

Nutrition for Performance Enhancement

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We Educate and Empower Athletes!



Today's TOPIC

Some Micronutrients and their Importance!

- Magnesium
- Zinc
- Vitamin D

Macronutrients

- Protein - All that you should know!
- Carbohydrates and Sports performance
 - Carbohydrate timing
- Sports Drinks and Sports Performance
- Water and Sports Performance
 - Weight class and water consumption protocols

Micronutrients

Micronutrients and Sports Performance

- **Why are they Important?**
 - Regulating Metabolism
 - Maintaining Fluid Balance
 - Fatigue
 - Reducing Oxidative Stress, etc.
- **Major Reasons for Deficiency**
 - Inadequate Intake
 - Excess Fluid Loss
 - Low Energy Intake



Magnesium

Effects on Sports Performance

- Electrolyte imbalance (muscle spasm)
- Impair aerobic performance
 - long training sessions
- Energy metabolism and work efficiency
- **Deficiency**
 - **Majorly due to fluid deficiency**
 - Sweating (intensity of exercise)
 - Urination
- **Sources - Nuts and Green Vegetables**



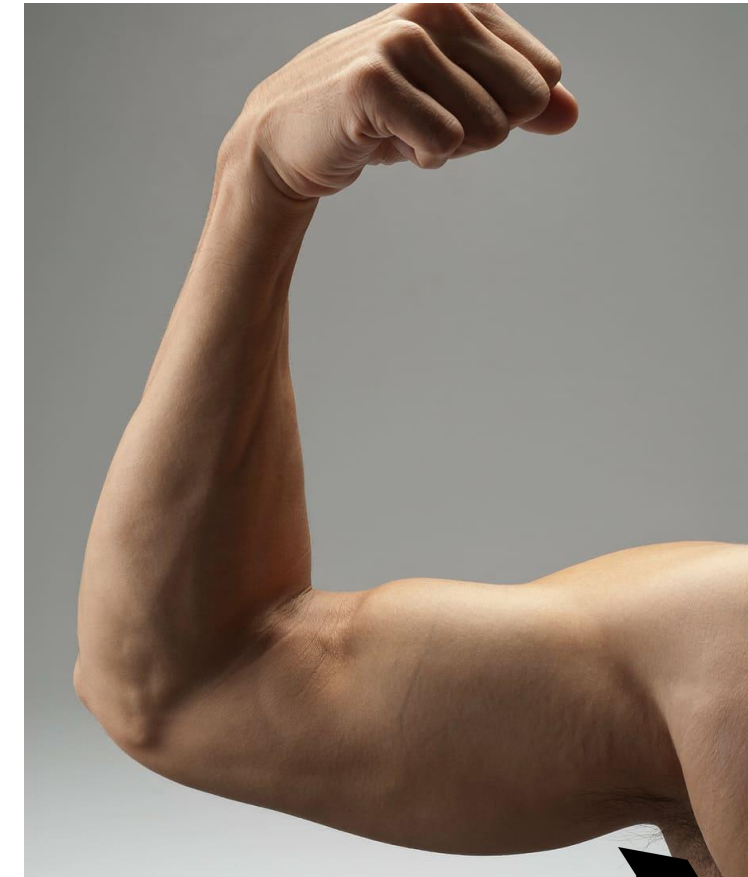
Ref:

https://www.researchgate.net/publication/279536950_Is_magnesium_a_limiting_factor_in_competitive_exercise_A_summary_of_relevant_scientific_data

Zinc

Effects on Sports Performance

- Protein and Carbohydrate Metabolism
- Muscle strength and Endurance
- **Deficiency**
 - Inadequate Dietary Intake
 - Urination and Sweating
- **Sources - Meat, Egg and Legumes**



Ref: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1748-1716.1982.tb07146.x>

Vitamin D

Effects on Sports Performance

- Impaired muscular strength
- Stress and musculoskeletal pain
- Immunity and Bone Health
- **Deficiency**
 - Inadequate exposure to sunlight
 - Inadequate Dietary Intake
- **Sources - Exposure to Sunlight, fish and eggs.**



Macronutrients!

Protein and Sports Performance

Effects on Sports Performance

- Recovery and Growth of damaged cells
- Quality of protein
- Protein Timing

How much protein should you take?

RDA (recommended daily allowance)

0.8 grams per kg BW

Strength and Endurance Athletes

1.5 to 2.0 grams per kg BW



Carbohydrates and Sports Performance

Effects on Sports Performance

- Primary Source of Energy
 - provides 60% or more of total energy required for athletic performance
 - Stored as muscle and liver glycogen
- Recovery post exercise/training sessions
- Supplements anaerobic energy metabolism

**Sources - Bread, Rice, Potato, Juices,
Sports drinks, Glucon D etc.**



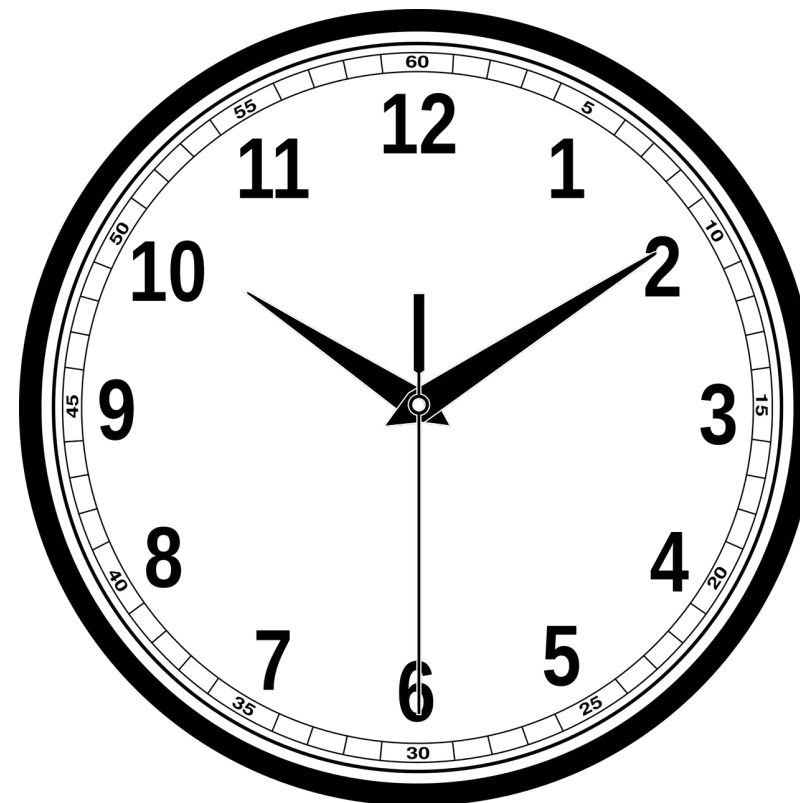
Carbohydrate timing

Importance of Carbohydrate timing

Before Training session

During Training session

After Training session



Sports Drinks and Sports Performance

Effects on Sports Performance

- Energy supply
 - Provide Carbs to help keep blood glucose levels high
- Electrolyte replacement
- Prevention from dehydration
- Pre and post exercise dehydration



Water and Sports Performance

Effects on Sports Performance

- How much to drink?
- Loss of Sodium and Hyponatremia

Water or Sports Drinks?

Weight Class and Water Intake Protocols

Dehydration and Hyponatremia

Increased Fatigue and Decreased

Performance

	Good
	Good
	Fair
	Dehydrated
	Dehydrated
	Very Dehydrated
	Severe Dehydrated

Thank You!
Any Questions?