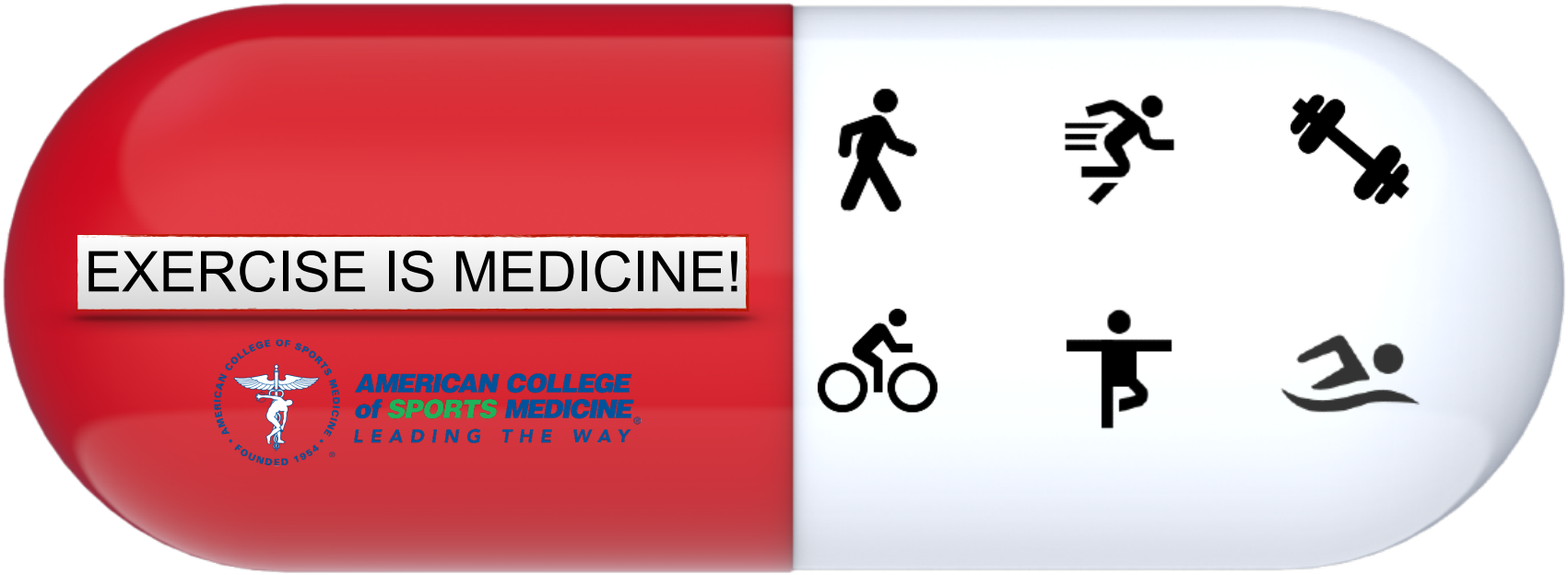
The good news



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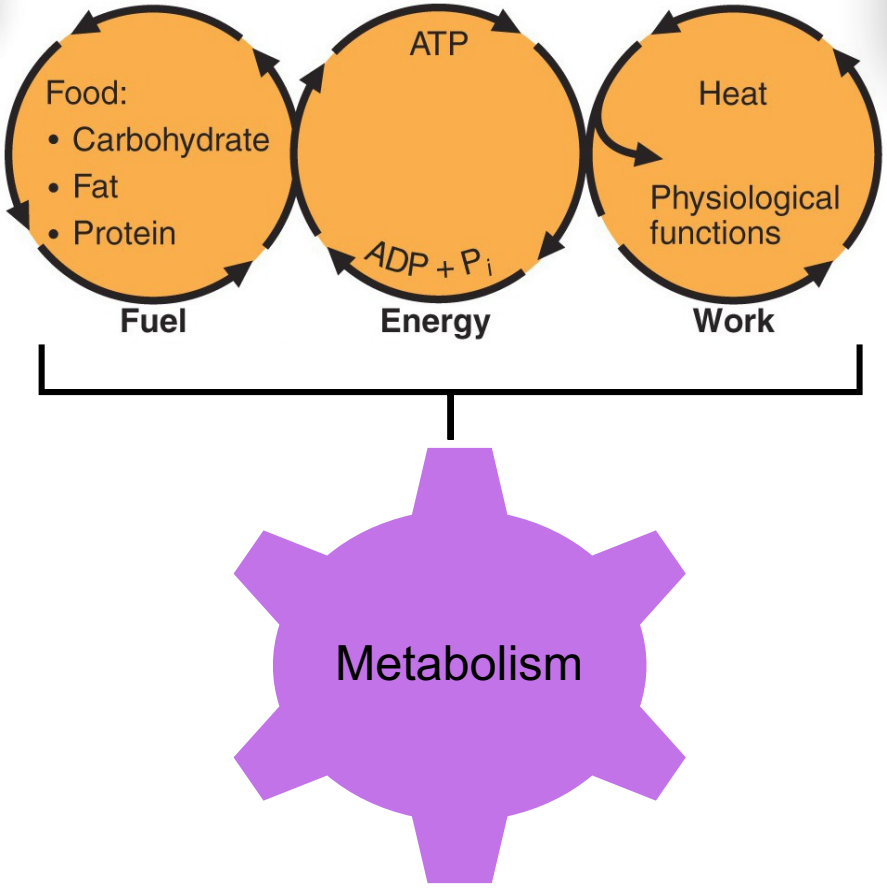
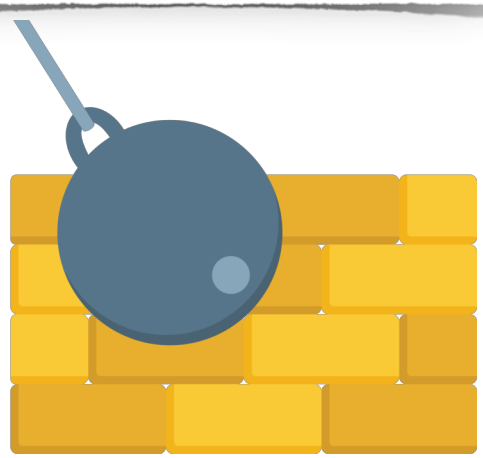
Essential concepts

Anabolism:
Process of making larger molecules from smaller ones (e.g. glucose to glycogen)
USES energy



Catabolism:
Process of breaking down larger molecules to make smaller ones (e.g. glycogen to glucose)
RELEASES energy



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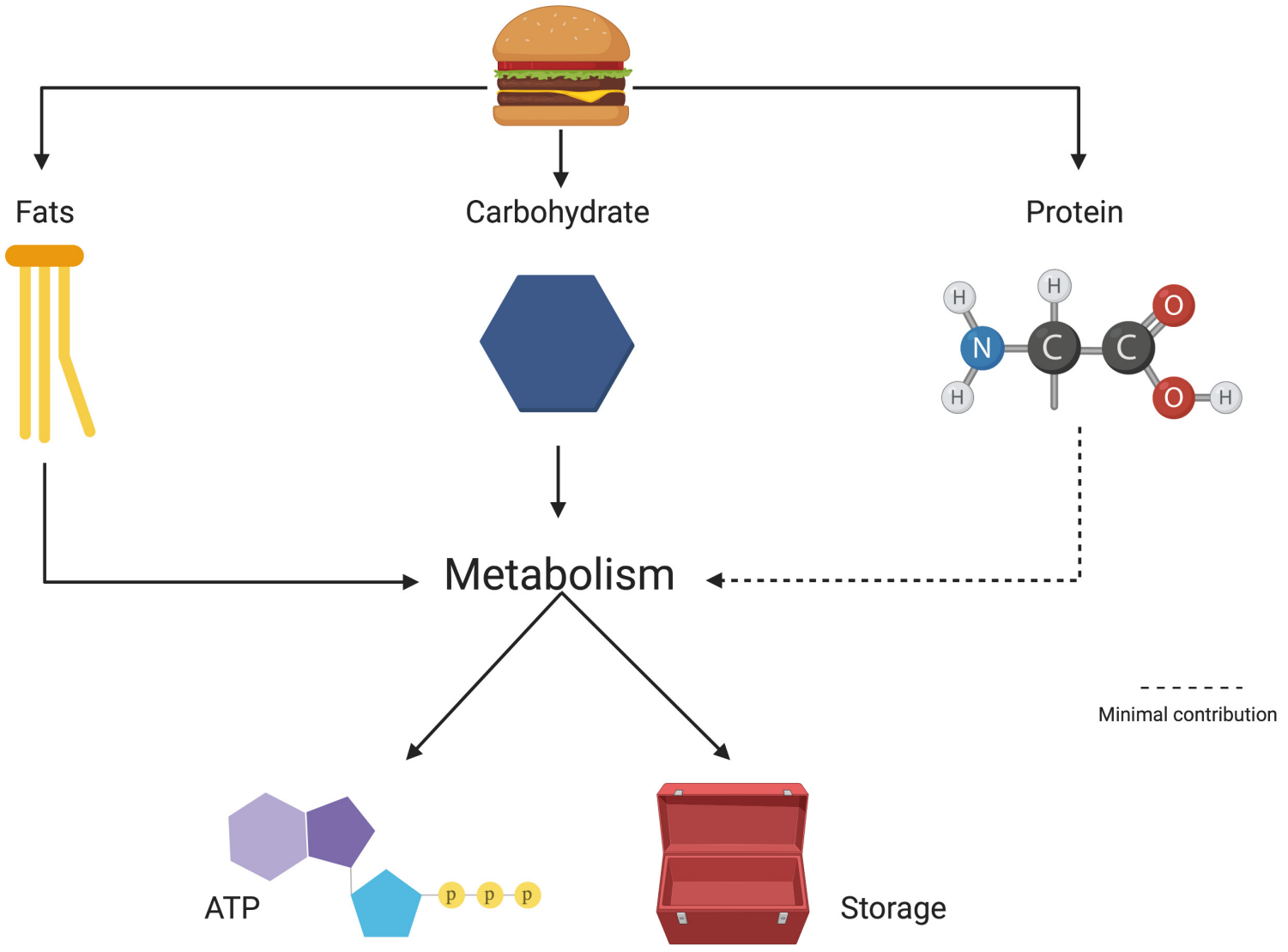
Energy consumption



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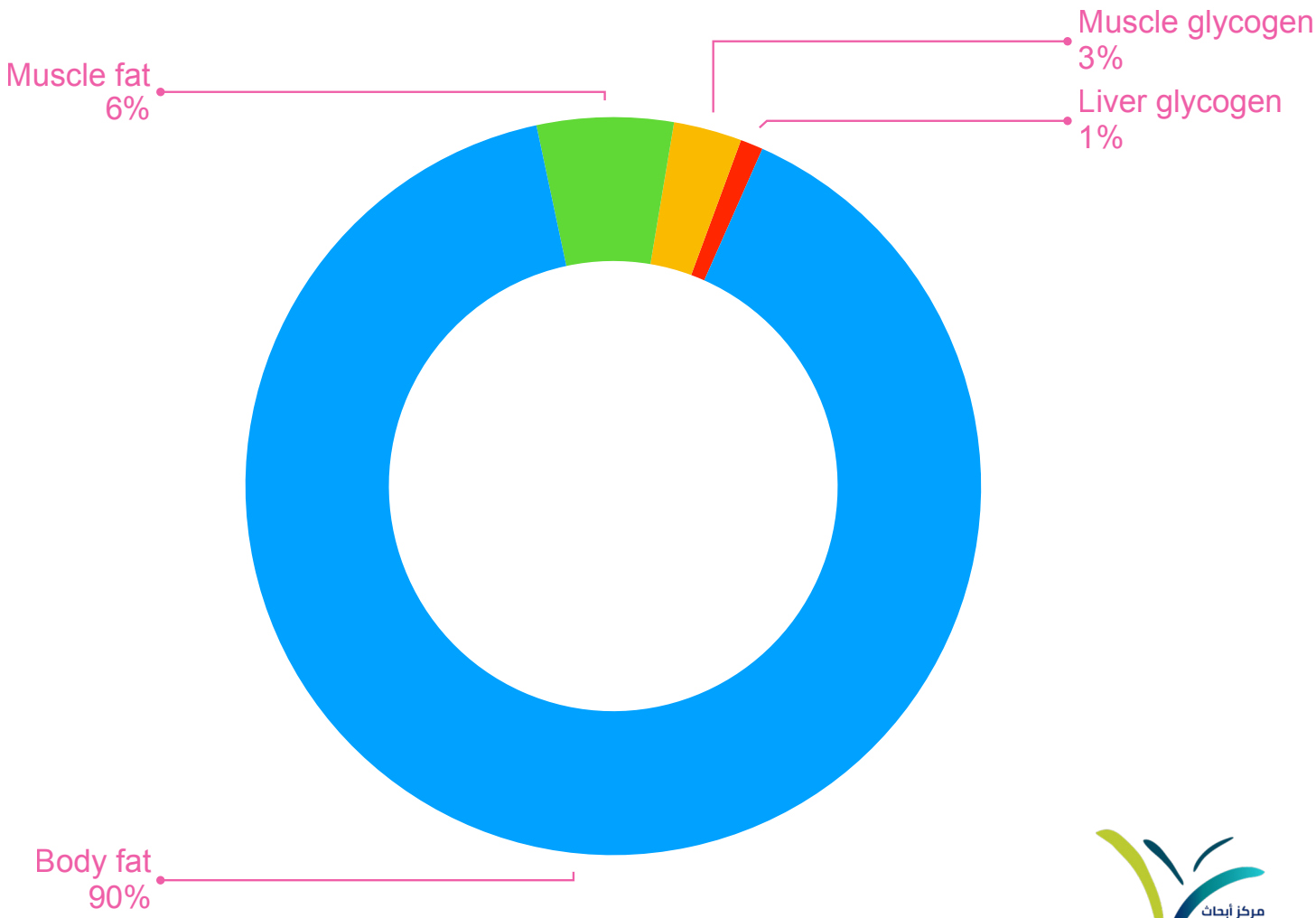
CHO & fat stores in the body

Fuel Type	Mass (g)	Available energy (kcal)
Liver glycogen	100	400
Muscle glycogen	400	1600
Blood glucose	15	60
Fat	10,500	93,000

Based on 70 g individual with 15% body fat



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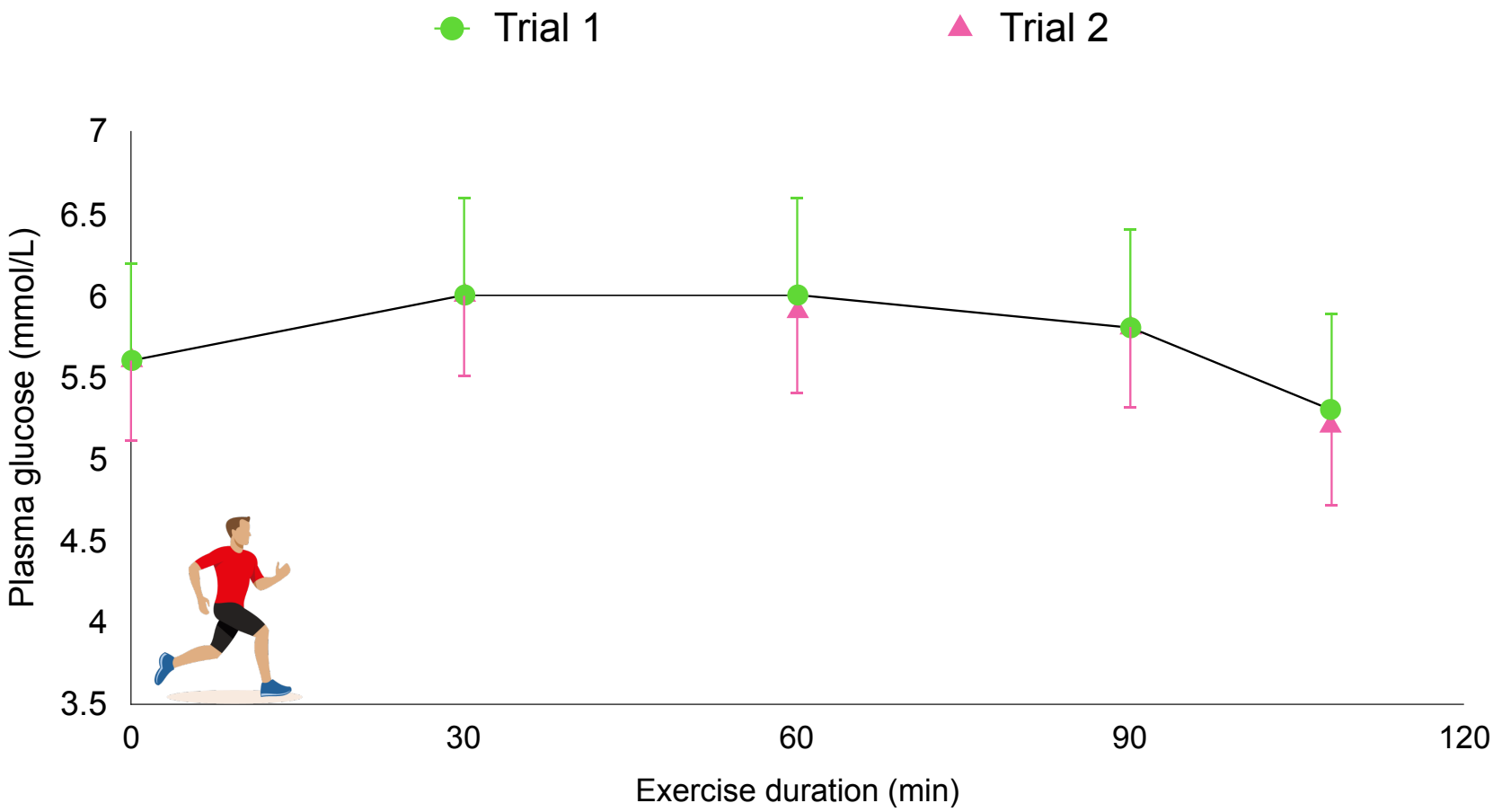
Is hypoglycemia a cause of fatigue in running?



Alghannam et al. (2016). Med Sci Sports Exerc. 48: 123-131

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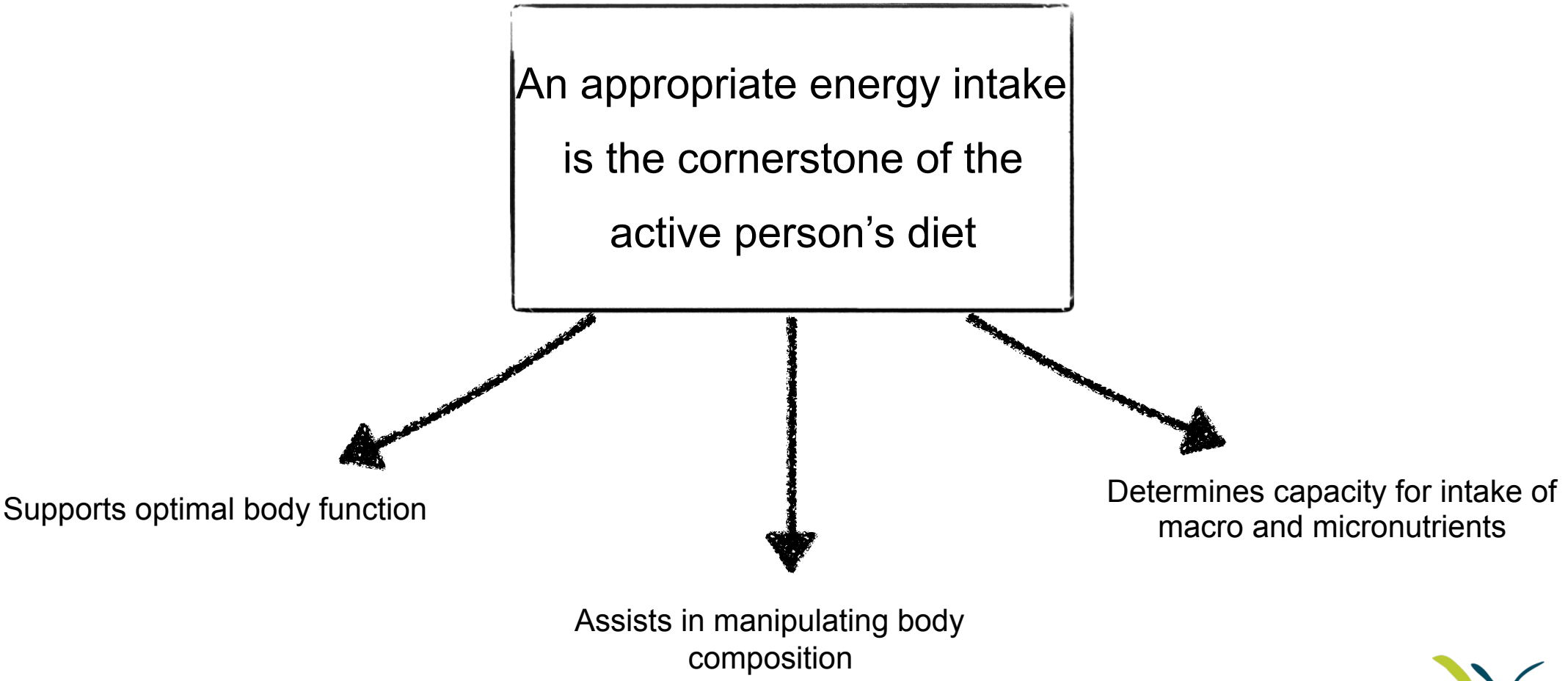
Energy requirements, energy balance and energy availability



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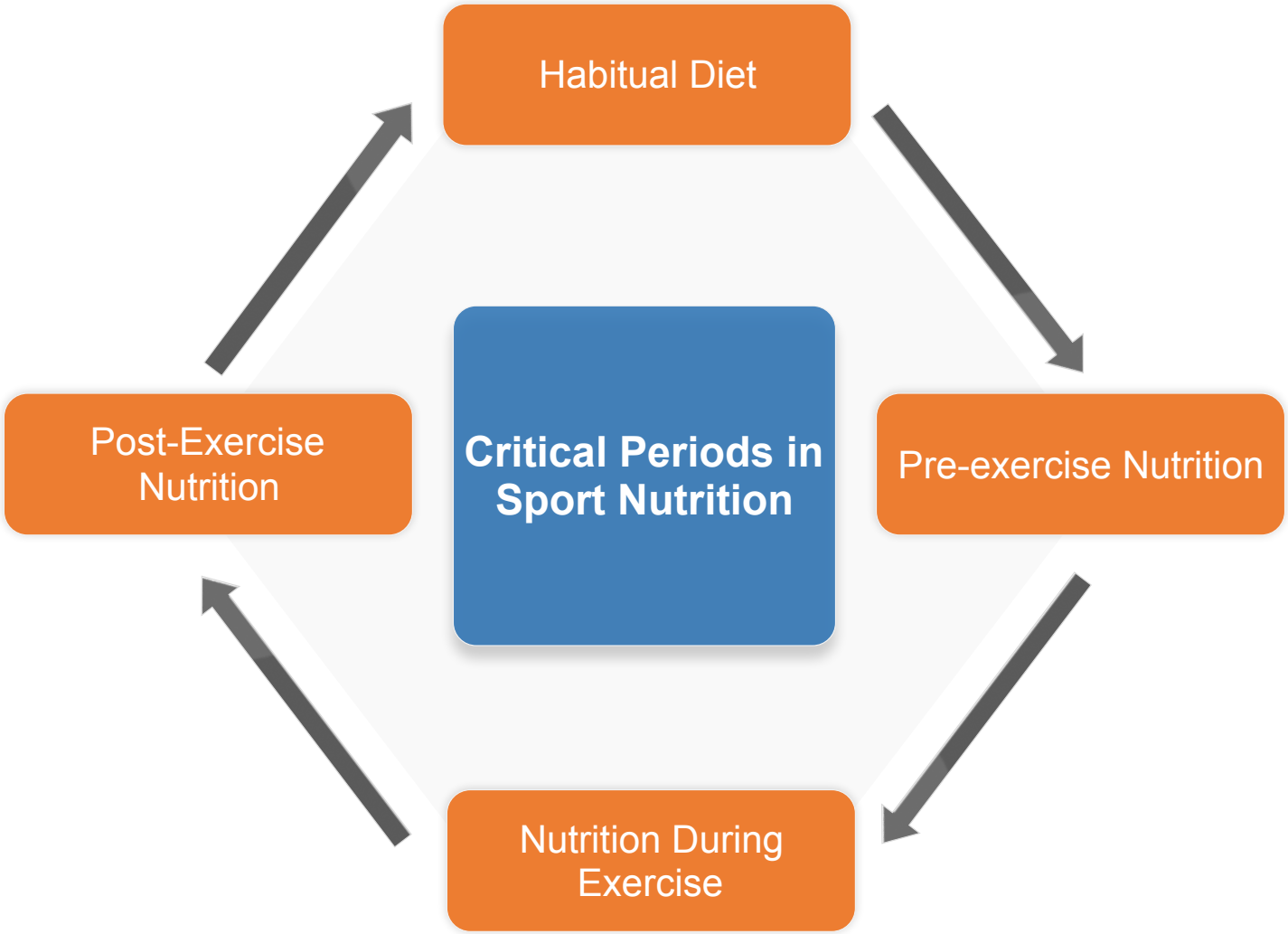

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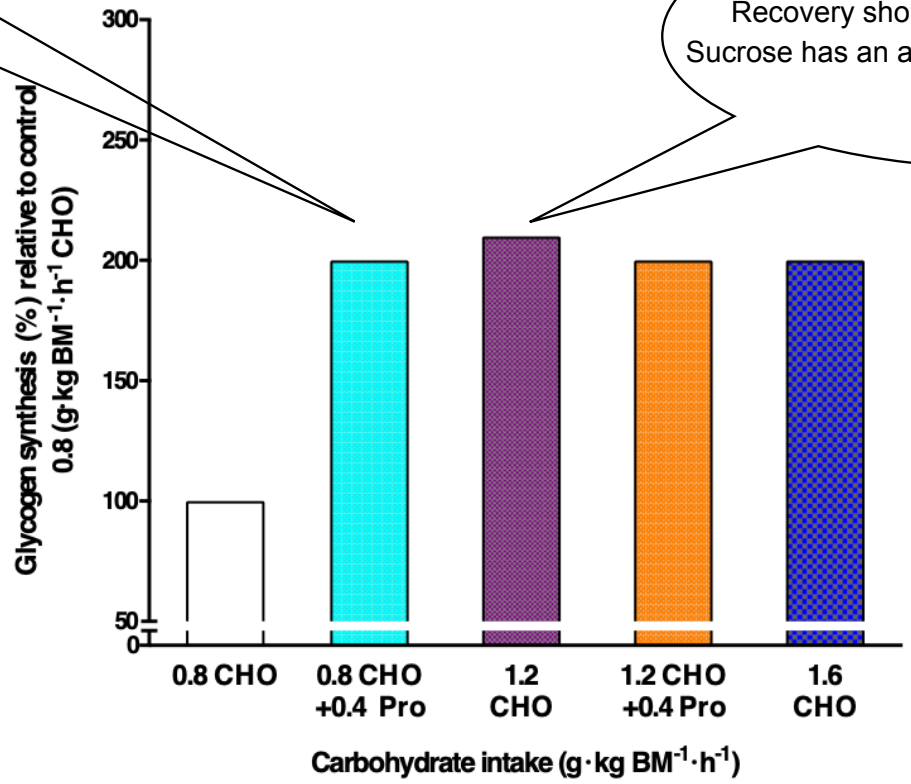
Nutrition recommendations for short-term recovery from glycogen depleting exercise

If CHO <1 g/kg/h, adding **protein (0.3-0.4 g.kg/h)** ↑ glycogen stores
Protein is needed for other aspects of recovery

1-1.2 g/kg/h of CHO for the first 4 h
Recovery should begin as soon as possible
Sucrose has an advantage (muscle+liver glycogen restoration)



Alghannam et al. (2018). Nutrients. 10:E253

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