

# Healthy & Safe Grilling

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It's summer and time to cook outside. Before you fire up the grill did you realize that grilling food can pose a cancer risk? Grilling can be a fun retreat from the kitchen and by following a few simple steps you can minimize these risks.

**What happens when meat is grilled?** High-heat grilling changes proteins in beef, pork, poultry and fish into heterocyclic amines (HCAs). These are chemicals that have been linked to a number of cancers including breast, colon, stomach and prostate.

We all have seen the smoke produced when the fat and juices from grilling meat drip down onto the heating surface. This smoke contains potential cancer-causing chemicals called polycyclic aromatic (PAHs). As the smoke rises up past the food, the carcinogens then land on the surface of the grilling meat.

**What can be done to make grilling safer?** Reducing the amounts of the harmful chemicals HCAs and PAHs when grilling will help to reduce the risk. Take our quiz:

1. T or F: *It doesn't matter what cut of meat I choose to grill.*

FALSE. Choosing leaner cuts such as beef or pork tenderloin or sirloin and skinless chicken, will cut down on both drippings and smoke compared to ribeye or 85% lean hamburger.

2. T or F: *Pre-cooking meat and chicken in the microwave or parboiling is a good idea before placing on the grill.*

TRUE. Pre-cooking will mean less smoke flare-ups and limited exposure to cancer-causing agents.

3. T or F: *Choosing smaller cuts of meat or chicken such as kebabs can also be healthful.*

TRUE. Smaller cuts of meat take less time to cook, reducing time on the grill.

4. T or F: *Marinating is a great way to add flavor and tenderize meat, and offers a protective effect against the carcinogens that can be formed when grilling.*

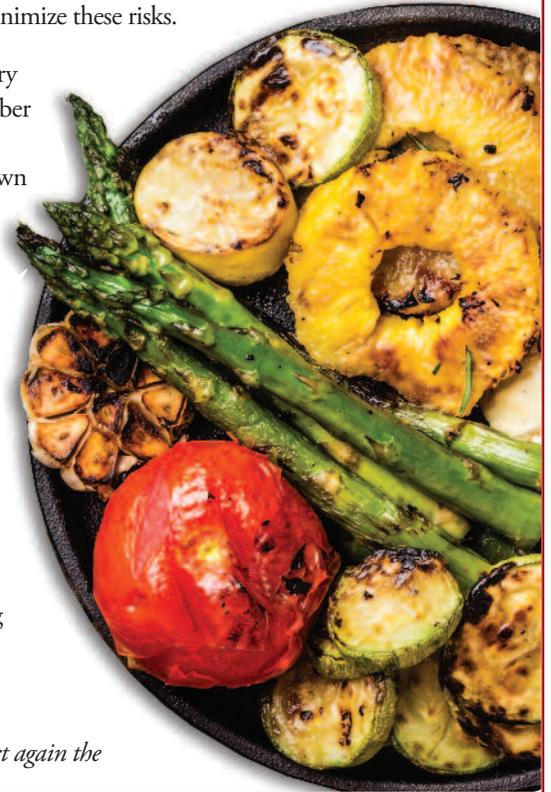
MAYBE. When using marinade, thinner marinade is better and should contain lemon or vinegar. A thick and sweetened marinade containing honey and sugar is likely to "char" and possibly increase the carcinogens and be more harmful.

Remember do not use the liquid meat is marinating in to baste during grilling. This transfers raw meat juices to cooked meat, possibly contaminating it.

**Skip Meat Altogether!** Try grilling marinated tofu or veggie burgers. Or grill vegetables and fruit. Grilling these foods is a delicious and simple way to add healthier choices to a barbecue, as well as increasing daily fruit and vegetable servings. Some suggestions are sliced: onion, bell pepper, zucchini, eggplant, mushrooms, pineapple, and chopped mango, watermelon and peaches.

**Put risk in perspective.** Grilling foods, especially if you follow recommended tips, can be safe in done in moderation. I also recommend that a diet in rich plant-based foods has a protective effect. Aim for at least 50% of your plate to be veggies and fruit and enjoy grilled foods 3 times weekly.

Resources: Dana-Farber Cancer Institute; Recipes adapted from Martha Stewart; National Livestock and Meat Board



## Marinades to Grill By:

In a liquid measuring cup, combine marinade ingredients. Reserve  $\frac{1}{4}$  cup and pour remaining marinade into a zip-top bag. Add  $1\frac{1}{2}$  pounds meat (for 4 people) and toss to coat. Refrigerate. For flavor, marinate for 15 minutes to 2 hours; for tenderizing, 3 to 6 hours. Use reserved marinade to brush over meat and vegetables while grilling.

**Balsamic-Rosemary Marinade** 10 mins prep – great for beef, lamb or chicken, makes  $\frac{3}{4}$  cup. Combine  $\frac{1}{2}$  cup balsamic vinegar;  $\frac{1}{4}$  cup olive oil; 1 Tbsp chopped fresh rosemary;  $\frac{1}{4}$  tsp sea salt; and 2 tsp pepper.

**Lemon-Oregano Marinade** 5 mins prep – great for chicken or fish, makes  $\frac{3}{4}$  cup. Combine  $\frac{1}{2}$  cup olive oil;  $\frac{1}{4}$  cup lemon juice; 3 Tbsp chopped fresh oregano; 1 tsp salt and  $\frac{1}{2}$  tsp pepper.

**Red Wine Marinade** 5 mins prep – makes  $\frac{1}{2}$  cup. Combine  $\frac{1}{3}$  cup red wine vinegar; 2 Tbsp olive or avocado oil; 1 Tbsp Dijon mustard; 2 cloves garlic, minced or  $\frac{1}{2}$  tsp dried garlic powder;  $\frac{3}{4}$  tsp salt-free Italian seasoning;  $\frac{1}{4}$  tsp coarse ground black pepper. Stir until blended.

**Southwestern Marinade** 5 mins prep – makes  $\frac{1}{2}$  cup. Combine  $\frac{1}{4}$  cup prepared salsa (mild-hot); 2 Tbsp chopped cilantro; 2 Tbsp fresh lime juice;  $\frac{1}{4}$  tsp garlic powder;  $\frac{1}{4}$  tsp ground cumin. Stir until blended.

**Sriracha-Pineapple Marinade** Great for pork or chicken. Boil 2 cups pineapple juice in pot and reduce down to  $\frac{1}{2}$  cup. Let cool and combine with  $\frac{1}{4}$  cup vegetable oil and 2 to 4 Tbsp Sriracha sauce.