

# **Introduction:**

## **Female Athlete Triad Pre Participation Evaluation**

Female athletes at risk for the Triad can be identified via a screening questionnaire. This document outlines the questions that are sensitive for identifying the athlete at risk who requires further investigation. The questions are based on a review of the current scientific literature on identifying athletes with eating disorders / disordered eating, amenorrhea and osteopenia/osteoporosis. Other documents reviewed in the compilation of this guide are the American College of Sports Medicine (ACSM) Pre-participation Examination (PPE) as well as the IOC Female Athlete Triad PPE and the ACSM Female Athlete Triad Position Stand.

### **Screening all Female Athletes:**

The first section of this document outlines the questions to be posed to all female athletes that will identify the female athlete at risk for the Triad. It is meant to be a screening tool that can be completed prior to the competitive season. The questions serve to not only identify the athlete at risk but also to stimulate conversation and discussion between the female athlete and her physician regarding her nutritional status, her body image and her overall health.

### **Screening the Female Athlete at Risk for the Triad:**

The second section of the document outlines the guidelines for the physician that should be undertaken once a female athlete has been identified at risk for the female athlete triad in the initial screening process.

This section reviews important questions to ask during history which will provide a clearer picture of the current health status of the athlete. The physical examination of the athlete can be guided by the check list provided to ensure that all necessary parameters are evaluated. Finally, a list of recommended laboratory tests are included which may be selected depending on the clinical picture and the medical judgment of the physician.

### **Authors:**

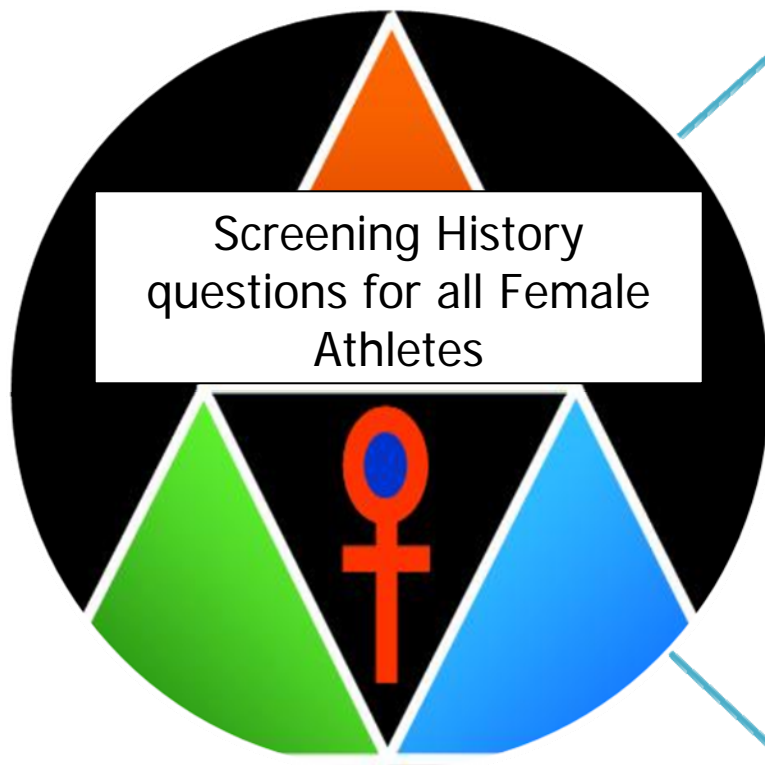
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# Screening the Female Athlete Algorithm

Evaluation for Female Athlete at Risk

detailed history



Screening History questions for all Female Athletes

physical examination

laboratory evaluation

# FEMALE ATHLETE TRIAD SCREENING QUESTIONNAIRE

The first section of this document outlines the questions to be posed to all female athletes that will identify the female athlete at risk for the Triad. It is meant to be a screening tool that can be completed prior to the competitive season. The questions serve to not only identify the athlete at risk but also to stimulate conversation and discussion between the female athlete and her physician regarding her nutritional status, her body image and her overall health. Questions address all components of the Female Athlete Triad including disordered eating/eating disorders, body image questions, menstrual history and bone health.

This tool can be given to female athletes during the pre-season evaluation, known as the pre-participation examination. Positive responses to these questions should trigger concern for the evaluating physician thus identifying the female athlete at risk for the Female Athlete Triad.

Upon identification of an 'at-risk' athlete, the physician can investigate further by completing a second level, more in-depth, questionnaire, physical examination and laboratory evaluation found following this screening questionnaire.

1. Do you worry about your weight or body composition?  
Yes      No
2. Do you limit or carefully control the foods that you eat?  
Yes      No
3. Do you try to lose weight to meet weight or image/appearance requirements in your sport?  
Yes      No
4. Does your weight affect the way you feel about yourself?  
Yes      No
5. Do you worry that you have lost control over how much you eat?

Yes No

6. Do you make yourself vomit, use diuretics or laxatives after you eat?

Yes No

7. Do you currently or have you ever suffered from an eating disorder?

Yes No

8. Do you ever eat in secret?

Yes No

9. What age was your first menstrual period?

Yes No

10. Do you have monthly menstrual cycles?

Yes No

11. How many menstrual cycles have you had in the last year?

Yes No

12. Have you ever had a stress fracture?

Yes No

# In-depth evaluation of athletes identified as high risk for the Triad by the Screening Questionnaire

The second section of the document outlines the guidelines for the physician that should be undertaken once a female athlete has been identified at risk for the female athlete triad in the initial screening process.

This section reviews important questions to ask during the History which will provide a clearer picture of the current health status of the athlete. This section focuses on details related to eating habits and attitudes towards body image. A detailed nutritional analysis of energy availability can be completed in cooperation with a registered sports nutritionist.

## DETAILED HISTORY

Please circle the response that best matches your situation.

Never= 1 Rarely=2 Occasionally=3 More often than not=4

Regularly= 5 Always=6

1. Do you want to weigh more or less than you do? 1 2 3 4 5 6
2. Do you lose weight regularly to meet weight requirements for your sport? 1 2 3 4 5 6  
How do you do it? \_\_\_\_\_
3. Is weight/body composition an issue for you? 1 2 3 4 5 6
4. Are you satisfied with your eating habits? 1 2 3 4 5 6
5. Do you think your performance is directly affected by your weight? 1 2 3 4 5 6  
If so how? \_\_\_\_\_
6. Do you have forbidden foods? 1 2 3 4 5 6
7. Are you a vegetarian? 1 2 3 4 5 6  
Since what age? \_\_\_\_\_
8. Do you miss meals? 1 2 3 4 5 6  
If so, how often? For what reason? \_\_\_\_\_
9. Do you have rapid increases of decreases in your body weight? 1 2 3 4 5 6

10. What do you consider your ideal competitive weight? 1 2 3 4 5 6
11. Has anyone ever suggested you lose weight or change your eating habits? 1 2 3 4 5 6
12. Has a coach, judge, or family member ever called you fat? 1 2 3 4 5 6
13. What do you do to control your weight? \_\_\_\_\_  
\_\_\_\_\_
14. Do you worry if you have missed a workout? 1 2 3 4 5 6
15. Do you exercise or are you physically active as well as training for your sport? 1 2 3 4 5 6
16. Do you have stress in your life outside of sport? 1 2 3 4 5 6  
What are these stresses? \_\_\_\_\_
17. Are you able to cope with stress? 1 2 3 4 5 6  
How? \_\_\_\_\_
18. What is your family structure? \_\_\_\_\_
19. Do you use or have you use(d) these ways to lose weight?
- a. laxatives 1 2 3 4 5 6
  - b. diuretics 1 2 3 4 5 6
  - c. vomiting 1 2 3 4 5 6
  - d. diet pills 1 2 3 4 5 6
  - e. saunas 1 2 3 4 5 6
  - f. plastic bags or wrap during training 1 2 3 4 5 6
  - g. other methods(please state) \_\_\_\_\_ 1 2 3 4 5 6

Review of systems: (headaches/visual problems, galactorrhea / acne / male pattern hair distribution)

Complete history of injuries.

Nutritional analysis assessing energy balance and nutrient balance.

This physical examination of the athlete at risk for the Female Athlete Triad should focus on assessment of the physical signs of eating disorders and secondary signs of hormonal abnormalities.

## PHYSICAL EXAMINATION

Height:

Weight:

Blood Pressure:

Pulse:

Physical signs of Eating Disorder:  
(lanugo, parotid gland enlargement, carotonia)

Skin: Acne / Male pattern hirsutism

Tanner Staging

Percent Body Fat (fat callipers)

Musculoskeletal Injury assessment

Laboratory examinations should be chosen from this list by the physician based on the findings from the history and physical examination.

## LABORATORY EXAMINATION (as indicated)

### Hematology:

CBC & differential, ESR, Ferritin, Vitamin B12, Folate

### Biochemistry:

electrolytes, Liver function tests, iron, TIBC, MG Phosphorus, Ca, Cholesterol, total protein, albumin

### Hormone profile:

TSH , T3, T4,

pregnancy test

LH/FSH, Estradiol, Testosterone, 17-OH -Progesterone, Sex Hormone Binding Capacity, Cortisol, Prolactin

DHEA-S and Androstenadione

IGF – I

### Urinalysis:

### Others:

Electrocardiogram

Bone Mineral Density