



Beef Burgers

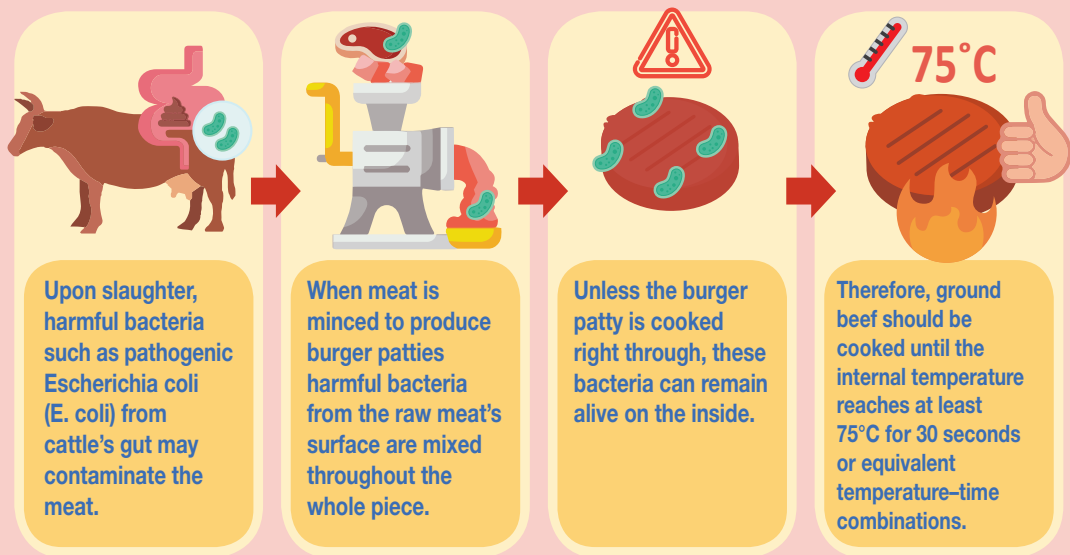
Food Safety Guidelines for Food Businesses

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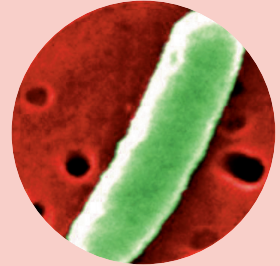
This set of guidelines is intended for food businesses that prepare and sell beef burgers, including those take-away shops or restaurants receiving orders through mobile apps. It aims to help food premises implement appropriate food safety measures in the course of food preparation to produce and sell safe beef burgers.



Over the past few years, there has been a trend for gourmet-style burger restaurants in Hong Kong. Some of them sell rare or medium burger patties that give a taste and mouthfeel considered to be distinct from their well-done counterparts. However, they may not be aware that undercooked burger patties can impose risks of food poisoning.



Burger patties should always be cooked well-done regardless of the quality, source and price of the meat.



One of the serotypes
E. coli O157:H7

Pathogenic E. coli Can be Fatal

The intestinal tracts of cattle is the main reservoir of disease-causing E. coli bacteria. One of the serotypes, E. coli O157:H7, may cause acute renal failure, particular in young children and the elderly. In the 90s, there was an outbreak linked to E. coli O157:H7 contaminated burgers from a fast food chain restaurant, infecting hundreds of people in the United States. The majority of the victims were under 10 years old, with some dead or left with permanent kidney damage. Until now, food poisoning incidents caused by eating undercooked burger patties or ground beef have still occurred in Europe and the United States from time to time. In Hong Kong, there were also sporadic cases of E. coli O157:H7 infection linked to undercooked minced beef reported in the past.

Furthermore, undercooked burger patties may contain some bacteria that even carry antimicrobial resistance (AMR). AMR results in reduced efficacy of antibiotics, resulting in more complicated infections that are difficult to treat.

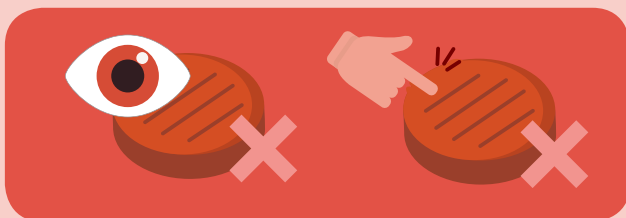


Common Myths

Myth 1: Browning means thorough cooking



In a study by the Centre for Food Safety, food handlers were often found to check if a burger patty is ready in ways other than using a food thermometer, including its visual colour, overall appearance and texture. However, **they are all not a reliable indicator of doneness.**



Colour, overall appearance and texture of beef patties are not reliable indicators for determining doneness.

Premature browning is a condition in which the interior of cooked patties appear to have a dull brown or well-done appearance before the recommended temperature of 75°C to kill pathogenic E. coli and Salmonella. Food handlers use the brown visual colour as an indicator of doneness based on their experience. However, this is not reliable because many factors such as the chemical state of myoglobin, a pigment protein of muscle tissues, and pH affect the occurrence of premature browning that may contribute to undercooking of ground beef. The harmful bacteria can cause food poisoning. To ensure thorough cooking of ground meat, **always use a food thermometer.**



Even if the surface of the patty has turned brown, the inside may still be undercooked.

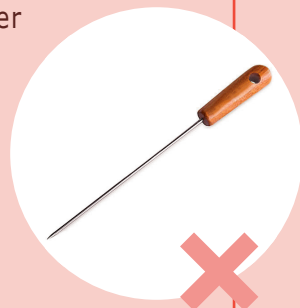


Don't use a cake tester to determine the doneness of meat!



Some food handlers might use a cake tester to determine the doneness of a burger patty by inserting it into the piece of meat. After removal, they put the cake tester on the back of the hand or below the chin to feel the heat. This practice is highly NOT recommended, because:

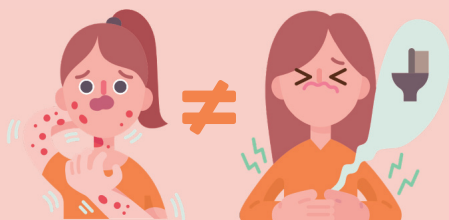
- A cake tester is not a reliable tool for indicating the doneness of meat.
- A hot cake tester can cause scald injuries to your skin.
- Reusing a used cake tester without proper cleaning can cause cross-contamination of food.



Myth 2: Some feel unwell after eating undercooked beef burgers just because they are allergic to raw meat



Food allergies are different from food poisoning (foodborne diseases). It can occur in consumers with certain body conditions that the consumer's immune system produces unnecessary immunological response to specific types of food.

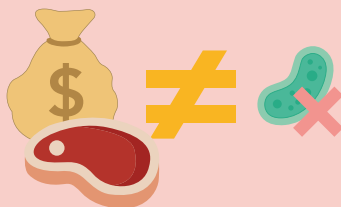


On the contrary, everyone, especially the elderly, infants and young children, pregnant women and people with weakened immunity, is at risk of food poisoning after eating contaminated food. Common symptoms are abdominal pain, diarrhoea, nausea, and vomiting. Undercooked beef burgers do not undergo sufficient heat treatment to kill germs, and are prone to cause food poisoning.

Myth 3: Burger patties made from good quality or expensive meat can be undercooked



Harmful bacteria can be carried on the surface of whole cuts of meat. When a rare intact steak is seared these bacteria are killed, making the steak safe to eat. However, when meat is minced to produce burger patties, any harmful bacteria from the surface of the raw meat spread throughout the patty. Unless the burger patty is cooked right through, these bacteria can remain alive on the inside. This happens to all burger patties, including those made from good quality or expensive meat.



Myth 4: Cooking a burger patty to well-done will compromise its quality



The perception that a well-done burger patty is less juicy and tender is probably due to not knowing the right temperature and resulting in overcooking. Without the aid of a food thermometer, it is likely to cook the burger patty to a temperature much higher than necessary for safety.



Safer Burgers Start Here

To produce safe burgers fit for human consumption, food handlers should adhere to the '**Five Keys to Food Safety**' at all times when preparing food items involving ground meat.

Choose and Clean

- Always source meat from a reliable and hygienic supplier.
- Wash hands with liquid soap before and after handling raw meat and other fresh foods to prevent germs from transferring from hands to food.
- Other ingredients of the burger such as lettuce, tomato, onion, etc. should be washed thoroughly under clean running water.
- Wash all utensils, cutting surfaces and countertops with detergents and hot water after contact with raw meat.



Separate

- Cover raw meat and keep it separate from ready-to-eat food such as vegetable ingredients of the burger both in the refrigerator and during preparation.
- Store raw meat in a container on the bottom shelf of your refrigerator to prevent juices from dripping onto ready-to-eat food or cooked food.
- Use different utensils, plates and chopping boards for raw and cooked foods.

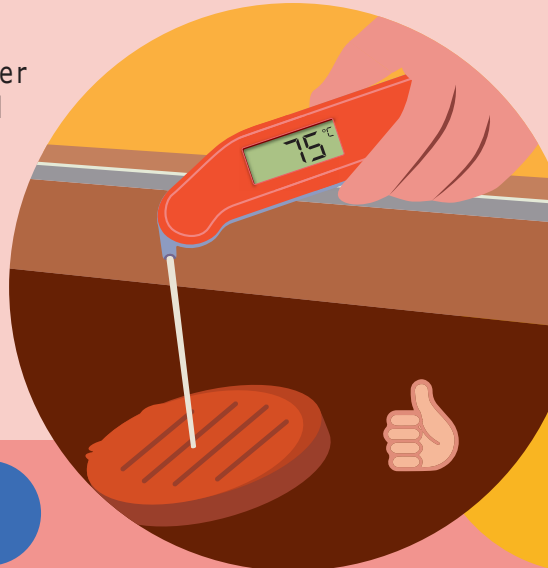


Defrost

- **Never defrost frozen ground meat at room temperature** that allows harmful bacteria to grow rapidly.
- Plan ahead and defrost frozen beef or burger patties in the refrigerator at 0°C to 4°C.
- Otherwise, you could put the meat in a sealed plastic bag and then place it under cold running water. Make sure the sink is clean and empty. The sink should be cleaned and disinfected after being used for defrosting.
(Note: This method may not be applicable to frozen burger patties as running water may break the patties.)
- You could also defrost frozen beef or burger patties in the microwave on the 'defrost' setting.
- If defrosting by running water or microwave, cook the beef or burger patty immediately because some areas may become warm enough for bacterial growth during the defrosting process.

Cook thoroughly

- Burger patties and other ground meat products should be thoroughly cooked to reach an internal temperature of at least 75°C for 30 seconds before being served.
- Always use a food thermometer.







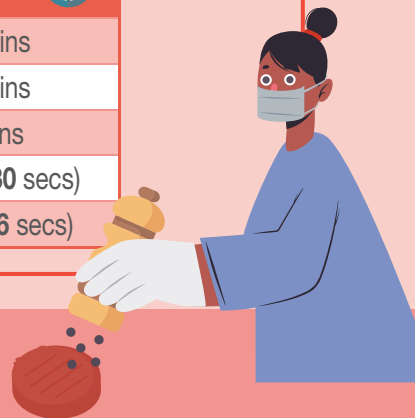
Thorough cooking does not mean sacrificing the flavour and juiciness of the patty. Here are some practical tips that you could follow:

- **Adding water into the meat** before shaping burger patties helps maintain moisture of the patty during cooking.
- **Avoid seasoning a burger patty too far in advance**, which pulls liquid from the meat.
- **Avoid pressing down a cooking burger patty**, which drains out its juice.
- **Avoid extremely high heat** that can overcook the outside of the burger patty while the interior remains underdone.



In addition, you may try to make burgers with the one of the following recommended safe internal temperature–time combinations:

Internal temperature of the burger patty 	Time 
60°C	45 mins
65°C	10 mins
70°C	2 mins
75°C	0.5 min (30 secs)
80°C	0.1 min (6 secs)



Hot holding at safe temperatures

- For cooked burgers or burger patties not immediately served, they should be kept at **above 60°C**.



>60°C





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SAFE KITCHEN

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