



# YMCA Awards

Level 3 Nutrition to support  
physical activity

2018

# Level 3 Nutrition to support physical activity

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## **Guidelines for different goals**

## **Fat loss**

- Creating a calorie deficit
- Reduction in carbohydrate intake to elicit greater fat usage
- Greater level of protein intake to prevent muscle atrophy
- Higher levels of physical activity in particular resistance training and high intensity cardiovascular activity

# Hypertrophy

- Creating a calorie surplus
- Increased protein intake to build and repair damaged tissue
- Maintaining carbohydrate intake in order for insulin to transport glucose and amino acids to the muscles

## Sports performance

- Sport dependant
- Possible alterations to diet include:
  - Carbohydrate restriction
  - Carbohydrate loading
  - High protein diets
  - Calorie surplus for gaining size
  - Calorie deficit for reducing weight (sports dependant on 'making weight')

# Muscle gain

There are several factors that will determine the amount of lean muscle gain achievable:

- Genetics
- Somatotype
- Hormone levels
- Training
- Recovery
- Nutrition

# How much lean muscle gain can a client expect to gain?

Achievable lean muscle tissue gains are approximately 0.5 – 1 Kg per month, if following an effective strength training programme



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## **Dietary considerations for muscle gains**

- An increased volume of training will require an increased energy intake
- Approximately 500kcal per day will allow for the increased needs for training and growth
- Energy in excess of your requirements will result in weight gain in the form of fat
- Adequate carbohydrates should be consumed to provide energy for training
- Protein intake should be 1.4 – 1.8g/kg body weight per day

## Endurance exercise

- Protein intake should be 1.2 – 1.4g/kg body weight per day
- Carbohydrate (glycogen) and fat are the primary fuels for endurance training
- Ensuring adequate intake is essential for any endurance training session
  - Before
  - During
  - After

## Before exercise

- Consume a light meal 2 hours before training or a large meal 4 hours before training
- Consume high GI carbohydrates in the 15mins or so just before the start of the session
- For long-duration events, carbohydrate loading ensures maximum glycogen stores prior to the start in order limit the effect of glycogen depletion and fatigue

# Carbohydrate loading

Carbohydrate loading involves the following:

- In the week running up to the event the volume of training should decrease
- During this period a high carbohydrate diet should still be consumed
- Aim to consume 7–12g/kg body weight of carbohydrate
- The combination of reduced training plus a consistently high carb intake leads to maximal glycogen stores

## During exercise

- For events lasting longer than 90 minutes, performance will be considerably enhanced if 25-30g of carbohydrate is taken in every 15-30 minutes (beginning at 90minutes)
- High GI carbohydrates are recommended because blood sugar and glycogen are being used immediately
- Signs and symptoms of glycogen depletion

## After exercise

- Replenish glycogen stores as soon as possible after exercise
- Aim to consume 1g/kg bodyweight of high GI carbohydrate, either as a drink or as a snack, such as dried fruit or rice cakes
- It is advantageous here to choose carbohydrate sources with a high GI so that carbohydrate is delivered to the empty muscle and liver cells as quickly as possible
- A larger meal can be eaten within the next two hours
- It will take 17-20 hours to re-establish glycogen stores after a bout of glycogen depleting exercise

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## Recommended carbohydrate

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## Recommended carbohydrate intake

<b>Body weight (kg)</b>	<b>Daily carbohydrate need (g)</b>
50	284–340
55	293–351
60	302–363
65	312–373
70	321–385
75	330–396
80	339–407
85	349–418
90	358–430



# Hydrate

- For endurance exercise, the other key factor to success is hydration
- Hydration requirements are related to energy expenditure and environmental temperatures



# Hydration for endurance exercise

## **Pre exercise:**

Aim to drink 500mls of water in the 2 hours leading up your session.  
This will allow for adequate hydration

## **During:**

To ensure adequate hydration aim to drink 120 – 180mls every 15 minutes (equivalent to a few sips)

## **Post exercise:**

Aim to replace the fluid you have lost during the session plus half again to account for the thermal effect of exercise

## Sports drinks

- Hypotonic and isotonic sports drinks may provide enhanced hydration compared to plain water.
- Hypertonic sports drinks may be useful for replenishing glycogen during and immediately after exercise

