Identifying Risk Factors for Effective Management of Stress Fractures in Ballet Dancers

Stress fractures are prevalent among both amateur and professional ballet dancers.

Understanding the risk factors can help in effectively managing these injuries.

### Risk factors for stress fractures

#### Nutritional status and energy availability
- Restricting food intake
- Avoiding high calorie foods
- Engaging in negative food-related behaviors like purging and vomiting

#### Training loads
- High training loads of up to 40 hours/week

#### Bone mineral density (BMD)
- Low BMD in non-weight-bearing areas
- Low BMD due to menstrual dysfunction
- Vitamin D deficiency

#### Body composition
- Low weight
- Low body fat percentage

#### Genetic factors
- Connective tissue disorder
- Genes associated with lower BMD
- Family history of osteoporosis and frequent fractures

#### Biomechanics
- Abnormal lower limb movement biomechanics
- Poor shoe wear
- Non-uniform dance surfaces

### Stress factor management should involve

- Preparticipation evaluation of smoking history, history of fractures, endocrine abnormalities, vitamin D deficiency, and family history of stress fractures and low BMD
- A multidisciplinary team approach for recognizing potential stress factors and providing successful intervention strategies

Understanding the various risk factors causing stress fractures among ballet dancers can help craft future prevention and intervention strategies.