Instructors Guide – Special Populations/The Female Athlete

Powerpoint: Approximately 30 minutes

Suggested Pre-reading:

* Female Athlete Issues for the Team Physician – 2017 update. *CJSM 17(5):163-171*. May 2018.
* Health-Related Concerns of the Female Athlete:A Lifespan Approach. *AFP 79(6):489-495*. March 2009.
* Bone Densitometry in Children and Adolescents. *Pediatrics 138(4):e1-e7*. September 2016.
* Recognition and Management of Vitamin D Deficiency. *AFP 80(8):841-846*. October 2009.
* <http://www.ncaa.org/about/resources/inclusion/pregnant-parenting-student-athletes>

Overview:

1. Musculoskeletal Conditions
2. Medical Conditions
3. Disordered Eating/Female Athlete Triad
4. Pregnancy
5. Lifespan Consideations

General Concept: Identifying conditions unique to female athletes and ensuring proper care based on unique anatomy and physiology

ACL INJURIES:

* Most common is late teens/early 20s
* Non-contact mechanism more common (in men, it’s more due to direct contact)
	+ Think ACL in skiing, field sports (soccer/lacrosse), jumping sports (basketball, cheer, gymnastics)
* Increased Q angle relative to men will increase risk
	+ Relatively wider pelvis – diagram in power point

PATELLOFEMORAL DISORDERS:

* Structural disease may or may not be present
* Neuromuscular Imbalance – weaker athletes at higher risk
* Introduce concept of “prehab” – preventative strength training/technical training
* Another overuse condition – year round training can lead to acute or chronic injury

SHOULDER INJURIES:

* Men and women
* Throwing and swimming
* Overuse and poor technique (beware boys corrected and young age vs girls)
* Prehab again important

BONE STRESS INJURIES:

* Continuum where stress fracture is end stage
* Know common sites (expected) vs high risk sites (concerning) – warrant further workup
* Think of disordered eating – opportunity for counseling and referral vs splint and discharge
* In ED – counsel smoking cessation; consider vitamin D and calcium supplementation

DEXA scan/Vit D and Ca prescription: Included for sake of interest, not really an ED issue

CONCUSSION:

* Higher rate of reporting in women?
* Cultural differences?
* Imbalance of head size/weight vs cervical muscle strength
* Mechanism: contact will ball/stick as opposed to another player
* Fun fact: Cheerleading is the only sport with a higher rate of concussion in practice than in competition
* Consider early referral to specialist

FEMALE ATHLETE TRIAD: Know all 3 components

* More accurate terminology for disordered eating is RED-S (Relative Energy Deficiency in Sport)
	+ Need adequate caloric intake to meet increased metabolic demand in athletes
* Menstrual Dysfunction (no longer just amenorrhea)
* Abnormal bone density (no longer just osteoporosis)
* Incredible opportunity to recognize/counsel/refer in ED. They are injured/vulnerable and may be in a different position to listen

DISORDERED EATING: When it’s an emergency (to pull from play/send to ED/admit)

* Biggest take home: there is no “look” to an eating disorder patient. Being severely underweight is only 1 facet and commenting on a patient’s look will often lead to lack of trust
* Low energy availability = caloric intake does not match metabolic needs
* Females at higher risk, but males at risk too
* Know the sports where athletes are at higher risk
* Admit when: hemodynamic instability, electrolyte abnormality, inability to eat, unwillingness to eat, lack of adequate follow up
* Treatment is multidisciplinary but ED physicians are often in a place to blow the whistle

THE PREGNANT ATHLETE:

* Exercise in pregnancy safe and recommended (but needs close supervision to start a new regiment)
* Risks:
	+ Increased susceptibility to environmental exposure
	+ Increased metabolic rate (need for hydration/caloric intake)
	+ Risk of trauma to gravid abdomen
	+ Risk of barotrauma
	+ Risk of travel (air travel/places with unusual infections)
	+ Musculoskeletal differences
	+ Physiologic differences
* Beware discrimination (strict NCAA policies)

LIFESPAN CONSIDERATIONS:

* Childhood (age 4-10) – increased risk for environmental/overuse injuries
* Adolescence (age 11-17) – increased risk for overuse injuries/FAT/certain MSK injuries
* Adulthood (age 18-49) – pregnancy/pelvic floor dysfunction
* Older adulthood (age 50+) – fall prevention/disease management/environmental injury