



FOOD AND NUTRITION

This section provides background information for early childhood services professionals.

It contains food and nutrition facts and figures relevant to families and children. It provides an outline of the issues and how it affects users of *What's there to eat?*

It includes the following sections:

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Healthy eating guidelines: what they mean

Healthy eating guidelines have been around for thousands of years - and in essence, not much has changed: they all promote a balanced diet, high in fruits and vegetables and a wide variety of food.

It is really important to note that nearly all healthy eating guidelines are developed for adults, not children. This applies to the 'pyramid' and the 'pie' featured on the following pages. While the main principles apply to children, it should be remembered that children have very different energy needs for growth and development. Maternal and child health nurses will be particularly conscious of these needs - for example, breastfeeding or formula requirements early in life and the introduction of solids, and calcium requirements of children.

The Commonwealth Government has most recently adopted healthy eating guidelines that are called the Australian Guide to Healthy Eating (see the 'Contacts and Resources' section about details to order it or see it on-line). It is published as a booklet.

The aim of the new Australian Guide to Healthy Eating, like its predecessors, is to encourage all Australians to consume a variety of foods from each of the core food groups every day, in basically the right proportions.

In the Australian Guide to Healthy Eating, the core food groups are grouped based on the nutrients they provide. The groups are listed below in a table that also shows the nutrients they provide (this table is taken from the Australian Guide to Healthy Eating). This table is provided for your background information.

Table 1: Nutritional characteristics of the five food groups

FOOD GROUP NAME	BREAD, CEREALS, RICE, PASTA, NOODLES	VEGETABLES, LEGUMES	FRUIT	MILK, YOGURT, CHEESE	MEAT, FISH, POULTRY, EGGS, NUTS, LEGUMES
Main distinguishing nutrients	carbohydrate, iron, thiamin	vitamin A (beta-carotene)	vitamins, especially vitamin C	calcium, protein	protein, iron, zinc
Other significant dietary components	energy, protein, fat, fibre, magnesium, zinc, riboflavin, niacin equivalents, folate and sodium.	carbohydrate, fibre, magnesium, iron, vitamin C, folate and potassium.	carbohydrate, fibre, and folate	energy, fat, cholesterol, carbohydrate, magnesium, zinc, riboflavin, vitamin B12, sodium and potassium.	fat, cholesterol, niacin equivalents and vitamin B12.

The dietary guidelines for children and adolescents were developed by the National Health and Medical Research Council and released in 1995.

The Dietary guidelines for Australians

Children and Adolescents

1. Encourage and support breastfeeding.
2. Children need appropriate food and physical activity to grow and develop normally. Growth should be checked regularly.
3. Enjoy a wide variety of nutritious foods.
4. Eat plenty of breads, cereals, vegetables (including legumes) and fruits.
5. Low fat diets are not suitable for young children. For older children, a diet low in fat and in particular, low in saturated fat, is appropriate.
6. Encourage water as a drink. Alcohol is not recommended for children.
7. Eat only a moderate amount of sugars and foods containing added sugars.
8. Choose low salt foods.

Guidelines on specific nutrients

1. Eat foods containing calcium.
2. Eat foods containing iron.

Who it applies to:

The general population of healthy children from birth to eighteen years.

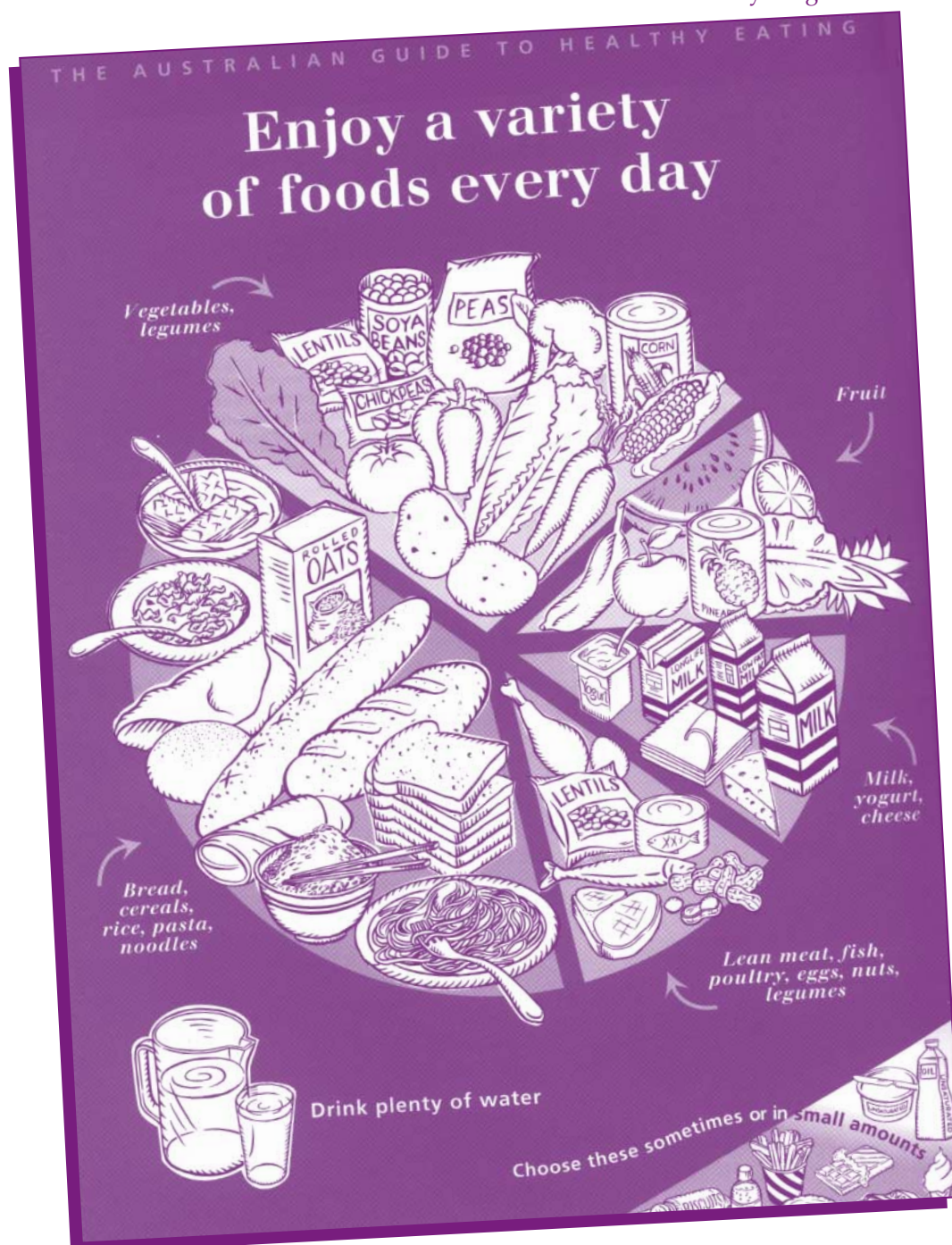
What it means:

1. The focus of the guidelines is to develop healthy eating patterns in children.
2. Emphasis is on eating a wide variety of foods including plenty of fruit and vegetables. Low fat diets are not recommended for young children. Growth should be checked regularly.
3. Breastfeeding is the first guideline to reflect the importance of this to the population.
4. The guidelines apply to the total diet of the child / adolescent. Individual guidelines cannot be considered in isolation.

How you can use it:

As an early childhood service provider, you can refer parents to this set of guidelines when they ask you for general guidance on children and eating. You can copy this excerpt and give it to them for future reference. You can also ensure these guidelines are applied to children in your care if your service / centre is responsible for providing meals.

The Australian Guide to Healthy Eating was released in 1998. It was funded by the Commonwealth Government under the National Food and Nutrition Policy Program.



Who it applies to:

Australian adults of all cultures.

What it means:

A mix of foods, and a wide variety of foods from different food groups, is important. Low fat, and low salt foods are encouraged. Each section of the 'pie' represents a food group, and what proportion of the daily diet it should make up. Foods are grouped together primarily on the basis of their nutrient similarity. See Table 1 on page 1. Food and drinks that don't fit into the main food groups are drawn outside as 'sometimes' foods but not essential.

How you can use it:

You can display the poster in your centre or service to prompt discussion about food and the principles of healthy eating.



One of the most well recognised and well-known healthy eating education tool is the 'Healthy Eating Pyramid' developed by the Australian Nutrition Foundation (Nutrition Australia). This is still widely used by the community.





The case for eating plenty of fruit and vegetables

For years we have known vegetables and fruit are a good source of Vitamin C and dietary fibre, giving rise to the old adage of an apple a day keeps the doctor away.

Research shows that populations with a higher consumption of vegetables and fruits have a reduced incidence of the common diet related diseases. Diets high in vegetables and fruit help to:

- Maintain healthy weight (prevent overweight/obesity)
- Prevent vitamin deficiency diseases
- Prevent constipation and other bowel disorders
- Reduce the risk of some forms of cancer
- Improve control of diabetic symptoms



Most vegetables are highly nutritious as they are good sources of vitamins, minerals and dietary fibre. Capsicum, broccoli, cauliflower, cabbage and tomatoes are high in Vitamin C. Vitamin C is important in brain, nerve and muscle function as well as maintenance of connective tissue. Dark green and orange vegetables like spinach, broccoli, carrots and pumpkin are high in Vitamin A, which is important for vision and bone growth. Green vegetables, dried peas, beans and lentils are a good source of folate. Folate is crucial to the healthy development of babies (reduces the risk of birth defects, in particular spina bifida).



Fruits are excellent sources of vitamins (including C and folate) and contain some dietary fibre and a selection of minerals. Fruit also provides carbohydrates, in particular natural sugars and fibre especially in the edible skins.

There are other good things about fruit and vegetables:

- They add crunch, colour and variety to meals. Meals with eye appeal tend to wet the appetite - including the appetites of children.
- Many fruits and vegetables are the best examples of take-away, convenient fast foods.
- Eating plenty of fruit and vegetables, together with a balance of foods from the other main food groups, is a good eating habit that contributes to long-term good health.





Tips to help your child enjoy Vegetables and Fruit

- Make a habit of including fruit at breakfast - banana on toast works well or cereals with fresh, stewed or canned fruit.
- Present lunches on a plate with a range of finely cut fruits and vegetables surrounding the main item (eg a small sandwich). Remember that children will only learn to enjoy foods if they are available.
- Use fruit or vegetables as the basis for snacks. Eg. Grated carrot, sultana and cheese sandwich, fruit and yoghurt.
- Always include at least 2-3 different kinds of vegetables with the main meal. Serving some vegetables separately, before the main meal increases the likelihood that the child will eat and enjoy them, because they are offered at the time the child is most hungry.
- Offering small serves of several different vegetables is ideal. Increase serving sizes over time.
- Place the vegetables and fruit in the centre of the table and let the children help themselves.
- When preparing vegetables, put some aside, cut into fine strips and offer them to your child as a snack.
- Involve children in shopping for and preparing vegetables and fruit. This will increase their familiarity with these foods.
- Fresh fruits are always preferable to fruit juices. Plain, unflavoured water and milk are great drinks for children.
- Most importantly, set a good example, if children see adults and their peers eating and enjoying a wide variety of fruits and vegetables they are more likely to join in.



Acknowledgement: developed for the PEAS Project (Parent Education and Support) December 2000.



Babies - The First Year

Growth and development - In the first year of life, babies grow very rapidly. Birth weight doubles by 6 months of age and trebles by the end of the first year whilst length increases by about 50%. To grow and develop well, infants require the appropriate introduction of solids at the right time, in addition to their intake of breast milk or formula.

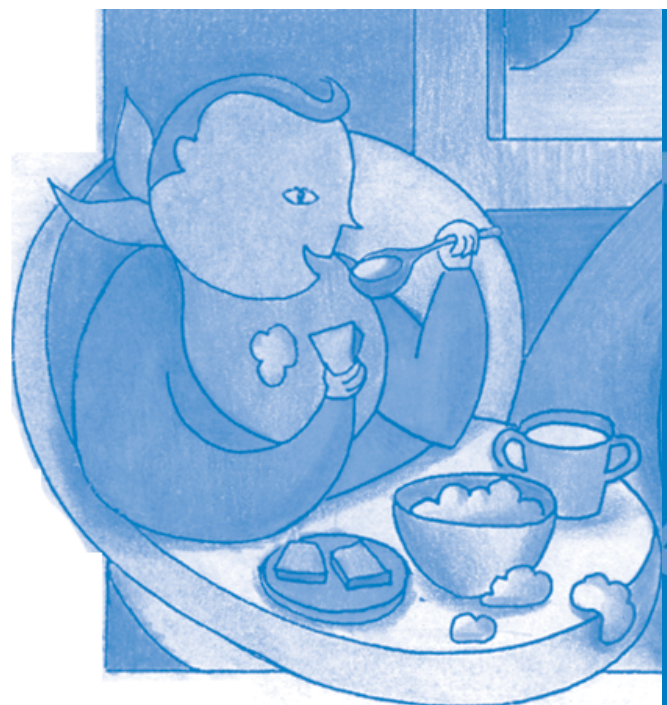
Breast milk or infant formula is important for babies for at least the first 12 months, but it is essential that solid foods be introduced at the right time. Between 4-6 months is the most appropriate time to introduce solids. The introduction of solids in an infant's diet is dependent on **nutritional, physiological and developmental** factors. By this age (4-6 months) the infant has usually matured **physiologically** by way of improved kidney capacity and gastrointestinal function. At this age, they now require increased **nutrients** and energy. For example, by about 4-6 months of age, a baby's iron stores are becoming low and it is important that by 6-7 months the baby is eating foods rich in iron (meats and chicken). This is particularly important in the prevention of nutritional problems such as iron deficiency anaemia. **Developmentally** babies begin to have good neck control, can reach for and grab objects (spoon) and begin to show a real interest in food.

If the parent has any concerns about the baby's growth or diet, they can discuss this with either their Maternal and Child Health Nurse or local dietitian.

Cultural factors can influence the age at which solids are introduced. Different societies have their own traditions about what foods to introduce first and how these foods are prepared. This may be especially challenging for newly arrived families who may have difficulties accessing their traditional foods and cooking equipment. These families may also be without family support or community networks. It is important to give special consideration to assisting these families to ensure the diet of their infants/children is nutritionally appropriate.

The Importance of the Parent /Carer: Children learn to eat by watching other people. Parents/caregivers can foster the formation of healthy eating habits and attitudes. Food habits of parents/carers influence the food habits developed by the baby/toddler. It is important for parents/carers to ensure mealtimes are happy, relaxed and fun. Infants/toddlers love to explore new foods by seeing, touching and smelling new foods as well as tasting it. Encouraging infants to self feed from about seven months is a terrific way to promote exploration, discovery and confidence. Although there will be some mess when they first begin to self-feed, this improves with practice and positive encouragement.

Communicate with Parents: If you are caring for a child in a child care setting, it is important to establish two way communication with the baby's parents about the progress being made in the introduction of new foods to the baby.





For detailed information about first foods for babies refer to:

“Filling the Gap” Nutrition Sheet - *Food in the First Year of Life* (located in the Family Tips section). This nutrition sheet contains the following information:

- What can happen if solids are started too early or too late?
- How can I tell when my baby is ready for solids?
- What is the best way to introduce food?
- What foods should I introduce first?
- When do I change the texture of food?
- When can I use cow’s milk?



Important Tips About Including Solids

- Continue breastfeeding or infant formula until at least one year.
- Start other foods between four to six months.
- Learn when your baby is interested in eating and when they are full.
- Food may be spat out at first when learning to eat new textures.
- First foods are finely mashed but quickly grade up texture.
- Encourage self-feeding from about seven to eight months.
- Stay with your child while eating to avoid accidents such as choking.
- Mealtimes should be fun, relaxed and happy.
- Children learn to eat by watching other people.

Remember

- Babies are all individuals and learn to eat at different rates.
- Not all babies the same age eat the same amount of foods.
- Learning to eat is just that - a new skill that needs lots of practise.
- Relax and enjoy this stage of the baby’s development.



Healthy eating for tots and toddlers

There are many people who might consider themselves experts in feeding babies and young children. These may include grandparents, parents-in-law, friends of the family, friends, workmates, brothers and sisters who have had a baby.

Whilst valuable, advice from all angles often makes feeding young children more complicated and confusing than should be. It's important to recognise that while there are general guidelines to help new parents, all babies and young children are individuals with their own rates of growth, activity and development that may influence their appetite and food preference.

A wide variety of nutritious food is an important health message. Parents can help their children learn to enjoy different foods through these simple tips:

- Try to enjoy a wide variety of nutritious foods yourself, particularly fruits and vegetables. Children who see their parents enjoying food are more likely to learn to enjoy these foods too.
- Food rejection is a normal part of learning about food. Your child will usually learn to enjoy a food if it is offered to them. So continue to offer a wide range of foods, particularly finely cut fruits and vegetables, even if they are usually rejected.
- When you are serving a new food, or a food that is usually rejected, try to serve it with foods you know your child will enjoy. It can take up to 10 times for a child to try 'new' foods.
- Try not to comment on foods not eaten or tried. Remember, it is the child's responsibility to decide whether to eat and how much to eat.
- Talk to your child during mealtimes about events going on in your lives.
- Encourage them to try a new food by saying 'try it, you'll like it'
- It is not helpful for mealtimes to become a battle of wills between carers and children, or for foods to be considered either reward or punishment.
- Relax, and enjoy mealtimes. Try to focus on the positive things about the meal!

Always remember that young children need to be supervised when eating. For further practical tips and advice refer to the "Family Tips" section.

For the toddler, food and mealtimes can be a mere distraction amidst the many glorious facets of the world around them. Appetites and food preferences of the toddler can change dramatically on a day to day basis. By this age, the child has already worked out the power that food (refusal or acceptance) can yield. Factors influencing the development of eating behaviour in early childhood include the slowing growth rate, meal patterns, quantity of food required, impact of other developing skills, food used as reward or punishment, independence and self feeding, likes and dislikes and television.¹

"... all babies and young children are individuals with their own rates of growth, activity and development that influence their appetite and food preferences."

¹ Department of Human Services (DHS) 'Filling the Gap, A Nutrition Needs Assessment Children Aged 0 to 8 Years in Melbourne's Western Metropolitan Region', Victorian Government DHS, Melbourne, 1997.



How much should a child eat?

One of the questions of many parents is “how much should my child eat?” It is a common concern expressed to professionals who work in early childhood services. In general the right answer is that parents and carers should be persistent and consistent. The best advice is to encourage parents to try and have regular routines associated with eating (for example, sitting down to eat main meals at roughly the same times each day) and regular healthy snacks.

It is important to reassure parents that there can be huge variations in children’s normal appetites and eating behaviours. These variations can apply from day to day, from week to week, and from age to age within anyone child, and between different children at apparently similar ages and stages.

It is for this reason that serving sizes are not given in this kit, as often these can lead to further anxiety and stress at mealtimes when a child does not eat the prescribed amount. What is important however is that children are offered a wide range of foods daily including fruit and vegetables, meat and meat alternatives, breads and cereals and water or milk as a drink.

Still parents and carers are often concerned when their child appears to be eating very little, refuse foods that were recently favourites, refuse to try new foods and in general restrict themselves to a very limited menu.

Remember no healthy child has ever starved from refusing food. If the child is growing normally, and is busy and active, there is no need to worry about whether they are eating enough. However if parents/carers do have concerns it is important to encourage they raise them with their Maternal and Child Health Nurse or family GP.

Tips on sharing food tasks

Parents decide what to feed their child and when:

This involves:

- choosing, preparing and presenting a wide variety of foods
- continuing to offer foods without a fuss, even when they are rejected
- avoiding ‘junk’ foods and sweet drinks, which may reduce their appetite for ‘healthier’ options
- providing food in ways that children can easily handle (eg cut into small pieces)
- providing meals and snacks at regular times
- parents having meals and snacks with their child whenever possible
- setting rules about behaviour at the meal table and sticking to them

Children decide *whether* to eat and *how much* to eat:

Remember that children eat when they are hungry and do not starve themselves.

Children have a natural ability to sense when they are hungry and when they are full; if parents insist that their child eats more than they choose to, they are also likely to be over-riding this natural ability. Children are encouraged to decide *whether* they will eat and *how much* they will eat.

Remind parents to avoid feeling the need to encourage their child to eat a little more, even if they have left most of their meal. The child will not starve! If parents try to control *whether* their child eats and *how much* he/she eats, they are providing opportunities for fussing and tantrums.

Refer to the Family Tips section for more advice on healthy eating

Acknowledgement: developed for the PEAS Project (Parent Education and Support) December 2000.



Common Concerns

It will come as no surprise that research with both childcare workers and parents and carers points to several concerns that are common to many parents and those responsible for feeding children.

A recent innovative study, *Filling the Gap, A Nutrition Needs Assessment Children Aged 0 to 8 Years in Melbourne's Western Metropolitan Region*¹ produced some interesting data on the nutritional concerns of parents and early childhood service providers. The sample numbers of some child care service providers in this study were relatively small but are accepted as representative of the wider group. Information was gathered from 500 families in the region.

Reported concerns tended to vary with the age of the children, though some were common across age groups.

Maternal and Child Health Nurses, responsible for the youngest age group of children, 0 to 2 years, ranked food refusal and poor eating of highest concern. Other issues for infants included reflux, constipation, poor weight gains, colic, allergies, and to a lesser extent, overweight and over feeding.

In the next age group, 2 to 4 years, additional concerns worry parents and child care workers. Poor appetite, food refusal and picky eating continued to be major concerns for parents, and 'child care coordinators felt parent's lack of understanding of normal appetite fluctuations, slowing growth and amount of food needed by children in this group were contributing factors' to these concerns.

Parents' concerns for older children, 4 to 6 years, were similar in some respects to the 2 to 4 year age group, including their child's appetite, eating patterns, food choices and growth.

Some of the common nutrition problems encountered by kindergarten teachers were similar to those identified by maternal and child health nurses and child care coordinators. These included poor appetite, food refusal, allergies and constipation. However dental caries appeared now as an important issue, along with limited food variety and overweight.

As with the previous group, concerns about packaged snacks, drinks, food allergies and food additives showed the increasing diversity of processed foods included in the diets of children at this stage.

The concerns of Grade 1 teachers reflected the growing impact of outside influences on children's food and eating habits. The issue of overweight in children appearing in this age group may be related to the perceived concerns of reliance on fatty foods and sweets.

Limited variety was again a concern, and allergies, constipation, eczema and poor growth were reported to a lesser extent. The question of what to put in school lunches became a priority for starting school children.

Child health nutrition fact sheets that answer several frequently asked questions relating to food for toddlers, fussy eaters, are included in the 'Family Tips' section.

“Maternal and Child Health Nurses ... ranked food refusal and poor eating of the highest concern.”

¹ Department of Human Services (DHS) 'Filling the Gap, A Nutrition Needs Assessment Children Aged 0 to 8 Years in Melbourne's Western Metropolitan Region', Victorian Government DHS, Melbourne, 1997.

Eating for health: some facts and stats

- A healthy diet can be the best investment a parent can make in their child's health.
- Research shows that poor nutrition in childhood can adversely affect adult health. Diet related diseases include heart disease, diabetes and cancer.
- It is estimated that one quarter or 1 in 4 Australian children are overweight or obese.
- Overweight and obesity will also increase the risk of diet related disease.
- There is a big gap in the amount of fruit and vegetables children are eating compared to what they should be. This, in addition to over-consumption of high fat/high sugar food and less physical activity is believed to be responsible for this increasing trend towards overweight.
- Recent data from the Australian Institute of Health and Welfare¹ indicate that one third of children aged 4-11 years had not eaten fruit at all on the day before the national nutrition survey.
- A further analysis comparing the fruit and vegetable intakes of Australian children and adolescents with the Australian Guide to Healthy Eating recommendations showed that the minimum number of serves fell markedly with age - less than 15% of adolescents met or exceeded the minimum serve recommendations.
- The percentage of participants consuming vegetables increased with age but only 25-40% achieved the minimum number of serves.
- Seven serves of fruit and vegetables per day, per adult, is now the recommended amount. That is, five serves of vegetables and two serves of fruit. Children require less depending on their age.
- It is estimated that inadequate fruit and vegetable consumption (less than 5 serves per day) was responsible for nearly 3% of the total burden of disease and 11% of cancer burden in Victoria in 1996.²

“Many people consider that they know what to eat and what not to.”

“...there is a considerable gap in the recommended amounts of fruits and vegetables to be included in the diet and what people in general believe is an adequate amount.”

1 Australian Institute of health and Welfare (AIHW) "Australia's Health 2000 AIHW, Canberra, 2000

2 Victorian Burden of Disease Study Morbidity Department of Human Services, Public Health Division. Melbourne, Victoria 1999.

Putting policy into practice

In translating the dietary guidelines into practical eating habits for adults, the Australian Guide to Healthy Eating gives examples of foods from each core food group that fit the matching guideline, for example:

Enjoy a wide variety of nutritious foods

In practical terms this means eating foods from each core food group every day.

This information is provided for your background, however you may find it useful to copy and provide to parents to help explain healthy eating.

To eat a healthy diet:

1. EAT ENOUGH FOOD FROM EACH OF THE FIVE FOOD GROUPS EVERY DAY.
2. CHOOSE DIFFERENT VARIETIES OF FOODS FROM WITHIN EACH OF THE FIVE FOOD GROUPS FROM DAY TO DAY, WEEK TO WEEK AND AT DIFFERENT TIMES OF THE YEAR.
3. EAT PLENTY OF PLANT FOODS (BREAD, CEREAL, RICE, PASTA, NOODLES, VEGETABLES, LEGUMES AND FRUIT); MODERATE AMOUNTS OF ANIMAL FOODS (MILK, YOGURT, CHEESE, MEAT, FISH, POULTRY, EGGS) IN THE PROPORTIONS SHOWN BY THE GUIDE; AND SMALL AMOUNTS OF THE EXTRA FOODS, AND MARGARINES AND OILS.
4. DRINK PLENTY OF WATER.

Why is variety so important?

Eating a wide variety of foods has a very positive effect on health.

Variety among the groups

If you eat from each of the five food groups in the amounts recommended, it is likely that your diet will contain all the nutrients that you need.

Variety within the groups

Within each of the five food groups, different foods provide more of some nutrients than others. If you eat a variety of foods from within each group, it is likely that you will get all the nutrients provided by the foods in that group. For example, in the vegetable group, carrots and pumpkin contain much more vitamin A than do potatoes. Foods also contain substances other than nutrients which may have health benefits. For example, 'cruciferous' vegetables such as cauliflower and cabbage are believed to contain protective factors against some cancers.



Eat plenty fruit and vegetables, including legumes

Vegetables

Some practical suggestions:

- Eat a variety of vegetables every day. Include:
 - dark green vegetables like spinach and broccoli
 - orange vegetables like sweet potato, pumpkin and carrots
 - cruciferous vegetables like broccoli, cauliflower, cabbage, brussels sprouts
 - starchy vegetables like potatoes, sweet potato, taro and corn
 - salad vegetables like lettuce, tomato, cucumber and capsicum
 - legumes like dried peas, beans, lentils and chick peas.
- Choose a wide variety of vegetables from week to week.
Buy vegetables in season, as these are the best value for money.
- Use frozen and canned vegetables as an alternative to fresh. They are nutritious, often cheaper, quick and easy to prepare, easily stored, and available in remote communities. Try some no-added-salt varieties.
- Eat some vegetables raw or slightly cooked for maximum nutrition.
Children often prefer raw vegetables.



*Always remember that young children need to be supervised when eating.
Extra care needs to be taken when hard foods are offered.*



Some practical suggestions:

- Eat a wide variety of fruit each week. Include:
 - apples and pears
 - citrus fruit such as oranges and mandarins
 - tropical fruit such as bananas and pineapple
 - melons
 - berries
 - grapes
 - stone fruit such as apricots and peaches.
- Buy fruit in season, as this is the best value for money.
- For convenience use canned fruit as a nutritious replacement for fresh fruit, especially those varieties that are canned in natural juice or without added sugar.
- Dried fruit is nutritious and adds variety to a healthy diet, but can contribute to tooth decay. For this reason, and to get enough fresh fruit, eat no more than 1 serve of dried fruit each day.
- Choose fruit more often than juice, as it is higher in fibre.
- Eat the skin where possible, as it is a useful source of fibre.
- Choose the right size fruit for different age groups. Smaller-sized fruit is often cheaper, and easier for small children to eat.



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