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Food Facts For You!

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Grilling Season: Barbeque and Food Safety; Caring For, and Recalibrating, a Food Thermometer; Does Eating Grilled Meat Cause Cancer?; Pet Food Chemical and Threat to Humans; What's On Your Mind? (fishing season).

Grilling Season: Barbeque and Food Safety

As the days lengthen and we approach summer, family and friends often gather for a cookout at home or a park. Just as when cooking inside, there are some important food safety guidelines for cooking out of doors. These food safety steps are summarized below and can also be found here: http://www.fsis.usda.gov/Fact_Sheets/Barbecue_Food_Safety/index.asp

From the Store: Home First. When shopping, buy cold food like meat and poultry last, right before checkout. Separate raw meat and poultry from other food in your shopping cart. To guard against cross-contamination — which can happen when raw meat or poultry juices drip on other food — put packages of raw meat and poultry into plastic bags. Plan to drive directly home from the grocery store. You may want to take a cooler with ice for perishables. Always refrigerate perishable food within 2 hours. Refrigerate within 1 hour when the temperature is above 90 °F. Once at home, place meat and poultry in the refrigerator immediately. Freeze poultry and ground meat that won't be used in 1 or 2 days; freeze other meat within 4 to 5 days.

Thaw Safely. As consumers, thawing meat safely can often be a challenge. Completely thaw meat and poultry before grilling so it cooks more evenly. Use the refrigerator for slow, safe thawing or thaw sealed packages in cold water. You can microwave defrost if the food will be placed immediately on the grill.

Marinating. A marinade is a savory, acidic sauce in which a food is soaked to enrich its flavor or to tenderize it. Marinate food in the refrigerator, not on the counter. Poultry and cubed meat or stew meat can be marinated up to 2 days. Beef, veal, pork, and lamb roasts, chops, and steaks may be marinated up to 5 days. Most recipes call for marinating meat for 2 to 24 hours. If some of the marinade is to be used as a sauce on the cooked food, reserve a portion of the marinade before putting raw meat and poultry in it. However, if the marinade used on raw meat or poultry is to be reused, make sure to let it come to a boil first to destroy any harmful bacteria.

Keep cold food cold. Keep meat and poultry refrigerated until ready to use. Only take out the meat and poultry that will immediately be placed on the grill. When using a cooler, keep it out of the direct sun by placing it in the shade or shelter. Avoid opening the lid too often, which lets cold air out and warm air in. Pack beverages in one cooler and perishables in a separate cooler.

Prevent cross contamination. To prevent foodborne illness, don't use the same platter and utensils for raw and cooked meat and poultry. Harmful bacteria present in raw meat and poultry and their juices can contaminate safely cooked food. If there isn't a ready source of clean water around, be sure to bring along moist towelettes for cleaning hands and surfaces which touch raw meat.

Cooking. Cook foods to the proper internal temperature. With grilled chicken a popular summertime treat, it's a good idea to remind consumers that the minimum safe internal temperatures for poultry are now lower; poultry is safe when cooked to an internal temperature of 165°F. The best way to check temperature is to use a **food thermometer**. Some thermometers measure temperature at the tip (digital), while others measure temperature along a stem (dial). Make sure you know how to properly use a food thermometer. For resources on choosing, and using, a food thermometer, see the **Thermy** web site: http://www.fsis.usda.gov/food_safety_education/thermy/index.asp

SAFE MINIMUM INTERNAL TEMPERATURES

- Whole poultry: 165 °F
- Poultry breasts: 165 °F
- Ground poultry: 165 °F
- Hamburgers: 160 °F
- Beef, veal, and lamb (steaks, roasts and chops):
 - Medium rare 145 °F
 - Medium 160 °F
- All cuts of pork: 160 °F

Keep hot foods hot. After cooking meat and poultry on the grill, keep it hot until served — at 140 °F or warmer. Keep cooked meats hot by setting them to the side of the grill rack, not directly over the coals where they could overcook. At home, the cooked meat can be kept hot in an oven set at approximately 200 °F, in a chafing dish or slow cooker, or on a warming tray.

Leftovers. Promptly refrigerate any leftovers in shallow containers. Remember to bring ice from home, if needed! Discard any food left out for more than 2 hours, or 1 hour if the temperatures are above 90°F.

Caring For and Recalibrating a Food Thermometer

- Did you know that placement of a food thermometer in a product impacts whether or not the temperature is recorded correctly?
- Did you know that thermometer-forks are now thought to be appropriate for checking food temperature while grilling?
- Did you know that pop-up timers popularly found in turkeys may not be accurate?

The United States Department of Agriculture has a wealth of information to help you answer questions such as these. Look in the **Food Facts subject index** under **Thermometers** for links to all sorts of helpful information...and read on for instructions on how to calibrate your dial-stem thermometer.



Using a dial stem thermometer. [These instructions are available as a hand out – check the Food Facts archives under *Thermometer* – and should be shared with any consumer who receives a dial stem thermometer as a teaching aid.]

- Remove the thermometer from the plastic sleeve.
- Place the metal stem 2 to 2 1/2" deep in thickest part of food with the pointed end first.
- Can be used in roasts, casseroles, and soups.
- Insert sideways into thin foods like burgers, steaks, or chops.
- Use to check the internal temperature of a food at, or near, the end of cooking time.
- Do not place the thermometer in food during cooking or grilling, the thermometer will melt.

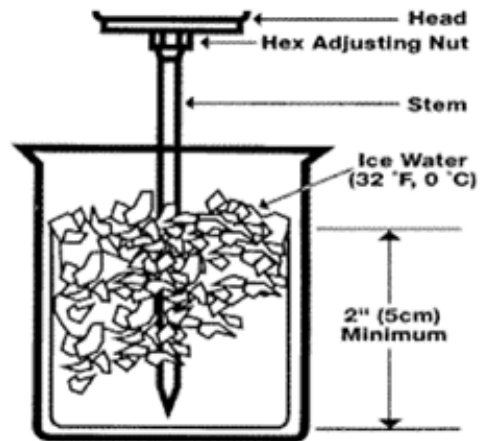
- After checking the temperature, clean the metal stem only with soap and water, do not put the entire thermometer in water, dry and store in the plastic sleeve.

Calibrating a dial stem thermometer (UWEX model). Sometimes a dial stem thermometer loses calibration (it no longer registers temperature correctly). You can recalibrate most dial stem thermometers using ice water and boiling water. To recalibrate the monogrammed UWEX thermometers, proceed as follows-

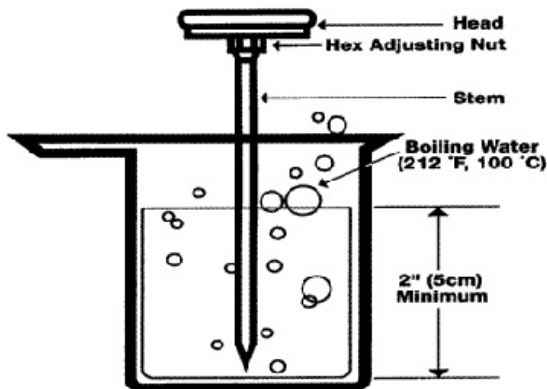
1. Hold the thermometer head in one hand.
2. Slide the white sheath up the thermometer stem until the pocket clip touches the rear of the thermometer case.
3. Turn the sheath so that the pocket clip catches and turns the adjusting lug, which will in turn move the pointer.
4. Immerse the stem at least 2 inches into either ice water or boiling water and allow the temperature to stabilize (at least 30 seconds). The pointer should read 32-33°F while the stem is immersed into a vessel filled with crushed ice and water. The pointer should read 210-212°F when the stem is immersed into a vessel filled with boiling water.
5. Adjust the pointer as necessary and recheck your readings to ensure calibration.

Calibrating a thermometer with a hex (6-sided) nut under the dial: The USDA offers these instructions for calibrating a dial stem thermometer with a hex nut under the dial.

Ice Water. To use the ice water method, fill a large glass with finely crushed ice. Add clean tap water to the top of the ice and stir well. Immerse the food thermometer stem a minimum of 2 inches into the mixture, touching neither the sides nor the bottom of the glass. Wait a minimum of 30 seconds before adjusting. (For ease in handling, the stem of the food thermometer can be placed through the clip section of the stem sheath and, holding the sheath horizontally, lowered into the water.) Without removing the stem from the ice, hold the adjusting nut under the head of the thermometer with a suitable tool and turn the head so the pointer reads 32 °F.



Boiling Water To use the boiling water method, bring a pot of clean tap water to a full rolling boil. Immerse the stem of a food thermometer in boiling water a minimum of 2 inches and wait at least 30 seconds. (For ease in handling, the stem of the food thermometer can be placed through the clip section of the stem sheath and,



holding the sheath horizontally, lowered into the boiling water.) Without removing the stem from the pan, hold the adjusting nut under the head of the food thermometer with a suitable tool and turn the head so the thermometer reads 212 °F.

Does Eating Grilled Meats Cause Cancer?

Summer in the United States means cookouts and family barbecues. Hamburgers, hotdogs, steaks and chicken are the epitome of the perfect weekend summer meal. For years, there has been controversy over whether meat grilled on a charcoal grill could cause cancer.

According to officials of the American Cancer Society, eating **excessive** amounts of grilled meat or chicken can increase your risk of developing cancer. This is also true for meats pan-fried at high temperatures. Current research tells us that **over cooked** or **burnt meats** pose the greatest risk. Whether you are using red meat, poultry or seafood, substances in the muscle proteins of these foods react under **very** high heat to form carcinogenic compounds called heterocyclic amines (HCAs). HCAs can damage DNA, beginning the process of cancer development. Consumption of HCAs is mostly clearly linked to cancers of the colon and stomach. One study found that people who eat the most barbecued red meat (beef, pork and lamb) almost doubled their risk of colon polyps, compared to those who did not eat these foods. Colon polyps can develop into colon cancer. Some evidence also suggests that these carcinogenic compounds can travel through the bloodstream to other tissues. This would explain why HCAs could be a factor in breast cancer and other cancers.

Keep in mind, that grilling is okay – firing up the barbeque every week in the summer would not be expected to increase risk. **Excessive consumption** of grilled foods is the risk factor; and **excessive consumption** of charred foods is the real culprit. Keep in mind that just like everything in life, moderation is key. There is only an increased **risk** of cancer when excessive amounts are consumed. This is by no means an alert or warning to toss out your grills! You still can enjoy grilled meats, but just do it in moderation.

And there are a few steps that you can take to further decrease your risk:

- **Cook at lower temperatures.** Charring is most often associated with grilling over high heat/flames. If you are using a charcoal grill, allow the time for the coals to burn white-hot; and then place them to one side. Use the other side of your grill for grilling. This indirect heat will cook food at a lower temperature and prevent burning. Or, try moving the heat of the grill surface away from the embers. If you have a gas grill, regulate the heat to low or medium-low to control charring.
- **Choose lean cuts of meat.** Flare-ups are most often associated with fat dripping onto hot goals or a grill surface. Before grilling, trim external fat from steaks, roasts or chicken, and choose lean ground meat for grilling.
- **Try marinating meat.** The color and flavor that develop when cooking meat over high heat can add taste-appeal. You can marinate meat in a salt/sugar brine before grilling and encourage color and flavor development without high heat.
- **Choose meat from younger animals.** The protein in older animals is more likely to have free fragments (amino acids) that will react to form heterocyclic amines. If you purchase meat in the grocery store, it will be difficult to tell the age of the animal; but if you raise animals yourself, reserve the meat from older animals for stewing, not grilling.
- **Avoid eating burned or charred areas.** Since heterocyclic amines are associated only with burned or charred areas, simply trim these areas off before cutting into a steak or chicken breast. If the burned area is on the skin of chicken, simply remove the skin and enjoy!

- **Use a meat thermometer to tell when food is done.** Once meat has reached the proper internal temperature to ensure safety, remove it from the grill. Over-cooking meat is also a way to produce harmful compounds.
- **Try vegetables or fruits on the grill.** Vegetables and fruits don't form heterocyclic amines on grilling. They also supply a whole range of cancer-fighting nutrients and phytochemicals. In fact, the natural phytochemicals in vegetables stimulate enzymes that can convert HCAs to an inactive, stable form that is easily eliminated from the body.

Pet Food Chemical and Threat to Humans

Pet food chemical unlikely to pose threat to humans, experts say

By Donald G. Mcneil Jr.. International Herald Tribune Wednesday, May 2, 2007

Toxicologists monitoring the American food supply for traces of melamine after it was found in imported ingredients in the contaminated pet food that has killed at least 16 dogs and cats and sickened thousands of others said Tuesday [May 1, 2007] that even if there were small amounts of it in the American food supply, it would be unlikely to pose much of a threat to humans.

Sampling thus far by the Food and Drug Administration for melamine, which has also been detected in chicken feed on some farms in Indiana, has not turned up the chemical in food meant for humans, and the trace amounts found in some poultry feed — and hog feed — would presumably be excreted or broken down by the animals before they were slaughtered, scientists and U.S. officials said. Also, a survey of poison control centers, veterans' hospitals and a sample of private hospitals across the country by the U.S. Centers for Disease Control and Prevention has found no increase in reports of kidney diseases, the most likely indicator of melamine poisoning, said Bernadette Burden, a CDC spokeswoman.

How the chemical — found in wheat gluten imported from China — could have poisoned cats and dogs remains something of a mystery, scientists said, because tests done decades ago on rats concluded that it was not very toxic. "Even when rats were loaded up with quite a lot, it caused stones or tumors over time, not acute kidney failure," said John Groves, a Princeton University chemistry professor. Other chemists speculated that the melamine could have been changed by the cooking of the pet food, by metabolism by bacteria or through combination with other, still unknown chemicals.

"I'm convinced that melamine can't do it by itself," said Richard Goldstein of Cornell University's veterinary college. Toxicity trials, he said, were done with pure melamine, not manufacturing scrap, which could also contain cyanuric acid or other compounds. Also, said Jack Henion, a retired professor of toxicology and veterinary medicine at Cornell, cats — the first animals whose deaths from pet food were noticed — are unusually sensitive to kidney and urinary problems.

Melamine is a simple organic molecule that can be extracted from oil or coal, and is used as a resin in making plastics. It is found in plates, countertops, cabinet facings, even children's erasers. It contains large amounts of nitrogen. For that reason, it has apparently been used as a fertilizer, though it would presumably be harmless because plants would take up only the free nitrogen.

But in China, ground-up scraps from plastic-making have been added to grain and byproducts, like the sticky glutes used to thicken soups or help bread rise. It is presumably done to fool buyers into thinking they are getting a more nutritious product, because crude tests for protein in grain do not test for protein molecules, but for nitrogen, which proteins also have in abundance.

"It's blatant fraud in my view," Henion said. "There's no other good reason we know of to put melamine in." Some of those grain products have been sold to the United States for pet food. Last week, the drug agency said it would start requiring importers to provide proof of the safety of many more ingredients, including glutes and proteins of wheat, rice, corn, soy and mung bean.

Officials from the drug agency and the Agriculture Department estimated Tuesday that up to three million young broiler chickens on farms in Indiana ate feed contaminated with pet food containing melamine or related compounds in February. Most were slaughtered, sold and, presumably, eaten, said Kenneth Peterson, assistant administrator for field operations with the Food Safety and Inspection Service.

Even in those chickens, or in hogs on other farms, independent toxicologists and drug agency and agriculture department officials said, it was highly unlikely that the melamine could concentrate in amounts that could be harmful to humans. It would be mixed with other feeds, and much of it would be metabolized by animals and excreted. And it is not stored in fat as, for example, pesticides are. Also, most humans are not strictly carnivores, as cats are, so they would get lower doses.

"The dilution levels are enormous," David Acheson, the drug agency's assistant commissioner for food protection said Tuesday [May 1, 2007]. "When you multiply it all together, we think the likelihood of human illness is very low."

What's On Your Mind?

Fishing season is here. With spring and the opening of the fishing season, it's a good time to update consumers on fish consumption advisories for state waters. Some resources that you might find helpful are:

- Wisconsin Fish Consumption Guidelines <http://dnr.wi.gov/fish/pages/consumption/index.html>
- Canning Meat, Wild Game, Poultry and Fish (B3345 Wisconsin Safe Food Preservation Series)
- Smoke Your Catch, Do It Safely!
http://www.wisc.edu/foodsafety/assets/pdf_Files/smokingyourcatch.pdf
- Home Pickling of Fish! <http://extension.oregonstate.edu/catalog/pdf/pnw/pnw183.pdf>

Teaching with Emphasis. According to a news report, a certain school in Garden City, MI was recently faced with a unique problem. A number of 12-year-old girls were beginning to use lipstick and would put it on in the washroom. That was fine, but after they put on their lipstick they would press their lips to the mirror leaving dozens of little lip prints. Every night, the maintenance man would remove them and the next day, the girls would put them back.

Finally the principal decided that something had to be done. He called all the girls to the washroom and met them there with the maintenance man. He explained that all these lip prints were causing a major problem for the custodian who had to clean the mirrors every night.

To demonstrate how difficult it had been to clean the mirrors, he asked the maintenance man to show the girls how much effort was required. He took out a long-handled squeegee, dipped it in the toilet, and cleaned the mirror with it. Since then, there have been no lip prints on the mirror.

THE MORAL OF THIS STORY... There are teachers, and then there are Educators.

HAPPY MEMORIAL DAY!