Sample Lesson Plan for IPE Day Workshop
Adolescent Dancer Pre-Season Screen Case Study

Note: Columbia Commons IPE is providing detailed samples of how an interprofessional workshop may unfold. Please feel free to use this lesson plan in its complete form or adapt and modify as you see fit.

By the end of this session, learners will be able to:

- Describe the strengths and weaknesses of pre-season health screens as a health promotion initiative.
- Coordinate with professionals across other health care disciplines (e.g., medicine, nursing, nutrition, social work, psychology, physical therapy, occupational therapy, chaplaincy, public health) to address health concerns of adolescents and the prevention and management of the female athlete triad and associated complications.
- Discuss the public health impact of sports specialization and intensive training in young athletes/dancers
- Describe the rationale or importance of interprofessional team skills in health care delivery in the context of their own learning or work experience.

Keywords: adolescent health; interprofessional training and collaboration; female athlete triad; overuse injuries; sports specialization and intensive training; pre-season health screening; eating disorders; dancer wellness

Orienting questions for all IPE workshops:

- What is your understanding of your profession’s role on this topic?
- To what extent is this topic covered in your curriculum?
- How can we leverage diversity of experience on the health care team?
- How have you seen interprofessional practice in healthcare on this topic as a patient, as a student, or as a clinician?
Introductions and Ice-Breakers (15 minutes)

- Faculty workshop leaders will demo these introductions before students break out into small groups.
- Form groups of 4-5 students with 3 or more professions represented in each group.
- Introductions should include:
  - Name, school, year
  - Preferred pronouns
  - Statement about how much preparation your program provides re: health screens, female athlete triad, and/or impact of intensive training in adolescent athletes/dancers.
  - Briefly discuss your exposure to interprofessional education and to the specific health professions represented in the workshop.
- Regroup: Faculty leaders will poll (via a show of hands) health professions represented in the room, exposure to key topics, exposure to IPE.

Content Delivery: Pre-Case Introduction (20 minutes)

Acknowledge content sources (MedEdPORTAL-The Journal of Teaching and Learning Resources; TeamSTEPPS ®; International Association of Dance Medicine and Science; Center for Adolescent Health John Hopkins Bloomberg School of Public Health; Columbia Commons IPE, other sources where cited)

Interprofessional Learning Definition

“Interprofessional education is defined as a “teaching strategy or educational approach where two or more professionals learn about, with, and from each other to improve collaboration and the quality of care.” The goal of interprofessional education is to engage learners in interactive learning that will enhance their interprofessional collaborative competencies.”¹

Adolescent Dancer Health

“Because they are in developmental transition, adolescents and young adults (AYAs) are particularly sensitive to influences from their social environments. Their families, peer groups, schools, and neighborhoods can either support or threaten young people’s health and well-being.”²

² https://www.healthypeople.gov/2020/topics-objectives/topic/adolescent-health
“Adolescence is a critical transitional period that includes the biological changes of puberty and developmental tasks such as normative exploration and learning to be independent. Young adults who have reached the age of majority also face significant social and economic challenges with few organizational supports at a time when they are expected to take on adult responsibilities and obligations.”  

“The adolescent growth spurt often occurs just as dance students are committing to career paths and increasing the intensity of their dance training. During the growth spurt enormous physical, psychological, and social changes correspond to a time when the young dancer is very vulnerable. Sudden increases in height and decreases in muscle strength and coordination are compounded by dramatically fluctuating hormone changes. Taken together, these changes can overwhelm both male and female teenagers. Choices made during the adolescent growth spurt can have a profound impact on a dancer’s professional development and long-term health. Parents, teachers, and the young dancers themselves all need to be aware of the following: physiological changes, psychological issues, nutritional considerations, and the need for training modifications.”

“In addition to technical training, it is essential that dance instruction involve education with respect to the well-being of the whole dancer. Preparing the dancer must include strategies to maintain physical and mental health. The bone health of dancers has long been a topic of concern to dance medicine researchers. Poor nutrition, disordered eating, and excessive training can lead to hormone imbalance followed by delayed menarche (onset of menses) or amenorrhea (loss of menstrual cycle) which can frequently cause sub-optimal bone mineral density in the young dancer.”

**Screening in a Dancer Wellness Program**

“Dance as an art form is an activity with high physical and mental demands. To monitor the impact of these demands, Dance Wellness Programs are often established dance schools, university dance departments, and professional dance companies. The goal is to promote dancer health. A Dance Wellness Program may include a range of activities and approaches to dancer health,

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3 https://www.healthypeople.gov/2020/topics-objectives/topic/adolescent-health
4 http://www.iadms.org/?page=1&hhSearchterms=%22social+and+dance%22
5 https://www.iadms.org/?212
including screenings. Screenings are groups of tests or assessments designed to collect information regarding a dancer’s unique condition. Screenings may include both physical assessments and surveys that collect information about a dancer’s nutritional and psychological well-being.”

“At the present time, screenings have not been scientifically proven to be able to predict dance injuries”

“Below is a table of sample screening components, a brief list of categories covered, and suggested professionals needed to conduct the assessment.

<table>
<thead>
<tr>
<th>Sample Screen Components</th>
<th>Professionals to Conduct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>Athlete Trainer, Nurse Practitioner, Osteopath, Physical Therapist / Physiotherapist, Physician</td>
</tr>
<tr>
<td>-general health screenings</td>
<td></td>
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<tr>
<td>-medical history, diagnosis, treatment</td>
<td></td>
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<tr>
<td>-anthropometric measures/growth</td>
<td></td>
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<tr>
<td>-structural abnormalities</td>
<td></td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>Athlete Trainer, Chiropractor, Nurse Practitioner, Osteopath, Physical Therapist / Physiotherapist, Physician</td>
</tr>
<tr>
<td>(includes injury history)</td>
<td></td>
</tr>
<tr>
<td>-physical assessment</td>
<td></td>
</tr>
<tr>
<td>-static alignment</td>
<td></td>
</tr>
<tr>
<td>-range of motion (hypo- or hyper-mobility)</td>
<td></td>
</tr>
<tr>
<td>-strength</td>
<td></td>
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<tr>
<td>-muscular imbalances</td>
<td></td>
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<tr>
<td>-functional asymmetries</td>
<td></td>
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<tr>
<td>Fitness</td>
<td>Athlete Trainer, Exercise Physiologist, Physical Therapist / Physiotherapist</td>
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<tr>
<td>-cardio-respiratory response</td>
<td></td>
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<tr>
<td>-body composition</td>
<td></td>
</tr>
<tr>
<td>Technical Dance Skills</td>
<td>Dance Instructor, Qualified healthcare provider</td>
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<tr>
<td>(includes dance training history)</td>
<td></td>
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<tr>
<td>-fundamental motor skills</td>
<td></td>
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<tr>
<td>-dynamic alignment</td>
<td></td>
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<tr>
<td>-core stability</td>
<td></td>
</tr>
<tr>
<td>-dance technique specific to form</td>
<td></td>
</tr>
<tr>
<td>Psychological, Psychosocial</td>
<td>Psychologist, Psychiatrist, Social Worker</td>
</tr>
<tr>
<td>-questionnaires, surveys and interviews covering performance anxieties, self- esteem, depression</td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>Dietician, Nutritionian</td>
</tr>
<tr>
<td>-questionnaires and surveys on food, diet and eating habits</td>
<td></td>
</tr>
</tbody>
</table>

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8 http://c.ymcdn.com/sites/www.iadms.org/resource/resmgr/resource_papers/dance_screening.pdf (note: we have modified this table to include additional professions)
• **Implementation:** The type or scope of screening to be administered may be related to the space available for screening, the type of dance and dancer, the timing of the screening, the available personnel, and the planned use of the results. Further, the availability and expertise of professionals to administer the screenings needs to be considered. Professionals may include doctors, physical therapists / physiotherapists, exercise physiologists, psychologists, social workers, nutritionists, movement science researchers, and the dance instructors themselves.

• **Follow-up:** The screening is not an end in itself. Analysis of the data should be conducted and a personalized summary or profile for each dancer should be provided and sensitively communicated."

**A more expansive list of professionals may be involved in the health management of a dancer once issues are identified in a screen.**

“Summary:

• Dance is a rigorous physical activity. Screenings may be useful for determining safety for participation in dance.

• Screenings may provide important and useful baseline data.

• Screenings might indicate tendencies in a group that could later help identify injury patterns or other "workload indicator" patterns of that group.

• Dancers often lack health insurance and may be wary of the advice given by doctors unfamiliar with the specific demands of dance. Screenings may introduce dancers to dance medicine healthcare providers with whom they may consult in the future.

• Screenings have not yet been proven to be predictive of risk for injury. The association between screenings and health outcomes at present is not well understood. ”

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10 http://www.iadms.org/?page=174&hhSearchTerms=%22screen%22
SBAR Method of Communication

We have different methods of communication that may vary by culture, gender, language, and profession. One professional may summarize a case using a narrative approach. Another may limit the reporting to the facts/empirical data. SBAR is a method of communicating that encourages succinct reporting of key information in a structured communication format. SBAR provides a framework for team members to effectively communicate information to one another.

1. **Situation** – Introduce yourself. Describe the situation, as you understand it. Express your clinical concern or question. Describe your role on the team for the particular issue.
2. **Background** – provide information that will concisely provide background or context for your primary concern.
3. **Assessment** – “What do you think is going on?” Clearly state the prioritized problem and what may happen if not addressed. The assessment provides a rationale for your subsequent recommendation.
4. **Recommendation** – Describe the recommended follow-up for the situation/concern. Include specific strategies and specific professionals that may be involved.

Interactive Activity: Case Study (20-25 minutes)

Form groups of 3 – 5 students with 3 or more professions represented in each group. [See: Appendix 1: Adolescent Dancer Screen Case Study]

Review the case study addressing the screening results from an adolescent dancer. Take notes using the SBAR framework. Prioritize the concerns that would be most relevant for your professional role. Identify other professional and non-professional roles that would be critical to the optimal management of this dancer’s health.

Take turns sharing your assessment of the situation, concerns, and recommendations using the SBAR communication framework.

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Case Study & Discussion (25 minutes)

- What is your understanding of your profession’s role in this case?
- How can we leverage diversity of experience on the health care team?
- What is the female athlete triad and potential health consequences?
- What are some of the implications of this case with regards to public health & mental health?
- What other adolescent groups are at risk of female athlete triad?
- How do social determinants of health impact the care and follow-up that this dancer will receive after the screening event?
- What are some of the pros and cons of health screening events?
- What is needed to improve this health issue?
- What are some of the benefits of managing this issue with an interprofessional collaborative approach?
- How will participation in this interprofessional workshop inform your future practice?

Faculty Talking points on clinical issues

What is the female athlete triad?
- The female athlete triad involves the relationship and often sequential development of:
  - Low energy availability
  - Irregular menses
  - Poor bone health
An athlete with signs or symptoms of any one of these components should be evaluated for the other two because of this relationship

What is low energy availability?
- Imbalance of calories in and calories out (common in endurance athletes)

Recommended Team Approach
- Patient, obstetrician–gynecologist, orthopedic MD/ NP /PA, physical therapist, sports nutritionist, coaches/ dance instructors, parents
- mental health care provider & dental health care provider, if indicated

Role of SW? OT? Pastoral care? Public Health Advocate?

Others?
Appendix 1: Adolescent Dancer Screen Case Study

Case: 17 y.o. Caucasian female dancer has been screened by an interprofessional team as part of a pre-season wellness program. A summary of the screening findings are presented below.

Medical History: N/A

Injury History:
Left metatarsal stress fracture suggested at last pediatrician visit (3 months prior) as possible cause of foot pain exacerbated by jumping in dance class. Dancer did not follow up for diagnostic imaging or a more comprehensive musculoskeletal evaluation at that time.

Change in training schedules:
Dancer recently selected for the pre-professional ballet company. She has a lead role in the Nutcracker, and will be competing in the Youth American Grand Prix as a soloist and in a company ensemble piece.

Average daily dancer hours: 2.8 hours, six days a week
6 ballet technique classes, 1 contemporary class, 1 ballet variations class, 1 character class, Pre-professional Company rehearsals

EAT26 [a survey to help track individuals who may be at risk for disordered eating]
Includes Dieting scale items; Bulimia & Food Preoccupation scale items; Oral Control subscale items:
EAT-score = 22 [Indicates a high level of concern about body weight or problematic eating behaviors]
(+) In last 6 months for “Ever made yourself sick (vomited) to control weight or shape

Menarche
Age of first menstrual period: 12 years old
Most recent menstrual period: 9 months ago
Number of periods in last 12 months: 2

Anthropometrics
Body Height: 5’5” (165.1cm)
Body Weight: 105lbs (47.7kgs)
Body Mass Index: 17 (underweight)

Heart Rate: 77 (bpm)

Blood Pressure: 120/80 (mmHg)

StepTest: Max HR 155 bpm; Recovery HR 88bpm; Level: Good

Body Fat Assessment: 16%
[Body fat calculation based on Sloan equation using 2 skin fold sites.]
Flexibility Laxity:
- Hip Internal Range of Motion R: 34 degrees  L: 30 degrees
- Hip External Range of Motion R: 38 degrees  L: 40 degrees
- Ober Test R: 1 inch (tight ITB)  L: 1 inch (tight ITB)
- Hamstring length via SLR:
  - Knee Extension Range of Motion R: 10 degrees (Hyperex) L: 10 degrees (Hyperex)
  - Knee flexion 150 degrees
- Gastrocnemius Length Assessment R: -5 degrees L: -5 degrees
- Soleus Length Assessment R: -10 degrees L: -10 degrees
- Beighton Hypermobility Score: 6/9

Strength Asymmetries:
- Hip flexion (4L <R5); Hip extension (5L >R4); Hip External rotation (4L <R5); Hip Internal Rotation (5L >R4)

Posture:
- Forward Head: (-)
- Shoulders: level
- Pelvic Tilt: 15 degree anterior tilt
- Scapular Winging: mild

Technique:
- Floor Turn Out: L 68 degrees R 55 degrees
- Disc Turn Out: L 67 degrees R 56 degrees Pelvic

Arabesque développé: gesture knee not fully extended above 110 degrees

Développé 2nd from 1st: Loss of turnout in hip of gesture leg (above 90 degrees); elevated hip (hiked)
Appendix 2: Adolescent Health Background Information

The Teen Years Explained: A Guide to Healthy Adolescent Development uses a few key terms throughout the chapters. Below are the definitions.

**Adeolescence.** Usually defined as the second decade of life, adolescence is the period of transition from childhood to adulthood. Research now note that bodily and brain changes associated with adolescence may begin as early as age 8 and extend until age 24.

**Health Risk Behaviors.** These are behaviors that make one more likely to experience a negative health result. For example, unprotected sexual intercourse is a health risk behavior that makes one more susceptible to sexually transmitted infections and unplanned pregnancy. Health risk behaviors are commonly referred to as risky health behaviors.

**Positive Youth Development.** Positive youth development is a framework for developing strategies and programs to promote healthy development. It emphasizes fostering positive developmental outcomes by providing young people the experiences and opportunities to develop core developmental assets. The list of core developmental assets typically includes what are known as the 5 Cs: competence, connection, character, confidence, and caring.

**Protective Factors.** These are characteristics or behaviors that increase the likelihood of experiencing a positive result (e.g., the presence of a caring adult is a protective factor for school success). Protective factors directly promote healthy development and also reduce the negative impact of risk factors. Protective factors exist wherever one finds young people—in school, at home, and in the community—and include things such as a long-term relationship with a caring adult, opportunities to build skills and become good at something, and belonging to a group of friends who value academic achievement. Protective factors can also be internal to a person, such as having a sunny temperament.

**Puberty.** The World Health Organization defines puberty as “the period in life when a child experiences physical, hormonal, sexual, and social changes and becomes capable of reproduction.” It is associated with rapid growth and the appearance of secondary sexual characteristics. Puberty typically starts for girls between ages 8 and 13, and for boys between ages 9 and 14, and may continue until age 15 or older.

**Risk Factors.** These are characteristics or behaviors that increase the likelihood of experiencing a negative result. For example, smoking is a risk factor for developing heart disease, and harsh parenting a risk factor for depression. Like protective factors, risk factors can be innate (e.g., having a genetic vulnerability to a disease), environmental (e.g., being exposed to lead or living in a dangerous neighborhood), or learned behaviors (e.g., not wearing seatbelts).
Physical Growth & Development

**NORMAL PHYSICAL GROWTH**

**Girls**
- Appearance of breast buds (between 8 and 12 years of age), followed by breast development (13–18)
- Development of pubic hair (11–14)
- Growth spurt begins (average age, 10), which adds inches to height and hip circumference
- Menstrual periods (average age, 12; normal age range between 9 and 16)
- Enlargement of ovaries, uterus, labia, and clitoris; thickening of the endo-metrium and vaginal mucosa
- Appearance of underarm hair (13–15)
- Dental changes, which include jaw growth and development of molars
- Development of body odor and acne

**Boys**
- Testicular enlargement, beginning as early as 9–10 years of age
- Appearance of pubic hair (10–15)
- Onset of spermatheca, or sperm found in the ejaculate
- Lengthening of genitals (11–14)
- Rapid enlargement of the larynx, pharynx, and lungs, which can lead to alterations in vocal quality (i.e., voice cracking)
- Changes in physical growth (average age, 14), first seen in the hands and feet, followed by the arms and legs, and then the trunk and chest
- Weight gain and increases in lean body mass and muscle mass (11–16)
- Doubling of heart size and vital lung capacity, increase in blood pressure and blood volume
- Growth of facial and body hair, which may not be completed until the mid-20s
- Dental changes, which include jaw growth and development of molars
- Development of body odor and acne
Body Image

Potential unhealthy responses to physical changes

It is normal for young people to feel self-conscious and fret about their appearance. Once in a while, more serious difficulties arise as teens deal with physical changes. These include:

- Fear, confusion, or withdrawal, especially during early adolescence, ages 10-14
- Obsessive concern about appearance
- Excessive dieting or exercise
- Early-maturing teens being exposed to social situations they may not be ready to handle (e.g., being invited to parties with older teens)
- Experiencing depression and eating disorders
- Being bullied, teased, or excluded

Eating disorders

Boys, as well as girls, can develop eating disorders, which are accompanied by severely distorted views of their bodies.

**ANOREXIA NERVOSA** Extreme weight loss and a fear of weight gain. Warning signs include dramatic weight loss, preoccupation with weight, food, calories, fat grams or dieting, excessive or obsessive exercise, and frequent comments about feeling overweight despite extreme weight loss.

**BULIMIA NERVOSA** Bulimics eat large amounts of food and then vomit or take excessive amounts of laxatives to lose weight. Warning signs include evidence of binge-eating or vomiting (purging), excessive or obsessive exercise, and ritual behavior that accompanies binging and purging sessions.

**BODY DYSMORPHIC DISORDER** An intense preoccupation with a perceived defect in one’s appearance.

**MUSCLE DYSMORPHIA** Sometimes known as “reverse anorexia,” muscle dysmorphia is a preoccupation with the idea that one’s body is not sufficiently lean and muscular. Warning signs include working out and weight-lifting to the point where school, social life, and family life are pushed aside. Boys are most susceptible to muscle dysmorphia, and often in adolescents it leads to such dangerous behavior as steroid use.
Spiritual Development

James W. Fowler, professor emeritus of theology and human development at Emory University, has written extensively about spiritual development across the lifespan. He describes the cognitive, emotional, and behavioral dimensions of faith development at different life stages.

1. Intuitive-protective faith ages 3 to 7

Children at this stage have no inner structures for sorting and understanding their experiences. Their lives are a never-ending world of fantasy, stories, experiences, and images. These images include the real events of daily life and the imaginary life of the child. Children's faith is influenced by the examples, stories, and actions of others, especially of adults with authority. Fowler claims the strength of this stage of faith lies in the birth of the imagination and the ability to hold the intuitive understandings and feelings in powerful images and stories. The pitfalls of this stage of faith lie in the potential for the child to be overwhelmed by images of terror and destructiveness.

The transition to the next spiritual stage involves the child's growing concern to clarify what is real and what only seems that way.

2. Mythic-literal faith

Elementary school age

To move to this second stage, children will necessarily have progressed to the developmental level of concrete operational thinking. The world now becomes linear, orderly, and predictable: faith at this stage becomes a matter of reliance on the stories, rules, and implicit values of the family's faith community.

During this spiritual stage, the child begins to accept the stories and beliefs that symbolize belonging to a tribe or her community. The child typically makes strong associations with "people like us" and tends to look critically at those who are "different." Stories are taken at literal in their meaning.

3. Synthetic-conventional faith

Adolescence

The term "synthetic" here means that the adolescent attempts to draw together the disparate elements of his or her life into an integrated identity. The term "conventional" indicates that the spiritual values and beliefs the adolescent holds are derived from other people who play significant roles in his or her life and, for the most part, are accepted at face value.

Young people at this stage do not have a sure enough grasp of their own identity and faith, nor sufficiently developed judgment to construct an independent perspective. Also, they are acutely attuned to the expectations and judgments of others. As a result, a young person at this stage may hold deep spiritual convictions, yet has not examined items critically.

4. Individuative-reflective faith

Late adolescence and young adulthood

During this stage, the individual emerges from the exciting influence of significant others. Young people begin to hold themselves, and others, more accountable for their own "authenticity, congruence, and consistency." They are eager to take responsibility for their beliefs, actions, and decisions and will no longer tolerate just following the crowd.

Young people at this stage do not or easily with a leadership structure that requires them to be dependent upon it. They want leadership that acknowledges and respects their personal positions and allows room for them to contribute to the decision-making of the group.

5. Conjunctive faith

Adulthood and nildlife

The experience of reaching middle age can lead to a new stage of faith development. This transition coincides with a realization of the power and reality of death feelings of growing and looking older; one's children's reaching teen age or adult years; and the awareness that there are aspects of one's own identity and circumstances that cannot be changed. Fowler sums up the life experience needed to begin transition into this stage as "having learned by having our knees rubbed in our faiths." Conjunctive faith accepts paradox: and the apparent contradictions of perspectives on such an intimate, yet vastly, People at this stage will "resist reductionist interpretations and are generally prepared to live with ambiguity, mystery, wonder, and apparent irrationalities.

6. Universalizing

Middle age and beyond

It is rarely the case that people reach a stage of faith development. Fowler's examples include Mother Teresa and Mahatma Gandhi, who are characterized as selfless. They have given up ego for the greater good of the community.
Teen Stress

THINGS THAT CAN CAUSE YOUTH STRESS

- School pressure and career decisions
- After-school or summer jobs
- Dating and friendships
- Pressure to wear certain types of clothing, jewelry, or hairstyles
- Pressure to experiment with drugs, alcohol, or sex
- Pressure to be a particular size or body shape. With girls, the focus is often weight. With boys, it is usually a certain muscular or athletic physique.
- Dealing with the physical and cognitive changes of puberty
- Family and peer conflicts
- Being bullied or exposed to violence or sexual harassment
- Crammed schedules, juggling school, sports, after-school activities, social life, and family obligations

SIGNS AN ADOLESCENT IS OVERLOADED

- Increased complaints of headache, stomachache, muscle pain, tiredness
- Shutting down and withdrawing from people and activities
- Increased anger or irritability; i.e., lashing out at people and situations
- Crying more often and appearing teary-eyed
- Feelings of hopelessness
- Chronic anxiety and nervousness
- Changes in sleeping and eating habits, i.e., insomnia or being “too busy” to eat
- Difficulty concentrating

Additional Background Notes for discussion:

[Diagrams showing the relationship between energy availability, menstrual status, and bone health]

13 http://totalformfitness.com/female-athlete-triad/
**Excerpts from Quizlet (original sources unknown):**
https://quizlet.com/41651272/the-female-athlete-triad-flash-cards/

Disordered eating/low energy availability
Can be from:
- Excessive energy expenditure
- Calorie, protein or fat restrictions
- Weight, control measures such as diet pills, laxatives, excessive exercise
- Self induced vomiting

More advanced issues:
- Clinical eating disorders such as anorexia nervosa or bulimia nervosa

Sequence of Triad Components
- Diagnosis generally occurs in the following order:
  - Stress fracture
  - Menstrual dysfunction
  - Low energy availability
  - Development of the triad is in the following order
  - Low energy availability
  - Menstrual dysfunction
  - Osteoporosis/stress fracture

Who is at risk?
- All female athletes
- Female athletes involved in weight/appearance conscious sports and activities
- At risk athletes include:
  - Gymnasts
  - Rowers
  - Divers
  - Swimmers
  - Runners
  - Dancers
  - Figure skating

Cause of Triad
Cause is unknown
- Emotion stress appears to be a significant fact
- Increased responsibility/academics
- Higher performance standards
- New environment
Personality Characteristics
- Competitive atmosphere
- Pressure to succeed
- Heightened body awareness
- Compulsiveness and perfectionism
- Fluctuating self-esteem with performance
- Ability to block pain and hunger
- Willingness to take unnecessary risks to win
- Importance of aesthetics in sport
- Belief that body leanness optimizes performance
- Lack of identity beyond their sport

Menstrual Dysfunction
The normal cycle:
- 28 days
- 10-13 cycles per year
Menarche - the first menstrual period
Amenorrhea involves the absence of menses
- Primary (hasn’t has their first)
- Secondary (were once regular, and now no longer have it)

Osteoporosis
- A disease characterized by low bone mass and deterioration of bone tissue, resulting in bone fragility and increased risk of fracture
- Bone is living tissue, constantly being absorbed and replaced
- OP occurs when creation of new bone doesn’t keep up with the removal of old bone
- With the absence of oestrogen, bone growth is decreased
- Loss of mass occurs because absorption of calcium from the bone continues to occur at a higher rate
  • As bone mass decreases, the risk of fractures, especially stress fractures increases.

Bone Density
- Testing
  • DEXA scanning

Calcium and Bone Death
- Peak bone mass is achieved between the ages of 10-20 with small additions between the ages of 20-30 years
- A well balanced diet with adequate calcium (1300-1500mg/day) is necessary for prevention and treatment of osteoporosis
- An amenorrheic athlete can lose 5% of bone mass in one year. Some of this is irreversible even with treatment

Prevention
- Education is crucial in the prevention of female athlete triad
- Education should include
  - Team physicians, other health care providers, athletic trainers, coaches, parents and athletes.
  - Early detection reduces symptoms and can decrease the likelihood of long-term effects