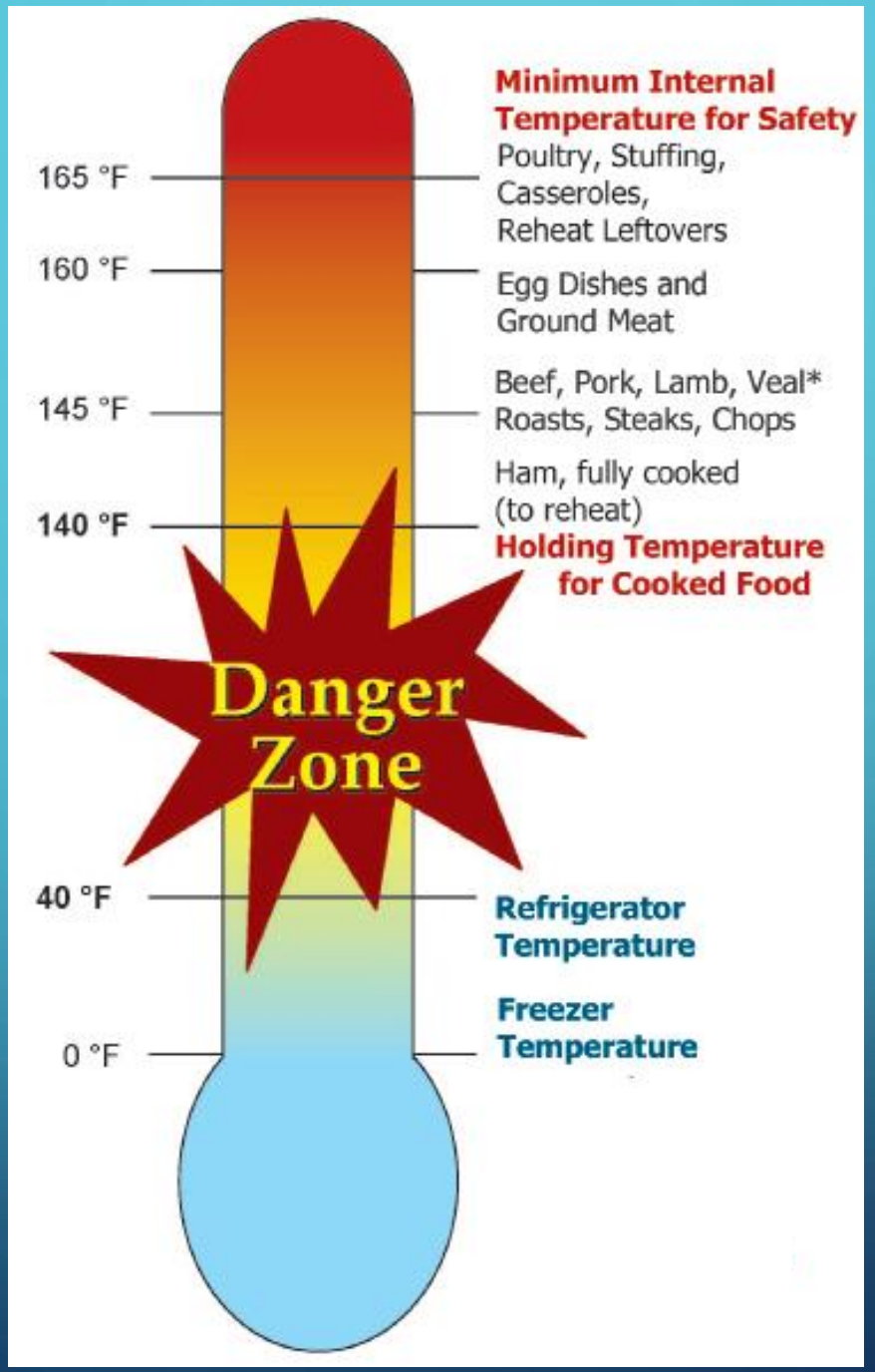
FOOD SAFETY: COOLING METHODS

WILKES HEALTH

WHY IS IT IMPORTANT TO HAVE PROPER COOLING METHODS?

- When cooling food for storage, it passes through the temperature danger zone (41°F - 135°F)
- Bacteria flourish in this temperature range
- The most rapid growth happens between 70°F - 125°F
- The longer the food is in the temperature danger zone, the longer the bacteria grow and contaminate your food


Minimum Internal Temperature for Safety
165 °F
Poultry, Stuffing, Casseroles, Reheat Leftovers
160 °F
Egg Dishes and Ground Meat
145 °F
Beef, Pork, Lamb, Veal* Roasts, Steaks, Chops
Ham, fully cooked (to reheat)
140 °F
Holding Temperature for Cooked Food
Danger Zone
40 °F
Refrigerator Temperature
Freezer Temperature
0 °F

TWO STEP COOLING METHOD

Step 1	**Cool the food from 135°F - 70°F within 2 hours**
Step 2	**Cool the food from 70°F - 41°F within 4 hours**

This process should take no more than **6 hours total** to ensure food has safe levels of bacteria growth

Make sure the 2 hour window is precise, as bacteria flourishes the **most** between 135°F - 70°F

THINGS TO CONSIDER WHEN CHILLING FOOD

- **Size of food item being cooled:** The thicker the food or larger the amount, the longer it takes to chill
- **Density of the food:** The denser, the longer it takes to chill. Ex: Chili will take longer to cool than chicken noodle soup

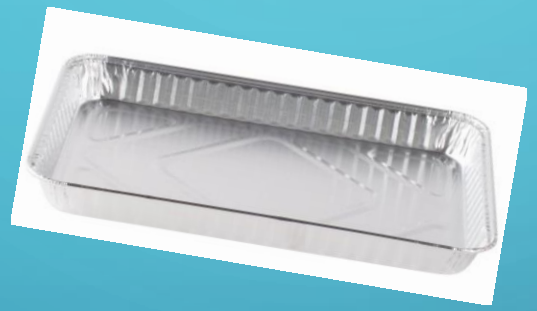
It is best to separate food into small containers, especially denser or thicker foods!

THINGS TO CONSIDER WHEN CHILLING FOOD

- **Container the food is stored in:** Metal cools faster than plastic, glass, or ceramic
- **Dimensions of the container:** Shallow, smaller containers let the food spread out in a larger surface area, making a more even and uniform cooling.

Having these types of containers will chill your food the fastest!

Characteristics of the Optimal Food Cooling Container
Metal
Shallow
Wide



CHILLING METHODS: BLAST CHILLER

- Blast chillers are an easy way to properly chill food
- Check temperature regularly to make sure unit is working properly
- Keep inside of unit in clean and working order
- Keep the door closed as much as possible to avoid temperature fluxuation

CHILLING METHODS: ICE BATH

Steps to make a successful ice bath:

1. Put the container of food into a larger container (or a clean sink)
2. Fill in the space around the small container with ice until it is in line with the food
3. Fill in the ice with water
4. Occasionally stir the food to create a more uniform chill (ice paddles are a good choice)
5. Once the food reaches 41°F, it can be stored in a fridge
6. Limit the opening and closing of the fridge to avoid temperature fluxation

CHILLING METHODS: ICE PADDLES

- Ice paddles are a useful tool to create more uniform, faster chill
- Fill them with water and stick them in the freezer until they are frozen
- Use them to stir foods that are in the process of cooling
- Ice Paddles:
  - Aid in cooling
  - Mix the food for more uniform cooling

GENERAL TIPS

- The refrigerator should be set to **40°F** or below, and the freezer **0°F** or below.
- **Do not** store perishable foods in the door of a fridge, as the door compartment temperatures fluctuate.
- Refrigerate/freeze perishables and prepared food within **two hours** of use. If the environment is **greater than 90°F**, refrigerate/freeze within **one hour**.
- **Do not** overstock the fridge or freezer, as air cannot circulate and keep the temperature in the unit uniform.
- Keep refrigerator/freezer doors closed as much as possible.

SOURCES

- https://www.cdc.gov/foodsafety/keep-food-safe.html
- https://www.fsis.usda.gov/shared/PDF/Danger_Zone.pdf
- https://www.cdc.gov/nceh/ehs/ehsnet/docs/jfp-food-cooling-practices.pdf
- https://extension.umn.edu/food-service-industry/what-risk-cooling-hot-food
- https://www.hengel.com/en/why-and-how-use-blast-chiller.html - blast chiller manufacturer
- https://www.clark.wa.gov/sites/default/files/dept/files/public-health/Food%20Safety/Cooling%20Method%20Time%20&%20Temp%20fact%20sheet.pdf