Association between Female Athlete Triad Cumulative Risk Assessment and in-season stress fracture in collegiate cross-country athletes
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**Purpose:** Determine if risk stratification using the Female Athlete Triad Cumulative Risk Assessment (CRA) published in the 2014 Consensus Statement on the Female Athlete Triad is associated with the development of stress fracture in collegiate cross-country athletes.

**Methods and Study Design:** Retrospective chart review. We reviewed pre-participation questionnaires of 22 Division 1 female collegiate cross-country athletes during the 2014-2015 season to determine the CRA score for body mass index, menstrual history, bone mineral density, and stress fracture history. We established the score for dietary history by chart review and athletic trainer recall. Subsequent in-season stress fractures were documented in weekly injury reports. Fisher exact test was utilized to determine the association between risk stratification and the stress fracture development.

**Results:** Six athletes (28%) were “low risk”, 16 athletes (72%) “moderate risk”, and no athletes were "high risk" as stratified by the CRA. Six moderate risk athletes developed nine stress fractures during the season. No low risk athletes developed stress fractures. There was no significant association between risk stratification and stress fracture (p=0.13). Six of seven athletes with a history of stress fracture developed subsequent stress fractures during the season, which was a significant association (p=0.0002). Three athletes used oral contraceptive pills (OCP); two had been prescribed them for amenorrhea. If we assigned additional points for amenorrhea to those athletes, one would have been classified as high risk. She developed two stress fractures during the season.

**Conclusions:** The CRA scored 72% of collegiate cross-country athletes to be at moderate risk for developing the female athlete triad. However, history of stress fracture was better than the CRA at identifying athletes who developed a new in-season stress fracture in our population. The CRA may not adequately address confounders such as OCP use.

**Significance:** The CRA could possibly be improved by assigning more weight to history of stress fracture and addressing confounders.