

## Frequently Asked Questions about barbecues

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Besides fine weather a barbecue is all about a delicious range of meat, fish, salads, sauces, dips and desserts. However, consumers frequently ignore the health risks linked to barbecues. It is common knowledge that harmful substances can form during grilling which consumers ingest from meat and fish. The speed at which sensitive foods like barbecue sauces or egg-based desserts go off at summer temperatures is also underestimated. Last but not least liquid grill lighters and lamp oils in garden torches are a hazard, too. There have been repeated incidences of poisoning because children have sipped the dangerous liquids. To ensure that nothing puts a damper on barbecuing fun, BfR has put together Frequently Asked Questions about how to handle foods, liquid grill lighters and lamp oils correctly.

### How can harmful substances form during grilling?

When fat from meat or fish or oil from the marinade drip onto the glowing charcoals or onto the heating coil of an electric grill, polycyclic aromatic hydrocarbons (PAHs) may form. They are known to be carcinogenic.

When meat and sausage products are grilled for too long at high temperatures, other harmful substances are formed like heterocyclic aromatic amines (HAAs).

### How can harmful substances be avoided when grilling?

To prevent the formation of polycyclic aromatic hydrocarbons (PAHs), as little fat and oil as possible should be allowed to drip onto the glowing charcoals. A simple and cheap solution is to use aluminium trays which collect the liquids from the grilled food. Anyone who is thinking of buying a new barbecue could opt for a (somewhat rare) model in which the charcoal and grilled food are positioned vertically. Other options are gas or electric grills as long as these are models where fat and oil are unable to drip onto the heating coil.

Generally speaking, meat and sausage products should not be exposed to heat for too long (charring) to ensure that contaminants like heterocyclic aromatic amines (HAAs) have no chance of forming.

### Should salted meat be barbecued?

Nitrite curing salt is used to preserve salted meat and sausage products. In the case of packaged goods it must be stated in the list of ingredients. Nitrosamines may form during the grilling of salted meat and sausage products. As they are carcinogenic substances, it is better not to grill salted meat and sausage products at all.

### For which foods are germs like *Salmonella* a problem?

Pathogenic germs in foods can cause nausea, diarrhoea or vomiting. Particularly during the summer season there is a higher risk of foodborne infections because germs can multiply quickly in foods which have not been refrigerated for a longer period.

When barbecuing, special attention should be paid to handling raw foods of animal origin especially meat, fish and eggs. Pathogens can spread via the raw meat, raw fish or the marinades. During cooking germs like *Salmonella* are destroyed if the relevant temperatures are reached. However, migration of the germs to hands, household appliances and kitchen surfaces can then contaminate other food with these germs. If these contaminated foods are not heated up again prior to consumption, they may damage health. As *Salmonella* can multiply at temperatures above 7°C in foods, there is an elevated risk when eating foods which have

been stored for longer periods without being refrigerated like for instance salads and desserts. Furthermore, grill sauces and other foods which are eaten raw may also carry a risk.

### **How can microbial risks be avoided?**

Foodborne infections can be avoided by complying with hygiene rules when handling the foods:

- Raw foods of animal origin and other foods (e.g. salads or desserts) should be stored and prepared separately particularly when the latter are not going to be reheated.
- Frozen meat should be removed from its packaging before thawing in the fridge.
- Packaging materials, thaw water and any marinade left over should be carefully disposed of.
- Clean any devices and surfaces that have come into contact with raw foods of animal origin, thaw water or marinades thoroughly with warm water and washing-up liquid before using them again.
- Wash hands thoroughly with warm water and soap between the individual preparation stages.
- Meat should always be cooked through. In the case of poultry ensure that the colour of the meat on the bone, too, is somewhere between white and grey.
- To prevent germs migrating from the raw meat or marinade to the cooked food, different barbecue tongs or forks should be used.
- During warm weather it is better not to use raw eggs for “real” fresh mayonnaise and desserts (for instance wine froth or tiramisu).
- For other sauces, mayonnaise and otherwise sensitive foods (like desserts) which do not contain raw eggs, the following applies: Always refrigerate properly and only remove for serving just before consumption!

### **What risks are associated with liquid grill lighters and lamp oils?**

BfR receives repeated reports of poisoning incidents involving small children who, when left unattended for a few minutes, have sipped paraffin-containing lamp oils or grill lighters. These lamp oils can easily reach the lungs. Even the smallest amounts can cause “chemical inflammation of the lungs” and in the worst case may even prove fatal.

### **How can children be protected from poisoning by liquid grill lighters and lamp oils?**

Once the charcoal starts to glow, the liquid grill lighters should immediately be stored away in a safe place. Furthermore, BfR advises labelling liquid grill lighters even more clearly as dangerous chemicals by placing special warnings on their labels to avoid them being mistaken for foods or beverages. To be really safe liquid grill lighters can be replaced by solid grill lighters. In these cubes or bars the liquid components are bound to sawdust or cork powder. There is almost no risk of the harmful oils reaching the lungs through swallowing.

To avoid lamp oil poisoning, it is not enough to store the containers safely. Poisoning incidents have also happened because small children sucked the wick of a garden torch or oil lamp. No garden torches or oil lamps should be used at all when there are children at the barbecue.

### **What action should be taken in the event of a poisoning incident involving liquid grill lighters or lamp oils?**

If children have managed to get hold of liquid grill lighters or lamp oil despite all the precautionary measures and child-resistant closures, the following rules apply:

- Do not induce vomiting!  
The vomit containing oil could penetrate the lungs.

- Consult a doctor immediately!  
Even in the case of the mildest symptoms like direct, persistent coughing, the child must see a doctor or be taken to hospital. If possible, take the product involved in its original packaging which will enable the attending doctor to give concrete information to the poison information and treatment centre. The more information available, the more targeted the help that can be given.
- Doctor's duty to report poisoning incidents!  
In order to identify any dangers early on and to take precautionary measures in conjunction with chemical products, doctors must notify all poisoning incidents to BfR. Draw the attending doctor's attention to his statutory notification obligation!