



COOLING

Why is it important to cool properly?

Improper cooling of potentially hazardous food is known to be the leading cause of foodborne illness. Food that's cooled too slowly remains in the Temperature Danger Zone for an unsafe amount of time. When this happens any bacteria that survive the cooking process can now multiply quickly and potentially produce toxins. It's very important to cool foods correctly by taking the food through the Temperature Danger Zone as fast as possible. This should help control the growth of bacteria that are known to cause foodborne illness.



WHAT SHOULD YOU DO?

Food should be cooled quickly. The proper cooling method follows a 2 hour/4 hour rule and happens in two stages:

1. Food is to be cooled from 60°C (140°F) to 20°C (68°F) within a maximum of 2 hours.
2. Then, food is to be cooled from 20°C (68°F) to 4°C (40°F) or colder in no longer than 4 hours.

Methods for Cooling Food

Cooling time and method used depends on the food. More dense foods and larger amounts will take longer to cool than smaller amounts. Also, certain methods for cooling may work better with liquid or solid food.

You can cool food by using one or more of the following methods:

- Portion food into smaller amounts and refrigerate.
 - Cut big pieces of meat into small slices or pieces.
 - Transfer liquids into shallow pans.
- Pans of food shouldn't be fully covered; leaving a portion of the pan exposed will allow heat to escape and cool air to contact the food.
- Do not stack pans; air must be able to circulate around the food.



- Use metal pans instead of plastic. Metal lets heat leave and plastic insulates, keeping the heat trapped in the food.
- Place a pan of food in an ice-water bath and stir. Stirring allows warm food in the centre to move to the cooler air on the outside of the pan to contact and moves the cooled food to the centre.
- Add ice to the food as an ingredient. An example of this would be reducing the amount of water called for in the recipe and instead, adding ice once food is cooked to help chill the food and make up the remaining amount of water required.
- Use chilling equipment if available, such as an ice wand or blast chiller.

NOTE:

It's important to monitor the internal temperature of food using a probe thermometer. Monitoring the temperature will help ensure you're following the 2 hour/4 hour rule and taking the food through the Temperature Danger Zone quickly.

References:

Nevada State Health Division. (2011). Environmental Health Section. *Cooling Foods Properly*. Retrieved on July 16, 2012, from NSHD website at: http://www.health.nv.gov/PDFs/BFHs/cooling_instruction_handout.pdf

Kansas Department of Agriculture. (2008). Division of Food Safety and Lodging. *Food Safety Fact Sheet: Two-Stage Cooling*. Retrieved on July 16, 2012, from KDA website at: http://www.ksda.gov/includes/document_centre/food_safety/Food_Safety/49TwoStageCooling.pdf

Food Standards Australia New Zealand. (2012). Food Safety Standards. *Temperature control requirements*. Retrieved on August 3, 2012, from FSANZ website at: <http://www.foodsafetystandards.gov.au/scienceandeducation/factsheets/foodsafetyfactsheets/foodsafetystandards857.cfm>

Whyalla South Australia. (2009). Health Department – Factsheet. *Cooling Food Safely*. Retrieved on August 3, 2012, from WSA website at: [http://www.whyalla.sa.gov.au/webdata/resources/files/Cooling_Food_Safely_\(whyalla\).pdf](http://www.whyalla.sa.gov.au/webdata/resources/files/Cooling_Food_Safely_(whyalla).pdf)

National Food Service Management Institute. (2009). Food Safety Fact Sheet. *Cooling Foods*. Retrieved on August 3, 2012, from NFSMI website at: http://nfsmi_web01.nfsmi.olemiss.edu/documentlibraryfiles/PDF/20090319100559.pdf

