

## OBJECTIVES

1. Contextualize the role of nutritional ergogenic aids related to proteins for the athlete population.
2. Review some supplements related to proteins.

## HYPERPROTEIC DIET

Fundamentals: increase protein and decrease carbohydrate

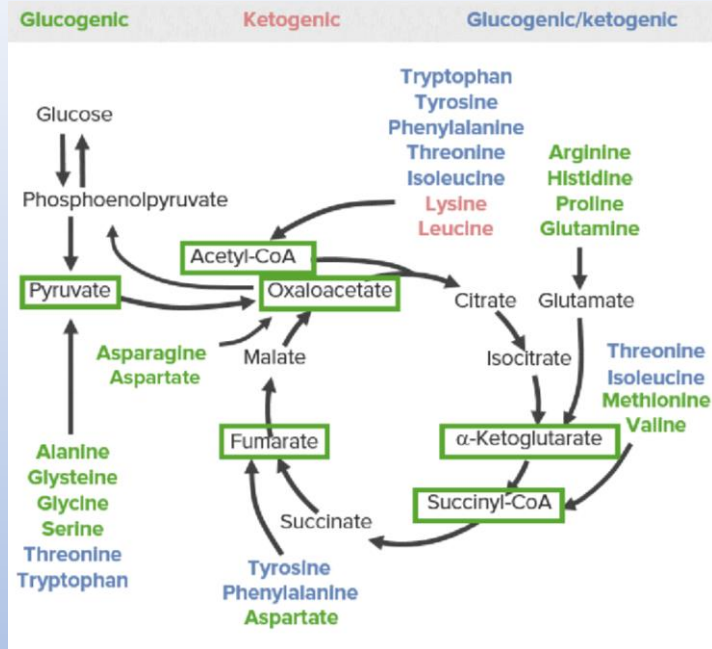


Image 1. Entry pathways for amino acids into the Krebs cycle (Ahern et al., 2018).

## POSSIBLE EFFECTS

- |  |   |  |
|--|---|--|
| <ol style="list-style-type: none"> <li>1. Energy production</li> <li>2. Metabolic acidosis</li> <li>3. Bone decalcification</li> <li>4. Kidney damage</li> </ol> | } | <p>Gluconeogenesis and Ketogenesis</p> <p>Acid overload</p> <p>Bone demineralization</p> <p>Renal stress or load</p> |
|--|---|--|

## CONCLUSIONS

1. It is important to monitor high-protein diets to avoid long-term undesired effects
2. Creatine can increase ATP availability during intense, short-duration exercises.
3. Glutamine may increase protein synthesis.

## NUTRITIONAL SUPPLEMENTS RELATED TO PROTEIN

Image 2. Mechanism of action of creatine (Echegaray & Rivera, 2001).

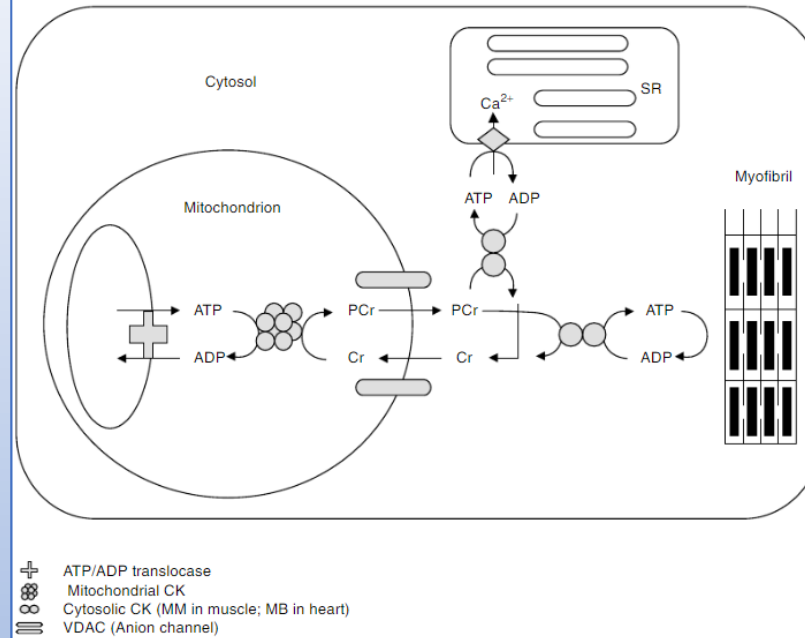
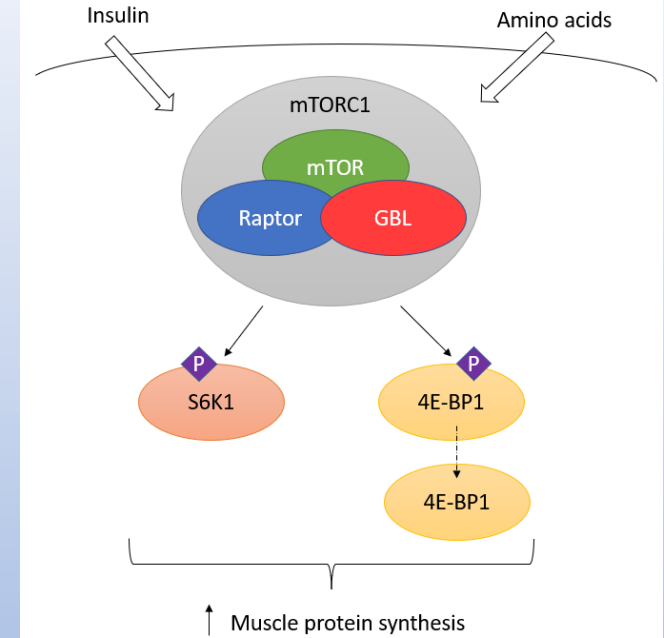


Image 3. Mechanism of action of glutamine (Qin et al., 2016).



## CREATINE

- ↑
- Availability of ATP
  - Muscular energy
  - Power
  - Force
  - Recovery between exercises

## GLUTAMINE

Maintain and increase muscular growth.