

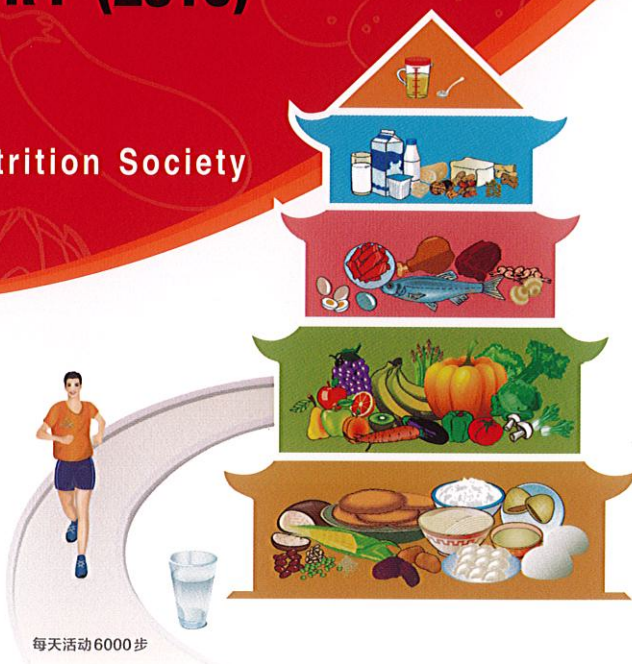


中国营养学会
Chinese Nutrition Society

CHINESE DIETARY GUIDELINES

SUMMARY (2016)

Chinese Nutrition Society



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中国营养学会
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Chinese
Dietary

Guidelines summary

(2016)

CHINESE NUTRITION SOCIETY



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Preface

The Chinese Dietary Guidelines (CDG) were first introduced to the public in 1989 by the Chinese Nutrition Society (CNS). The guidelines were published during the time of rapid social and economic development in China. Its main goal was to act as a guide to achieve a balanced dietary pattern. Since then, the guidelines were revised a few times (1997, 2007); yet the revised versions still adhere to the original purpose. Also, the prevention of nutritional deficiencies is also another goal of the CDG (2016) as there is a drastic change in the lifestyle and dietary habits of the Chinese population over the past decade.

CNS organized an expert committee to review and revise CDG (2007) since 2014. The revision of CDG (2007) was an open, transparent and evidence-based process following the WHO's Handbook for Guideline Development. A total of 6 technical reports were developed as part of the CDG revision process. These reports illustrated details on the revision process as well as the scientific evidences and methods used. The latest edition, CDG (2016), was issued in May 2016 by the National Health and Family Planning Commission.

The guidelines provide information that can be used as a foundation for the development of public health or nutritional policies. Recommendations on the food selection and physical activities to the Chinese population were based on evidence based nutrition. Also, it can act as a basis for health education as well as a crucial component in the improvement of population nutrition.

The Dietary Guidelines (2016) are comprised of four main chapters: Dietary Guidelines for The General Population, Supplementary Guidelines for Specific Populations, Feeding Guidelines for Infants (0-24 months), Dietary Guidelines for Vegetarians. In general, the Dietary Guidelines target the healthy population (aged 2 years and above) with six core recommendations. On the other hand, the Supplementary Guidelines for Specific Populations are based on the different physiology characteristics of different age groups or life stages, in which a supplemented version of the Guidelines for The General Population was used. The specific populations involved include pregnant and lactating women, pre-schoolers, children and adolescents (2-5 years old and 6-18 years old, respectively) and the elderly (≥ 65 years old). It is also a first for the CDG to propose guidelines for vegetarians.

Changes can also be observed in CDG (2016) compared to the previous edition. Revisions were made on the Food Guide Pagoda, the new addition of the Food Guide Plate and the Food Guide Abacus for children also highlight the visibility and practicability of CDG (2016). The graphs and meal plans available also improved the readers understanding and practice.

Two editions of CDG (2016) are available, one is for educators and the other for the public. Those who are in the teaching profession are encouraged to relate their experience and knowledge to aid consumers in integrating the guidelines into their lives.

CNS welcomes the participation of nutrition professionals in helping consumers and the general public. It is also hoped that the guidelines will pave a concrete path towards the promotion of healthy eating and well-being in the Chinese population.

More details on the scientific research reports, graphs, videos, leaflets and posters of the CDG (2016) can be found at <http://cnsoc.org/cdg>. Also, feel free to email cns@cnsoc.org if there are any queries.

Professor YueXin Yang
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Apr 2017

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1. Dietary Guidelines for the General Population



Summary of the core recommendations

(a) Eat a variety of foods, cereal based

A balanced diet consisting of a variety of foods is the major contributor in meeting ones nutritional needs and maintaining health. It is advised to eat 12 different types of foods daily and at least 25 different foods weekly. The everyday diet should comprise of different food groups including cereals and tubers, fruits and

vegetables, meat, poultry, dairy, soybeans, legumes^① and nuts. A cereal based diet is an important characteristic of a balanced diet. A total daily intake of 250-400g of cereals, tubers and legumes is recommended, in which whole grains and legumes should make up 50-150g and tubers 50-100g. At least 50% of the total energy intake should be supplied by the energy from carbohydrate.

(b) Be active to maintain a healthy body weight

Body weight is an important indicator of one's nutrition and health status. The balance between energy intake and expenditure is the key to maintain a healthy body weight. People of all age groups should have physical exercise daily to maintain energy balance. Under- or over-weight increases the risk of diseases. It is recommended to perform moderate level physical activities for at least 5 days (a total of at least 150 min) per week. Daily activities, totaling up to the equivalent of 6000 walking steps, are also recommended. Avoid being sedentary for more than an hour.

(c) Eat plenty of vegetables, fruits, dairy and soybeans

Vegetables, fruits, dairy, soybeans, dairy and soy products are vital components in a balanced diet whereas nuts are a beneficial supplement. Fruits and vegetables are the main source of micronutrients, dietary fiber and phytochemicals. Dairy and soybeans are rich in calcium, high quality proteins and B vitamins. Vegetables should be included in every meal; the recommended daily intake being 300-500g, in which half of them should be dark colored vegetables. It is also encouraged to eat fruits daily. A daily intake of 200-350g of fresh fruits is recommended and they cannot

① "legumes" refer to all legumes excluding soybeans

be replaced by processed fruit products. A wide variety of dairy products should be consumed in which a daily intake equivalent to 300g of liquid milk is recommended. Soy products, equivalent to 25g of soybeans or more, should be eaten daily. Although nuts are also a protein source and provides essential fatty acids, they should be consumed in small portions as they are high in calories.

(d) Enjoy fish, poultry, eggs and lean meats

Fish, poultry and lean meats are sources of high quality protein, Vitamin A and B, etc. However, some contain higher amounts of fat and cholesterol than others. Fish and poultry are better choices as their fat content is lower and fish contains higher amounts of non-saturated fatty acids. Eggs contain a wide variety and high amounts of nutrients. Lean meats should be the preferred choice to fatty meats as the fat content is relatively lower. Avoid smoked and cured meats as they can increase the risk of tumors. The recommended weekly intakes for meat and dairy products are as follow: fish-280-525g, poultry and meat-280-525g, eggs-280-350g. The total intake of fish, poultry, lean meat and eggs should be targeted at 120-200g daily.

(e) Limit table salt, cooking oil, added sugar and alcohol

Table salt, cooking oil and fats are over-consumed in the Chinese population; this poses as an important factor in the high incidence of chronic diseases such as hypertension, obesity and cardiovascular diseases. Thus, it is advised to follow a diet which is low in cooking oil and high salt seasonings. The intake of salt and cooking oil for an adult should be less than 6g and 25-30g a day, respectively. Eating excess added sugar can increase the risk of cavities and being overweight. The recommended sugar intake should be less than 50g a day (not exceeding 10% of the total

1. Dietary Guidelines for the General Population

calorie intake per day), but it is best if less than 25g is consumed. Water is essential to the biological functions of the body and should be consumed adequately. Adults are recommended to drink 7-8 cups (1500-1700ml) of water daily. It is encouraged to drink plain water or tea instead of sugary drinks. Children, adolescents, pregnant women and lactating mothers should not consume alcohol. For those who consume alcohol, the consumption should not exceed 25g for men and 15g for women each day.

(f) Develop healthy eating habits, avoid food waste

Food waste in the food supply chain should be avoided. Everyone should play their part at each stage (from harvest and transport to the storage, preparation and consumption of food), to avoid food waste. One should learn to read food labels to make healthy food choices. Choosing fresh and clean foods as well as using appropriate cooking methods is critical to ensure food safety. Sustainable implementation of the guidelines can be promoted to each individual, family, school and whole society through the development of healthy eating culture and behavior.



2. Supplementary Guidelines for Specific Populations



(a) Women who are trying to get pregnant

- Adjust pre-pregnancy weight to a normal body weight.
- Use iodized table salt and frequently consume iron-rich foods; also, take folic acid supplement 3 months prior to pregnancy.
- Refrain from smoking and drinking as well as maintain a healthy lifestyle.

(b) Pregnant women

- Take folic acid supplement, regularly consume iron-rich foods and choose iodized table salt over normal table salt.
- Those with severe morning sickness should eat small frequent meals throughout the day to ensure adequate intake of carbohydrates.
- Appropriately increase the intake of milk, fish, poultry and lean meats during the 2nd and 3rd trimesters.
- Perform physical activities in moderation and maintain an appropriate weight gain throughout pregnancy.
- Refrain from smoking and drinking; constantly maintain a good mood during pregnancy and be prepared to breastfeed.

(c) Lactating women

- Increase animal-based foods and seafood, which are rich in high quality proteins and Vitamin A; also, choose iodized table salt over normal table salt.
- Eat a variety of foods, but not excessively; pay attention to nutrition during the lactating period.
- Being in a good mood and having sufficient sleep can promote breast milk secretion.
- Keep breastfeeding and perform physical activities in moderation to help control body weight.
- Refrain from smoking and drinking as well as the consumption of concentrated tea or coffee.

(d) Pre-schoolers (2-5 years old)

- Establish good eating habits; eat only on fixed mealtimes, encourage self-feeding and discourage picky eating.

- Drink milk daily and have adequate amounts of water; choose healthy snacks.
- Foods should be properly prepared to allow easy digestion, as well as low in seasonings and frying.
- Encourage children to help prepare and cook foods to promote their interest in foods.
- Encourage outdoor activities to aid healthy growth.

(e) Children and adolescents (6-17 years old)

- Understand different foods, learn how to prepare meals, improve nutritional knowledge.
- Have 3 main meals on fixed meal times, establish healthy eating habits.
- Choose healthy snacks, drink adequate amounts of water and avoid beverages with added sugars.
- Encourage a balanced diet; avoid picky eating and over-eating; maintain a healthy weight gain.
- Encourage outdoor activities of at least 60 minutes daily.

(f) The elderly (65 years old and above)

- Eat small but frequent meal portions daily and consume softer foods to prevent nutritional deficiency.
- Stay hydrated by drinking adequate amounts of water, engage in outdoor activities.
- Delay sarcopenia by maintaining a



2. Supplementary Guidelines for Specific Populations

suitable body weight.

- Ensure adequate food intake, having meals with others are encouraged.



3. Feeding Guidelines for Infants



(a) 0-6 months

- 1. Initiate breastfeeding as soon as possible when your infant's born; the very first food for newborns should be colostrum**
 - Let infant repetitively suck nipples to stimulate the secretion of milk as soon as possible after birth.
 - Colostrum should be the very first food for newborns.
 - Keep breastfeeding as long as the weight loss of infant does not exceed 7% of the birth weight.
 - It is unnecessary to wipe or disinfect the nipple excessively

prior to breastfeeding.

- Factors such as a relaxing environment, being in a good mood, having mental support and breast massages aid in the secretion of breast milk.

II. Keep exclusive breastfeeding for the first 6 months of life

- Exclusive breastfeeding provides sufficient fluid, energy and vitamins for 0-6 months infants, thus infants should be exclusively breastfed during their first 6 months of life.
- Breastfeed according to demand; alternate breasts for breastfeeding and breastfeed at least 6-8 times daily.
- Direct breastfeeding is preferred over bottle feeding of expressed breast milk.
- Under specific conditions where the addition of solid foods is required before 6 months of age, consult a physician or other professionals beforehand.

III. Practice responsive feeding which helps establish a healthy lifestyle

- Breast feeding should gradually adapt from demand feeding to scheduled feeding.
- Infants should be fed according to their hunger cues, a minimum of 8 feedings daily may be needed whereas newborns may require at least 10 feedings. However, do not restrict the time and frequency for feedings.
- Feeding frequency decreases as the infants grow, practice scheduled feeding as it helps establish good dietary habits.
- Consult a physician when abnormal crying patterns, which are not caused by hunger, are observed.

IV. Vitamin D supplementation should be given within the first few days after birth; calcium supplementation is unnecessary

- Vitamin D₃ [10µg (400IU)] supplementation should be given within the first few days after birth.
- Calcium supplementation is unnecessary if infants are exclusively breast fed.
- Newborns should be supplemented with vitamin K as soon as possible after birth.

V. Infant formula is only an option when the mother is unable to breastfeed

- All infant formula can never be comparable to breast milk; infant formula is only an option when breastfeeding fails or there is insufficient breast milk.
- It may be inappropriate for mothers to breastfeed under the following conditions: ①The infant is sick; ②The mother is sick; ③The mother is under medication for certain reasons; ④Insufficient breast milk despite all efforts and guidance from professionals. Conditions above may require the use of infant formula. Consult a dietitian or physician for more information on the overall condition of diseases, contraindications and appropriate alternative feeding methods.
- It is inappropriate to feed normal milk, adult formula, protein powder, soybean powder, etc. to infants aged 0~6 months.

VI. Monitor infant's anthropometric data to ensure healthy growth

- Length and weight are direct indicators for infant's feeding and nutritional status.
- The infant's length and weight should be measured every 2 weeks for the first 6 months after birth; the frequency can be increased during the recovery phase of sickness.
- For infants with normal birth weight, the best growth pattern is to meet the normal distribution curve for the same age group.
- As the growth of each infant is different, catching up to the upper limit of growth indicators is unnecessary.

(b) 7-24 months

I. Introduce solid foods in addition to breast feeding starting at 6 months of age

- On top of breastfeeding, infants should be gradually introduced to a variety of foods upon 6 months old.
- Solid foods refer to any foods other than breast milk or infant formula.
- During special conditions, the timing in the introduction of solid foods is flexible under a physician's supervision.
- Infant formulas should only be recommended when breast milk is not available or insufficient.

II. Start with iron-fortified pureed food and gradually increase food variety

- Increase the amount of solid foods as breast milk secretion decreases.
- The first solid foods should be iron-rich pureed foods such as iron-fortified infant cereals and pureed meats.
- Only introduce a new type of food each time, make gradual transitions to solid foods.
- The addition of an appropriate amount of vegetable oil is recommended.

III. Adopt responsive feeding, encourage eating but do not force feed

- Be patient and supportive during feeding, never force feed.
- Encourage and help self-feeding, help develop infant's interest in foods.
- Avoid watching television or playing during mealtimes; mealtimes are recommended to be within 20 minutes.

3. Feeding Guidelines for Infants

- Interact with infants during mealtimes, never use foods as a form of reward or punishment.
- Parents should be the infant's role models on healthy eating.

IV. Avoid seasonings in solid foods, limit intake of table salt and sugar

- Infant foods should be prepared independent of adult foods.
- Maintain the original flavor of foods; the addition of sugar, table salt and seasonings are unnecessary when the infant is within 12 months of age.
- Infants who are 1 year old and above can gradually try mild tasting foods which are part of the family diet.

V. Emphasize food hygiene and safety

- Choose safe, high quality and fresh ingredients.
- Maintain hygiene and tidiness during food preparation; separate raw and cooked foods.
- Avoid leftovers; handle and store leftovers properly.
- Wash hands before eating; adult supervision is constantly required during mealtimes to emphasize a safe eating environment.

VI. Monitor infant's anthropometric data, strive for healthy growth

- Both weight and length are direct indicators of an infant's nutritional status.
- Infants should undergo routine measurements of growth indicators such as length, weight, head circumference every 3 months.
- A stable growth rate is the best growth pattern.

4. Dietary Guidelines for Vegetarians

- Eat a variety of foods, mainly cereal based; increase the amount of whole grains.
- Increase intake of soybeans and soy products to 50~80g daily; choose fermented soy products.
- Eat nuts, seaweed and mushrooms frequently.
- Eat plenty of fruits and vegetables.
- Choose healthy cooking oils.



5. Figures of Balanced Dietary Pattern

A total of 3 figures were developed to further illustrate and understand the core recommendations and balanced dietary pattern of the Chinese Dietary Guidelines (2016). The Chinese Food Guide Pagoda is used as the main figure for the core recommendations whilst the Chinese Food Guide Plate and Food Guide Abacus are supporting figures of the pagoda.

(a) Chinese Food Guide Pagoda

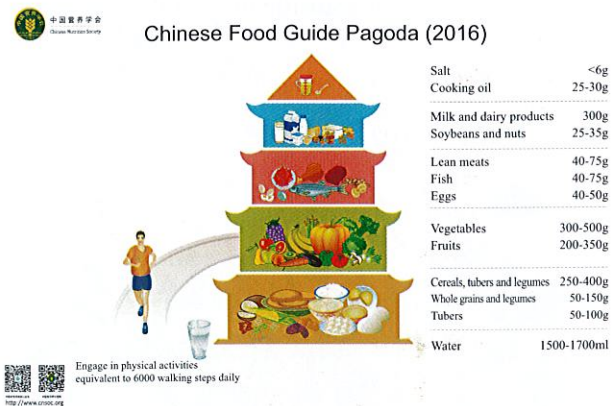


Figure 1. Chinese Food Guide Pagoda (2016)

This latest edition of the Chinese Food Guide Pagoda is based on the core recommendations and contents of the Chinese Dietary Guidelines (2016). The Chinese Food Guide Pagoda serves as a general visual representation of an ideal, balanced diet for those aged 2 years old and above who requires a daily energy intake of 1600-2400kcal. It illustrates both the amounts and varieties of foods that should be consumed in a day.

A balanced daily diet is comprised of 5 major food groups, each providing at least one of the essential nutrients. The food groups are classified into: ①Cereals, tubers and legumes; ②Fruits and vegetables; ③Poultry, lean meats, fish and eggs; ④Dairy, soybeans and nuts; ⑤Salt and cooking oil. The Chinese Food Guide Pagoda is made up of 5 levels representing the different food groups. Different sizes of each level of the pagoda represent the different amount of recommended intake.

The first and bottom level of the Pagoda is comprised of cereals, tubers and legumes, indicating that they should make up the largest part of the diet. They are the main source of energy in the diet (contributing 50%-65% of the total energy intake) as well as a good source of micronutrients and dietary fiber.

The second level is fruits and vegetables where dark colored vegetables should make up half of the total vegetables eaten. It is crucial that fresh fruits cannot be replaced by processed fruit products. This is followed by protein foods, which include lean meats, fish and eggs. It is also advised to avoid smoked and cured meats. The fourth level consists of dairy and nuts whereas table salt and cooking oil is found at the top of the food guide pagoda. Smaller portions of nuts are recommended as nuts are high in calories. It is also advised to reduce table salt intake as the average consumption is relatively high in China.

Apart from dietary suggestions, the Food Guide Pagoda also illustrated that daily activities, totaling up to the equivalent of 6000 walking steps, is recommended. Adults are also encouraged to drink 7-8 cups (1500-1700ml) of water daily.

It is worth mentioning that the amounts of food suggested in the balanced dietary pattern are referring to their uncooked raw weight. It is essential to eat a variety of foods daily to achieve a balanced diet. Multiple food choices are available in each food group, which helps meet the requirements on nutrients as well as non-nutrient components.

(b) Chinese Food Guide Plate

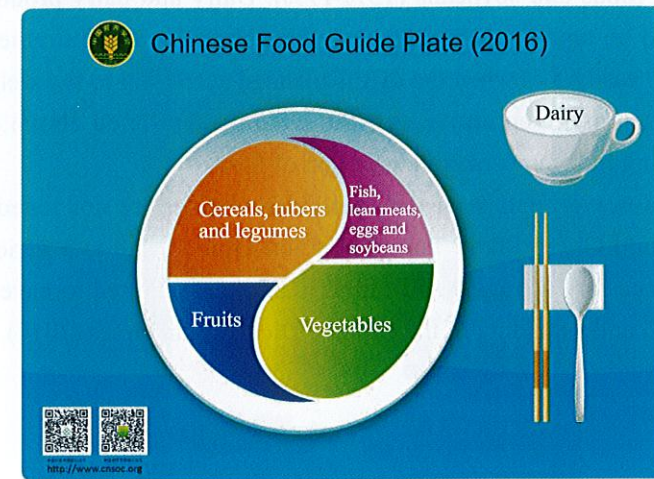


Figure 2. Chinese Food Guide Plate (2016)

The Chinese Food Guide Plate is based on the principles of a balanced diet and is a supplementary figure of the Chinese Food Guide Pagoda. It is a direct visual representation of food proportions in the balanced dietary pattern for a person in one meal. The Food Guide Plate is a simplified Food Guide Pagoda, which enables the basic understanding of a balanced diet and also facilitates its ease of practicability.

The plate is divided into 4 sections: cereals and tubers; animal-based foods and soybeans; fruits; and vegetables. The cup of milk beside the Food Guide Plate highlights its importance. The Food Guide Plate is also applicable to vegetarians, where the meat can be easily replaced by legumes to meet adequate protein intake.

According to their respective weight, vegetables should account for 34%-36% of the total weight of the diet, followed

by cereals and tubers (26%-28%), fruits (20%-25%) and animal-based foods and soybeans (13%-17%). Dairy and dairy products should be equivalent to 300g of milk. Nutritional requirements can be easily met when the diet is planned according to the weight proportions given above. All the weight mentioned above are referring to the uncooked raw weight of foods.

However, details of the Dietary Guidelines are not stated in the Food Guide Plate. Thus, the Food Guide Plate is a general guidance for each meal and further reading is required to have an overall understanding of the Chinese Dietary Guidelines (2016).

(c) Chinese Food Guide Abacus



Figure 3. Chinese Food Guide Abacus (2016)

The Chinese Food Guide Abacus is also a supporting figure of the Chinese Food Guide Pagoda specifically designed for children. The abacus is divided into 6 rows of different colored beads. The different colors represent the different food groups whereas

5. *Figures of Balanced Dietary Pattern*

the amount of beads represents the portions recommended. The numbers of beads shown in this figure are recommendations for those aged 8-11 years old. The food groups and portion recommendations in the form of abacus as well as the use of different colored beads attract the interest of children and aid in their learning as well as memory.


The Chinese Food Guide Abacus serves as a simplified illustration of a basic dietary structure, which enables children to have a basic understanding of a good and healthy diet. A child is seen running with a water bottle beside the abacus, which encourages children to have an active lifestyle and to drink adequate amount of water.

CHINESE DIETARY GUIDELINES

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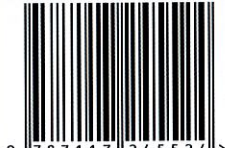
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