

Healthy Choices for Food and Activity

Authors: Vivienne Hobson (DHCS); Fran Keeble-Buckle

Topic Reviewers: Dr Alison McLay (Public Health Nutritionist, Alice Springs); Angela Peermen (RAN, Oenpelli Clinic); Dr Dorothy McKerras (MSHR)

Introduction

A healthy lifestyle includes, amongst other things, optimal nutritional intake and participation in adequate physical activity. These two areas form the basis of much of the preventive component of the NT Preventable Chronic Disease Strategy. As contributors to the overall burden of diseases in the general population, lack of physical activity (6.7%), obesity (4.3%), inadequate consumption of vegetables and fruit (2.7%) and high blood cholesterol (2.6%) are major risk factors.¹

An increasing health issue in Australia, and particularly amongst Aboriginal people, is overweight and obesity. In the 1994 National Aboriginal and Torres Strait Islander Health Survey, 36% of men and 29% of women were classified as overweight and an additional 25% of men and 29% of women were classified as obese.² Overweight and obesity are underlying risk factors for cardiovascular disease, type 2 diabetes and some cancers. Nutrition and physical activity are core to the prevention and management of overweight and obesity.

This section is concerned with some key nutrition messages aimed at preventing overweight and obesity, and guidelines to encourage participation in physical activity at a level for health gain.

Explanation and expansion of the guidelines

Eat a variety of foods

Research has shown that diets with little variety are associated with increased risk of mortality.³ Other studies have shown that diets that are limited in variety are likely to be deficient in at least one nutrient. Also, by eating a variety of foods, the proportions of major dietary components such as protein, carbohydrate and fat are more likely to be appropriate, rather than any being in excess. This is of particular importance in the prevention of overweight and obesity, which has been linked with excess fat in the diet.

Consuming a wide variety of foods is the best way to ensure all nutrient needs are met and minimise the risk of nutrient deficiency diseases. A varied diet will also minimise risk factors for preventable chronic diseases, such as cardiovascular disease, type 2 diabetes and certain types of cancer. It is also a good way to minimise the risk of intake of toxic substances that may be naturally occurring in some foods or contaminants, and to minimise the risk of nutrient deficiency diseases. Finally, when the diet is varied and well balanced the likelihood of nutrient interactions that may effect the absorption, metabolism or retention of other nutrients is minimised.³

It is difficult to measure dietary intake of Aboriginal people because of a range of cultural, social and ethical factors. In remote areas, it has been estimated that approximately 95% of the food eaten by Aboriginal people comes from the community store and takeaway.⁴ However, this is from studies about a decade old – and the other 5% relates to bush foods (this was done in a community where most people did not have the traditional right to access food from the land the community was on) and many communities now have takeaway shops.

'Store turnover', which measures the through-put of foods through the community store over a given period, is a validated research tool to estimate the apparent dietary intake of Aboriginal people in remote communities. Store turnover studies have shown that most people only have access to a very limited selection of foods within the store.

The Australian Guide to Healthy Eating is one food guide designed to demonstrate a varied diet and the approximate proportions of each food group required in order to meet nutrient requirements. This guide is based on the NHMRC The Core Food Groups.⁵ Recently, an Aboriginal and Torres Strait Islander version of this guide has been developed which also includes bush foods.

Eat more bush foods

Before European settlement Aboriginal people led a nomadic hunter-gatherer lifestyle and their diet was varied and rich in nutrients. The food supply was diverse and affected by geographical location, climate, season and cultural beliefs. Even in arid areas there was a variety and abundance of both animal and plant foods.⁴

The traditional Aboriginal diet is low in fats and sugar and high in vitamins, minerals, protein and fibre. High sugar foods – such as honey ants, sugarbag, other nectars and honey – are considered delicacies and are not available for much of the year or only eaten in small amounts. Meats from native animals and other wild game meats are generally low in fat, particularly saturated fat, compared to other contemporary meat sources. Bush vegetables, seeds and fruits are rich in vitamins and minerals. The green plum, for example, has the highest concentration of ascorbic acid of any known plant. Seeds of the acacia species are high in the essential oils, linoleic and oleic acids.⁴

Eat more fruit and vegetables

An adequate consumption of fruit and vegetables is protective against diseases such as coronary heart disease, hypertension, stroke, type 2 diabetes and many forms of cancer. Many of these diseases are of higher prevalence amongst the Aboriginal population.⁶

Results from national surveys have shown that Australians do not consume enough fruit and vegetables. For people living in remote communities in the NT fruit and vegetable consumption is further compromised because of limited availability and high costs. The NHMRC publication Core Food Groups recommends intake of two serves of fruit and five serves of vegetables per day.⁵ Note, however, that recommendations 'per day' usually mean averages over some period of time (e.g a week) and so the fact that people do not eat something the day before a survey does not necessarily mean they do not meet the recommendations.

The National Nutrition Survey 95 indicates that Australians are not eating adequate fruit and vegetables.² Nationally, excluding juice, 42% of adults did not eat any fruit and 16% had no vegetables on the day of

survey. For fruit, amounts were mostly met in the very young, but fell sharply to their lowest level during adolescence after which they rose again with age. Intakes range from 26-60% of recommended when juice is not included. Intake of vegetables is only 32-60% of that recommended. Vegetable intake shows a steady increase with age, with males eating more potato than females, to give a higher total. Adolescents and young adults are the groups least likely to meet their requirements of fruits and vegetables.

Territorians have the lowest fruit and vegetable intake in Australia⁷, though the NT sample in the National Nutrition Survey may have been too small to draw strong conclusions. Interestingly, juice intake is higher than for the rest of Australia. This could be because of reduced availability, poorer quality and higher cost of fruit in the Territory.

A small number of community stores have been surveyed over the past 10 years and data indicates that the average recorded availability per head for fruit and vegetables is 103 g per person, which is only 15% of recommended amounts. Store turnover studies completed in 2001 have shown that 'the average person' is eating only one-third serve of fruit per day and one serve of vegetables per day.

Market Basket Surveys were carried out in 54 stores across the Northern Territory between April and June 2001.⁸ This information provides us with details about the availability, quality and cost of foods. Analysis showed that the average number of fresh vegetable choices was 12. For fruit, the average number of fresh choices available was six. Some stores had no fresh fruit or vegetables available on the day of the survey and others had very limited amounts. The price survey showed that on average fruit costs 39% more and vegetables cost 45% more in remote communities when compared to a Darwin supermarket chain store. This includes both fresh and tinned produce. It should be noted that the price of food is already higher in Darwin when compared to other capital cities.

In a setting where fresh vegetables may be in low supply or of poor quality, processed vegetables such as frozen, dried and canned should not be ignored. It may be difficult to increase consumption, particularly in remote communities, if we promote only fresh produce when the nutritional value of frozen and canned is similar to fresh produce.

Eat less fatty food and fried food

Fat is the macronutrient with the highest energy value (kilojoules) per unit weight. Fats and oils may be invisible in the diet, hidden in foods such as pastries, cakes, confectionery, biscuits and nuts. There is some evidence that high fat intakes are associated with overweight and obesity.

The results of the 1995 National Nutrition Survey showed that total fat intake was approximately one third of total energy, with saturated fat around 12.5%, polyunsaturated fat around 4.5% and monounsaturated fat around 11.5%.²

A high saturated fat intake is associated with increased plasma LDL cholesterol, major risk factor for CHD. This has been demonstrated repeatedly. The first reported association between saturated fat intake and CHD was the Seven Countries Study, and this has been confirmed in numerous observational and experimental studies since then. Trans-fatty acids were also reported to be associated with CHD in the Nurses Health Study.³ A meta-analysis of randomised controlled trials has shown that dietary interventions altering the type of fat reduce cardiovascular outcomes in

the primary prevention situation, but not necessarily total mortality (see Cochrane Collaboration).

The 2000 Dietary Guidelines for Americans recommends a saturated fat intake of 10% of kilojoules, and this is a feasible target for Australians to aim for. With this reduction in saturated (and trans) fatty acids, the National Heart Foundation (NHF) recommends an increase in polyunsaturated fatty acids to approximately 8-10% of the total energy intake. Oils rich in polyunsaturated fatty acid lower plasma total and LDL cholesterol. During the mid 1960s the population started to increase their intake of polyunsaturated fats with the introduction of polyunsaturated margarines and oils and it was around this time that the deaths from CHD started to decline in Australia³ (although there may be other explanations).

Mono-unsaturated fats found in olive and canola oils may be of particular benefit in reducing both total and LDL cholesterol and in reducing risk of CHD.

Omega 3 polyunsaturated fatty acids found in fish oils are of special benefit in reducing the risk of CHD, and for this reason the NHF has recommended inclusion of two fish meals per week. The NHF also recommends inclusion of both plant and marine omega 3 fatty acids as they may protect against CHD through different mechanisms.⁹

In remote communities, store turnover has shown that fatty meats contribute nearly 40% of the total energy in the northern coastal communities and over 60% in central desert communities. Takeaway foods also contribute a lot of fat to the diet. In some of the larger northern coastal communities it has been estimated that 25% of all food purchased comes from the takeaway with the most popular takeaway foods being pies, chips and fried chicken legs. Both fatty meat and takeaway foods are high in saturated and trans fatty acids.¹⁰

Eat less sugar and sweet food

Many foods contain naturally occurring sugars, but in other foods sugar is added during processing to increase palatability and shelf life. Sugars provide an easily absorbed source of energy, but large amounts are not desirable. There is an association between sugar intake and dental caries, and if the sugar is in the form of sugar-sweetened drinks there is an association with obesity and dental caries, particularly in children. Foods (and drinks) high in sugar may also displace more nutrient-rich foods in the diet.

Australian adults obtain about 45% of their energy requirements from carbohydrates, and about one half of this is from sugars (which includes the natural sugars found in milk and fruit as well as sucrose from refined sugar cane). Store turnover studies have shown that Aboriginal people in remote communities have a much higher consumption of sugar, with refined sugar contributing approximately 30% of the total energy intake. This equates to approximately 260 grams (nearly 50 teaspoons) of sugar per person, per day. 60% of this sugar comes from white sugar per se, with carbonated drinks providing much of the remaining sugar. Excessive consumption of sugary foods and limited physical activity contribute to weight gain and increased levels of triglycerides in the blood.

Drink plenty of water

Water is essential for life. The average adult man requires 3000 ml of fluid a day and the average woman at least 2200 ml. Approximately 1000 ml

of water comes from solid food and an additional 250 ml comes from the water of oxidation. The remainder must come from water and other fluids. This equates to approximately six to eight glasses of fluid a day, and more in a hot climate.⁹

The average turnover of water in a 70 kg adult is equivalent to 2500-3000 ml per day. Water loss from lungs through respiration and skin (perspiration) is responsible for approximately half of this loss, and at high temperatures these losses may be even higher. Water depletion can lead to heat exhaustion, loss of consciousness and heat stroke. Exercise can exacerbate this water depletion. Another health effect of poor fluid intake is increased risk of kidney stones, and adequate fluid is also necessary to prevent constipation.

[Editor: The recommendation to 'drink more water' is partly based on the expectation that this may displace some soft drink consumption.]

Be more active

There has been a growing consensus among epidemiologists, health professionals and experts in exercise science that moderate amounts of physical activity can greatly improve health and quality of life and result in significant savings in health expenditure.¹¹

In 1996 the first US Surgeon General's report on Physical Activity and Health was published. This report confirmed the protective effect of physical activity in relation to prevention of cardiovascular disease, diabetes and some cancers. Some of the mechanisms for the protective effect of physical activity in relation to cardiovascular disease are through lowering the risk of hypertension. Also, physical activity may increase HDL cholesterol that transports cholesterol away from blood vessel walls and reduces the risk of development of atherosclerotic plaque.¹²

Another major disease that is partly caused by inactivity is type 2 diabetes. Physical activity is important in the prevention and management of type 2 diabetes. Physical activity uses up some of the excess glucose in the blood, enhances the body's sensitivity to insulin and reduces central obesity. Physical activity is also believed to help in the prevention of hypertension, colorectal cancer and osteoporosis. Studies confirm the benefits of physical activity in treating mild to moderate unipolar depression. Some studies have shown that physical activity is beneficial in treating anxiety, sleep disorders and in improving the quality of life.¹¹

Physical activity is also of major importance in the prevention of overweight and obesity. In 1997 the NHMRC released a report 'Acting on Australia's Weight'.¹³ The trends of increasing overweight and obesity in the Australian population over the last few decades were attributed to the decline in physical activity in this same period. This decline in physical activity resulted from a decrease in incidental activity because of greater use of labour saving devices, as well as a decline in participation in active recreational activities.

In 1998 the Commonwealth Department of Health and Family Services published the health response to Active Australia, titled Developing an Active Australia: A framework for action for physical activity and health. This document outlined the importance of physical activity in the prevention of all the National Health Priority Areas (cardiovascular disease, cancer, mental health, diabetes and injury).¹⁴

The first physical activity guidelines in Australia were released in 1997 by the Commonwealth Department of Health and Aged Care. These guidelines incorporated the current view of physical activity for health,

as well as the previously developed concepts of exercise for fitness. They stressed the importance of all forms of activities, including simple movement, to low to moderate intensity physical activity, to more vigorous activity. The Australian guidelines are:

1. Think of movement as an opportunity, not an inconvenience.
2. Be active every day in as many ways as you can.
3. Put together at least 30 minutes* of moderate intensity physical activity on most, preferably all, days.
4. If you can, also enjoy some regular, vigorous exercise for extra health and fitness.

* These 30-minute sessions can be a single session, or accumulated over the day with each bout lasting at least eight to 10 minutes.¹⁵

*[Editorial comments: **Eat more cereals and legumes.** The authors reported that the forthcoming Australian Dietary Guidelines would recommend that people eat more cereals, preferably wholegrain. This is to encourage higher carbohydrate intake. Generally speaking wholemeal flour does not have a lower glycaemic index than white flour. It is whole-grain foods which have a lower glycaemic index. One of the main reasons to promote increased carbohydrate (cereal and legume) consumption is to displace fats and sugars in the diet.*

Basmati rice and oats are specifically mentioned as they have low glycaemic indexes and their incorporation into a meal will lower the glycaemic index of the entire meal.

References

1. AIHW. Mathers C, Vos T, Stevenson, C. Burden of disease and injury in Australia. AIHW Catalogue PHE 17. Canberra. November, 1999.
2. Cunningham J, Mackerras D. Overweight and obesity Indigenous Australians 1994. ABS Cat 4702. Australian Bureau of Statistics, 1998
3. NHMRC. 2001. Draft Dietary Guidelines for Australians. Canberra.
4. Territory Health Services. Public Health Bush Book. Darwin, 2000.
5. Cashel K, Jefferson S. NHMRC The Core Food Group.
6. SIGNAL. 2001. Eat Well Australia: An Agenda for Action for Public Health Nutrition 2000-2010. Canberra.
7. A National Nutrition Survey Selected Highlights Australia. Canberra: Australian Bureau of Statistics, 1995.
8. Territory Health Services. Market Basket Survey of Remote Community Store in the Northern Territory. Darwin, 2000.
9. National Heart Foundation of Australia. Position statement on dietary fats. 1999, 56(4)Supplement S3-S4.
10. Territory Health Services. Background papers to the Northern Territory Food and Nutrition Policy Volume 4: Food and Nutrients in remote Aboriginal Communities.
11. Sallis, J & Owen, N. Physical Activity and Behavioral Medicine. London: Sage Publications, 1999.
12. US Department of Health and Human Services. Physical activity and health: A report of the Surgeon General. Atlanta. GA: Center for Disease Control, 1996.
13. NHMRC. Acting on Australia's Weight: A strategic plan for the prevention of overweight and obesity. Canberra: Australian Government Publishing Services, 1997.
14. Australian Sports Commission. Active Australia: A National Participation Framework. Canberra, 1997.

15. Commonwealth Department of Health and Family Services. Developing an Active Australia: A Framework for action for Physical Activity and Health. Canberra, 1998.