# FEMALE ATHLETE TRIAD (FAT) SCREENING IN HIGH SCHOOL CROSS COUNTRY RUNNERS

Nicole O’Rourke, BSN, RN, DNP student  
University of Missouri-Columbia Sinclair School of Nursing

## INTRODUCTION

**Problem:** Increased education and assessment about the Female Athlete Triad (FAT) is needed among high school female cross-country athletes as:

- early intervention prevents serious endpoints such as amenorrhea, osteoporosis and eating disorders (De Souza et al., 2014)
- Female athletes often present with one or more of the three components of the triad without knowledge of their presence
- Adolescence is the most critical time for bone mineral density (BMD)

**Zach et al. (2011) found 78% of varsity athletes had one or more components of the triad with 50% reporting menstrual dysfunction**

**Literature Review:**

- The Low Energy Availability Questionnaire for Females (LEAF-Q): 25 item questionnaire focusing on physiological symptoms developed to identify female athletes in endurance sports at risk for the FAT (Melin et al., 2014).
- The Eating Disorders Examination Questionnaire (EDE-Q): 26-item self-report measure of ED psychopathology-rate on a 0-6 scale the frequency over the past 28 days (Nichols et al., 2006).
- Kyrizas et al., only 10% of respondents could even name the three components of the FAT (2012)

## MATERIALS AND METHODS

### Setting & Sample

The setting for the education and assessment took place in a Mid-western, suburban all female high school. A convenience sample of 14-18 year old females were recruited from the female cross-country team. Participation was voluntary. Parental consent for those <18 years and athlete assent were obtained.

**Design:** Pilot study using a prospective cohort pre and post-test design using existing questionnaires LEAF-Q and EDE-Q. Pre-post test design

- **LEAF-Q:** menstrual function, injuries, GI, energy availability, disordered eating
- **EDE-Q:** based on the last 28 days (weight concern, shape concern, eating concern & restraint= global score)
- Behavior change survey: 5 questions, self-report true/false

## RESULTS

- 75% of runners had never heard of the FAT before education and intervention
- 92% of runners felt that the educational session at the beginning of their season was beneficial
- 33% of participants had a change in behavior following education on the signs and symptoms of the FAT
- 83% plan on talking to their parents or doctors if they notice any red flags related to the FAT
- 100% of participants agreed that it would be beneficial for more young female athletes to be aware of the FAT

## PICOT

In female high school cross country athletes age 14-18 how does a Female Athlete Triad (FAT) educational session affect the results of the symptom awareness questionnaires immediately after the educational session and at the end of the cross country season?

## OBJECTIVES

1. End of season LEAF-Q and EDE-Q scores will decrease by 20% compared to beginning of the season.
2. 75% of female cross country runners will experience a change in behavior related to pre-season education and questionnaires

<table>
<thead>
<tr>
<th>August 2016</th>
<th>September 2016</th>
<th>November 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FAT Screen</strong></td>
<td><strong>25 minute educational session performed with PowerPoint at the school</strong></td>
<td><strong>Follow up LEAF-Q and EDE-Q administered</strong></td>
</tr>
<tr>
<td><strong>LEAF-Q:</strong> sent home to parents explaining the project risks and benefits along with consent</td>
<td><strong>LEAF-Q administered immediately following education</strong></td>
<td><strong>5 question true/false questionnaire created by investigator</strong></td>
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<tr>
<td><strong>LEAF-Q:</strong> sent home to athletes along with assent form</td>
<td></td>
<td><strong>Discussed general results and importance of contacting investigator for scores</strong></td>
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</tbody>
</table>

## RESULTS

- **Outcome 1 NOT MET:** LEAF-Q and EDE-Q global scores (n=15) increased slightly from pre season 8.47 (sd = 4.3) to post season 8.53 (sd = 3.8). The difference between the two means was not statistically significant at the .05 level (t = .07, df = 14).
- **Outcome 2 NOT MET:** 33% of participants (n=15) had a change in behavior following education on the signs and symptoms of the FAT. The goal was 75%.

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## REFERENCES