



Healthy Lifestyle Choices For The Future

* 서울미래밥상 is pronounced as "Seoul Mirae Bapsang" in English.

Seoul Mirae Bapsang

A Practical Guide

This guide intends to promote the practice of a balanced diet and to reduce an individual's carbon footprint at the same time.



SMG guidelines for a sustainable diet

**A Practical Guide to the
Seoul Mirae Bapsang
(Seoul Future Diets)**

SMG guidelines for a sustainable diet

A Practical Guide to the Seoul Mirae Bapsang

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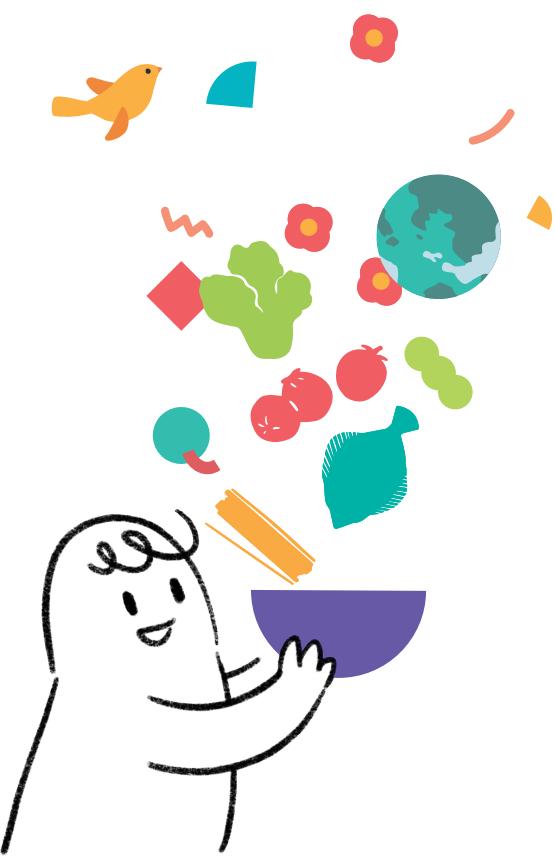
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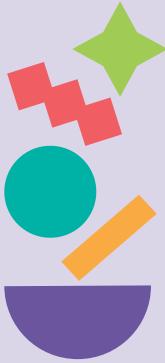
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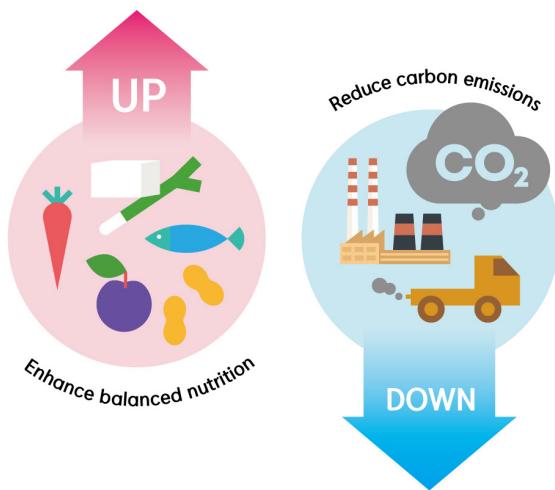
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Seoul Mirae Bapsang (Seoul Future Diets)

Healthy Lifestyle Choices For The Future

What is the Seoul Mirae Bapsang (Seoul Future Diets)?



Seoul Mirae Bapsang (Seoul Future Diets) is a set of dietary guidelines created by the Seoul Metropolitan Government (SMG) to promote a **healthy and balanced diet**.

Reduce a carbon footprint through simple actions to **save the Earth**.

Why we need the Seoul Mirae Bapsang (Seoul Future Diets)

Are you eating a healthy diet?

Foods that we typically consume nowadays harm both ourselves and the planet Earth. Eating less fruit, vegetables, and legumes while having more red meat and processed food than the recommended amount threatens not only ourselves but also the ecosystem.

Currently, about 30% of food production is wasted, and about 80% of global food production is expected to be consumed in cities by 2050. To promote our health and support environmental sustainability, we must enjoy and practice a healthy diet.

To serve this purpose, the SMG proposes the Seoul Mirae Bapsang (Seoul Future Diets), a practical guide to sustainable diets. The Seoul Mirae Bapsang (Seoul Future Diets) is a healthy diet plan that includes a variety of plant-based foods as well as appropriate amounts of animal-based foods. At the same time, it encourages how to choose food products that contribute to reducing greenhouse gases (GHGs) and minimizing food loss.

Introduction to Seoul Mirae Bapsang (Seoul Future Diets) guidelines

Choose low-carbon food and unprocessed or minimally processed food



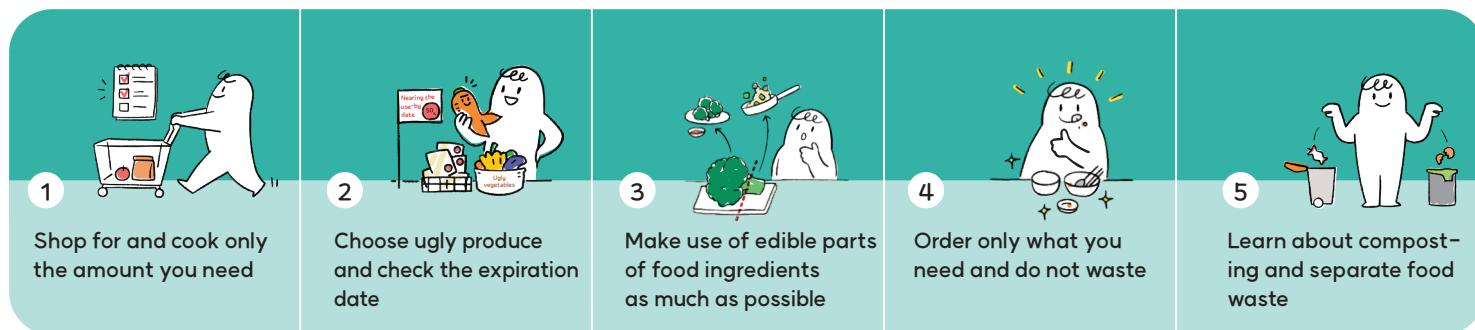
Hello. I am Seoulee. Let me tell you about Seoul Mirae Bapsang (Seoul Future Diets), a healthy and sustainable diet.

Eat a balanced diet with a plant-based foods



The guidelines of Seoul Mirae Bapsang (Seoul Future Diets) are some of the simple ways to practice a diet good for health and the environment. When choosing food ingredients at the grocery store, when cooking and preparing a meal, and when cleaning up the table, practice these guidelines and have your body and the Earth get healthier!

Food upcycling and no leftovers



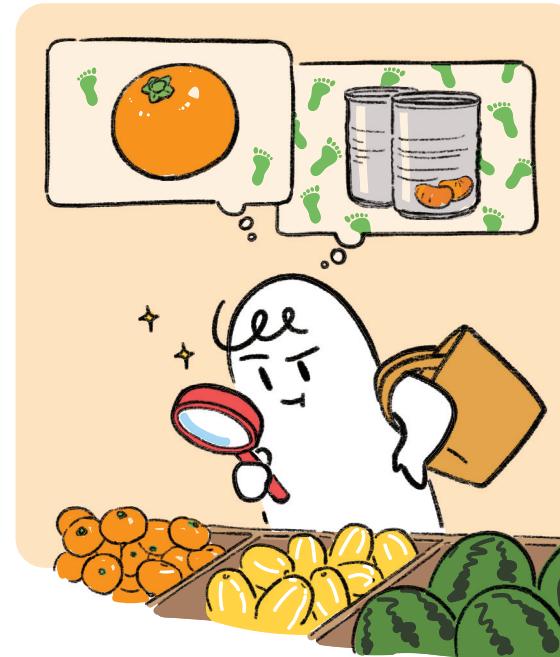
A sustainable diet for all.
Find out all about it with Seoulee.





Choose low-carbon food and unprocessed or minimally processed food

Choose low-carbon food and unprocessed or minimally processed food



Seoulee has brought a tote bag to the groceries. Consumption of healthy food ingredients is the first step to a sustainable diet. Domestically produced foods, seasonal foods, and unprocessed or minimally processed foods are higher in nutrition and better for the health. They are also categorized under **low-carbon foods*** that benefit the environment. Shop wisely with Seoulee to promote your health and reduce **carbon footprints***!

* **Low-carbon food** is one that minimizes GHG emissions in the process of food consumption, from production to packaging, processing, delivering, cooking, and disposal. Food products that are locally grown, are in season, are less processed, and use less packaging are closer to low-carbon foods.

* A **carbon footprint** is the total amount of GHGs emitted directly or indirectly that are generated by our actions.

1 Choose domestically produced food



Longer delivery distance generates more carbon emissions. Purchasing domestically grown produce reduces food miles*. Choosing local foods and purchasing from farmers' markets are helpful to farmers and contribute to reducing carbon emissions. Eat local foods for a healthy and low-carbon diet that benefits yourself and the Earth.

1 Check the country of origin before purchase

"Country of origin" is where agricultural goods have been produced or harvested and is usually marked at the back side of products. You can also check the marks below or use the NAQS app to see more details about products.

NAQS App

Use the "Country of Origin" menu to check the country of origin right away.



Traceability marking

This marking includes strictly managed information, from production to sales, to guarantee product safety.



2 Use farmers' markets

Farmers' markets open regularly and are distributed nationwide to sell produce harvested by farmers. The markets filled with fruit, vegetables, grains, and processed foods are participated by farms recommended by district.

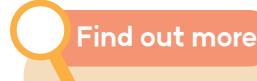


(Source) <http://blog.naver.com/seoulfarmersmarket>

* Visit the SMG website to see the opening schedule of farmers' markets.
 → <https://news.seoul.go.kr/economy/archives/520102>

* Visit the SMG Farmers' Market blog and social media channels to find out more about seasonal produce, member farms, and schedule.
Blog → <http://blog.naver.com/seoulfarmersmarket>
Facebook → <http://www.facebook.com/seoulfarmersmarket>
Instagram → <https://www.instagram.com/seoulfarmersmk>

* **I Market U in local regions:** I Market U is a market with excellent agricultural produce and local specialties established by the SMG to support small and medium-sized farms and provide healthy foods to citizens. → <https://sangsaeng.seoul.go.kr/>



What are food miles?

Food miles are the value of the amount of food multiplied by the distance it has traveled from production until it reaches a consumer. Food miles are indicators that show how much energy has been consumed and how much environmental pollution has been made during transportation. Import foods that travel longer distances and fruit and vegetables that require refrigerated transportation are examples of food products with high food miles.

2 Choose seasonal food



Seasonal foods are agricultural and fishery products cultivated and harvested at the most appropriate time. This is why choosing seasonal foods is the most natural way of consuming healthy and nutritious foods at a reasonable price. Consuming seasonal foods also contributes to combating climate crisis by reducing carbon emissions generated during the process of production, distribution, and storage. Have seasonal foods on your table for your body and the Earth.

1 Check and purchase seasonal foods

Agricultural and fishery products are freshest and in the best condition when they are in season. Shorter distance to get to consumers contributes to consumers purchasing fresher foods and lowering carbon emissions during transportation.

Spring



Spring greens

Spring greens such as Korean mugwort, Korean wild chive, and shepherd's purse that sprout from the ground that had been frozen during the winter are rich in phytochemicals that activate physiological activity.

Strawberry

Spring strawberries are rich in antioxidants and reduce cholesterol levels, which are beneficial to the blood vessel.

2

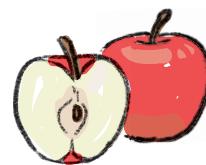
Summer



Cucumber

Cucumbers are good for the liver and the digestive system. It also serves as a water source in the summer season when we sweat a lot.

Fall



Apple

Freshly harvested apples in fall are not only larger in size and sugar content, but also richer in vitamins and dietary fiber.

Winter



Mandarin

Mandarins are rich in vitamin C and are natural defenses against flu in the winter season.



Tomato

Tomatoes grown in direct sunlight have significant amounts of antioxidants, such as lycopene.



Pumpkin

Pumpkins improve the digestive system and are rich in vitamins A and C for protection against flu in-between seasons.



Seaweed

Seaweed is nutritious and rich in dietary fiber that helps maintain bowel health.

* For more information, visit the Foodnuri Information Service website.

[Link ➔ https://www.foodnuri.go.kr/portal/main/main.do](https://www.foodnuri.go.kr/portal/main/main.do)

3

Choose eco-friendly, low-carbon certified food



If you are having trouble choosing sustainable ingredients, look for products with eco-friendly or low-carbon certification. Eco-friendly and low-carbon labels will serve as guides to reducing carbon footprints by purchasing produce grown in a healthy environment with minimal chemical use.

1 Look for the eco-friendly label

Agricultural and livestock products labeled as eco-friendly have been grown and raised with minimum amount of synthetic pesticides, chemical fertilizers, and antibiotics to promote biodiversity and preserve a healthy agricultural ecosystem.

Organic agricultural or livestock products

No synthetic pesticides and chemical fertilizers have been used in organic agricultural products, and organic livestock products were raised with organic feed.



Pesticide-free agricultural products

No synthetic pesticides and less than a third of the recommended amount of chemical fertilizers have been used in pesticide-free agricultural products.



2 Choose low-carbon foods

Good Agricultural Practices (GAP)

Products with the GAP mark mean that residual substances such as pesticides and bacteria found on products during distribution have been treated intensively.



Organically processed foods and pesticide-free foods

Processed foods produced organically or manufactured with organic ingredients are given the marks below.



Low-carbon foods mean that fewer GHGs have been emitted during production.

Low-carbon agricultural and livestock products

This national certification is given to agricultural and livestock products produced with low-carbon agricultural technology.



Low-carbon products

This certification is for products that have outperformed the national goal of reducing GHG (e.g. carbon dioxide) emissions.



Find out more

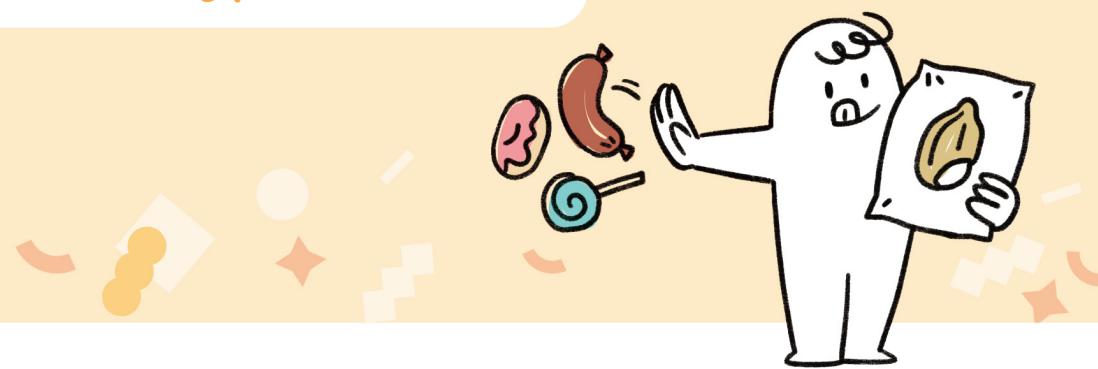
Look for the certification mark!



You can check the eco-friendly and low-carbon marks you have learned so far on product packaging. Look for them on your next grocery shopping.

4

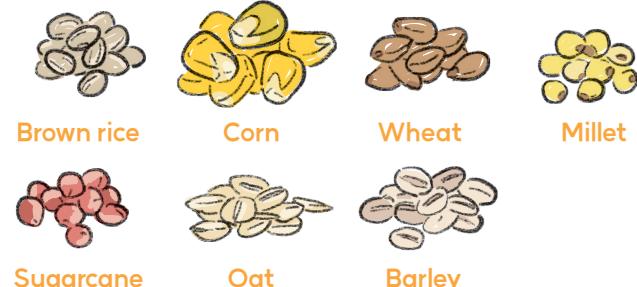
Choose unprocessed or minimally processed food



Processed foods are more likely to contain sugars and sodium and less likely to have nutrients. In other words, they are not ideal for a healthy meal. Processing also generates significant amounts of GHGs that impact the environment. Compared to polished grains and processed foods, whole grains and natural food products contain fewer sugars, sodium, and energy, but are rich in dietary fiber. They benefit our health and also contribute to reducing GHGs generated from the processes of manufacture, processing, and delivery.

1 Choose less-polished* grains and seeds

Whole grains contain more protein, dietary fiber, vitamins, and minerals than polished grains. That is why whole grains are helpful to stay healthy and prevent

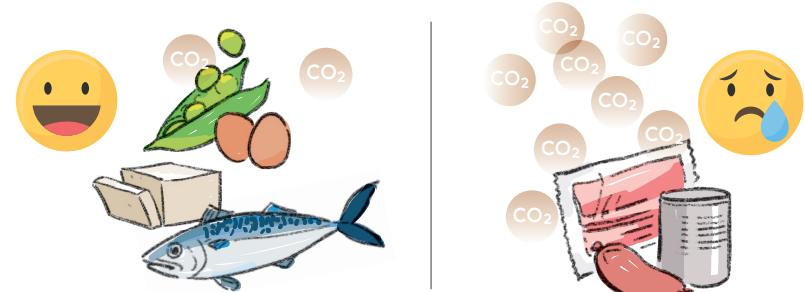


***Polishing** is the process of separating grain from its husk and bran. Brown rice has minimal removal of the bran, and white rice is completely polished rice.

2 Choose natural foods over processed foods

Processed foods like canned foods and sausages release significant amounts of GHGs during processing and packaging. They also contain more sugars and sodium, so they must be consumed with caution.

Foods that come from nature, such as plant proteins, fruit, vegetables, and whole grains, are richer in nutrients and more beneficial to your health compared to processed meat.



Plant proteins, vegetables, and less-processed food ingredients emit less carbon.

Processed foods release significant amounts of carbon during the manufacturing process.

Find out more

Try using a carbon calculator.

There is a simple way of finding out the carbon footprints of food on our table. Use the “carbon calculator” provided by Hankook Ilbo to see GHGs generated during production, delivery, and disposal of foods you eat.



Source <https://interactive.hankookilbo.com/v/co2e/>
(Hankook Ilbo)

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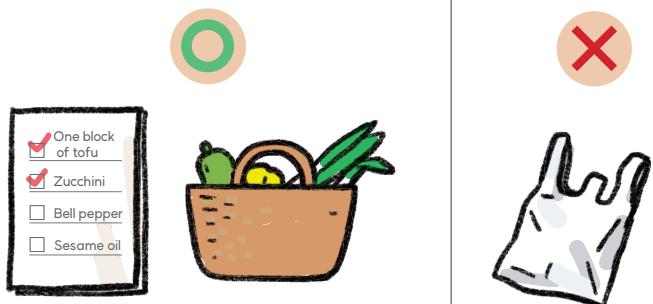
Choose products with minimal or no packaging and use tote bags



Going to grocery stores instead of eating out or getting food delivered prevents overeating and reduces waste. Use tote bags rather than plastic bags when going grocery shopping, and choose minimal packaging, plastic-free products or those with eco-friendly packaging to help conserve the environment.

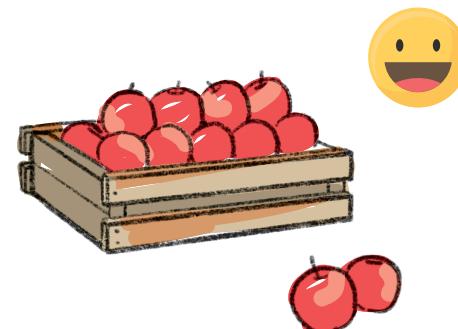
1 Go grocery shopping instead of using delivery

Grocery shopping helps you purchase just the amount of food you need and reduce unnecessary packaging. Making a grocery shopping list is another way to avoid waste from food and packaging.



2 Choose products with minimal packaging

Avoid using plastic bags placed in grocery stores and pick fruit and vegetables with less packaging to reduce plastic consumption. Make a habit of avoiding food products with excessive packaging and choosing those with minimum or recyclable packaging. Taking your own tote bag or container for grocery shopping can be helpful.



Find out more

Why should we reduce packaging waste?

Packaging waste generated in Korea accounts for an annual amount of 4,000 tons, which is equivalent to 62% of domestic waste. Styrofoam, plastics, and aluminum take over 500 years to decompose completely. Using less packaging itself can contribute to lowering carbon emissions and saving the planet.

Amount of time needed to decompose

5 years



At least 500 years





Eat a balanced diet with a plant-based foods



Seoulee is standing in front of the refrigerator thinking what to have for dinner. A tasty, healthy, and sustainable meal should be good!

How about joining the **planetary health diet*** challenge
that recommends eating plant-based foods?

Red meat and processed foods contain high amounts of saturated fats, which are not only bad for the health but also emit large amounts of GHGs during production and processing.

Plant-based foods such as fruit, vegetables, and legumes are healthy and more beneficial to the environment, as they release less carbon emissions and use less water during production.

* The **planetary health diet** emphasizes a plant-based diet where fruit, vegetables, nuts, and legumes comprise a greater proportion of foods consumed than animal-based foods to promote a balanced diet and reduce potential GHG emissions.

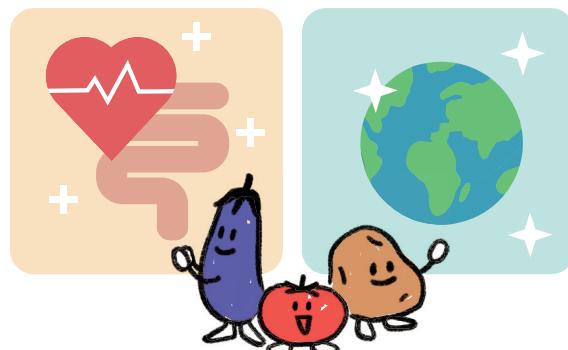
1 Eat at least two servings of vegetables for each meal



Vegetables are rich in nutrients, such as vitamins and minerals that are essential for the body to prevent diseases. They are also rich in dietary fiber, containing less energy (kcal) but making you feel fuller. They reduce cholesterol levels, lower the risk of heart disease, and prevent constipation.

According to the results of the Korea National Health and Nutrition Examination Survey, only 23.4% of people consume more than the recommended daily amount of vegetables. For a nutritionally balanced diet, it is encouraged to have at least two servings of vegetables for every meal. Livestock products account for 80% of GHGs released from food production. Consuming more fruit, vegetables, and legumes instead of meat can help save the Earth.

For our health



For the environment

① Order a dish with vegetables when eating out

When eating out, have a salad with your main dish and make sure you finish your greens.



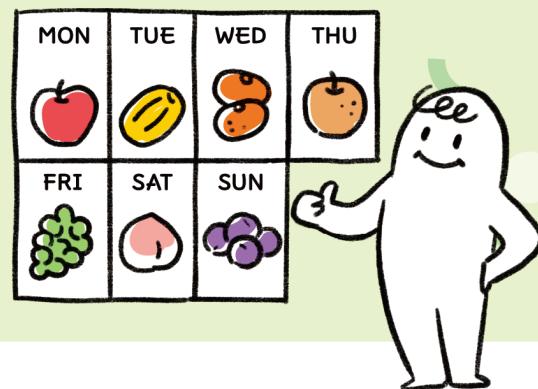
② Choose a variety of colored vegetables

Vegetables of different color groups contain a variety of physiologically active substances. Therefore, it is important to have various colorful vegetables to promote antioxidant activity, blood vessel health, blood circulation, and immunity.

Red	Antioxidant activity, blood vessel health, blood circulation, and immunity	Red cabbage	Tomato	Red chili
Yellow	Anti-cancer and antioxidant activities, skin health, immunity, blood vessel health, eye health, and physical growth	Carrot	Bell pepper	Pumpkin
Green	Liver regeneration, liver health, blood circulation, eye health, and bone health	Cabbage	Cucumber	Broccoli
Black	Antioxidant activity, brain health, and bone health, regular blood pressure, and anticoagulant	Black bean	Kelp & seaweed	Olive
White	Immune boosting effects against germs and viruses and lowering the level of bad cholesterol and blood pressure	Deodeok	Korean radish	Onion

2

Eat fresh fruits every day



Fruits rich in vitamins, dietary fiber, and antioxidants relieve fatigue and boost immunity. Consuming different seasonal fruits not only provides balanced nutrition but helps preserve biodiversity and food products.

1 Have two servings of fruit every day

The World Health Organization (WHO) recommends eating at least 400 g of fruit and vegetables everyday. Not having enough fruit and vegetables causes a lack of beneficial phytochemicals. Have two servings of different kinds of fruit and vegetables. When eating fruit for a meal, mix it with vegetables like a salad or with unsweetened yogurt.



Q&A

What are phytochemicals in fruit and vegetables?

The 5 A Day campaign is practiced in some countries to encourage the consumption of fruit and vegetables of five color groups rich in phytochemicals—red, yellow, green, black, and white—every day, following a recommendation by the WHO.

Phytochemicals activate antioxidant functions and improve the immune system, blood circulation, resistance to inflammation, and detoxification. Phytochemicals not only benefit our health but also serve to give plants their unique taste, aroma, and color.

2 Follow the recommended amount of fruit intake

Recommended amount per serving
150g



Recommended amount per serving
100g



Recommended amount per serving
15g



* 50 kcal per serving; daily intake of 2 servings for women and 3 servings for men recommended as snacks (From the Korean Dietary Reference Intake)



Q&A

Can I have fruit juice instead of fruit?

Fruit juice available in grocery stores contains almost no dietary fiber and high amounts of sugars. It is best to consume fresh fruit in its original form. However, should you have it as juice, use a blender to make a glass of fresh fruit juice.

3

Eat protein-rich plant-based food every day



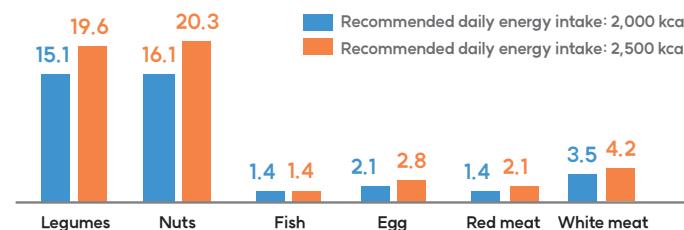
It is recommended to consume sufficient amounts of plant-based proteins every day to maintain our body conditions and prevent the loss of proteins needed for physiological functions.

Maintain nutritional balance by having a variety of protein-rich plant-based foods, such as legumes, nuts, and tofu. You can also try a balanced diet consisting of plant-based foods once a week.

1 Increase your intake of protein-rich plant-based foods

Compared to high-protein foods obtained from animals, those from plants do not have issues like excessive intake of saturated fats and cholesterol. They are also eco-friendly, as they release fewer carbon emissions and consume less water during production. Plant-based proteins include legumes, processed or fermented soybean products (e.g. tofu, soybean paste, bean curd), and nuts such as peanuts, almonds, and pine nuts.

Recommended intake of protein-source food groups per week in serving sizes



2 Consume the right amount of protein according to your body size, gender, age, and activity levels

The recommended daily protein intake is 5~6 servings for men and 4~5 servings for women, which should be divided appropriately into three meals.

Amount of plant-based protein
(per 100g)



Whole wheat

12g



Rice

6g



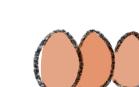
Spinach

3g



Chicken breast

23g



Egg

13g



Milk

3.2g



Pea

9g



Soybean

34g



Peanut

26g



Pork tenderloin

38g



Beef shank

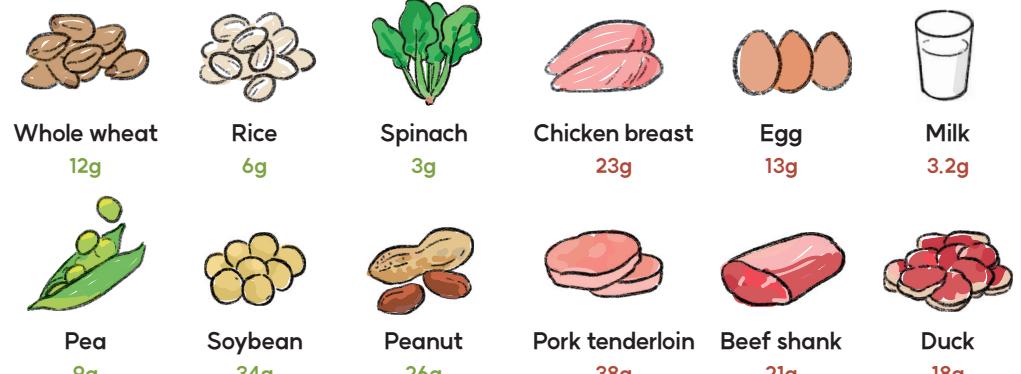
21g



Duck

18g

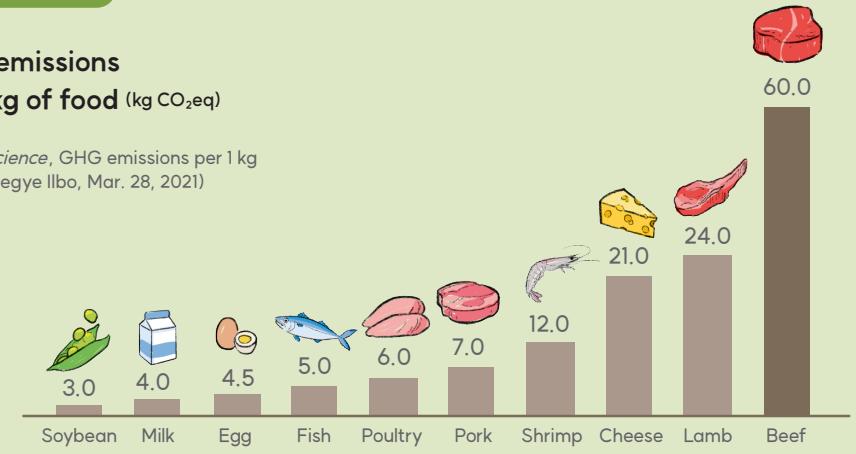
Amount of animal-based protein
(per 100g)



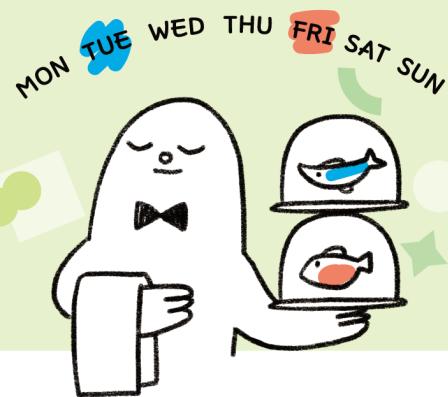
Find out more

GHG emissions per 1 kg of food (kg CO₂eq)

Source: Science, GHG emissions per 1 kg (Segye Ilbo, Mar. 28, 2021)



4 Eat fish twice a week



Fish contains large amounts of protein and is rich in omega-3 fatty acids (e.g. EPA, DHA) good for the heart. They also release less carbon emissions during production and processing compared to red meat. Heavy metals such as mercury are found in large fish from the deep sea due to marine pollution, so sometimes you need to be careful when eating fish. Yet, eating about twice a week is beneficial to your

1 Choose fish in season

Fish in the spawning season eat a lot, so they accumulate more nutrients in the body. Seasonal fish are more nutritious.



2 Follow the recommended amount per serving

The recommended amount of fish per serving is 60g (handful) including anchovy, mackerel, cutlassfish, salmon, and skipjack tuna (canned tuna). About 400 g is recommended weekly.



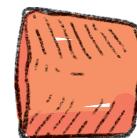
Rough amount per serving



Mackerel



Cutlassfish



Salmon

Find out more

Do not consume too much!

Proteins, vitamins, and minerals in fish help the brain development of children. However, large fish such as tuna, billfish, and sharks from the deep sea contain more methylmercury compared to other fish, requiring caution for consumption.

General fish and canned tuna

	Pregnant or lactating women	1~2 years	3~6 years	7~10 years
Recommended amount (g/week)	400g	100g	150g	250g
Amount per serving (g/serving)	60g	15g	30g	45g
Weekly servings	6	6	5	5

Tuna, billfish, sharks

	Pregnant or lactating women	1~2 years	3~6 years	7~10 years
Recommended amount (g/week)	100g	25g	40g	65g
Amount per serving (g/serving)	60g	15g	30g	45g
Weekly servings	1	-	1	1

Source: Ministry of Food and Drug Safety

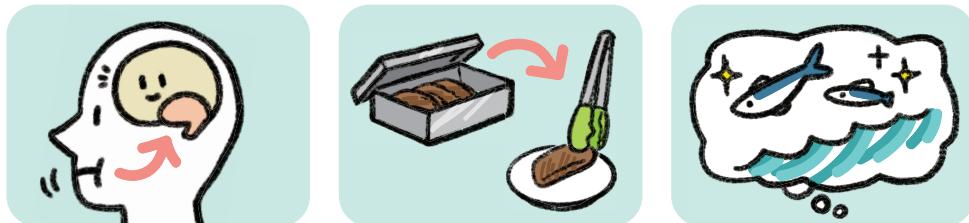
5

Keep a balanced diet and avoid overeating



Overeating means having more food than the body needs and eating too much until it feels uncomfortably full. Generally, overeating is a cause of obesity and chronic diseases (e.g. diabetes, heart disease, stroke, cancer), which can further result in a weakened immune system. By eating only the right amount you need and not leaving any leftovers, you can not only improve your health but reduce environmental pollution and disposal costs caused by food waste.

1 Avoid overeating and eat just the right amount



Cheat every bite 30 times

The slower and longer you chew your food, the faster you signal to your brain that you are full.

Eat just the right amount

Have your portion of food on your own plate before you eat.

Focus on eating

Focus on eating and be conscious of what and how you are eating.

2 Learn and practice the recommended consumption of foods

Diet plan using the Food Balance Wheels

The Food Balance Wheels indicates the recommended daily intake of foods designed for Koreans. Water in the front wheel demonstrates the importance of water consumption. The back wheel shows food groups in different proportions, visualizing the amount of foods that should be consumed everyday. Have a balanced diet with the nutrients you need and exercise regularly to maintain your health and an appropriate weight.

(Source) Ministry of Health and Welfare & Korean Nutrition Society, 2020
Dietary Reference Intakes for Koreans, 2021



Food group	Grains	Legumes/fish/egg/meat	Vegetables	Fruit	Milk/dairy products	Oils/sugars
Example of serving per person	Rice 210 g (1 bowl)	Tofu 80 g (1/5 block)	Bean sprout 70 g (1 dish)	Apple 100 g (1/2 apple)	Milk 200 ml (1 glass)	Soybean oil 5 g (1 tbs)

* The recommended serving per person per each food group (see pg. 51) to satisfy dietary reference intakes according to life cycles as a reference during diet planning or evaluation



Find out more

Plan your healthy diet

Make a meal plan for a healthy diet without having to calculate nutrition. Take a look at the examples below on how to plan your meal.



Male, 31 years old
176cm / 68kg
Physical activity level: Low



Female, 31 years old
160cm / 52kg
Physical activity level: Low

1. Check the daily energy requirement according to age, gender, and physical activity level.

Activity level	Low		High		Very high			
	Gender	Male	Female	Male	Female	Male	Female	
30~49 y/o		2,500		1,900	2,800	2,200	3,200	2,500

2. Check the recommended meal pattern according to the energy requirement.

Food group	Grains	Legumes/fish/egg/meat	Vegetables	Fruit	Milk/dairy products	Oils/sugars
	Unit: No. of servings					
1,900 kcal	3	4	8	2	1	4
2,500 kcal	4	5	8	4	1	7

3. Divide the recommended amount of food groups into three meals.

Food group	Grains	Legumes/fish/egg/meat	Vegetables	Fruit	Milk/dairy products	Oils/sugars
	No. of servings	3 / 4	4 / 5	8 / 8	2 / 4	1 / 1
Breakfast	1 / 1	1.5 / 1.5	2.5 / 2.5			
Lunch	1 / 1	1 / 1.5	2.5 / 2.5	1 / 2		
Dinner	1 / 1	1.5 / 2	2 / 2			
Snack	0 / 1		1 / 1	1 / 2	1 / 2	

It is important to divide the recommended amount of food groups into three meals. For example, males need 1 bowl of rice (grains) for each meal and 1 piece of bread (or rice cake) for a snack, as grain foods. They also need to have 1/5 block of tofu and nuts for plant-based proteins, 2 servings of vegetables and 1/2 dish of kimchi every meal, 2 servings of fruit, and 1 serving of dairy products. Oils and sugars are recommended to have the least amount possible. Do not add oils and sugars separately to your meal as they are already included in your food ingredients.

4. Calculate the amount of food consumption and plan your meal.

Refer to the amount of 1 serving size on page 51 for calculating the amount of food consumption and make a meal plan.

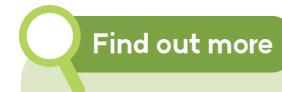


* Fruit and nuts:
Men need to double
the recommended
intake.

Multigrain rice, seaweed soup, grilled tofu (1 serving), mung bean sprout salad, kimchi

Snack: Apple, nuts, milk

Multigrain rice, seaweed soup, grilled tofu (1.5 serving), bellflower root salad, kimchi



Find out more

Visit the Korean Nutrition Society website to download the recommended nutritional intake for Koreans and plan your own diet plan.

→ <http://www.kns.or.kr/FileRoom/FileRoom.asp?BoardID=Kdr>

3 Calculate and evaluate your nutritional intake with the nutrition quotient



MFDS Nutrition Quotient Program
→ <https://various.foodsafetykorea.go.kr/nq/>

The nutrition quotient is an indicator that evaluates the quality and nutrition of diet. By accessing the website on the left, you can see for yourself whether you are having a balanced diet, moderation in unfavorable foods, and practicing healthy and safe eating behaviors.



Food upcycling and no leftovers



Seoulee is cleaning up after eating.

Upcycling* food by-products and leftovers from fruit and vegetables are nutritionally fine. In fact, it can reduce GHG emissions caused by treating food waste. Anyone can practice food upcycling in the process of storing and disposal, as well as during consumption. Choosing produce that are fine in taste and nutrition but have less product value for their appearance or food products nearing their use-by date are some of the best ways of upcycling food.

* **Food upcycling** refers to the purchase of produce that are fine in taste and nutrition but have less product value due to their appearance or food products nearing their use-by date. It also refers to use of food by-products generated from cooking and eating.

1

Shop for and cook only the amount you need



Shopping for and cooking only the amount you need helps you consume appropriate amounts. It is healthier for the body and prevents wasted food. Plan your grocery shopping to purchase and cook just the right amount to actively practice maintaining a healthy diet and reducing food waste.

1 Make a weekly meal plan and shop accordingly

Create a weekly meal plan considering your family size and the number of meals you get at home. It serves as the basis for grocery shopping. Before you shop, check what you have in your refrigerator and see what else you have to buy.



2 Cook just the right amount



Accurate measurement is important to avoid wasting food when cooking. If you do not have measuring tools, you can make your own routine, for example, by using tablespoons. When cooking, it is easier to add salt little by little.

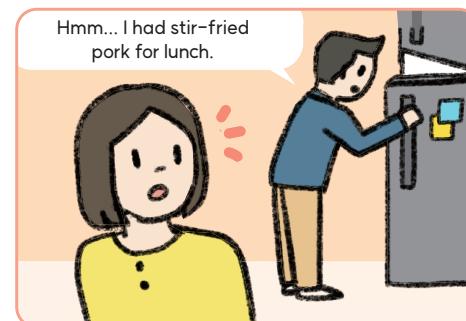
3 Share your meal plan with your family

If you are living with your family, share whether you have plans eating out or what you had earlier before preparing a meal.

Inform your dining plans



Share what you had earlier



2

Consume ugly produce and check the best-before date carefully



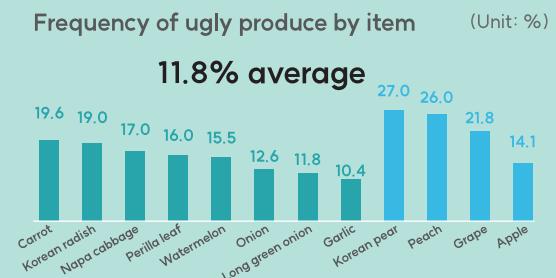
Ugly produce that is often disposed of for having less product value has no problem in its taste and nutritional contents. In fact, it is sold at cheaper prices compared to regular produce, so purchasing it can be a way to keep healthy economically. Reducing food waste by purchasing products nearing the use-by date contributes to reducing GHGs generated from the disposal process.

1 Purchase ugly produce that is disposed of during production

Ugly produce accounts for 10% to 50% of harvests and is usually thrown away due to simple reasons: it is not good-looking and does not meet the recommended standard. But recently, there has been an increased number of establishments that sell this ugly produce.

Find out more

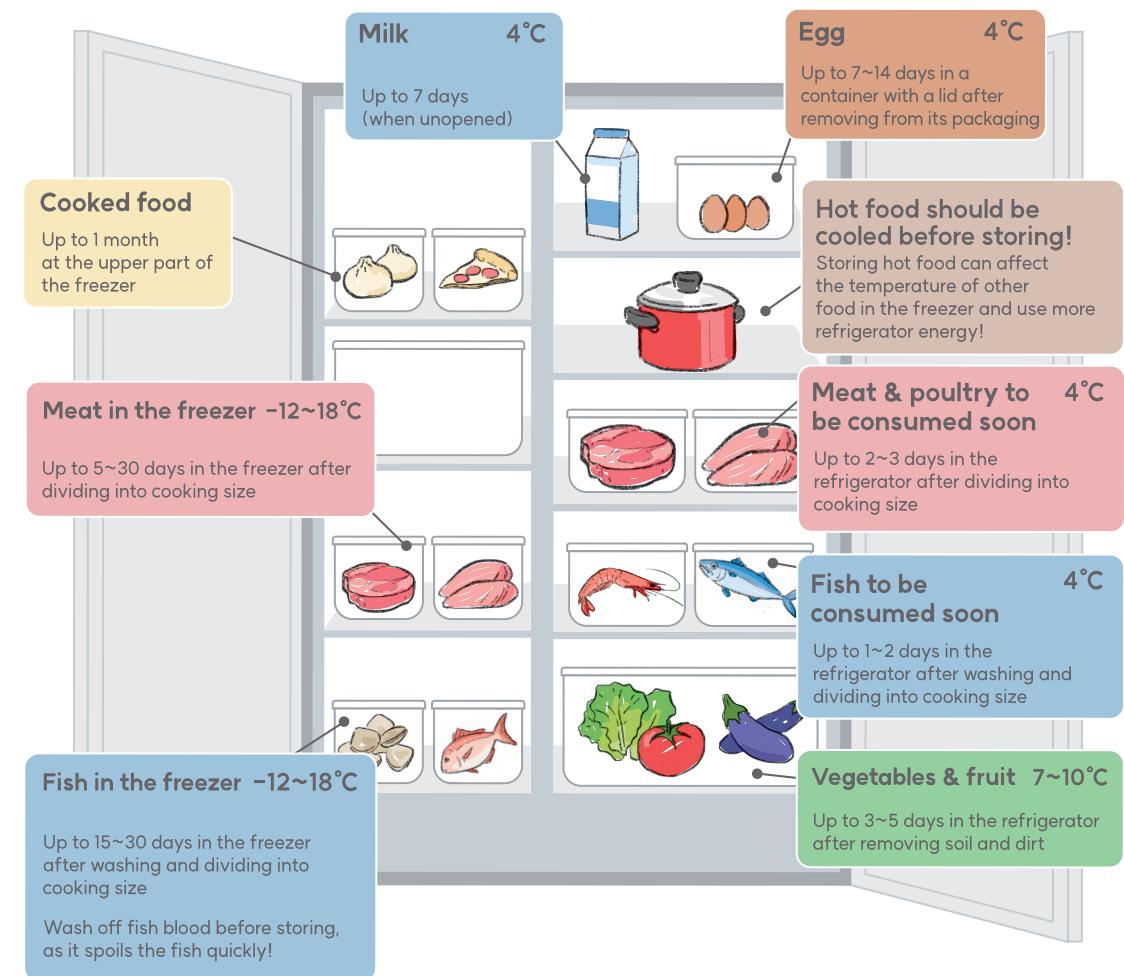
In 2018, fruit, vegetables, and grains worth KRW 25 trillion were classified as "ugly produce" in Korea. It is timely that we raise awareness of ugly produce and upcycle it.



(Source) Ministry of Agriculture, Food and Rural Affairs, Survey of 128 agricultural cooperatives nationwide on 27 products

2 Organize your refrigerator regularly

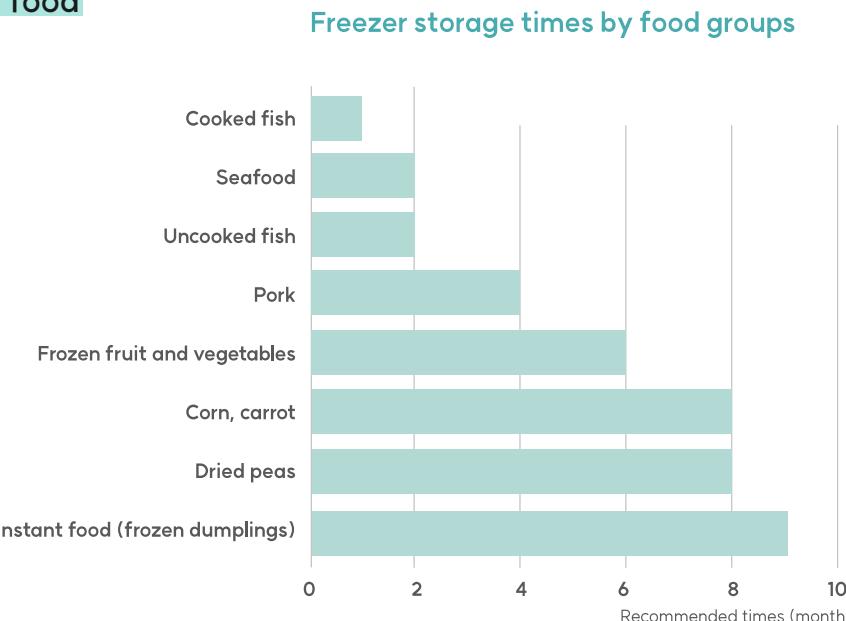
Make a list of what you have in your refrigerator and look into it often to avoid wasting food when it goes bad. Designate spots for food groups to help you keep organized.



(Source) Ministry of Food and Drug Safety

③ Follow the freezer storage times by food groups

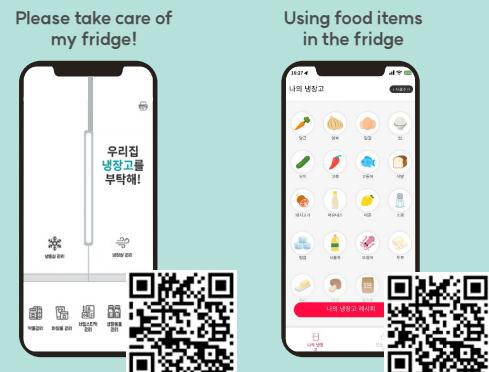
Note that different foods have different storage times in the freezer, which vary by cooked and uncooked food.



TIP

Use an app that recommends recipes for leftovers

Try using an app that systematically manages food in your refrigerator. All you have to do is simply input food items in your refrigerator together with their use-by date and date of purchase. The app helps you keep track of food in your refrigerator, which helps you save money in grocery shopping and gives you recipe recommendations that you can try with what you have.



④ Check the expiration date and consume those nearing the expiration date first

Place food items nearing the use-by date in front rows inside the refrigerator so that they are consumed first. Store food in clear containers to see what is inside. You can write down the use-by date on the container for easier organization.



Find out more

The “use-by date system” is effective from Jan. 2023

“Use-by date” is the last date recommended for safe use of the product when stored properly according to instructions. The use of a sell-by date was often misunderstood by consumers as the expiration of food, which resulted in unnecessary disposal of food and high costs. Therefore, the government adopted the use-by date system to ensure safe consumption and reduce food waste.

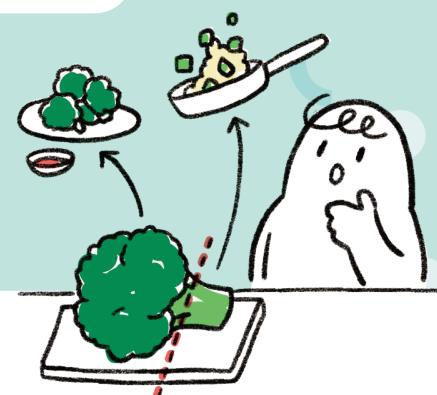
What is the difference between a use-by date and a sell-by date?

A “use-by date” is a consumer-oriented indication, set through experiments and other methods to determine the period at which the taste and quality of a food product undergo a significant change, typically set between 80% and 90% of the quality safety limit period. A “sell-by date,” on the other hand, is a business-oriented indication, set between 60% and 70% of the quality safety limit period. The adoption of the use-by date system is expected to lower food waste costs, resulting in an estimated cost savings of KRW 7.3 trillion over the next decade.

Use-by date: a beneficial system for the environment

Food waste is one of the major causes of environmental pollution that emits GHGs during the decomposition process. About 8% to 10% of global GHG emissions come from food waste. If the use-by date indication contributes to preventing wasted food, it could be a beneficial choice for both our economy and the environment.

3 Make use of edible parts of food ingredients as much as possible



Even if you purchase eco-friendly ingredients, they can become useless if not used properly. Hence, it is crucial to store food ingredients properly and minimize waste during the cooking process. Furthermore, skillfully upcycling leftover food can turn it into a delightful meal.

1 Extend the life of ingredients through proper storage

It's a good habit to immediately divide and store ingredients after grocery shopping. It can help stay fresh for longer periods. It is recommended to use reusable containers instead of disposable ones for storage and to learn how to store them properly according to each food type.



Dividing foods to max out the shelf life

Fish that are easily perishable can be preserved longer by thoroughly rinsing, removing excess moisture, sprinkling with salt, and storing in a reusable container. It is recommended to separate the fish from other stored items like meat to prevent any mixing.

As for **meat**, remove excess moisture and apply a light coat of cooking oil for longer shelf life. For vegetables, remove excess moisture, cut them into preferred sizes, and store them in containers in the refrigerator or freezer.

Storing **grains** and **fruit** that require more freshness in empty plastic bottles and reusable containers, respectively, will allow them to stay fresh for longer periods.

2 Wash fruit and vegetables before consumption and eat the peel if possible



Strawberry

Soak in water for about 1 minute, then rinse under running water for 30 seconds. Remove the hull, as it can have pesticide residues.



Grape

Soak in water for about 1 minute, then rinse under running water.



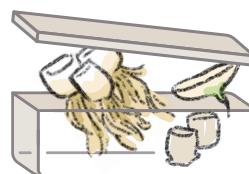
Perilla leaf & lettuce

Soak in water for 5 minutes, then rinse under running water for 30 seconds to remove pesticide residues.

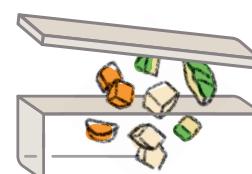
(Source) Ministry of Food and Drug Safety

3 Make use of edible parts of food ingredients as much as possible

For foods like watermelon which you cannot eat the peel, cut the inner white part into appropriate sizes. You can use them to make kimchi or vegetable salad. Store leftover pieces in a separate container since you might use them for other recipes. You can also reuse food items that were used for making broth.



Long green onion roots, mushroom volvas, and Korean radish tops make excellent ingredients for making broth.



Vegetable by-products (e.g. carrot greens, pumpkin stems) can be used for fried rice or dumpling fillings.



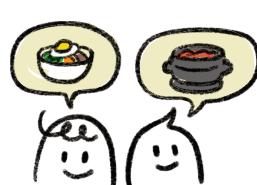
Anchovy, shrimp, and kelp used for making broth can be powdered to use as natural condiments.

4

Order only what you need and do not waste



Ordering the right amount of portions helps prevent obesity and reduce food waste, which leads to minimizing related costs and cutting GHG emissions. When eating out, you can ask what side dishes are served and request to remove any that you do not enjoy. If there are leftovers from a delivery order, it's a good idea to store them properly and upcycle them.



Order only what you can eat considering the number of people dining.



When eating out, ask what side dishes are served and request to remove any that you do not enjoy.



Ask for refills after finishing what you have on your table.



Choose not to receive disposable items when making delivery orders.



Instead of placing delivery orders, take reusable containers to take out food, if possible.



TIP

Look for Zero-Waste Stores through the "Smart Seoul Map"

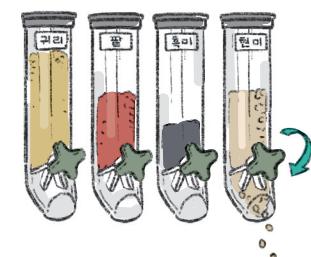
Zero-Waste Stores are eco-friendly establishments that practice reducing waste. Access the "Smart Seoul Map" and select "Urban Life Map." Click the "Environment" button to check "Zero-Waste Stores" operated in Seoul.



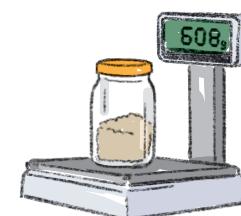
→ <https://map.seoul.go.kr/>



In Zero-Waste Stores...



You can buy just the amount you need.



You take your own container and pay according to the weight.



You can purchase a wide range of eco-friendly products.



5

Learn about composting and separate food waste



Are you aware of how to separate waste properly? It is important to know and practice the proper way to separate food waste from general waste, as well as to know about the specific local guidelines for disposing of food waste. Taking responsibility for segregating and disposing of waste after eating is one of the most significant practices for reducing carbon emissions and accelerate a sustainable future.

① When disposing of food waste, minimize moisture and foreign substances

To recycle food waste into compost or animal feed, you must remove any foreign substances and moisture before disposal. You can use a draining tray to help reduce odors and the overall amount of waste.



TIP

How to use fruit peels

Leaving fruit peels at room temperature to naturally dry can spread a pleasant fruity aroma in the house. However, it should be dried properly in the summer season to prevent the possibility of pests. Water with fruit peels can be a good natural air freshener.



② Properly segregate food waste from general waste

Food waste includes leftovers, fish scraps, vegetable peelings, and fruit skins, which can be used as ingredients for animal feed or fertilizer. The following items are not considered food waste but general waste. They must be disposed of in respective waste bags.

Items considered general waste



Dried peels and roots of vegetables

Skins of onions and corn / roots of chives, long green onions, and water parsley / red pepper stalks / corn stalks, etc.



Fruit

Hard shells of walnuts, chestnuts, coconuts, and pineapples / seeds of stone fruits such as peaches, apricots, and persimmons



Fish and shellfish

Shellfish / crustacean shells / fish bones / toxic foods such as puffer fish intestines



Meat

Bones, hair/feather, fat, and intestine of beef, pork, and chicken



Residue

Tea (e.g. tea bags) / ground coffee / Korean medicine residue



Eggshell

Shells of chicken egg, duck egg, quail egg, etc.



Salty food

Salty food like kimchi



Sauce

Red chili paste, soybean paste, and other savory sauces

③ Know and practice proper food waste disposal

The method of disposing of food waste may vary depending on the place of residence. Make sure to check and follow the food waste disposal guidelines in your area of residence.

	Single-family house	Apartment	Studio & multi-family house
Disposal day	Every day (No disposal on Saturdays and the day before national holidays)	Every day	Designated day and time
Disposal hours	6 PM-1 AM (Buildings by sidewalks, commercial buildings, etc.: 10 PM-1 AM)	24 hours	
Disposal location	In front of your house	In your respective waste collection areas	In front of the building
How to	Dispose of food waste in a designated food waste bag after removing foreign substances (e.g. plastic, toothpick) and place it in the collection container.	Dispose of food waste after removing foreign substances (e.g. plastic, toothpick)	Use tags and stickers
Collection method	Designated waste bag (light blue background + black letters)	RFID-type collection box	Sticker and designated collection container (Types: 3 L, 5 L, 25 L, 120 L)



How are the separated waste treated?

All waste separated at home is collected together and then goes through another thorough sorting process. Efforts to separate and dispose of waste according to the designated methods are necessary to ensure the recycling of valuable resources.



We went over the Seoul Mirae Bapsang (Seoul Future Diets), the guidelines for practicing a sustainable diet, with Seoulee. Practice in daily life will lead to healthier bodies and healthier Earth.

Annex

① Evaluate yourself

See how you have changed after learning about the Seoul Mirae Bapsang guidelines.

Read through each item and mark '1' if it applies to you or '0' if not.

The below table will serve as a good reference for identifying your eating habits and making an effort to practice the guidelines.

Guidelines	Checklist	Score	
		Before	After
Choose low-carbon food and unprocessed or minimally processed food	I choose domestically produced foods.		
	I choose seasonal foods.		
	I choose eco-friendly certified foods.		
	I choose low-carbon certified foods.		
	I choose less-polished foods(grains, seeds etc).		
	I choose unprocessed or minimal processed foods.		
	I use tote bags.		
	I choose products with minimal or no packaging.		
Eat a balanced diet with a plant-based foods	I eat at least two servings of vegetables for each meal.		
	I eat fresh fruits every day.		
	I eat protein-rich plant-based food every day.		
	I eat fish twice a week.		
	I do not overeat.		
	I have a balanced diet. (I eat vegetables, fruit, and plant-based proteins every day.)		
Food upcycling and no leftovers	I shop for only the amount I need.		
	I cook only the amount I need.		
	I choose ugly produce.		
	I check the expiration date.		
	I make use of edible parts of food ingredients as much as possible.		
	I order only what I need.		
	I do not leave leftovers.		
	I know about composting and separate food waste.		
	Total		

② Table for calculating the amount of food consumption and choosing the right dish

Food group	Amount of 1 serving size per person						
Grains	Rice 210g	White rice 90g	Noodle 90g	Naengmyeon noodle 90g	Rice cake stick 150g	Bread* 35g	
Meat/fish/egg/legumes	Beef 60g	Chicken 60g	Mackerel 70g	Soybean 20g	Tofu 80g	Egg 60g	
Vegetables	Bean sprout 70g	Spinach 70g	Kimchi 40g	Cucumber kimchi 40g	Oyster mushroom 30g	Dried seaweed 10g	
Fruit	Apple 100g	Mandarin 100g	Korean melon 150g	Grape 100g	Watermelon 150g	Dried jujube 15g	
Milk/dairy products	Milk 200ml	Cheese* 20g	Yogurt 100g	Drinkable yogurt 150g	Sherbet 100g		
Oils/sugars	Soybean oil 5g	Butter 5g	Sesame 5g	Instant coffee 12g	Sugar 10g	Honey 10g	

* 35g of bread is calculated as 0.3 serving and 20g of cheese as 0.5 serving.

③ Glossary(in alphabetical order)

Carbon footprint: One of the environmental impact categories in environmental labeling. It is a quantified indicator that represents the impact of carbon (GHGs) generated throughout the entire process of collecting raw materials, production, transportation and distribution, use, and disposal of products and services on climate change.

Food miles: The distance food has traveled from production until it reaches the consumer's table. It demonstrates the level of environmental burden generated in the process of production, transportation, and consumption of ingredients.

Food upcycling: Purchase of produce that is fine in taste and nutritional contents but has less product value for its appearance or food products nearing its use-by date, or making use of food by-products generated from cooking and eating.

Greenhouse gas(GHG): Among the various gases that make up the atmosphere, there are GHGs that cause the greenhouse effect, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs),

perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and ozone (O_3). Currently, GHG emissions from food production to disposal account for 26% of total global emissions*.

However, a healthy diet (consisting of fruit, vegetables, nuts, legumes, fish, and limited amounts of animal-based products and edible oils) is reported to cut emissions by over 30%**.

Low-carbon food: Food that minimizes GHG emissions in the process of food consumption, from production to packaging, processing, delivering, cooking, and disposal.

Polishing: Process of separating grain from its husk and bran. Brown rice is less polished rice with minimal removal of the bran, and white rice is completely polished rice.

*Reducing food's environmental impacts through producers and consumers, Poore and Nemecek, 2018

**C40, 2019, In Focus: Addressing food related consumption in C40 cities