

(NOT-SO) HOT TIPS FOR GRILLING HEALTHIER MEAT

As the weather heats up, Americans spend more time doing everything outdoors, especially eating outside. Although grilling seems like a healthier cooking option, you may need to think twice before reaching for your next grilled steak or charred hot dog. There is newer evidence to suggest that something produced in overcooked meat may be related to cancer in people.

DOES OVERCOOKED MEAT CAUSE CANCER?

Researchers discovered that compounds called heterocyclic amines (HCAs) form when components in meat are heated together at high temperatures. Over the last two decades, 20 HCAs have been found in cooked meat. One HCA that is common in the American diet has been shown to cause colon, breast and prostate tumors in animals. Although there isn't clear proof yet that HCAs cause cancer in humans, they are still thought to be reasonably carcinogenic to humans.

Evidence is building that well-done meat may increase the risk of several cancers:

- In a 2008 study of 23,000 U.S. agricultural workers, the National Cancer Institute researchers found that men who ate the most well-done or very-well-done meat and poultry (about 20 ounces a week) were twice as likely to be diagnosed with advanced prostate cancer as men who ate the least (about 4 ounces a week)¹.
- In the mid-90's, the members of the AARP (Association for the Advancement of Retired Persons) completed 32,000 questionnaires for the National Cancer Institute that asked several things, including how they cooked their meat and poultry. Over the next 5 years, men who reported eating the most grilled or barbecued meat were about 50 percent more likely to be diagnosed with pancreatic cancer than men who reported eating the least².

Cancer-causing chemicals are found in meat and poultry, but it is still unclear whether they actually cause cancer. Until more evidence is available, experts agree that it is important to cut your risk of exposure to HCAs. Check out the tips on reducing your risk. Enjoy the hot weather but remember to stay healthy by NOT overcooking your grilled meats.

References:

1. Koutros S, et al. Meat and meat mutagens and risk of prostate cancer in the Agricultural Health Study. *Cancer Epidemiol. Biomarkers Prev.* 2008;17:80.
2. Stolzenberg-Solomon RZ, et al. Meat and meat-mutagen intake and pancreatic cancer risk in the NIH-AARP cohort. *Cancer Epidemiol. Biomarkers Prev.* 2007;16(12):2664-75.
3. Schardt D. Feeling the Heat, Are overcooked meat and poultry dangerous? *CSPI Nutrition Action Healthletter.* 2008;35(7):9-11.
4. Walters DG, et al. Cruciferous vegetable consumption alters the metabolism of the dietary carcinogen 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP) in humans. *Carcinogenesis.* 2004;25(9):1659-69.



GRILLING TIPS TO REDUCE RISK³

Researchers at the National Cancer Institute recommend avoiding eating burned or highly browned meat cooked at high temperatures since they form unhealthy HCAs. Here are some other tips from the Lawrence Livermore National Laboratory:

- **Marinate.** It protects meat from high cooking temperatures.
- **Microwave first.** After 1-2 minutes of microwaving, throw out the juices that are released. This cuts exposure to HCAs by 90%.
- **Try seafood.** It has fewer HCAs than red meat or poultry ("blackened" fish is from the sauce and not charring).
- **Keep it moist.** Do not overcook; prevent meat from drying out.
- **Flip frequently.** If you flip every minute, HCAs never form on meat.
- **Bake, roast or stir-fry.** Grilling and barbecuing generate the most heat and produce the most HCAs.
- **Eat your veggies.** Veggie burgers and cooked vegetables generate little or no HCAs. Eating 3 cups of cruciferous vegetables daily such as broccoli or cauliflower may help detoxify HCAs⁴.



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