professional sports continue to grow, it will undoubtedly be a hot topic. There are multiple issues that arise when women compete in sports that are not a problem with men. These include the female athlete triad, increased risk of ACL injury, and pregnancy.

The female athlete triad consists of 3 interrelated problems that arise in the female athlete, typically manifested as a consequence of disordered energy balance. The 3 components of the triad are disordered eating, menstrual problems, and bone density reduction (6). Female athletes often assume that a decrease in body fat will lead to performance enhancement, even though the decreased energy availability typically leads to decreases in immediate performance.

Having low energy levels also causes the body to reduce energy expenditure on other processes. In the female athlete, this can lead to menstrual problems, particularly amenorrhea, or discontinuation of the menstrual cycle. It can also lead to decreased bone mineral density, as new bone tissue is not formed and tiny cracks in the bone are not healed and possibly lead to osteoporosis (6). It is important to note that this is not natural consequence of exercise as long as energy balance is maintained within acceptable limits. In fact, exercise has been shown to have positive effects on bone mineral density.

While genetics has a major role in the incidence of osteoporosis, physical activity also has an effect on bone mineral density. The inclusion of weight-bearing activities, particularly in the high school years, leads to increases in bone mineral density which reduces the risk of osteoporosis (1, 2). It is important to note that improvements in bone mineral density will only occur in the regions of the body that are being trained. In other words, a seated dumbbell press will have little effect on the bone density of the bones of the lower body. As such, loading of the spine is the most effective method of improving bone mineral density of the spinal column and progressive resistance is crucial to continued improvements in bone mineral density (2).

Of particular importance is the notion that these problems arise because of disordered energy BALANCE and not

necessarily energy intake (Food consumption). An athlete can be eating more food than her sedentary peers, but still be at risk for the triad if she has increased her caloric expenditure to enhance endurance or drop body fat through cardiovascular training. This infers that a coach stay attentive to changes in an athlete's physical appearance more so than casually observing her food intake

Research has shown that females are at an increased risk for ACL injury. Some sources show a 6 time greater risk for ACL injury when compared to male athletes in the same sport (3, 4). Possible reasons cited for this increased risk are an imbalance between the left and right legs, an imbalance between quadriceps and hamstring strength, core stability, and an increased load on connective tissue as a result of weak muscles crossing the knee joint (4). Although an increased risk of ACL injury would occur with anyone who has these issues, regardless of gender, a coach should remain aware that they are typical in female athletes.

One topic that does not seem to be discussed enough is pregnancy and the female athlete. In 2005, athletes in the WNBA had an average age of just over 26 with the oldest being 38 (8), while the average age of a woman's first pregnancy in the United States is just over 25 (7). With female professional sports on the rise and the increased rate of birth defects in women giving birth over the age of 35, it is not totally out of the realm of possibility that an athlete would want to take a season off to give birth and compete again. There is a wealth of information on training and pregnancy. For the most part, the emphasis is on maintaining strength and conditioning as much as possible without negatively affecting the fetus. Guidelines set by the American College of Obstetricians and Gynecologists state women should exercise at a level that corresponds with a12-14 rating on the Borg Rating of Perceived Exertion 20 point scale with heart rate not exceeding 60-70% of maximum (5). This is equivalent to a moderate intensity level. The valsalva maneuver, ballistic and heavy lifting, and exercises in the supine position should be avoided. It is also recommended that the 12-15 rep range be used with low resistance (5). While it is possible to increase strength and power during pregnancy for an average woman, it is unlikely with a strong and highly conditioned athlete. One other strategy of value is targeted training of the hip musculature to reduce the risk of injury during the birthing process.

While many principles of strength training are consistent between the genders, being cognizant of issues typical of the female athlete will greatly enhance the coach-athlete relationship and lead to greater performance in the gym and on the field.

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7) www.homefocused.com

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