



Most people have a good, general idea of which kinds of food are healthy and which ones are unhealthy. For instance, it is common knowledge that fruit and vegetables are healthy, and that greasy, high fat food and sugary sweet food are not healthy. However, what is less common is more specific knowledge about how nutrition works and what particular food behaviours or choices can improve health. Questions about this issue often come up in FitSense Australia health and fitness assessments, particularly by people trying to lose weight and then maintain their weight at a healthy level. For this reason, this issue of the newsletter is dedicated to the specifics of good nutrition and healthy eating.

There are articles on a range of topics including:

- how the energy in - energy out equation works
- the specifics of good nutrition and healthy food choices
- healthy grocery shopping and cooking tips
- interpreting food labels, and
- serving sizes and routine portion control.

This issue of the newsletter should answer lots of our readers' questions about good nutrition and healthy eating.

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Balancing Nutrition

How the Energy In - Energy Out Equation Works

Food is the body's fuel. It provides energy for daily living, and for physical and mental activities. It also provides nourishment for the body's growth and replenishes it when it is in need of recovery or repair.

The major components of food are: carbohydrate, fat and protein. Different foods have different proportions of these components. Some foods have none of one or other component.

Energy from food is measured in kilojoules and how much energy different foods have depends on the amount and mix of carbohydrate, protein and fat the food contains. The energy value per gram of carbohydrate, fat and protein is:

- Carbohydrates - 16kJ/gram
- Protein - 17kJ/gram
- Fat – 37kJ/gram

Clearly, foods that are higher in carbohydrates and protein are lower in energy or kilojoules than foods that are high in fat. Energy dense foods (i.e., high kilojoules) should be consumed in moderation, particularly if weight loss or maintaining a healthy body weight is a priority.

Anyone who wants to have a good diet and healthy eating habits needs to:

- carefully match their energy/kilojoule intake in their food to their energy expenditure and metabolic needs, and
- make sure that their total energy/kilojoule intake is made up of a healthy nutrient mix so the nutritional value of their energy/kilojoule intake is optimised. In other words, not all kilojoules are of equal value.

Individual energy/kilojoule intake requirements vary depending on factors such as age, gender, metabolism and level of physical activity. However, the following formula for calculating metabolic rate combined with activity factor is a good place to start in determining how much energy (kilojoules) is expended by men and women of different activity levels and therefore how much energy (kilojoule intake) is required to maintain a person's current energy in/energy out status, and their current body weight.

Energy output (kJ) = Resting Metabolic Rate (RMR) X Activity Factor

RMR for men = $[66.47 + (13.75 \times \text{weight}) + (5 \times \text{height}) - (6.76 \times \text{age})] \times 4.2$

RMR for women = $[655.1 + (9.56 \times \text{weight}) + (1.85 \times \text{height}) - (4.68 \times \text{age})] \times 4.2$
(Weight = kgs, Height = cms)

Activity Level	Description	Activity Factor
Sedentary	Little or no exercise, desk job	1.2
Lightly active	Light exercise or sport 1-3 days per week	1.375
Moderately active	Moderate exercise or sport 3-5 days per week	1.55
Very active	Hard exercise or sport 3-5 days per week	1.725
Extremely active	Hard daily exercise or sports or physical job	1.9

In practice, the formula works like this:

Individual profile: sedentary 30yr old female, 170cm tall, weighs 70kgs.

Total energy output = RMR for women X activity factor (sedentary)

Total energy output = 6293 X 1.2

Total energy output = 7551.6kJ

So, total daily energy intake = 7500kJ - 8000kJ.

For someone wanting to lose weight, their energy or kilojoule intake needs to be less than their energy or kilojoule expenditure. Or to put it another way, their energy or kilojoule expenditure needs to be greater than their energy or kilojoule intake. Of course everyone's goal should be to get to a healthy weight and then maintain it by balancing energy or kilojoule intake with energy or kilojoule expenditure on an ongoing basis.



The Specifics of Healthy Food Choices

Good nutrition and lifelong healthy food choices assist in the prevention of a range of illnesses and diseases including overweight/obesity, cardiovascular disease, diabetes and some cancers.

The key to good nutrition is eating a wide variety of foods from each of the five food groups in the recommended daily quantities. The major food groups are:

- Fruit
- Vegetables
- Lean meat, fish, poultry, eggs, nuts, legumes
- Breads, cereals, rice, pasta
- Milk, yoghurt, cheese.

The recommended daily intake of each of these food groups depends on factors such as age, gender and level of physical activity (see page 2). However, for most people, the following number of serves of each of the food groups per day is appropriate.

Food Group	No. of Serves Per Day for Adults
Fruit	2 - 3
Vegetables	5 - 6
Lean meat, fish, poultry, eggs, nuts, legumes	1.5 - 2
Breads, cereals, rice, pasta	4 - 6
Milk, yoghurt, cheese	2 - 3

Remember, the nutritional value of food can be affected by the way food is grown, stored and prepared. It is also important to complement your healthy food intake by drinking plenty of water.

Healthy Grocery Shopping

- Plan your meals in advance, write a healthy shopping list and just buy what is on the list.
- Incorporate foods from all of the food groups into your meal planning and shopping.
- Buy appropriate quantities of ingredients from all of the food groups for all members of your household.
- Choose fruit and vegetables that are in season and buy fresh when you can.
- Frozen and tinned fruit and vegetables can also be nutritious but check to see if there are any additives.
- Choose lean cuts of meat and skinless chicken.
- Choose low fat versions of foods where possible and avoid "hidden" fats like the fats that are in processed foods.
- Avoid buying pre-packaged meals which can be high in fats, salt and sugars, and choose more fresh foods.
- Read food labels so that you know what is in particular products, and so you can compare the nutritional value of different brands and products.
- Avoid going shopping when you are hungry so that you don't buy tempting unhealthy "extras".

Healthy Cooking

- Trim meat of excess fat.
- Limit use of oils and fats.
- Cook in liquids instead of oils as often as possible – e.g., stock, lemon juice, vinegar, water.
- Steam, bake, grill, braise, boil or microwave food rather than frying.
- Scrub vegetables rather than peel them (many nutrients are close to the skin).
- Microwave or steam vegetables rather than boiling them.
- If you boil vegetables use a small amount of water and don't overcook them.
- Use herbs and spices to add taste to your recipes instead of salt.



Food Labels Explained

In Australia, it is compulsory for packaged foods to have food labels on them. There are only a few exceptions to this rule. These include: (i) very small packages of food, (ii) foods like herbs and spices, tea and coffee, and (iii) foods that are packaged at the point of sale - e.g., take away food.

All food labels have to comply with the guidelines set by Food Standards Australia New Zealand (FSANZ) which ensures that they are consistently applied across products, and makes it easier for consumers to quickly and easily compare foods when shopping.

Food labels provide consumers with a large range of valuable information including:

- Name and description of the product
- brand name and "lot" or batch number
- Name and Australian street address for the product supplier
- Country of origin/manufacturers details
- Ingredient list
- Nutrition Information Panel (NIP)
- Use by or best before date
- Warning and/or advisory statements.



The name and description of the product must be accurate and must not mislead or misinform the consumer.

The ingredients must be listed in descending order from the largest quantity ingredient to the smallest ingredient by weight. Where there are small ingredients (<5%) that are made up of several components - i.e., composite ingredients - they can be listed as composite ingredients rather than by the individual components within each - e.g., tomato sauce. However, if there is an additive within a composite ingredient which performs a function in the total food then it must be listed separately - e.g., a preservative.

The NIP must include how much of the following nutrients is in the product:

- energy (kilojoules)
- protein
- total fat
- saturated fat
- total carbohydrates
- sugars
- sodium

The NIP can be used to compare the nutrient composition of different foods, different brands of the same food, or variations of similar foods. One of the easiest ways of doing this comparison is to compare the quantity of each nutrient listed per 100g - i.e., as a percentage of the product. This is much easier than trying to compare serving sizes listed on different products in different quantities.

If you are trying to lose weight or maintain a healthy weight it is particularly important to pay attention to the amount of fat and sugar in the food you consume. You can use the NIP to help control your intake of fat and sugar by choosing products that are low in fat and sugar. Below is a guide to what are considered large and small amounts of sugar, fat and fibre per 100g:

Large Amounts Per 100g	Small Amounts Per 100g
30g of sugars	2g of sugars
20g of fat	3g of fat
3g of fibre	0.5g of fibre
600mg of sodium	20mg of sodium



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Food Labels Explained

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Some product labels have nutrition claims on them. These include claims such as “low in fat” or “reduced salt”. Manufacturers are not allowed to make these claims unless their product(s) meets certain criteria.

Low fat foods = 3g or less of fat per 100g
Reduced fat foods = 25% less fat than the regular product
Fat free foods = less than 0.15g of fat per 100g
Low salt foods = 120mg of sodium or less per 100g
No added sugar = no added sugar but may contain natural sugars

Nutrition claims are not the same as health claims. Health claims are claims that a particular food or ingredient(s) have particular health benefits. It is currently illegal in Australia for manufacturers to put health claims on food labels. The only exception to this is foods with added folate. Manufacturers are allowed to state that eating folate just before conception and during pregnancy helps to reduce the risk of spina bifida in babies.

Food labels also include a range of other information of particular importance to some people - ie, advisory and warning statements about ingredients that may cause an adverse reaction in some people, as well storage and preparation requirements. For more information about food labels visit: www.foodstandards.gov.au

Food Labelling Trick and Traps

“Light” or “lite” doesn’t necessarily mean the product is low in fat or energy (kilojoules). “Light” or “lite” may refer to the texture, colour or taste of a product. The characteristic that makes it “light” or “lite” must be stated on the label.

The claims “no cholesterol”, “cholesterol free” or “low cholesterol” on foods derived from plants - e.g., margarine and oil - are meaningless because all plant foods are virtually free of cholesterol. But some of these products can be high in saturated fat which can contribute to weight gain and can increase the level of LDL cholesterol in the blood which is a risk factor for poor health and a range of lifestyle diseases.

Be careful of wording. 93% fat free may read or sound as if the product concerned is almost totally fat free but in fact it means that it contains 7% fat which is not low fat. Similarly, “baked not fried” may sound as if a product is healthier because it is not fried but it may still contain a high percentage of fat. It is still important to check the NIP.

“Fresh” means a product hasn’t been preserved by freezing, canning or high temperature or chemical treatment. However, a “fresh” product may have been refrigerated for a long time or spent a long time in processing and transport, and so not be “fresh” as in “just produced”.



Portion Control

How much is a serve? How much is too much?

Healthy food choices on their own don't constitute good nutrition or a balanced diet. The other vital aspect is routine portion control.

Without routine portion control even healthy food choices can lead to an unbalanced diet - i.e., a diet that has too much or too little of some things, and which doesn't match energy expenditure.

Portion control involves: understanding what a portion size is, estimating the energy intake (kilojoules) of portion sizes of different foods (based on what they are composed of), and either restricting that intake (for weight loss) or regulating it (for healthy weight maintenance).

How big or small a portion or a serving size is depends on the food. Here is a guide to the standard portion or serving sizes of some common foods:

FOOD	ONE PORTION OR ONE SERVE	EXAMPLE
Bread	2 thin slices or 1 thick slice	2 thin slices of bread = 1 bread roll
Cereal	1 cup cereal flakes or 1 cup of porridge or 1/2 cup muesli	1 small bowl of cereal
Pasta	1 cup cooked pasta	1 small bowl
Potato	1 medium potato	About the same size as a closed fist
Cooked vegetables - e.g., broccoli, cauliflower, beans, carrots	1/2 cup	1/2 a plate
Salad vegetables - e.g., lettuce, cucumber, tomato	1 cup	
Vegetable juice	1/2 cup	1/2 cup V8 vegetable juice
Fresh fruit	1 medium piece	Medium fruits include apples, pears, bananas etc
Dried fruit	1-2 tablespoons	1.5 tablespoons of sultanas 4 dried apricots
Fruit juice	1/2 cup	1/2 cup of fruit juice is equal to a whole apple
Milk	1 cup	
Cheese	40g or 2 thin slices	
Yoghurt	200g yoghurt	1 small tub
Steak	65g-100g cooked	About the size of palm of hand
Fish	80-120g cooked	About the size of hand (palm and fingers)
Mince meat	1/2 cup	
Eggs	2 small eggs	
Nuts - e.g., almonds, peanuts	1/3 cup	

So, the keys to good nutrition and a healthy diet are:

- estimating your energy needs (page 2),
- making healthy food choices (pages 3-5), and
- practicing routine portion control.

