



Malaysian Dietary Guidelines for Children and Adolescents -Summary



National Coordinating Committee on Food and Nutrition
Ministry of Health Malaysia ♦ 2013



Message by
Minister of Health Malaysia

I would like to commend the Technical Working Group (TWG) on Nutritional Guidelines established under the National Coordinating Committee on Food and Nutrition (NCCFN) for their diligent efforts in successfully completing this book.

This guideline is developed with the noble objective of empowering health professionals, policy makers and educators with the latest evidence - based nutritional sciences. It will also assist health professionals and relevant groups in providing nutrition information and education to the desired population including parents, caregivers and educators.

The Malaysian Dietary Guidelines for Children and Adolescents comprise 15 key messages for healthy children and adolescents from birth to 18 years of age. I am confident that this book will be fully and extensively utilised as a source of reference to ensure optimal growth of Malaysian children and adolescents.

A handwritten signature in black ink, consisting of stylized, flowing letters that appear to be 'S. Subramaniam'.

YB Datuk Seri Dr. S. Subramaniam
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Executive summary

Nutritional needs differ at different stages of life. For the newborn, there is no better food than breast milk. Older children need a proper balance of foods to ensure good growth and development, whilst for adolescents, dietary habits and food preferences which affect energy consumption and nutrient intake are generally developed during this period. However, for both children and adults, some principles are equally applicable including the need to ensure that food is handled well and safe to eat and to enjoy a wide variety of nutritious foods.

The recommendations in the Malaysian Dietary Guidelines for Children and Adolescents are for healthy Malaysian children and adolescents and may not satisfy the specific nutritional needs of children and adolescents with particular health conditions. This book describes the scientific rationale for the guidelines and is intended for health professionals.

In summary, the Malaysian Dietary Guidelines for Children and Adolescents recommend:

- Exclusive breastfeeding for babies below 6 months and continue to breastfeed until 2 years of age.
- Appropriate complementary foods to children between the aged of 6 months to 2 years.
- Eating a variety of foods within your recommended intake.
- Attaining healthy weight for optimum growth.
- Being physically active everyday.
- Eating adequate amounts of rice, cereals or tubers.
- Eating fruits and vegetables every day.
- Consuming moderate amounts of fish, meat, poultry, egg, legumes and nuts.
- Consuming milk and milk products everyday.
- Including appropriate amounts and types of fats in the diet.
- Limiting the intake of salt and sauce.
- Consuming foods and beverages low in sugar.
- Drinking plenty of water daily.
- Consuming safe and clean foods and beverages.
- Educating children on the use of nutrition information on food label.

Contents

Pages

Key Message 1 Practise exclusive breastfeeding from birth until 6 months and continue to breastfeed until 2 years of age	1
Key Message 2 Give appropriate complementary foods to children between the age of 6 months to 2 years	7
Key Message 3 Eat a variety of foods within your recommended intake	13
Key Message 4 Attain healthy weight for optimum growth	19
Key Message 5 Be physically active everyday	23
Key Message 6 Eat adequate amount of rice, cereals or tubers	27
Key Message 7 Eat fruit and vegetables everyday	31
Key Message 8 Consume moderate amounts of fish, meat, poultry, egg, legumes and nuts	35
Key Message 9 Consume milk and milk products everyday	39
Key Message 10 Include appropriate amounts and types of fats in the diets	43
Key Message 11 Limit intake of salt and sauce	47
Key Message 12 Consume foods and beverages low in sugar	51
Key Message 13 Drink plenty of water daily	55
Key Message 14 Consume safe and clean foods and beverages	59
Key Message 15 Educate children on the use of nutrition information on food labels	65



Key Message 1

Practise
Exclusive
Breastfeeding
from Birth
until 6 Months
and Continue
to Breastfeed
until 2 Years
of Age

Key recommendation 1

Be mentally prepared during pregnancy for exclusive breastfeeding.

How to achieve

1. Get information on exclusive breastfeeding from trained healthcare professionals during antenatal visits.
2. Learn the correct breastfeeding techniques.
3. Get additional information on breastfeeding from breastfeeding counsellors, peer support group, any reading materials in order to strengthen knowledge and motivation.

Key recommendation 2

Start breastfeeding within one hour of birth.

How to achieve

1. Ask to place your baby naked on your chest without clothing within one hour after birth.
2. Maintain skin-to-skin contact for at least one hour.
3. Let your baby learn to latch and start breastfeeding during skin to skin contact.
4. Ask nurses or doctors to help you start breastfeeding by employing the correct techniques.

Key recommendation 3

Breastfeed frequently and on demand.

How to achieve

1. Be available to your baby so that he can be fed on demand.
2. Breastfeed when baby shows signs of hunger (e.g. sucking on a fist, looking around, searching for breast and crying) or when mother's breasts feel full.
3. Wake your baby up for breastfeeding if baby sleeps too long (more than 2 hours) or when mother's breasts feel full.
4. Breastfeed your baby on demand, day and night, at least 8 to 12 times everyday.
5. Feed baby on the first breast until baby is satisfied (e.g. baby relaxes, stops searching for breast and falls asleep). Offer the second breast if baby is still hungry and if the first breast does not feel full.
6. Do not give pacifiers or artificial teats to breastfed babies except upon doctor's advice.

Key recommendation 4

Breastfeed with correct techniques.

How to achieve

1. Make sure you are in a comfortable position either sitting or lying down.
2. Make sure your baby is well-positioned for breastfeeding:
 - a. Baby's head and body are in a straight line.
 - b. Baby is held close to your body.
 - c. Baby's whole body and head is well supported and facing your breast.
3. Make sure your baby is well latched on to the breast. Signs of good attachment are:
 - a. Baby's mouth is wide open.
 - b. Baby's lower lip is turned outward.
 - c. Baby's chin touches breast.
 - d. More areola, especially the lower part, is inside baby's mouth.
4. Learn to recognise signs of correct breastfeeding techniques:
 - a. Baby suckles slowly and deeply with pauses.
 - b. Baby's cheeks appear full and round during suckling.
 - c. You can hear your baby swallowing.
 - d. Baby releases breast when full.

Key recommendation 5

Avoid giving liquids or food other than breast milk to breastfed babies below 6 months.

How to achieve

1. Do not start your baby on complementary foods before the age of 6 months to prevent early termination of breastfeeding. Get advice from breastfeeding counsellors or health care professionals before introducing other fluids including plain water, infant formula, juices or complementary foods to babies below 6 months of age.
2. Learn signs of a breastfed baby's satiation, including:
 - a. Baby passes urine 6 to 8 times a day.
 - b. Urine colour which is clear to light yellow.
 - c. Gaining weight according to WHO (2006) child growth standard.
 - d. Passing motion 3 to 8 times a day and perhaps less frequently as baby grows older.

Key recommendation 6

Continue to give breast milk even when mother returns to work.

How to achieve

1. Take as much maternity leave as possible to continue breastfeeding, if you are a working mother.
2. Practise expressing breast milk by hand or use a breast pump during confinement or maternity leave.
3. Store expressed breast milk properly. Expressed breast milk can be kept for 3 to 5 days in the refrigerator
4. Train your baby to drink breast milk using a cup during maternity leave.
5. Make arrangements to have your baby near your workplace, if possible.
6. Continue to breastfeed frequently, especially at night to ensure milk production is sustained.
7. Arrange a work schedule that will allow time to express breast milk.

Key recommendation 7

Get enough rest, nutritious food and drinks to maintain health while breastfeeding.

How to achieve

1. Reorganise housework and have enough sleep.
2. Consume a well-balanced diet with additional 1 serving of milk and 1 serving of rice or other cereals daily.
3. Drink at least 8 glasses of water everyday.
4. Avoid excessive alcohol and caffeinated drinks.

Key recommendation 8

Obtain full support to breastfeed from husband, family members and community.

How to achieve

1. Get husband and close family members to:
 - a. be involved in the preparation during pregnancy such as accompanying during pregnancy check-ups (antenatal visits) and after delivery (post natal) follow-up.
 - b. help to arrange housework and take care of other children.
 - c. ensure that breastfeeding mothers are provided with nutritious foods.
 - d. be caring and understanding towards the breastfeeding mother.

- e. seek help from trained health care professionals in breastfeeding or breastfeeding support groups whenever mother faces breastfeeding difficulties.
2. Urge employers and the community to provide a supportive environment by having childcare centres or breastfeeding areas at the workplace or shopping complex.

Key recommendation 9

Use cup feeding as an alternative to breastfeeding.

How to achieve

1. Thaw expressed breast milk in quantities that are required for each feed by placing it in the refrigerator the night before use or gently re-warm the container under warm running water or in a bowl of warm water.
2. Gently swirl the bottle or container of breast milk to mix the content well.
3. Extract the thawed breast milk into a cup (spoon or dropper also can be used for younger baby) for feeding.
4. Take note of the following when cup feeding your baby:
 - a. Baby will take time to get used to expressed breast milk and feeding from a cup. You will need to be patient, especially during the first introduction.
 - b. Cradle the baby on the lap. Hold the baby in upright position with your hand placed behind his neck. Make sure the baby is positioned comfortably.
 - c. Place a small cup on the baby's lips and tilt the milk gently until it reaches the baby's lips. Let the baby lick the milk with his tongue.
 - d. Make sure the baby is swallowing the milk and avoid pouring the milk into the baby's mouth.
 - e. Feed the baby according to his need. Stop feeding the baby when he begins to show signs that he is full (such as turning his head away or stop licking).
 - f. Burp the baby. All babies need to be burped for all types of feeding methods except direct breastfeeding.





Key Message 2

Give
Appropriate
Complementary
Foods to
Children
Between the
Age of 6 Months
to
2 Years

Key recommendation 1

Start baby on complementary food from 6 months of age.

How to achieve

1. Start with a few teaspoons of complementary food and gradually increase the amount.
2. Breastfeeding on demand should be continued until baby is 2 years of age.
3. Add expressed breast milk to complementary foods (e.g. breast milk mixed with rice porridge).

Key recommendation 2

Feed children with enough food to meet their energy needs.

How to achieve

1. Give children a variety of cereals (e.g. porridge, rice, bread) and tubers (e.g. potatoes, sweet potatoes).
2. Generally, baby aged 6 to 8 months should be given ½ cup of thick rice porridge at each main meal. This should be increased gradually to 1 cup between the ages of 9 to 11 months.
3. Children 1 to 2 years should be given ½ cup of rice at main meals.
4. Add about ½ teaspoon of oil, butter or margarine in each main meal every day (up to a maximum of 2 teaspoons per day).
5. Prepare home-cooked complementary food without adding salt, sugar, or soya sauce (*kicap*).
6. If you give children commercially prepared cereals, read the food label including the nutrition information panel and choose those fortified with iron. Avoid products with added sugar or salt.
7. Avoid adding salt and sauces when preparing food for toddlers.

Key recommendation 3

Increase the feeding frequency of complementary foods according to age.

How to achieve

1. Give complementary foods to children at the following frequencies according to their age as per Table 2.2.

Age	Meal frequency/ day	Nutritious snacks/ day
6 to 8 months	2 to 3 times	1 to 2 times
9 to 11 months	3 to 4 times	1 to 2 times
1 to 2 years	4 to 5 times	1 to 2 times

Key recommendation 4

Change food texture and preparation methods gradually as the baby gets older.

How to achieve

1. Ideally, give infants and young children freshly prepared food.
2. Serve blended, mashed and soft foods to children at the age of 6 to 8 months.
3. Serve chopped foods to children at the age of 9 to 11 months. Healthy finger foods such as fruits can also be given.
4. Give children family foods at the age of 12 months.
5. Avoid giving chunks of hard food larger than 0.5 cm (½ of your thumb nail) and supervise children during mealtimes to avoid choking.

Key recommendation 5

Give a variety of food and gradually increase the quantity to ensure that all nutrient needs are met.

How to achieve

1. Give children foods from animal sources such as meat, poultry, fish or eggs every day, as they are the main sources of protein, iron and zinc. However, avoid giving egg white to babies aged below 1 year.
2. Continue to practice breastfeeding in between meals. For breastfed children above 6 months old who are non-breastfed should be given all types of dairy milk, except low-fat milk, skimmed milk, sweetened condensed milk and creamer. Soya milk should not replace dairy milk unless advised by health care professionals. However, avoid adding sugar to milk and choose flavoured milk that has little or no sugar.

3. If milk and foods from animal sources are not consumed in adequate amounts, give children both cereals and legumes [e.g. mung beans (*kacang hijau*), red beans or dhal] in the same meal.
4. Give different-coloured fruits and dark green leafy vegetables (e.g. spinach and mustard greens) every day. Fresh fruits can be served as healthier and nutrient-dense snacks.
5. Provide fruit juice, but not more than $\frac{3}{4}$ glass (180 ml) a day, to prevent children from feeling full, as it may decrease the intake of other nutritious food.
6. Give fresh foods and avoid processed foods high in sugar or salt.
7. Avoid giving children drinks with low nutrient value such as tea, coffee, sweetened condensed milk, syrup, cordials and carbonated drinks.

Key recommendation 6

Consider your child's stage of development and ability when feeding.

How to achieve

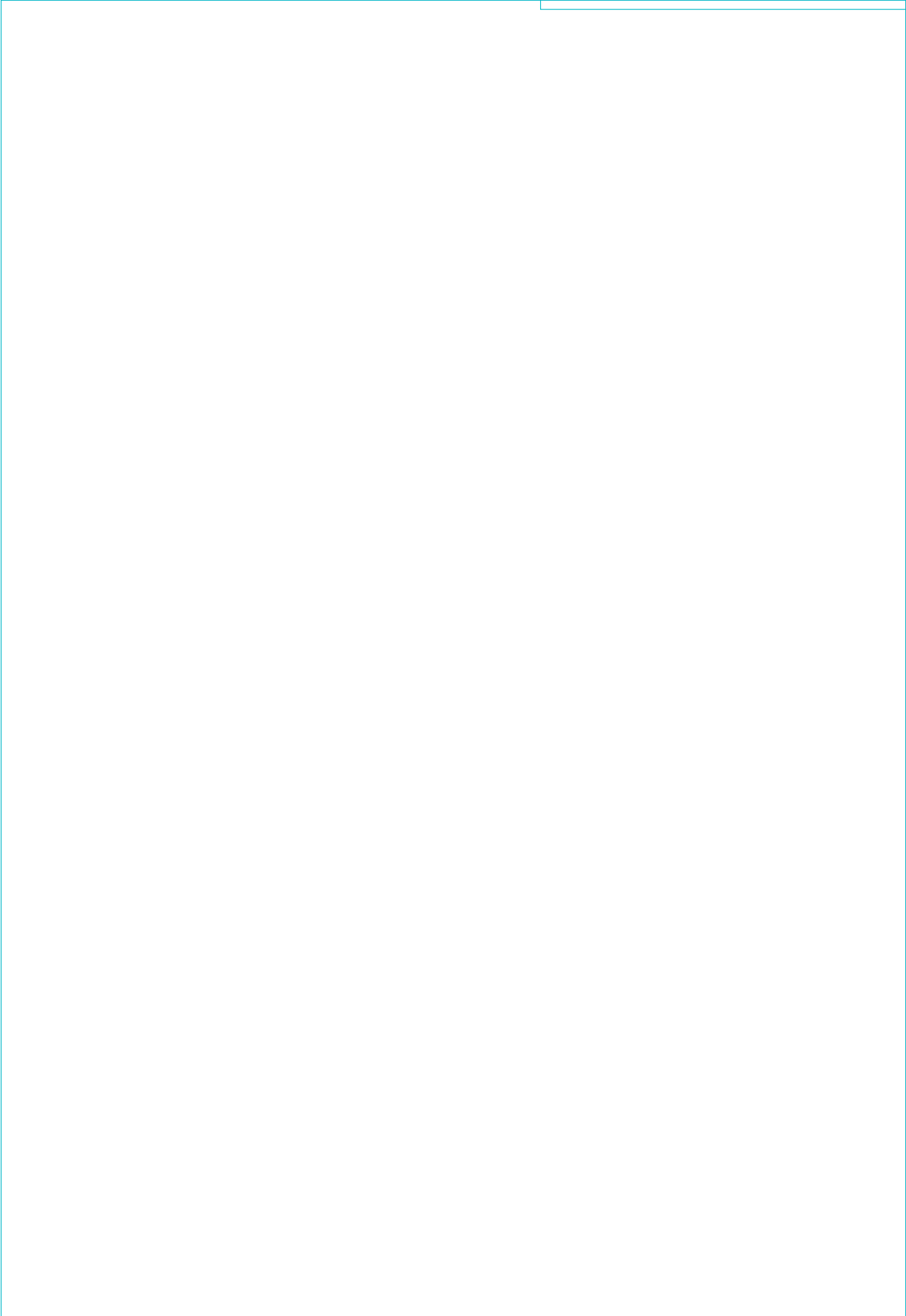
1. Feed babies directly when they are still young. When they grow older and are able to feed himself, provide assistance at meal times.
2. Avoid giving complementary foods using the feeding bottle.
3. Be patient and take time to feed children. They should be encouraged and not forced to eat.
4. Be aware of signs of hunger and satiety. Stop feeding children when they are full.
5. Create a fun environment and interact lovingly with children during meal times.
6. Teach good and proper oral hygiene habits such as brushing teeth daily.

Key recommendation 7

Give sick children extra fluids and offer small but frequent meals.

How to achieve

1. Continue and practise frequent breastfeeding.
2. Offer children their favourite foods when they have no appetite.
3. Encourage children to eat a variety of soft and appetising food.
4. During recovery, give extra food and encourage children to eat more at each meal.







Key Message 3

**Eat A Variety
of Foods
Within Your
Recommended
Intake**

Key recommendation 1

Choose and ensure that the daily diet consists of foods based on the Malaysian Food Pyramid.

How to achieve

1. Choose foods from the five food groups based on the Malaysian Food Pyramid to get all nutrients needed by the body.
2. Vary your food choices within each food group during main meals.
3. Reduce fats, oils, salt, sugar and flavour enhancers such as monosodium glutamate (MSG), sauces (e.g. soya sauce) and flavouring cubes in cooking.

Key recommendation 2

Choose and ensure the number of servings consumed are based on caloric needs.

How to achieve

1. Determine the caloric needs based on age group and sex as shown in Table 3.1

Table 3.1. Recommended caloric intake of children and adolescents by age and sex

Age groups	Boys (kcal)	Girls (kcal)
3 years	1000	1000
4 to 6 years	1300	1300
7 to 9 years	1800	1600
10 to 12 years	2200	2000
13 to 15 years	2700	2200
16 to 18 years	2800	2000

Source: NCCFN (2005); Values are rounded up to the nearest tens.

2. Consume the number of servings based on caloric needs as shown in Table 3.2a and 3.2b.

Table 3.2a. Number of serving sizes based on daily caloric needs by age group (3 to 9 years)

Food groups	Energy (kcal)			
	1000 (3 years)	1300 (4 to 6 years)	1600 (7 to 9 years)	1800 (7 to 9 years)
Cereals/ grains	2	3	5	5
Fruits	2	2	2	2
Vegetables	2	2	3	3
Meat/ poultry	½	½	1	1
Fish	½	1	1	1
Legumes	½	½	½	1
Milk and dairy products	2	2	2	2

* Based on 14 g protein per serving

Based on 30 g carbohydrate per serving

Fat and sugar caloric values have been incorporated into the total caloric intake per day.

Table 3.2b. Number of serving sizes based on daily caloric needs by age group (10 to 18 years)

Food groups	Energy (Kcal)				
	2000 (10 to 12 years)	2200 (10 to 12 years)	2500 (13 to 15 years)	2700 (13 to 15 years)	2800 (16 to 18 years)
Cereals/ grains	6	7	8	8	9
Fruits	2	2	2	2	2
Vegetables	3	3	3	3	3
Meat/ poultry	1	1 ½	2	2	2
Fish	1	1	1	2	2
Legumes	1	1	1	1	1
Milk and dairy products	2	2	3	3	3

* Based on 14 g protein per serving

Based on 30 g carbohydrate per serving

Fat and sugar caloric values have been incorporated into the total caloric intake per day.

3. Ensure variety in each food group and vary the food choices in the same group as they are interchangeable. The foods and their serving sizes below have similar nutrient content (Table 3.3).

Table 3.3. Food varieties according to food groups

One serving of cereals and cereal products and tubers (30 g carbohydrate per serving)	
<i>Bee Hoon</i> , soaked	1 ½ cups
Biscuits, cream crackers	6 pieces
Bread, white	2 slices
Bread, whole meal	2 slices
<i>Laksa</i> , soaked	1 ½ cups
<i>Mee</i> or <i>kuay teow</i> , wet	2 medium whole
Potato	6 pieces
<i>Putu mayam</i>	2 pieces
Rice, white, cooked	2 <i>senduk</i> / 1 cup
Rice porridge, plain	2 cups
Sweet potato, yam and tapioca	1 cup
One serving of fruits (15 g carbohydrate per serving)	
Apple/ chinese pear/ mango/ <i>ciku</i>	1 whole
Banana, <i>berangan</i> (medium size)	1 whole
Banana, <i>emas</i>	2 whole
Durian	3 <i>ulas</i>
Grapes	8 small
Guava/ pear	½ whole
Mandarin orange, (small to medium)	1 whole
Papaya/ pineapple/ watermelon	1 slice
Prunes	4 small
Raisins	1 dessert spoon
One serving of vegetables	
Dark green leafy-vegetables, cooked	½ cup
Fruit vegetables, cooked	½ cup
<i>Ulam</i> , raw	1 cup

Table 3.3. Food varieties according to food groups

One serving of fish, poultry and meat (14 g protein per servings)	
Anchovies (head removed)	$\frac{2}{3}$ cup
Beef, lean (7.5 cm x 9 cm x 0.5 cm)	2 pieces
Chicken, drumstick	1 piece
Cockles	1 cup
Eggs	2 whole
<i>Ikan kembung</i>	1 medium
<i>Ikan selar</i>	1 whole
<i>Ikan tenggiri</i>	1 piece
Chicken liver	2 pieces
<i>Telur puyuh</i> (Quail egg)	12 whole
Squid	2 medium
One serving of legumes (7 g protein per servings)	
Chickpea/ dhal	1 cup
Green/ Mung bean and canned baked bean	1 $\frac{1}{2}$ cups
<i>Tempeh/ tau-kua/ tauhu</i>	2 pieces
Unsweetened soy bean milk	1 $\frac{1}{2}$ glass
One serving of milk and dairy products (7 g protein per servings)	
Cheese	1 slice
Milk, low fat	1 glass
Milk, evaporated	$\frac{2}{3}$ cup
Milk, powdered (heaped)	4 dessertspoon
Yoghurt	1 cup

Standard measurements used in this dietary guideline are as follows:

1 cup = 200 ml.

1 glass = 250 ml.

1 dessertspoon = 10 ml.

1 tablespoon = 15 ml.

1 tea spoon = 5 ml.





Key Message 4

Attain Healthy Weight for Optimum Growth

Key recommendation 1

Monitor the growth of children and adolescents using appropriate growth standards or charts to ensure healthy growth.

How to achieve

1. Measure weight and height, calculate Body Mass Index (BMI) and determine weight status using BMI-for-Age monthly.
2. Monitor growth of children below 5 years old using WHO, (2006) chart and use WHO, (2007) reference for children 5 to 19 years old.
3. Discuss the growth of children with health care professionals (nutritionists, dietitians, doctors, nurses) or teachers.
4. Bring your child to the clinic according to the appointment date for growth monitoring.
5. Keep your child's growth chart and constantly monitor his or her growth. Seek medical advice if there is any concern with his or her growth.

Key recommendation 2

Children and adolescents should consume adequate amount of calories and nutrients needed for healthy growth.

How to achieve

1. Eat according to calorie recommendations by age, sex and physical activity level.
2. Eat a variety of foods from all food groups in appropriate amounts to obtain adequate nutrients.

Key recommendation 3

For children and adolescents who are overweight or obese, reduce weight gradually by adopting a healthy diet and increase physical activity.

How to achieve

- A. Encourage overweight and obese children to practise healthy eating.
 1. Eat according to calorie recommendations by age, sex and physical activity level.
 2. When hungry, eat only to satisfy needs but do not overeat.
 3. Eat 3 main meals per day, plus 1 or 2 nutritious snacks between meals. Avoid skipping meals as it will lead to eating bigger meals or snacks later.
 4. Replace calorie-dense foods with healthier options.
 5. Eat smaller serving sizes of high calorie foods.

6. Replace sugar sweetened beverages with plain water or low fat milk.
 7. Avoid using special diets such as meal replacements, slimming tea or pills to reduce weight as they can cause side effects.
- B. Encourage overweight and obese children to increase physical activity.
1. Reduce sedentary activities such as watching television and video, playing computer games and other sedentary activities.
 2. Perform 60 minutes of physical activity daily.
 3. Motivate children to be physically active everyday.
 4. Inculcate interest in physical activity with peers in order to develop confidence and increase self- esteem.

Key recommendation 4

If the child is underweight or having growth failure, increase calorie intake as recommended.

How to achieve

1. Provide small but frequent meals throughout the day.
2. Choose foods with higher calorie and protein content.
3. Provide complete balanced nutritional supplements and drinks to ensure additional calorie and nutrient intake.
4. Consult with a health care professional to ensure appropriate management of weight and other health problems.

Key recommendation 5

Instill a healthy body image in children and adolescents.

How to achieve

1. Look out for signs of distorted body image perception among children and adolescents for instance, if they are extremely concerned about their weight, eating, dieting or dislike certain parts of the body.
2. Emphasise the positive appearance and character of children and adolescents.
3. Explain normal variation in body sizes and shapes among children and adolescents.
4. Discuss how the media can use a variety of techniques to create unrealistic body images.
5. Encourage realistic goals and aim for gradual change in body weight. If the child or adolescent is overweight, do not criticise his or her appearance.
6. Seek medical advice if your child is having weight control issues





Key Message 5

Be Physically
Active
Everyday

Key recommendation 1

Be physically active everyday in as many ways as you can.

How to achieve

Always incorporate more physical activities in your daily life. Parents should try not to restrict their children from being naturally active.

Do these activities whenever possible so as to be more active:

1. Walk or cycle to school.
2. Engage in some physical activity during school, especially during recess time.
3. Participate actively during physical education classes.
4. Help with household chores, such as sweeping, washing your own school shoes and mopping the floor.
5. Choose to walk up the stairs, instead of taking the lift or escalator.
6. Whenever you have free time, engage in outdoor activities with your family and friends.

Key recommendation 2

Accumulate at least 60 minutes of moderate-intensity physical activity daily.

How to achieve

Activities for children and young people should match their age, maturity, developmental or skill level and health status. Children often do activities in short bursts; hence, accumulation of physical activity over the day is a practical approach.

1. Allow young children to play as much as possible in a safe outdoor environment.
2. Emphasise participation and enjoyment, rather than competition and winning, when conducting structured sports programmes for pre-schoolers.
3. Encourage children and adolescents to engage in moderate-intensity activities, such as playing badminton, riding a bicycle, rollerblading, brisk walking or a game of catch and throw.
4. Encourage children and adolescents to engage in vigorous-intensity activities suitable for their age, such as running and chasing (e.g. police and thief), football, basketball, tennis, swimming, riding a bicycle (fast), jumping rope, martial arts (e.g. taekwondo, karate) or vigorous dancing.
5. Accompany children for longer walks, visits to park or swimming pool and bike rides during weekends.

Key recommendation 3

Participate at least 3 times a week, in activities that increase muscle and bone strength.

How to achieve

1. Engage in moderate-intensity physical activities that help to strengthen muscles. Suitable activities for muscle-strengthening by age group are as follows:
 - a. Children below 7 years: Playing at playground, adult supervised exercises (e.g. squats, chin-ups, crab walk, jumping jacks).
 - b. Primary school-aged children and adolescents: Climbing trees/walls, playing at playground (e.g. monkey bars), push-ups, pull-ups, sit-ups, tug-o-war or working with resistance bands.

2. Engage in moderate physical activities that help to strengthen bones. Suitable activities for bone-strengthening by age group are as follows:
 - a. Children below 7 years: Jumping, hopping, skipping or running.
 - b. Primary school aged children and adolescents: Hopscotch (*teng teng* or *jengket-jengket*), jumping rope, running, gymnastics, basketball, volleyball or tennis.

For a more comprehensive list of muscle and bone strengthening activities, refer to Appendix 2.

Key recommendation 4

Limit physical inactivity and sedentary habits.

How to achieve

Children should be discouraged from extended periods of inactivity and should not be sedentary for more than 60 minutes at a time.

1. Limit screen time to not more than two hours a day. For example: Watching television, playing video games and using the computer or surfing the internet.
2. If children are into electronic games, encourage them to play active video games (e.g. basketball video exergames) rather than sedentary ones.





Key Message 6

**Eat Adequate
Amount of
Rice, Cereals
or Tubers**

Key recommendation 1

Ensure an adequate intake of cereals and cereal based foods according to age.

How to achieve

1. Consume a variety of cereals (including rice) and cereal based food for main meals.
2. Gradually increase the number of servings according to age. (refer Table 6.1).
3. Tubers may be consumed as an alternative to rice and other cereal

Table 6.1. Number of servings according to age

Age	No of servings
4 to 6 years	3
7 to 9 years	4 to 5
10 to 12 years	6 to 7
13 to 15 years	7 to 8
16 to 18 years	6 to 9

Note: Males need more servings than females

products.

Key recommendation 2

Ensure that at least half of daily cereal intake includes whole grain.

How to achieve

1. Introduce whole grain foods in children's diet beginning at 9 to 12 months old.
2. Choose whole grain alternatives for bread, biscuits and cereal products.
3. Cook white rice mixed with brown rice/ unpolished rice.
4. Mix whole wheat flour with plain flour when baking.
5. Read food labels and choose cereals products labelled with whole grain, wholemeal or whole wheat.

Key recommendation 3

Prepare and choose healthier tubers and cereal products.

How to achieve

1. Choose or prepare healthier food made from tubers and cereals such as boiled sweet potatoes, tapioca, yams, steamed corn kernels, rice puddings and others.
2. Choose or prepare cereal based meals which are high in fibre, low in sugar and salt.
3. Choose cereal based snacks low in fat, sugar and salt.
4. If you choose breakfast cereal, select those with high fibre, low sugar content and add fresh or dried fruits, seeds and nuts to enhance the flavour.





Key Message 7

**Eat Fruit
and Vegetables
Everyday**

Key recommendation 1

Eat a variety of fruits and vegetables everyday.

How to achieve

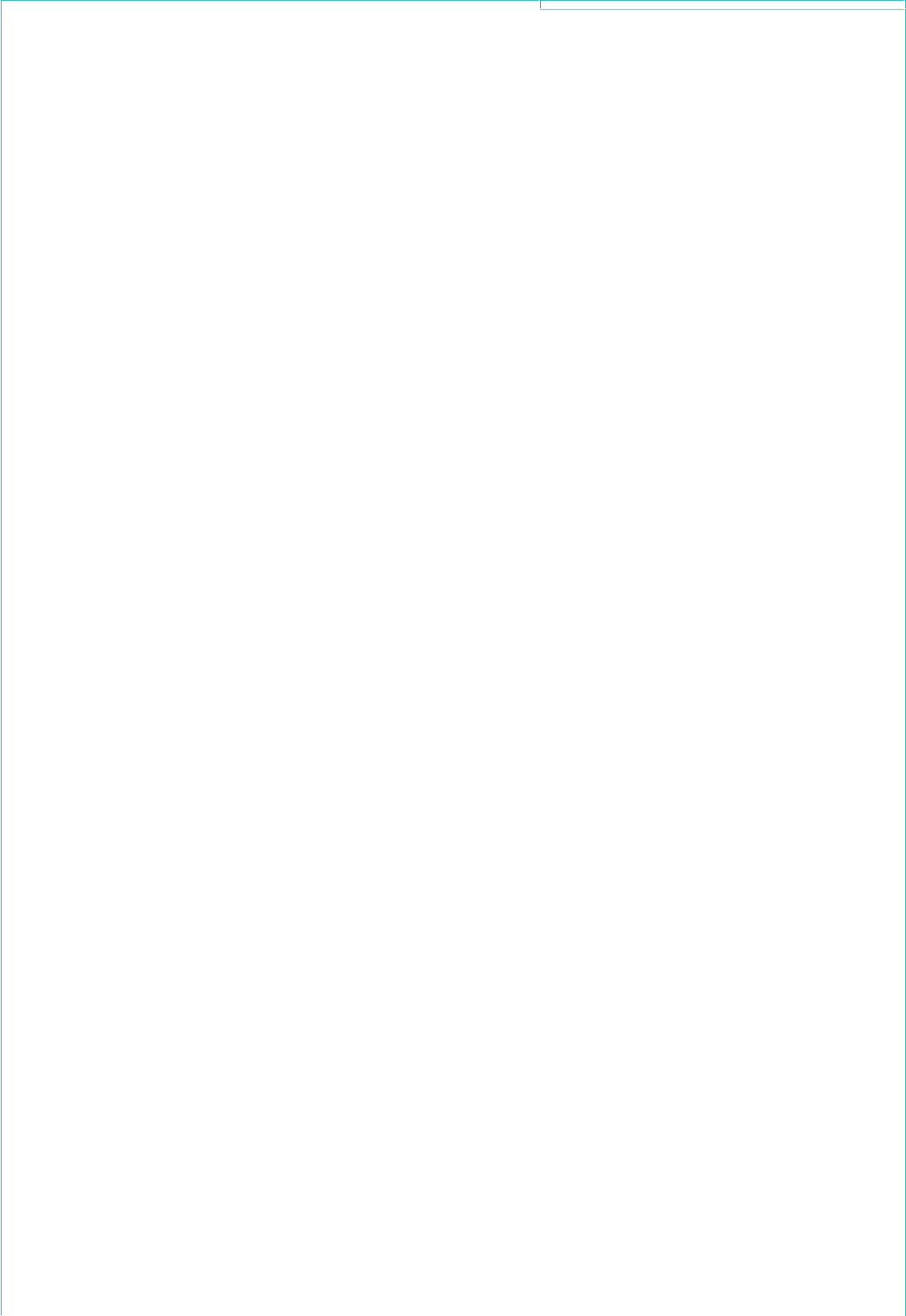
1. Eat fresh fruits and vegetables.
2. Choose dark green leafy vegetables everyday.
3. Eat different coloured fruits and vegetables.
4. Choose a variety of fruits and vegetables as snacks such as bananas, guava, cucumber slices, tomatoes or carrot sticks.
5. If you choose dried fruits, select unsweetened or unsalted variety.
6. If you choose canned fruits, serve without syrup.
7. Prepare fresh fruit and vegetable juices without added sugar and preservatives.
8. Choose fresh, frozen or canned vegetables and serve as a dish, salad, *ulam* or as an ingredient in a dish.

Key recommendation 2

Eat adequate amount of fruits and vegetables everyday.

How to achieve

1. For children below 7 years old, give 2 servings of vegetables and 2 servings of fruit daily.
2. For children and adolescents aged 7 to 18 years, eat at least 3 servings of vegetables and 2 servings of fruits daily.
3. Choose fresh fruits over fruit juices. Fruit juices should not replace more than 1 serving of fruit.
4. Serve fruits and vegetables creatively to encourage consumption.







Key Message 8

Consume
Moderate
Amounts of
Fish, Meat,
Poultry,
Egg, Legumes
and Nuts

Key recommendation 1

Eat fish daily.

How to achieve

1. Consume a serving of fish daily and choose a variety of fish.
2. Freshwater fish may be consumed, alternating with marine fish.
3. Serve sardine and tuna occasionally as a dish or fillings (e.g. sandwich, pie or buns).
4. Choose anchovy without the heads and entrails as one of the fish source in porridge/ dishes.
5. Shellfish should be consumed less frequently compared to fish.
6. Frozen fish can be consumed as a substitute for fresh fish; however, frozen processed fish products such as fish ball, fish nugget and fish cake are not encouraged due to the high content of salt and preservatives.
7. Consumption of salted, dried or pickled fish is not encouraged due to the high salt content.

Key recommendation 2

Consume meat, poultry and egg moderately.

How to achieve

1. Choose or prepare either meat, poultry or egg dishes daily to the recommended amount (Refer to Key Message 3).
2. Fresh or frozen poultry or meat should be consumed instead of the processed form, such as chicken ball, meat ball, nugget or burger patties, due to the high content of salt and preservatives.
3. Consumption of salted egg is not encouraged due to the high salt content.

Key recommendation 3

Practise healthier cooking methods for fish, meat, poultry and egg dishes.

How to achieve

1. Choose lower fat cooking methods such as poaching, steaming, boiling, braising, grilling or roasting.
2. Avoid consumption of over-grilled meat, poultry and fish.
3. Limit deep frying methods in preparing fish, meat, poultry and egg dishes to reduce fat and calories.

4. Use herbs, spices or lime to add flavour in fish, meat and poultry dishes, while reducing the use of salt or sauces (e.g. oyster sauce, fish sauce or tomato sauce).
5. For children, prepare meat and poultry dishes by shredding, chopping and mincing. Slow cooking methods such as stewing or braising are also recommended.
6. For children, fish bones should be removed. Fish fillets or cutlets are suitable as the bones have been removed.

Key recommendation 4

Choose meat and poultry that are low in fat and cholesterol.

How to achieve

1. Choose lean cuts of meat. Trim off the visible fat as much as possible before cooking.
2. Choose skinless chicken parts or remove the skin before cooking. Skinless chicken breasts are the leanest parts.
3. Minimise consumption of processed meat sources such as burgers patties, sausages or nuggets to not more than once a week. Choose lower fat and salt products by referring to the Nutrition Information Panel (NIP) of the food label.

Key recommendation 5

Consume legumes daily.

How to achieve

1. Add legumes (peas, beans or dhal) to soups, porridge and dishes.
2. Choose a variety of legume products such as *tempe* and bean curds to prepare meals.
3. Be creative in preparing various legume dishes to encourage consumption.

Key recommendation 6

Include nuts and seeds in weekly diet.

How to achieve

1. Add nuts and seeds (sesame seeds) as ingredients in dishes.
2. Choose unsweetened and unsalted nuts as well as seeds (e.g. sunflower seeds or pumpkin seeds) as snacks.





Key Message 9

Consume
Milk and
Milk Products
Everyday

Key recommendation 1

Consume 2 to 3 servings of milk and milk products everyday.

How to achieve

1. Drink milk such as fresh milk, sterilised milk, ultra-high temperature (UHT) milk, pasteurised milk or milk prepared from milk powder every day. Sweetened condensed milk and sweetened condensed filled milk are not considered as milk and should be discouraged.
2. Add milk to breakfast cereal.
3. Drink milk as a snack to replace other sweetened beverages.
4. Choose a variety of milk based drinks such as yoghurt, yoghurt drinks and cultured milk with lower sugar content.
5. Choose a variety of milk based foods such as butter with lower salt content and cheese.
6. Consume milk and milk products in addition to a variety of other foods every day. Milk should not replace main meals.
7. Encourage parents to pack UHT milk for children to consume at school.

Key recommendation 2

Use milk and milk products creatively.

How to achieve

1. Serve milk in ways that children like best such as milk shake, adding chocolate powder or fruits.
2. Chill milk to encourage children to drink milk.
3. Use milk in various recipes for example in cookies, puddings, custard and curd.
4. Substitute coconut milk (*santan*) with milk in preparing dishes.
5. Replace sweetened condensed milk, sweetened creamer and sweetened condensed filled milk with liquid or powdered milk in tea or *ais kacang*.

Key recommendation 3

Choose milk and milk products appropriate to physiological needs.

How to achieve

1. Get all family members to drink milk every day according to their needs.
2. Children and adolescents should consume adequate quantities of milk and milk products every day.
3. Pregnant and lactating adolescent girls should drink milk every day to help meet increased nutrient needs.
4. Choose lower fat milk and milk product for children who are overweight.

Key recommendation 4

Encourage milk consumption through education and promotion.

How to achieve

1. Promote milk intake in pre-school and school such as designating a particular day as 'Milk Drinking Day'.
2. Encourage school canteen operators to sell milk and milk products.
3. Encourage provision of milk-vending machines in schools.
4. Teach children that milk is a nutritious beverage.
5. Parents, caregivers and teachers should be role models and drink milk themselves.
6. Strengthen and expand the implementation of the school milk programme.





Key Message 10

Include
Appropriate
Amounts and
Types
of Fats in the
Diets

Key recommendation 1

Limit total daily fat intake to 25 and 30% of energy.

How to achieve

1. Limit intake of deep fried foods, to not more than once a day e.g. french fries, fried chicken or banana fritters (*pisang goreng*).
2. Limit intake of high-fat foods, e.g. fried *kuey teow* and fried rice, to not more than 2 to 3 times per week.
3. Limit intake of processed meat, e.g. burgers patties, sausages or nuggets to not more than once a week.
4. Modify recipes to reduce the oil content when preparing foods that are commonly cooked with excessive oil or fat.
5. Trim the visible fat from meat/ poultry before cooking.
6. Use steaming, stewing, grilling and baking, instead of frying, as a cooking method.
7. Reduce breading and battering in cooking as this absorbs oil. Wipe fried food with tissue paper to remove excess oil..

Key recommendation 2

Limit the intake of saturated fats (SFA).

How to achieve

1. Replace animal fats with vegetable oil when preparing food.
2. Remove the skin from poultry during food preparation.
3. Limit intake of foods rich in coconut milk or santan (e.g *masak lemak*, *bubur kacang*, *nasi lemak*, curry or *kaya spread*) to 2 to 3 times per week.
4. Limit intake of foods containing and prepared with, saturated fat, e.s. biscuits, traditional *kuih* such as *dodol*, *briyani* rice or crisps.
5. Limit intake of spreads (butter/ margarine/ peanut butter/ chocolate) to not more than 2 teaspoons per day.

Key recommendation 3

Increase the intake of polyunsaturated fatty acids (PUFA).

How to achieve

1. Cook food using a blended vegetable oil high in PUFAs, e.g. Palm oil with soya oil, palm oil with corn oil, or palm oil with sunflower oil.
2. Encourage children to eat corn, nuts (e.g. cashew nuts, almonds, pistachios and chestnuts), legumes (e.g. chickpeas, soyabean or dhal), seeds (e.g. sunflower seeds or pumpkin seeds) as snacks to increase intake of PUFAs.
3. Serve children sandwiches with sardine and tuna fillings.
4. Encourage consumption of fresh local fish containing PUFAs, such as *tenggiri, siakap, kembung, cencaru, bawal hitam, selar kuning* and *tongkol*.

Key recommendation 4

Limit foods containing *trans* fatty acids (TFAs).

How to achieve

1. Use non-hydrogenated fats/ oils when making pastries and cookies.
2. Avoid food products with the words 'partially hydrogenated fat' on the food label.

Key recommendation 5

Choose low-fat foods when eating out.

How to achieve

1. At school, children should avoid sausages, nuggets and burgers.
2. When buying street food, including at *pasar malam*, children should avoid deep-fried foods, e.g. *keropok lekor, cakoi* and foods high in oil e.g. fried noodles, *kuih peneram, roti bom* and *murtabak*.
3. Children should limit eating at fast food outlets when going out with friends to not more than once a week.
4. Children should request less fat and oil when ordering food.





Key Message 11

Limit Intake of Salt and Sauce

Key recommendation 1

Choose and prepare foods with less salt and sauces (refer Table 11.2).

How to achieve

1. Eat home-cooked meals more frequently rather than eating out, as this offers more control over the use of salt and sauces.
2. Limit the intake of salty extruded snacks, e.g. potato chips, crackers and fish crackers.
3. Choose fresh fruits and foods low in salt as snacks, e.g. wholemeal crackers, buns and low-salt crackers.
4. Cut down on consumption of salty processed foods (e.g. sausages, nuggets, meat/ chicken burgers, instant noodles, fish or prawn crackers), pickles and preserved fruits (e.g. *jeruk* or *asam boi*).
5. Read food labels for the sodium content of food. Choose products with claims of 'low' or 'lower' sodium/ salt on the packaging.
6. Read the ingredients list on the food label and take note of all sources of sodium such as monosodium glutamate.
7. Avoid adding salt or sauces at the table.
8. Iodised salt is also salt. Until an alternative vehicle for salt fortification is found, the current use of salt iodisation is still applicable to protect against Iodine Deficiency Disorders (IDD) among high-risk groups.

Table 11.2.

High-salt food in Malaysian children's diet and healthy alternatives

Limit	Choose
Salty extruded snacks (e.g. potato chips, prawn, crackers and fish crackers)	Fruits, wholemeal crackers, bun and low salt crackers
Processed meat (e.g. sausages, nuggets, meat/ chicken burger), salted fish and salted egg	Home-made or low salt version of processed meat
Salted pickles or preserved with salt (e.g. <i>jeruk</i> or <i>asam boi</i> powder)	Low-salt and no MSG added version
Instant noodles with commercial flavour enhancer	Add fresh ingredients such as eggs, vegetables and meat to instant noodles and use only half the sachet of soup seasoning
Instant creamed soup	Low salt and no MSG version
Salted nuts	Unsalted nuts

Source: Tee et al., (2007)

Key recommendation 2

Instil preference for low-salt foods.

How to achieve

1. When preparing food for babies and toddlers, do not add salt, soya sauce or tomato sauces.
2. Cut down or halve the usage of salt and sauces in cooking.
3. Enhance the flavour of food by using natural herbs and condiments such as garlic, onion, white pepper, lemon juice and curry spices.
4. Provide healthy and low-salt packed foods for school children.
5. Request for low salt, less sauces and no MSG when eating out.





Key Message 12

Consume
Foods and
Beverages
Low In Sugar

Key recommendation 1

Eat foods low in sugars.

How to achieve

1. Replace high-sugar cereals, snacks and desserts with better choices such as fresh fruits, steamed corn, chickpeas or groundnuts.
2. If you choose *kuih*, cakes and biscuits, select varieties with less sugars and without cream/ filling/ icing.
3. Reduce consumption of sugary desserts such as ice cream and cakes, while choosing fruits more often.
4. Avoid sugary foods in between meals and close to bedtime.
5. If consuming sugary snacks as desserts, limit them to smaller portions and not more than once a day.

Key recommendation 2

Drink beverages low in sugars.

How to achieve

1. Choose plain water or milk over sugar-sweetened beverages, such as carbonated drinks, packed drinks and cordials as well as juices with added sugar.
2. Avoid sugar-sweetened beverages in between meals and close to bedtime. Plain water is the best to quench your thirst.
3. Choose milk, soya milk and cultured milk lower in sugar.
4. Limit intake of table sugar or sweetened condensed milk or sweetened creamer to 1 teaspoon per cup of drink.

Key recommendation 3

Instil a preference for less sweet taste.

How to achieve

1. Avoid introducing sugary foods and drinks to children below the age of 1.
2. Modify food preparation methods to reduce the sugar content.
3. Provide nutritious and lower in sugar paced foods and drinks for school children.
4. Request for lower sugar drinks when eating out.
5. Refrain from giving sweets, candies, chocolates, cookies and ice-cream as rewards to children.

Key recommendation 4

Choose sugar-free or less sugary products.

How to achieve

1. Check food labels for sugar content. If sugar is listed at the beginning of the ingredient list, it indicates that sugar is the main component of the product.
2. On the ingredient list, look for other names for sugars such as glucose, sucrose, maltose, caramel and corn syrup.
3. Check the Nutrition Information Panel (NIP) on product labels for sugar content, if available. Choose products labeled as lower sugar or sugar-free.



Key Message 13

Drink Plenty of Water Daily

Key recommendation 1

Drink an adequate amount of plain water daily.

How to achieve

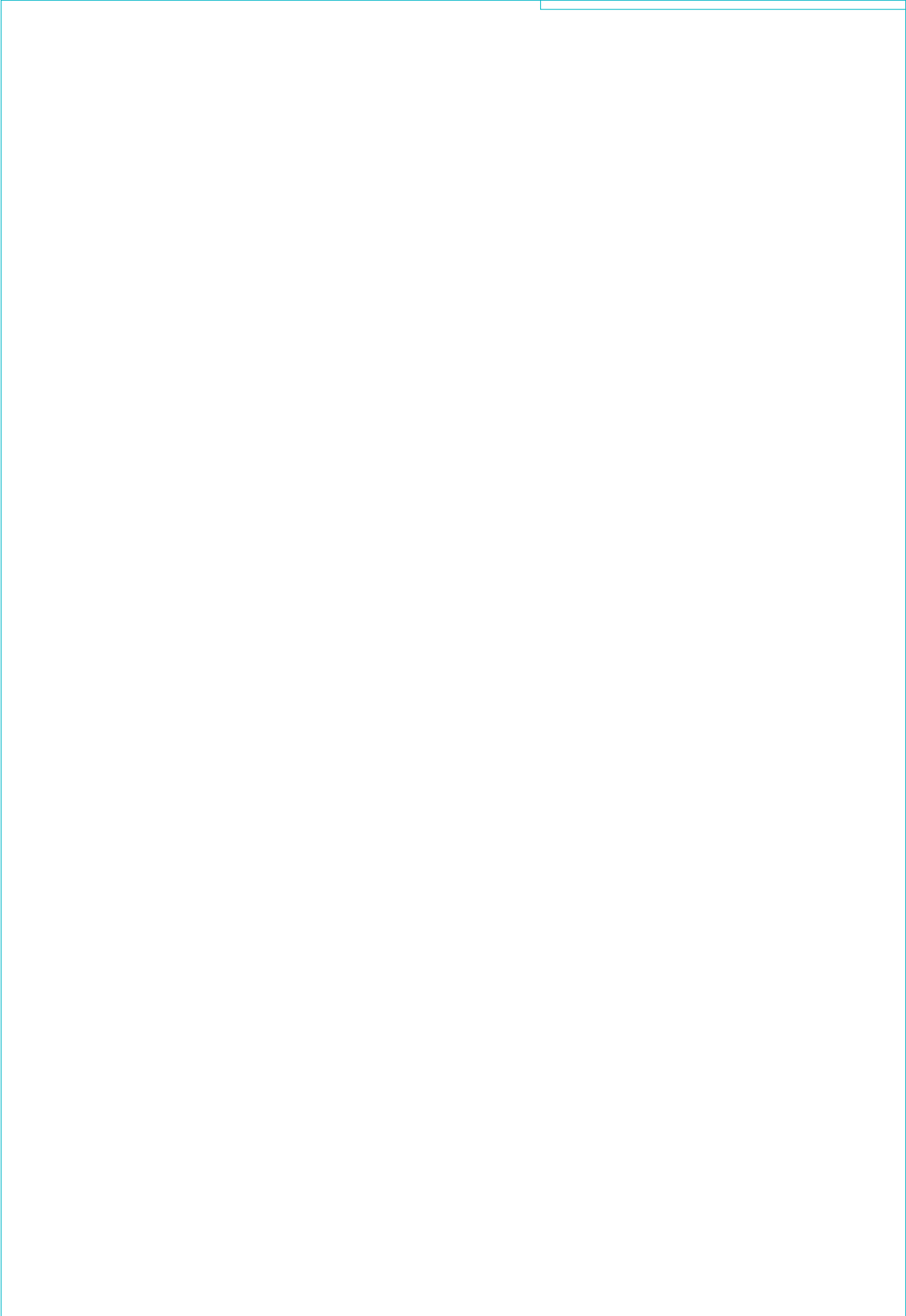
1. Give children aged 2 to 3 years small amounts of plain water up to 1 to 2 glasses and for 4 to 18 years old, 6 to 8 glasses.
2. Ensure plain water is available all the time both at school and at home.
3. Ensure the child drinks plain water frequently even when not thirsty.
4. Encourage the child to drink more water when he is active.
5. Choose plain water instead of sweetened beverages.
6. Give more water when your child is sick.

Key recommendation 2

Avoid alcoholic beverages.

How to achieve

1. Increase the awareness of your children about the dangers of alcohol consumption. Do not wait until they have started.
2. Make your children aware of peer and media influence on their initiation of alcohol use. Help them be assertive in resisting alcohol.
3. Choose only non-alcoholic beverages at social gatherings.







Key Message 14

Consume Safe
and Clean
Foods and
Beverages

Key recommendation 1

Keep clean.

How to achieve

1. Teach children to wash their hands with soap and clean water before and after eating as well as after going to the toilet, playing outside, blowing their nose, coughing or sneezing and handling pets or dirty materials.
2. Teach children to use tongs/ spoons/ forks, instead of their hands, when buying self-service food at the school canteen.
3. Clean all surfaces and equipments used for food preparation.
4. Always change dish cloths and hand towels regularly.
5. Protect kitchen areas from insects, pests and other animals.

Key recommendation 2

Prepare food hygienically.

How to achieve

1. Ensure personal hygiene, cleanliness of cooking utensils and food at all stages of food preparation to avoid food poisoning.
2. Wash hands before and after handling food, before preparing baby's food and feeding baby, after changing baby's diapers, after going to the toilet and frequently during food preparation.
3. Sterilise infant feeding bottles, cups and breast pump kits, following the instructions, before every feeding session. If there are no instructions, then the utensils should be submerged in boiling water for 5 to 10 minutes.
4. Use separate chopping boards for raw and ready-to-eat food. If the same chopping board and utensils are used, wash thoroughly between use.
5. Avoid handling foods if you have cuts, burns or wound on your hand unless properly bandaged.

Key recommendation 3

Cook food thoroughly.

How to achieve

1. Cook food thoroughly, especially meat and meat products, poultry, eggs and seafood. Bring foods like soups and stews to a boiling temperature.
2. Reheat cooked food thoroughly until it reaches boiling temperature.
3. When using a microwave oven to cook, rotate and stir the food so that it cooks evenly.

Key recommendation 4

Keep food appropriately.

How to achieve

1. Do not prepare food too early. Do not leave cooked food at room temperature for more than two hours.
2. Serve hot food hot and cold food cold.
3. Promptly refrigerate all cooked and perishable food (preferably below 5°C) as soon as possible, always within two hours after purchase.
4. Cooked food should not be kept longer than three days in the refrigerator.
5. Wait for food to cool down before you put it in the fridge.
6. Packed food for school or day care centre can safely be prepared earlier, provided they are kept in the fridge. Ensure that ready-to-eat raw food and cooked food are separated.
7. Store raw and cooked food separately to avoid raw food contaminating cooked foods (cross contamination).
8. Store meat, poultry and seafood in the freezer compartment
9. All food should be covered.

Key recommendation 5

Use safe water and safe raw materials.

How to achieve

1. Use clean and safe water.
2. Select fresh and wholesome foods.
3. Boil water for drinking, including water that is used to prepare infant formula for non-breastfed babies.

Key recommendation 6

Read the product label.

How to achieve

1. When infant formula is used, the instructions for preparation must be followed strictly.
2. Teach children to read the expiry date on food packaging.
3. Buy or consume food that has not expired.
4. Read the list of ingredients to get information on allergens.
5. Always follow the food storage instructions on the label.

Key recommendation 7

Choose clean and safe foods.

How to achieve

1. Choose food that is still hot, fresh and kept in a clean container.
2. Teach children to use their senses (see, smell, taste) to recognise contaminated or spoiled food.
3. Discard all leftover foods and drinks brought back from school.
4. Discard unfinished milk.
5. Children should be warned against sharing drinking bottles because of the risk of infection.
6. Avoid sharing spoons when feeding children.

Key recommendation 8

Use safe foods containers.

How to achieve

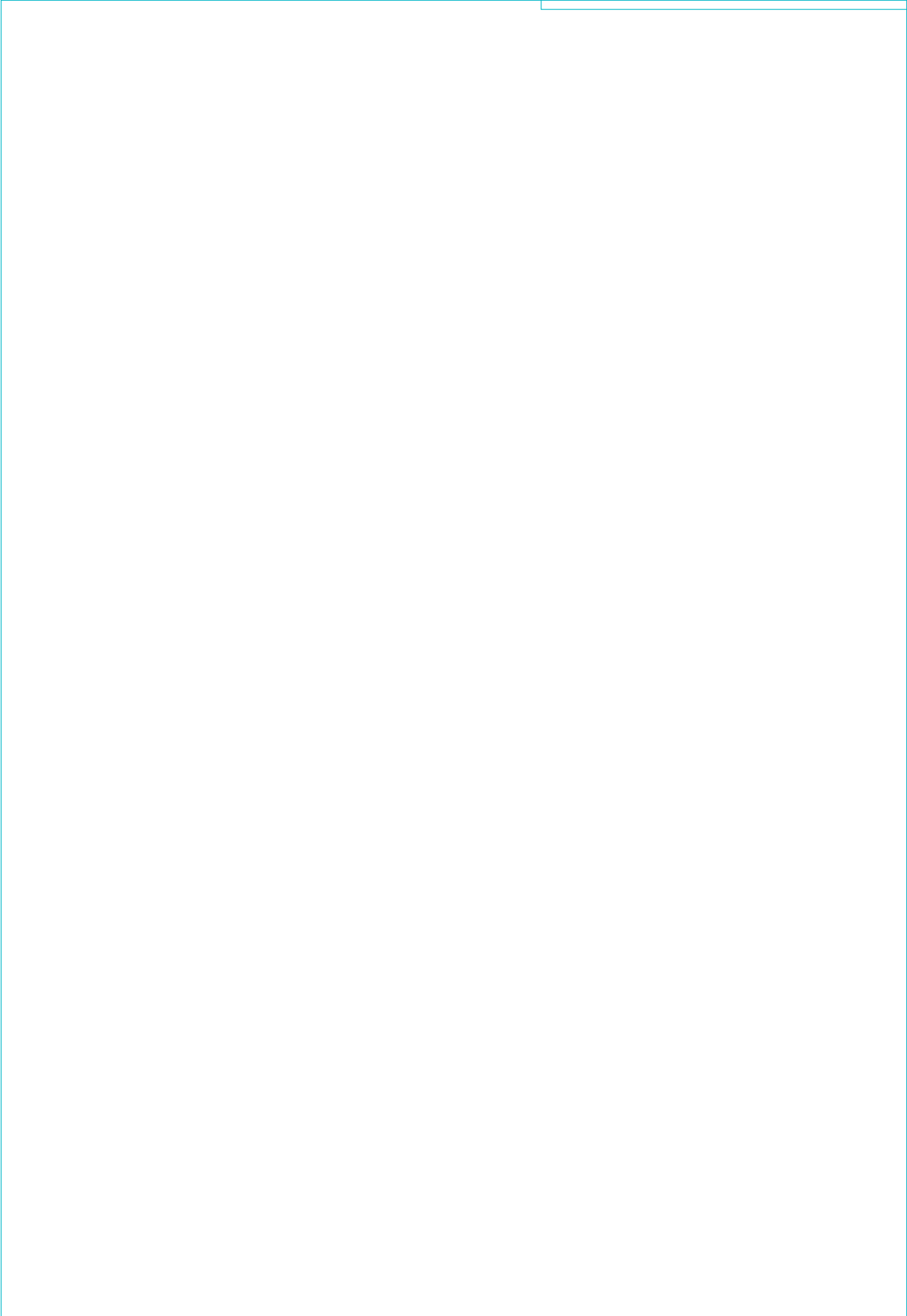
1. For formula-fed babies, choose feeding bottles that are not made with Bisphenol A (BPA). These bottles are usually labeled as 'BPA free'.
2. Check the inner surface of the feeding bottle regularly. If there are scratches or damage to the feeding bottle, it should be replaced.
3. Avoid placing/ pouring hot food or beverage directly into a plastic container or bottles.

Key recommendation 9

Choose clean and safe premises to eat.

How to achieve

1. Choose food premises that are situated in clean areas far away from traffic fumes, rubbish dumps, clogged drains or septic tanks.
2. Choose food premises where the food handlers practise good personal hygiene.
3. Choose premises that serve properly-covered food and beverages.
4. Patronise clean food premises equipped with basic facilities and that are free of pets, rodents, pests and insects.



Energy values	100ml contains	250ml contains
Energy	199kJ 47kcal	500kJ 120kcal
Protein	0.5g	1.3g
Carbohydrate	10.5g	26.3g
of which sugars	10.5g	26.3g
Fat	trace	trace
of which saturates	trace	trace
Fibre	trace	trace
Sodium	trace	trace
Salt equivalent	trace	trace

*Guideline daily amounts

Vitamins/Mineral

Key Message 15

Educate
Children on
the Use of
Nutrition
Information
on Food Labels

Key recommendation 1

Educate children on the nutrition information found on food labels.

How to achieve

1. Inculcate the habit of reading all nutrition information to make healthier choices from young.
2. Encourage awareness among friends and family and share label reading tips for healthier choices.
3. Find opportunities to read together nutrition information on food labels.
4. Explain how to look out for healthier options of food products to the children.
5. Encourage children and adolescents to read the nutrition information by themselves.

Key recommendation 2

Create various opportunities to educate children about the nutrition information on food labels.

How to achieve

1. Talk about nutrition and food choices during daily activities, for example during meal times at home, at the restaurants or shopping at the supermarket.
2. Prepare shopping lists and include healthier food items.
3. Parents should take time to read food labels during grocery shopping with their children.
4. Use the nutrition information in the menu when available to select foods with lower calories, fat, sugar and sodium.

Key recommendation 3

Explain the components in the Nutrition Information Panel (NIP) for older children.

How to achieve

1. Show ways to read the NIP as follows:
 - i. Determine the serving size (in g or ml as stated on the packet).
 - ii. Find out the number of servings in the packet.
 - iii. Show the child the three main columns of the NIP:
 - a) the nutrient listing;
 - b) nutrients per 100 g/ 100 ml and
 - c) nutrients per serving.

2. Teach how to calculate the nutrients consumed when taking more than 1 serving.
3. Explain the basic functions of energy and the key nutrients such as carbohydrate, protein and fat.
4. For certain components which are not commonly found on NIP such as sugar, check the ingredient listing to determine the presence of these components.

Key recommendation 4

Explain the meaning of 'Nutrient Content Claim' and 'Nutrient Comparative Claim'.

How to achieve

1. Familiarise the children with the example of nutrient content claim such as 'low-sugar', 'low sodium' or 'high in calcium' and nutrient comparative claim such as 'reduced fat', 'less sodium' or 'more vitamin C'.
2. Encourage the children to pick up foods which carry words 'source of', 'high in', 'more', 'extra' or 'increased' nutrients such as vitamins, minerals or dietary fibre.
3. Encourage the children to pick up foods which carry words such as 'low in', 'free of', 'reduced', 'less', 'fewer' or 'light' sugar, fat, cholesterol or sodium (salt).

Key recommendation 5

Make nutrition labeling education as part of school activities.

How to achieve

1. Strengthen the nutrition labelling component in the school curriculum.
2. Show the children the basics of the nutrition information panel and explain how a healthy diet is made up of different kinds of foods and nutrients.
3. Explain that food ingredients on the label are listed in descending order of weight.
4. Use interactive games and resources to reinforce basic nutrition concepts.
5. Be positive. Make it fun, rather than a source of arguments over choosing the products.

NOTES



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