Education Key to Preventing Female Athlete Triad

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SEATTLE — Education and the collaborative efforts of a team of professionals are important for preventing the female athlete triad, according to Sharon H. Thompson, Ed.D.

The definition of the female athlete triad had been expanded recently, said Dr. Thompson, professor of health promotion at the Coastal Carolina University in Conway, S.C. Previously, the triad was viewed as consisting of disordered eating, amenorrhea, and osteoporosis. Now, athletes are considered to be affected if they have low energy availability, menstrual disorders, and low bone mineral density.

“The extent of disordered eating in athletes is really unclear,” Dr. Thompson said at an international conference sponsored by the Academy for Eating Disorders. Studies suggest that perhaps two-thirds of female athletes are affected.

“Very often, it’s thought that if a female athlete has a menstrual cycle, it may be a sign of not enough training or too much training, or [may even be] looked upon as a luxury,” she said. “But this certainly isn’t the case, because any disturbance of the menstrual cycle can affect bone health.”

It would be rare to find a female athlete who has frank osteoporosis, Dr. Thompson noted. However, “we know that athletes who have amenorrhea have 10%-25% lower bone mineral density at their lumbar spine, compared to control athletes. Bone loss may be accelerated in this population by estrogen deficiency, low energy availability, and a decreased rate of new bone formation.”

A survey that Dr. Thompson conducted among 300 female collegiate cross-country runners found that 23% had irregular menstrual cycles.

Athletes who are not consuming enough calories often become deficient in nutrients as well, and some of these (calcium, vitamin D, vitamin K, phosphorus, magnesium, and fluoride) are critical for bone health, she noted.

Amenorrhea in female athletes is associated with a two- to fourfold increased risk of stress fractures. Dr. Thompson said at the conference, which was cosponsored by the University of New Mexico. But they may have other types of menstrual dysfunction, including oligomenorrhea, anovulation, and luteal phase deficiency, which also affects their bones.

“Low energy availability, low bone mineral density, and amenorrhea are all interrelated,” Dr. Thompson said. “So, we need to focus on all three.”

She emphasized that evaluation and treatment should be nonstigmatizing, and that athletes be made aware of their risk factors early in their careers. “We don’t want to eat this experience,” she said. “We want to learn from it.”

It is important to realize, when [you screen] for the female athlete triad, that the main priority really should be looking for low energy intake, which of course could be some type of disordered eating for these female athletes,” Dr. Thompson said. She recommended that screening questions be part of the routine medical history to avoid calling undue attention to them. And athletes suspected of having disordered eating should be interviewed in person and given surveys that have been validated in this population (J. Athl Train. 2008;43:80-108).

When drafting educational programs for athletes, institutions can refer to guidelines from the National College Athlete Association and the American College of Sports Medicine, Dr. Thompson said. Such programs should present factual information and resources on eating disorders, nutrition, weight, and menstrual health to avoid any stigmatization, she advised.

Since many coaches lack formal education on the female athlete triad, Dr. Thompson recommended mandatory, comprehensive training for this group at least annually so they are better prepared to recognize and deal with the condition.

“The bottom line is researchers have found that coaches who have more education are more likely to emphasize healthy eating rather than weight standards for their athletes,” she said.

Certified athletic trainers can look to educational competencies for working with athletes outlined by the National Athletic Trainers’ Association, according to Dr. Thompson. “Prevention efforts do work and should be implemented,” Dr. Thompson concluded. “It’s important that a team of professionals be there to work with athletes.” Mental health, athletic training, medicine, and nutrition professionals; coaches; and athletic administrators “can all work together to improve the health of the female athlete.”

Dr. Thompson reported that her survey was funded by a grant from the South Carolina Osteoporosis Coalition, and the South Carolina Department of Health and Environmental Control.