

# Cooling and Reheating Prepared Foods

Food Safety Guidelines for Food Businesses



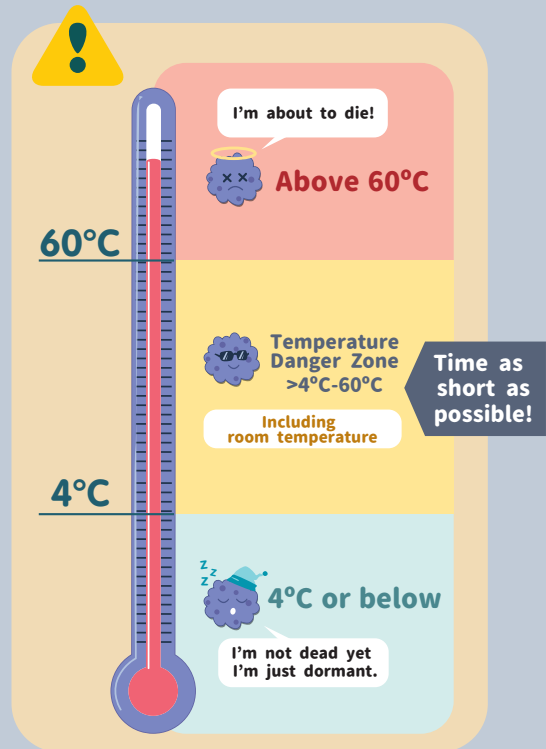
# In a nutshell

Prepared food that will not be eaten right away should be cooled as soon as possible, stored at the right temperature, and heated thoroughly before being eaten. Do not leave prepared food at room temperature for too long.

We cool hot cooked food down for various reasons, for example:

- Prepare meat stew or poon choi in batches ahead of time and chill it to be served later.
- Cool freshly made soybean milk to serve cold.
- Cool hot steamed rice to make it dry for preparing fried rice.

It is important to **keep cooked foods out of the Temperature Danger Zone**, which is **between 4°C and 60°C**, for as little time as possible after cooking to stop the growth of microorganisms that can cause foodborne diseases (food poisoning).



# Why should I hurry to cool down food if I can reheat it later to kill germs?

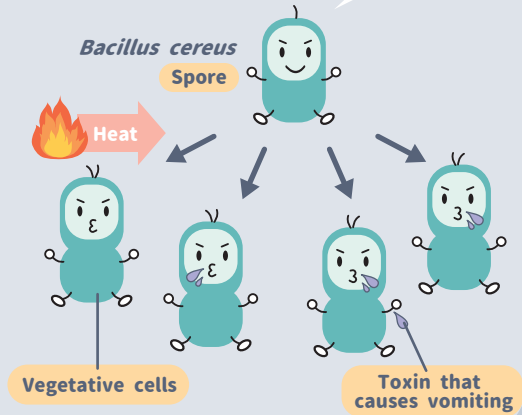
It is true that thorough cooking or reheating can kill bacteria and viruses in food that make you sick. However, the longer it takes to cool down the food, the more time the food is exposed to Temperature Danger Zone. **Harmful bacteria can grow** in food that is left to cool down slowly. Sometimes, these bacteria can **produce heat-resistant toxins**, which cannot be got rid of even by reheating.



## Beware of *Bacillus cereus*

*Bacillus cereus* is a food-poisoning microorganism that can form spores. **Not only can the spores live at normal cooking temperatures, but when heated, they also turn into vegetative cells.** If cooked food is left at ambient temperatures for too long, the vegetative cells can multiply into large numbers and eventually produce toxin.

The heat never bothered me anyway!



Therefore, keeping food away from Temperature Danger Zone is equally important in addition to thorough cooking. This can be done by cooling food quickly and storing it at proper temperatures after cooling.



# Prepared foods that require extra care

Extra care should be taken with these foods to reduce the risk of food poisoning, particularly related to *Bacillus cereus*:



## Cooked rice

e.g. steamed rice and fried rice



## Cooked pasta and noodles

e.g. cooked spaghetti, rice noodles



## Bean and nut products

e.g. soybean milk, soybean curd dessert



## Egg products

e.g. quiches



## Dairy products

e.g. custards



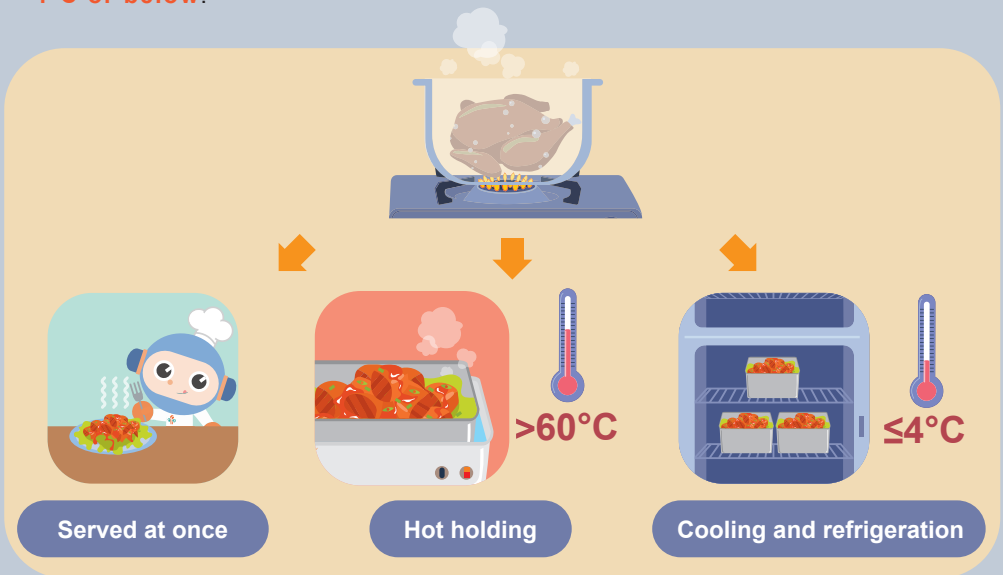
## Casseroles and sauces containing meat

e.g. meat stew, curry, poon choy, gravy and soup

# Safe cooling down, storing and reheating of cooked food

## Before and after cooking 1

- Estimate how much food is needed carefully so as to avoid overproduction that can lead to running out of room for hot-holding, cooling and refrigeration.
- Plan the production schedule ahead of time so that food would not be made too far in advance and kept at unsafe temperatures for too long.
- Food should be served immediately after cooking. If not, hot food should be stored **at above 60°C**. Otherwise, food should be cooled down fast and kept at **4°C or below**.



## Hot holding 2

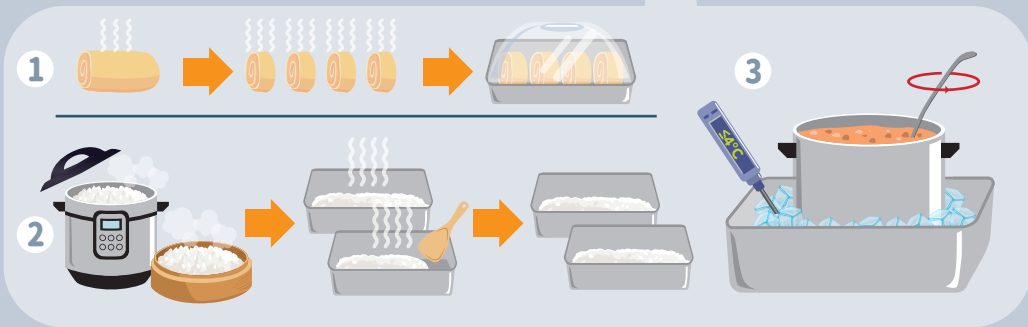
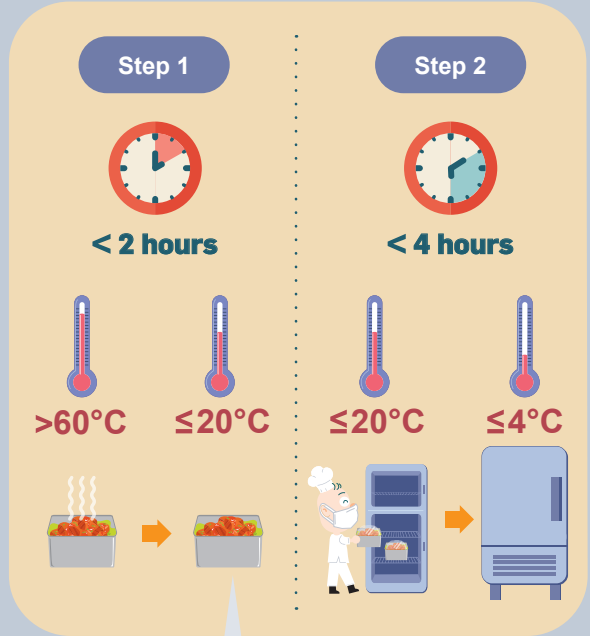
- For hot holding, set up the equipment so that food stays above  $60^{\circ}\text{C}$  and use a thermometer to check the temperature of the food in the containers. Food that has been **kept below  $60^{\circ}\text{C}$  for more than four hours should be thrown away**.

# Cooling 3

- Small amounts of hot cooked food can be readily cooled in a refrigerator. However, hot cooked food in bulk may need to be cooled quickly before being put in the fridge:

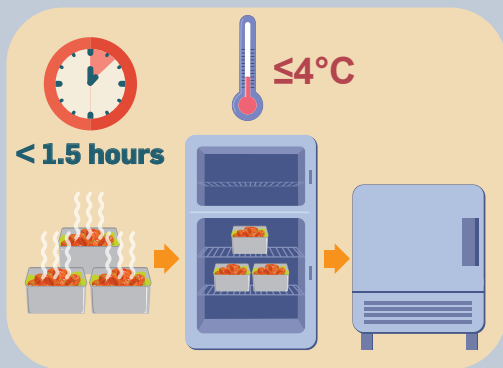
## Two-step cooling

- Cooked food must be **cooled to 20°C within two hours**, and then cooled further **from 20°C to 4°C in a refrigerator within two to four hours**.
- There are a few ways to speed up the cooling of food:
  - 1 Cut the food into smaller pieces and put them in shallow, covered containers in an area with good air circulation.
  - 2 Spread out food, like rice, on a tray.
  - 3 Place pans of hot food in an ice water bath with stirring.
- Separate cooked food from raw food during cooling.



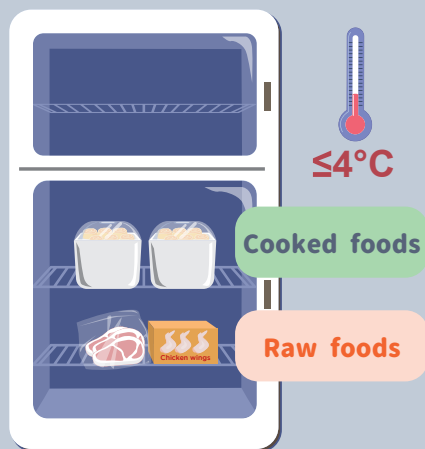
## Blast chilling

- Blast chilling is a method of chilling often used in large-scale restaurants, central kitchens, factories, and hotel kitchens.
- Food can be divided into small portions and placed in shallow containers before being rapidly chilled to 4°C in a blast chiller within 1.5 hours. When blast chilling is done, place the food in the refrigerator or freezer.
- The starting and ending temperatures, as well as the time of the entire blast chilling process, must be recorded.

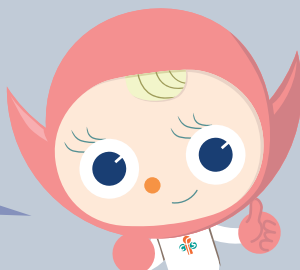


## Refrigeration 4

- Store cooled food in a fridge at 4°C or below.
- Food should be put in a sealed, clean container.
- Separate cooked food from raw food, e.g. put cooked food in the upper compartment of a fridge above raw food.
- Measure and record the temperature of the refrigerator twice a day to ensure proper operation.

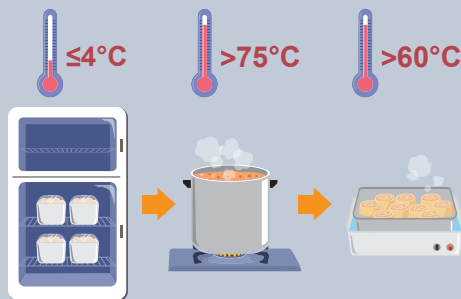


Aside from the cooked ones, fresh pastas and noodles, such as rice noodles, spoil easily at room temperature due to their high water content. **Keep them refrigerated before use.** Soak dry rice noodles **only right before cooking.**



## Reheating 5

- Reheating precooked food means cooking again, not just warming up.
- Reheat the food well until the temperature at its centre reaches **at least 75°C**.
- Soups, congee, sauces, and gravies should be brought to a full boil.
- **Only reheat the food once**, and do not put it back in the fridge after reheating because bacteria can grow if it stays at dangerous temperatures for too long.
- Do not try to heat food in a bain marie or with other equipment that are only meant to keep food hot. This will probably take too long or will not heat the food enough to keep it safe.



**Only reheat once**

## Personal Hygiene 6

- Always follow good personal hygiene practices, which include proper hand washing. Wash hands thoroughly with liquid soap and water and rub hands for at least 20 seconds before and after handling foods or after using the toilet, touching your eyes, nose or mouth, coughing, sneezing or blowing your nose, etc.
- Cuts or wounds on hands should be covered by waterproof dressings or gloves.
- Do not smoke, eat, or drink while preparing food.
- Stop working if you have or think you have an infectious disease with symptoms like diarrhoea, vomiting, fever, sore throat, or abdominal pain.

