

## CARBOHYDRATE

Carbohydrate is the main source of fuel for exercising muscles and a diet low in carbohydrate can lead to a lack of energy during exercise and early fatigue (the feeling of 'hitting the wall'). This may cause loss of concentration and muscle heaviness and will delay recovery. Once digested, all carbohydrate-rich foods are eventually converted into glucose (blood sugar) which your body uses for energy or stores in the form of glycogen for later use. If you do not consume carbohydrate-rich foods on a regular basis your glycogen stores will eventually run out and your body will break down muscle protein and some fat for glucose. This will have undesirable effects, one of which will be the loss of muscle mass and strength.

Carbohydrate-rich foods include grains, fruits and vegetables, dairy foods, sugars and some sports-specific products.

### How Much Carbohydrate (CHO) Should You Eat?

- Carbohydrate-rich foods should make up 50 to 60% of your total kilojoule (energy) intake. Your total kilojoule intake should be sufficient to meet your energy demands of training.
- To be more precise, you can calculate your requirements according to your body weight and activity.
- You will need +/- 5-7g CHO/kg body weight/day if you do <1 hr moderate-intensity exercise or many hrs low intensity exercise and, 7-10g CHO/kg body weight if you do >1hr intense or lengthy medium-intensity exercise, endurance training or if carbo-loading.

By using the examples of foods that provide 50g of carbohydrate in the table below, you can get an idea of the amount of carbohydrate-rich foods that you should be eating to meet your daily requirements. Divide your total daily carbohydrate requirements by 50, and then you can

calculate the number of carbohydrate servings needed per day. (e.g. 500 g carbohydrate divided by 50 = 10 carbohydrate servings per day).

#### Grains

**1 cup = 250 ml**

3 thick slices bread  
10 provita or snackbreads or 6 rice cakes  
2 cups All Bran flakes, 1 cup Cornflakes or Rice Crispies  
3 Weetbix  
2 cups porridge  
1 cup pasta or 1 heaped cup brown rice  
1 cup samp  
3 medium bran muffins  
2-3 muesli bars or Bokomo Breakfast Bars

#### Vegetables & Legumes

1 cup baked beans  
3 1/3 cups peas or carrots or butternut or mixed vegetables  
3 medium potatoes or 1 cup sweet potato

#### Fruit

3 medium pieces of fruit (eg apple, banana)  
3 tablespoons raisins  
2 cups fruit juice

#### Dairy

4 cups skim or low fat milk or buttermilk or maas  
350 ml low fat flavoured drinking yoghurt or 250 ml fruit yoghurt

#### Sports products, sugars and sweets

12 teaspoons sugar  
60 g jelly babies  
10 Super C's/marshmallows  
Twin Fast Fuel Bars, 2 Turbo Bars (Energy Dynamics),  
50g Glucose polymer powder (eg Fast Fuel)  
360 ml Nestle BuildUp (with low fat milk)  
450 ml Complian, 80g Evox GlycoPro  
800-1000 ml Energade/Powerade  
500 ml Coke or soft drink

It is best to split your total carbohydrate intake into several meals and snacks throughout the day i.e. some at breakfast, lunch and supper with in-between-meal snacks. Aim to consume 50g carbohydrate/hr training and a carbohydrate rich snack (50-100g) within 30-60 minutes after training to help you recover.

### CHOOSING THE BEST CARBOHYDRATES

1. Enjoy a variety of carbohydrate-rich foods to optimize your nutrient intake.
2. Nutrient-dense carbohydrates that are rich in vitamins, minerals and fibre (e.g., wholegrain cereals, fruit and vegetables) should form the basis of your diet.
3. Sports drinks and sweets can help you to meet your daily carbohydrate requirements, but you should not rely on these foods as they are not rich sources of vitamins, mineral and fibre.
4. Carbohydrate is sometimes classified according to the speed at which it is absorbed from the blood. This is referred to as the Glycaemic Index (GI). By choosing foods with different GIs you can ensure sustainable blood glucose levels during training and promote rapid recovery. High GI carbohydrate-rich foods are for example absorbed more quickly (e.g. sports drinks, bars, white bread and jam) and are therefore useful in post-match or recovery situations. If you would like to experiment with the GI, ask your SASC accredited Dietician for assistance.

### CARBOHYDRATE INTAKE: CHALLENGES AND SOLUTIONS !

#### No appetite – you find carbohydrate-rich foods bulky

If you have a small appetite and/or suffer from stomach discomfort (e.g. before a match), choose compact carbohydrate-rich foods that are easy to digest e.g. sweetened low fibre breakfast cereals, white bread with honey/jam, sugar. You can boost your CHO intake by

#### WIN WITH FOOD

adding glucose polymer powders (e.g Fast Fuel) to your food and drinks and making use of liquid meal supplements like Complan. Always have portable choices such as fruit, sandwiches, yoghurt, sports bars and dried fruit on hand for between meal snacks.

#### **Fear of weight gain**

Carbohydrate provides only 4 kcal/g (17kJ/g) compared to fat (9kcal/g; 37 kJ/g) but if you are watching your weight remember to adjust your carbohydrate intake according to your level of training and to taper your intake when training decreases i.e. in the off-season.

#### **No time to cook and shop, and/or no energy left after training to prepare a nutritious meal**

Plan meals ahead of time, and shop and cook ahead during rest days. Prepare as much as possible of a meal before training so you can have a meal in minutes post-exercise and cook more than one portion so you can freeze or eat leftovers with other accompaniments on another day. If you share a house divide household tasks and cooking. Become an expert with quick-easy-to-prepare nutritious meals like pasta with low fat cheese or a tomato and tuna sauce, frozen pizza with fruit or vegetable toppings, thick lentil or bean soups and bread, canned beans on rice or baked potatoes, scrambled eggs with baked beans and bread, or putu pap and tomato-onion sauce.

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