



PHYSICAL DEMANDS

Physical Demands:

- Female soccer players cover approximately 10km (6.2 miles) on average during a game¹.
- Distance covered in high intensity actions is determined by applying specific speed thresholds to the players movements. There is large variation in high-speed running between soccer games due to a number of factors^{2,3,4,5}.

Factors:



Environmental conditions



Playing position



Level of play



Quality of the opposition



The playing surface



Team tactics

- Focusing solely on high-speed running neglects other soccer activities which are important in influencing the physical demands.
- It is important to know all physical demands of female soccer players to improve our understanding of the potential health and nutrition considerations.



HEALTH

Does menstruation affect athletic performance?

- In women, exercise performance might be reduced by a trivial (very small) amount during the early follicular phase compared to other phases⁶. However, this data is not specific to soccer.
- Julian et al. (2020) showed that very high intensity running distance during matches was significantly greater in the luteal phase compared to the follicular phase albeit with large measurement variance across matches⁷.

Energy Availability (EA):

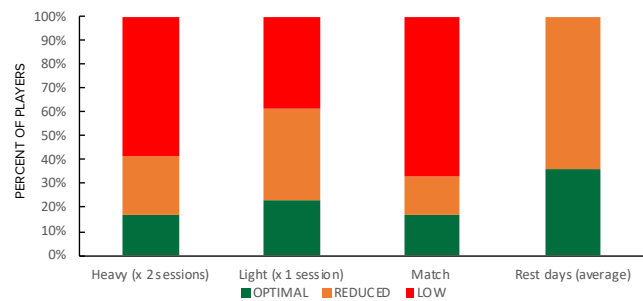
- Female soccer players may be at risk of low EA if training and competition demands are high and when there is not a reciprocal increase in energy intake. Chronic low EA can have health and performance implications.
- A study by Moss et al found that 77% of elite female soccer players had low or reduced EA over a five-day monitoring period⁸.

Average EA over the whole 5-day monitoring period

23% of players (3/13) had **OPTIMAL** energy availability (>45 kcals)

54% of players (7/13) had **REDUCED** energy availability (30-44 kcals)

23% of players (3/13) had **LOW** energy availability (<30 kcals)





HEALTH AND PERFORMANCE CONSIDERATIONS FOR FEMALE SOCCER PLAYERS

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NUTRITION

Carbohydrates:

Daily carbohydrate recommendations should be based on the daily activity level of athletes⁹.

Carbohydrates are essential for:



Maintaining short bursts of high intensity activity



Maintaining muscle glycogen stores



Maintaining blood glucose for attention & decision making



Maintaining glycogen over time

Protein:

Protein provides the building blocks for our body and helps to repair muscle tissue; this is especially important after soccer practice and matches. Total daily protein recommendations are ~1.6 g/kg/day or ~0.3 g/kg of protein for each meal^{10,11}.

A study in elite female soccer players found that carbohydrate intake was low on training and match days, but players reached the protein recommendation⁹.

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