



# CARBOHYDRATES FACTS

Carbohydrates serve as the body's preferred energy source and helps to reduce the effects of fatigue and exhaustion that can significantly impact the duration of your workout. In recent years, there has been a backlash against carbohydrates in many popular diets especially in the media. However, many are unaware that good sources of carbohydrates in appropriate amounts and at the appropriate times can benefit physical performance.<sup>1</sup>

The body stores carbohydrate as glycogen (the stored form of glucose in our bodies) in the muscles and liver, which have a limited storage capacity. When energy is needed by the body, glucose is transported by the blood to the working cells. These cells break down the glucose to carbon dioxide and water, releasing usable energy known as adenosine triphosphate (ATP). The energy produced from the breakdown of ATP fuels metabolism, muscle contraction and a wide range of other demands essential to maintain exercise performance.<sup>1</sup>

Fat is our body's secondary energy source and is not depleted as easily as carbohydrates. However fat is only used by our body under specific conditions and generally when our preferred fuel source is low. Fat is also not converted as easily into energy and is higher in calories (units of energy), making carbohydrates the body's preferred energy fuel due to its fast ability to convert into energy. Although carbohydrates are considered a limiting fuel source, if you prepare correctly you can help delay the effects of fatigue and improve your performance.<sup>2</sup>

To achieve optimal carbohydrate fuelling during exercise will depend on the level of exercise performed. This may be light, moderate, high or very high.

Situation		Carbohydrate Targets
Light	Low-intensity or skill-based activities	3–5 g per kg BM*
Moderate	Moderate exercise programme (~1 hr / day)	5-7 g per kg BM
High	Endurance programme (i.e. moderate-to-high intensity exercise of 1-3 hr / day)	6-10 g per kg BM
Very High	Extreme commitment (i.e. moderate-to-high intensity exercise of >4-5 hr / day)	8-12 g per kg BM

Source: AIS 2016, 'Carbohydrates – The facts', Viewed 16th March 2016, [http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate\\_\\_how\\_much](http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate__how_much)  
\*BM: Body Mass

Overall it is important to remember that carbohydrate requirements vary depending on the exercise regime, frequency, duration and intensity of the activity performed. The above guidelines are a great starting point to help you better manage your carbohydrate intake during exercise. Since activity levels change from day to day, remember that your carbohydrate intake should change to help support these fluctuations. On high activity days, your carbohydrate intake should increase to match the increase in activity output. This will help to maximise your performance and assist with recovery between training sessions. Alternatively, on low or no activity days, your carbohydrate intake should be reduced to reflect the decreased exercise performed. By scheduling your meals you can be sure to better plan your carbohydrate intake, helping to provide your body with an optimal level of fuel required for exercise and the recovery you need to reach your XS destination.<sup>3</sup>

## References

1. Muth ND, 2015 'Sports Nutrition For Health Professionals', F.A Davis Company, Page 5-9
2. Candice Health 2016, 'Carbohydrates And Fats: The Fueling Foods Training Notes', Sports Nutrition and The Sporting Diet, Page 52
3. AIS 2016, 'Carbohydrates – The facts', Viewed 16th March 2016, [http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate\\_\\_how\\_much](http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate__how_much)