

FOOD FOR FITNESS



The Irish Nutrition and Dietetic Institute

The Irish Nutrition and Dietetic Institute (INDI) is the professional organisation for Clinical Nutritionist/Dietitians in Ireland. A clinical nutritionist/dietitian applies knowledge of food, and the science of nutrition, to promote health, prevent disease, and manage certain medical conditions. The INDI promotes healthy eating to enhance the performance of all people whatever their level of physical activity.

The Sports Nutrition Interest Group (SNIG) of the INDI is a group of Dietitians with a specific interest in the field of sports nutrition. An Accredited Sports Dietitian has an additional recognised qualification in Sports Nutrition.

Physical activity is an important part of a healthy lifestyle and proper nutrition is essential to help you exercise at your best. A good diet will not turn an average athlete into a superstar, but a poor diet will prevent you from achieving your potential.

WHAT SHOULD A SPORTSPERSON EAT?

Both athletes and non-athletes need the same nutrients . . . carbohydrate, protein, fat, vitamins, minerals and water, but they need to consume them in different quantities and proportions.

Carbohydrate, protein and fat (along with alcohol) provide energy. Vitamins and minerals do not provide energy, but are needed in very small amounts to enable the body to perform efficiently and effectively.

It is essential that the food you eat provides sufficient energy to fuel your sport. However, it is important that you obtain this energy from the right foods, to ensure you meet your requirements for vitamins and minerals, without gaining excess body fat. This booklet will advise you how to get the balance right.

FUELS FOR EXERCISE

Carbohydrate and fat are the 2 main fuels for exercising muscles. Even the leanest athletes have ample stores of fat, however, carbohydrate stores are limited.



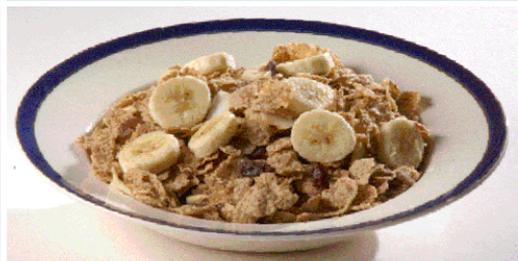
CARBOHYDRATE

Carbohydrate is stored in the body as glycogen in both the liver and muscles. During exercise glycogen is broken down into glucose to supply the working muscles with energy. If you do not eat enough carbohydrate rich foods your glycogen stores will be inadequate. This will cause you to feel tired earlier, and will affect your performance. Too much carbohydrate in the diet however, will lead to weight gain.

SO HOW MUCH CARBOHYDRATE DO I NEED?

The amount of carbohydrate you need depends on the frequency, duration and intensity of your exercise.

SITUATION	RECOMMENDED CARBOHYDRATE INTAKE
Light Activity (3-5 hours a week)	4-5g per kg body weight / day
Daily refuelling needs for training programs less than 60-90 min per day or low intensity exercise, for example out of season training	5-7 g per kg body weight / day
Daily refuelling for training programs greater than 90-120 min per day	7-10 g per kg body weight /day
My weight is _____ kg	My carbohydrate requirement is _____ g



HOW TO INCREASE YOUR CARBOHYDRATE INTAKE...

- Base every meal around a carbohydrate rich food, such as: bread, breakfast cereal, potatoes, rice, and pasta.
- Consume a high carbohydrate snack between meals, such as: fruit, wholemeal scone, low-fat yoghurt, dried fruit, cereal bar, fruit bread, fruit smoothie.
- Use thicker slices of bread.
- Choose deep pan rather than thin based pizzas.
- Add potato to soups and salads.
- Eat boiled/ mashed/ baked potatoes instead of chipped or roasted.
- Try boiled rice/pasta with stews and curries for variety.
- Pasta and rice mixed with beans/peas/sweetcorn or raisins make tasty salads.
- Add fresh or dried fruit to breakfast cereals and desserts.
- Make your own "high carbohydrate" smoothie with fresh or tinned fruit, low-fat yoghurt and honey or sugar.

TIP

To prevent tooth decay when following a high carbohydrate diet it is important that you brush your teeth regularly.

**EAT LARGE AMOUNTS OF
NUTRITIOUS CARBOHYDRATE
RICH FOODS**

Breakfast cereals, porridge,
Bread – all types, wholemeal scones,
Potatoes, pasta, rice, cous cous,
noodles,
Pizza bases, pitta bread, oatcakes
Sweet potato, root vegetables,
sweetcorn,
Beans (e.g. kidney, butter),
peas, lentils
Fruit – fresh, dried, stewed, tinned,
Fruit juice, low fat smoothies,
Low fat yoghurt, cereal bars, popcorn

**EAT SMALLER AMOUNTS OF *LESS
NUTRITIOUS CARBOHYDRATE
RICH FOODS**

Jam, honey, marmalade,
Boiled sweets, jellies,
Fizzy drinks, fruit squash,
*Desserts (meringues, ice cream, jelly)
*Cakes, fruit scones, jam sponge,
Crackers, crispbreads,
*Biscuits, low-fat muffins,
Sports gels, energy bars, sports drinks

** Take care with fat content*



PROTEIN

Protein is necessary for growth, maintenance, and repair of body tissue. Athletes taking part in strength and endurance sports have higher protein requirements than non-athletes. However, most athletes can meet this increased requirement through a varied balanced diet, which meets their energy needs. It is generally not necessary to take specialised protein powders / bars / supplements.

GOOD SOURCES OF PROTEIN

Lean meat
Chicken/turkey
Fish
Eggs
Low fat/skimmed milk

** high in fat*

Low fat yoghurt
Pulses (peas, beans, lentils)
* Cheese (choose lower fat varieties)
* Nuts

Vegetarians and vegans will need to take special care to ensure their diet is properly balanced (see your sports dietitian if you have any questions)



FAT

Small amount of fats in your diet are necessary. However, for athletes (as with the general population) a high fat intake is not recommended as it increases the risk of excessive gains in body fat, and results in lower carbohydrate intakes.

HOW TO CUT DOWN ON FAT

- Limit your intake of high fat foods (see list below)
- Grill, boil, steam, braise or microwave food instead of frying.
- Eat chicken, turkey and fish regularly.
- Lean red meat is a good source of iron and can be included 2-3 times a week.
- Trim visible fat from meats and skim fat from casseroles and stews.
- Use low fat, monounsaturated/polyunsaturated spread
- Use low-fat, vitamin enriched, or skimmed milk instead of full-fat.
- Choose low-fat cheeses such as "light" cheddar, Edam, Gouda, Feta, Camembert, Cottage or low-fat cheese spread.
- Substitute low-fat yoghurt/fromage frais for cream
- Use fat-free or vinegar based dressings, mustard, or chutney instead of mayonnaise, on salads and sandwiches.

FOODS HIGH IN FAT INCLUDE

Butter, margarine, cream, full fat dairy, mayonnaise, visible fat on meat, processed meats, fried food, pastries, crisps, cakes, and chocolate.

TIP

Include *small* amounts of unsaturated or "good fats" in your diet. Sources include oily fish (e.g. salmon, tuna, sardines, and mackerel), vegetable oils (e.g. olive, sunflower canola), nuts and avocado.

FLUIDS – KEEP YOUR COOL

During exercise fluid loss from sweating can be very high, particularly in warm weather. If you do not replace these losses through drinking you will become dehydrated. Dehydration can cause fatigue and impair performance.

HOW MUCH FLUID DO I NEED?

Drink plenty of fluid during the day to ensure that you are properly hydrated when you start to exercise. During exercise you should aim to drink 150-200ml every 10-15 minutes.

WHAT SHOULD I DRINK?

BEFORE AND DURING EXERCISE

- Isotonic sports drinks, e.g. Club Energise Sport, Gatorade, Lucozade Sport, Powerade or a homemade solution (see next page).
- Water.

AFTER EXERCISE

- Isotonic sports drinks.
- Hypertonic sports drinks, e.g. BPM, Club Energise, Lucozade Original, Lucozade Energy.
- Soft drinks.
- Fruit drinks.
- Water.

HOMEMADE SPORTS DRINKS

You can make your own sports drinks using these recipes:

1. 40-80g sugar or glucose powder.
1 litre water (previously boiled and cooled).
1g salt.
2. 500ml fruit juice.
500ml water (previously boiled and cooled).
1g salt.
3. 200ml fruit squash/cordial.
800ml water (previously boiled and cooled).
1g salt.

For 1 to 3 above mix all ingredients together until dissolved.

TIP

Thirst is a poor indicator of dehydration, so don't wait until you feel thirsty to have a drink.

TIP

Drinks bottles in addition to lunchboxes should be taken home after exercise, emptied and washed thoroughly in warm soapy water before reuse.

VITAMIN AND MINERALS

Active people need to make sure they consume adequate vitamins and minerals to meet the demands of exercise. A varied balanced diet, which includes plenty of fruit and vegetables – at least 5 portions a day – will ensure that your vitamins and mineral needs are met. Some athletes have higher requirements for iron and calcium, such as female athletes and adolescents. Particular attention should be made to these nutrients.

GOOD SOURCES OF IRON:

Lean red meat
Chicken
Eggs
Legumes

Fortified breakfast cereals
Nuts
Dried fruit e.g apricots, raisins
Spinach

GOOD SOURCES OF CALCIUM:

DAIRY

Low fat milk, low fat yoghurt,
Cheese – choose low fat varieties,
Smoothies,
Custard, milk pudding

NON DAIRY

Calcium enriched soya milk,
Calcium enriched fruit juice
Tinned fish (with bones),
Green leafy vegetables,
Nuts, dried figs

Some athletes take a multivitamin/mineral supplement if they are unsure how balanced their diet is. Unless you have been advised by a dietitian or doctor you should avoid taking large doses of any single vitamin or mineral as this may cause more harm than good.

PUTTING IT ALL INTO PRACTICE

WHAT SHOULD I EAT BEFORE EXERCISE?

To ensure your glycogen stores are as full as possible when you exercise it is important to have a high carbohydrate meal 2-4 hours beforehand. Avoid high fat and very high fibre foods as these may cause stomach discomfort during exercise.

WHAT SHOULD I EAT AFTER EXERCISE?

After a hard session glycogen stores will be depleted. It can take up to 20 hours to replace glycogen stores. The body re-synthesizes glycogen at the fastest rate when a high carbohydrate snack which contains a small amount of protein is eaten immediately after exercise. You should eat one of these suitable snacks (see next page) within 2 hours of exercise (or within 30 minutes if you plan to exercise again within 8 hours). Ensure you meet your daily carbohydrate requirement (see page 3) over the next 24 hours.



PRE-EXERCISE MEALS

Porridge with low-fat milk, honey and fruit.
Breakfast cereal with low-fat milk and fruit juice
Toast with low-fat spread and jam/honey/syrup
Yogurt drink and a scone with low-fat spread
Pasta with tomato based sauce
Baked potato with tinned spaghetti or ratatouille
Vegetable soup and bread roll
Sandwich with lean meat/turkey and salad
Pita bread filled with chopped banana and honey
Low-fat creamed rice with dried fruit
Low-fat yogurt and fruit
Smoothie made with low-fat milk, yoghurt and banana/mango/berries

POST EXERCISE MEALS

Pot low-fat yoghurt + banana
Breakfast bar + flavoured milk
Ham/turkey/tuna sandwich
Protein containing sports drink
Fig rolls/jaffa cakes + yogurt drink
Dinner based on a starchy carbohydrate food, e.g. spaghetti bolognaise, tuna pasta or a chicken and rice dish

TIP

Handwashing is the single most effective means of preventing the spread of germs. The message is simple – always wash your hands before eating food.

Nutritional needs and dietary preferences differ greatly from person to person. This booklet gives general advice to help you achieve a well balanced diet to fuel you sport. If you need more information on nutrition and athletic performance, or if you wonder whether your eating habits help or hinder your training programme, talk to a qualified, accredited sports dietitian. He/she can evaluate your diet, determine your individual nutritional needs and advise on foods for optimizing your sporting performance.

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