

FOOD SAFETY



BE FOOD SAFE!
A publication for retail food establishment licensees and food handlers

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REDUCING THE RISK
OF *E. COLI*

HANDLING FRUITS
AND FRESH VEGETABLES
WITH CARE

HOW TO PREPARE AND COOK
GROUND MEAT PROPERLY

FOOD POISONING
CASE STUDY





OPENING MESSAGE

We are happy to bring you the third issue of the Food Safety Bulletin.

In this issue, we will feature *Escherichia coli* (*E.coli*), a foodborne bacteria which can cause foodborne illness. As fruits, vegetables and undercooked ground meat may be contaminated with *E.coli*, we will be sharing tips on handling of fruits and vegetables as well as how to prepare and cook ground meat.

Practising good personal hygiene is also important to minimise the spread of diseases and infections, and this will be highlighted through sharing of good hygiene practices and lessons learnt from a food poisoning case study, where seven students at a local primary school came down with foodborne outbreak after consuming food sold at the school canteen.

Lastly, we would also like to announce revisions to the Code of Practice on Environmental Health (COPEH) and the relocation of licensing units at NEA Regional Offices.

Happy reading!

**Food and Environmental Hygiene Department
National Environment Agency**

REDUCING THE RISK OF *E. COLI*



SIGNS AND SYMPTOMS

Escherichia coli (*E. coli*) is a bacteria that live in the intestines of humans and animals and can also be found in the environment. While most *E. coli* are harmless, some strains can cause illnesses such as diarrhoea and abdominal pain. Recovery for healthy adults are usually self-limiting, but infections may have prolonged and severe effect on young children, the elderly and those with weak immune systems. Of the pathogenic strains, one common strain known as *E.coli* O157:H7 is particularly dangerous, and people infected with it may suffer from severe diarrhoea. Complications associated with this infection could also result in kidney failure and even death.

CAUSES

E. coli is most commonly found in undercooked ground beef, fruits and raw vegetables, unpasteurised milk and soft cheeses made from unpasteurised milk. People can also be infected by *E. coli* by drinking untreated water, through ingesting the bacteria during swimming, or if they do not wash their hands properly after touching animals or visiting the toilet.

PREVENTION

- Avoid consuming high-risk food (e.g. raw or undercooked food), especially for people in high-risk groups (e.g. pregnant women and newborns, children, elderly, and those with weak immune systems.)
- Practise good food and personal hygiene

A few simple steps can go a long way. Read on to find out more about good food handling and hygiene practices to protect yourself and your consumers against *E. coli* infections!



HANDLING FRUITS AND VEGETABLES WITH CARE

With contributions from the Agri-Food & Veterinary Authority of Singapore

Here are some tips on buying, storing, handling and preparing fresh fruits and vegetables to prevent contamination and help ensure that they are safe to eat.

BUY RIGHT

- Purchase fresh produce from licensed sources.
- Select fruits and vegetables that are not bruised, mouldy or show signs of spoilage.
- When purchasing pre-cut produce (e.g. half a watermelon or ready-to-eat salad mix), ensure that such items are kept refrigerated and are closely wrapped to prevent contamination.
- Ensure fresh fruits and vegetables are separately packed from raw meat, poultry and seafood products.



STORAGE BASICS

- Store fresh fruits (except bananas) and vegetables in the refrigerator.
- Do not keep fruits and vegetables in the same storage compartment as fruits can cause green vegetables to turn yellow during their ripening process.
- Keep fresh produce separate from raw meat, poultry and seafood products.
- Store cut fruits and vegetables in sealed plastic bags or clean containers in the refrigerator.
- Store hardy root vegetables and fresh fruits that need ripening at room temperature.



WASHING FRUITS AND VEGETABLES?

HOW TO WASH DIFFERENT TYPES OF FRUITS AND VEGETABLES

- Firm (e.g. potatoes and melons): Scrub the skin gently with a clean brush.
- Soft (e.g. tomatoes): Rub the surface gently with your hands to loosen the dirt.
- Leafy (e.g. lettuce and cabbage): Remove the outer leaves before washing.
- Berries and grapes: Soak them in a basin of fresh tap water. After which, place them in a clean colander and rinse it under a tap. Shake the colander as you rinse.

After washing, dry all fruits and vegetables with a clean cloth or paper towel.



PREPARATION BEFORE USE

- Cut away any bruised or damaged parts of the fruit and vegetable. Discard the fruit or vegetable if it is rotten.
- Remove soiled portions of the vegetables, cut off the base and wash away any residual soil in a basin of tap water.
- Soak vegetables in fresh tap water for 15 minutes. Special detergents or washing liquid are not required.
- Before cutting and cooking, rinse the vegetables again under a tap or in a basin of fresh tap water.
- For hardy root vegetables like potatoes, scrub the skin gently with a clean brush.

WHEN SERVING

- When handling fruits or vegetables to be consumed raw (e.g. for salads or garnishes), wear clean gloves and use a separate chopping board and utensils from those used to prepare other raw food.
- Where possible, cut fruits only when requested by the customer as the skin of the fruit protects it from contamination and spoilage.

GOOD PERSONAL HYGIENE, SAFER FOOD

All persons working in a retail food establishment should practise good food and personal hygiene to ensure that food served to customers is safe.

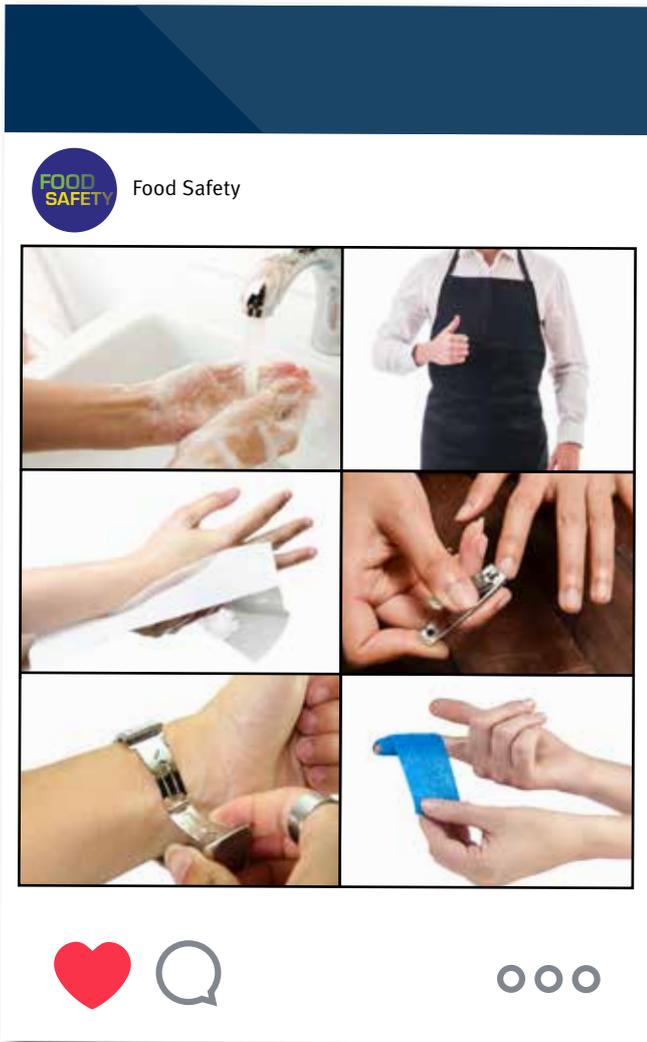
Here are some dos and don'ts to take note of when preparing and serving food to customers.

DOs

- Wash your hands regularly with soap and water
- Dry your hands with a hand dryer or clean towels
- Wear clean, proper and tidy attire
- Use gloves, tongs or ladles to handle cooked and ready-to-eat food
- Keep your fingernails short and clean
- Keep your hair neat and tidy
- Cover cuts and sores completely with brightly-coloured waterproof dressing

DON'Ts

- Do not work if you are unwell
- Do not wipe your hand on dirty cloth
- Do not wear accessories or jewellery when preparing food
- Do not handle cooked food or ready-to-eat food with bare hands
- Do not put on any nail polish or fake fingernails
- Do not touch your hair/face when preparing food
- Do not cough or sneeze into food



WHEN TO WASH YOUR HANDS?



WHEN SHOULD YOU WASH YOUR HANDS?

- After visiting the toilet
- After having a break
- After handling money and in between tasks
- After handling waste
- Before and after handling raw food
- Before and after serving food
- After coughing, sneezing, eating or drinking
- After cleaning duties (e.g. clearing plates and wiping tables etc.)

HOW TO PREPARE AND COOK GROUND MEAT PROPERLY

Meat, in its ground form, carries a higher risk of foodborne illnesses as compared to whole cuts. Bacteria can contaminate the meat during slaughter or processing. In whole cuts such as steak or roasts, the bacteria tend to stay on the surface, so cooking them at high temperatures will destroy pathogens or bacteria on the surface. However, when meat is ground up, the bacteria on the surface gets mixed throughout the product, contaminating all or a large portion of the meat.

PURCHASE AND STORAGE

- Refrigerate or freeze the raw meat as soon as possible upon receipt.
- Follow the recommended safe handling and storage information as indicated on the packaging.
- Do not overstock your meat supply.



THAWING

- Place chilled and thawed meat in the refrigerator if not cooked immediately.
- Thaw the meat thoroughly before cooking. Frozen or partially frozen food will require longer cooking time. For ground meat in the form of patties, meatloaf or meatballs, the surfaces could be cooked, but remain uncooked internally. Harmful bacteria within the food may not be completely destroyed as a result.
- Thaw only the amount you require for cooking.
- Do not refreeze thawed meat. Improper handling and refreezing of meat may lead to the growth of bacteria.
- Never leave chilled or thawed meat out at room temperature for more than 2 hours.

COOKING

- Always ensure that ground meat is cooked thoroughly.
- When cooking patties, meatloaf or meatballs made of ground meat, use a food thermometer to check that the meat has reached a safe internal temperature of at least 75°C.



Three Ways To Thaw Meat Safely

1. THAWING IN THE REFRIGERATOR OR CHILLER ROOM

- The best way to thaw meat is in the refrigerator as keeping meat at a safe temperature helps prevent the growth of bacteria.
- Thaw raw meat safely by placing it on containers or trays on the lowest shelf of the refrigerator or below ready-to-eat food to prevent cross-contamination.

2. THAWING IN THE MICROWAVE OVEN

- Place meat to be thawed in the microwave oven on 'defrost' setting.
- Stir or turn the meat over to facilitate thawing.
- Cook the meat immediately after thawing.
- Clean the microwave thoroughly after using it for thawing.

3. THAWING UNDER RUNNING WATER OR IN COLD WATER

- Place meat to be thawed in a clean leak-proof package or plastic bag.
- Put the package in a clean container and thaw the meat under running water, or submerge the package in a container of clean tap water, changing the water every 30 minutes as the meat continues to thaw. Do not place the meat directly in the sink or into container of water without packaging it.
- Avoid cross-contamination from water dripping off the food or splashing onto other food, preparation surfaces and utensils.
- Thaw food without opening the package to prevent contamination.
- Ensure that the sink is cleaned and sanitised after being used for thawing.

FOOD POISONING CASE STUDY

With contributions from the Ministry of Health



In 2012, seven school children at a local primary school came down with food poisoning after consuming food purchased from the school canteen. They developed symptoms such as diarrhoea, abdominal pain and nausea.

Investigation findings showed several hygiene lapses. Several of the food samples collected for microbial tests were also found to have high total coliform and high faecal coliform counts, which indicated poor personal hygiene and food handling practices.

LEARNING POINT 1

Finding: Liquid soap and toilet paper were not provided in the toilet which was intended for food handlers' use.

Issue: The provision of toilet paper and soap helps to ensure the hygienic use of toilets, and it is important for food handlers to wash their hands properly after visiting the toilet. Non-provision of these amenities increases the risk of contamination via the faecal-oral route.

Recommendation: Ensure that toilets are provided with the basic amenities, such as toilet paper, liquid soap, hand dryers and litter bins. This helps to ensure that food handlers practise good toilet and personal hygiene, and reduces the likelihood of contamination during preparation of food after a visit to the toilet.

LEARNING POINT 2

Finding: The temperature of one chiller was found to be above 4°C.

Issue: Refrigeration slows bacterial growth and prolongs the freshness of food. Bacteria grow most rapidly between 5°C and 60°C – a temperature range known as the "Temperature Danger Zone."

Recommendation: Keep the temperature of chillers between 0°C and 4°C. Use a refrigerator thermometer to ensure that the refrigerator temperature is correct and ensure that both thermometer and refrigerator are in good working condition. Allow proper circulation of cool air by not overloading the refrigerator. Cool air should circulate freely to keep food properly chilled.

LEARNING POINT 3

Finding: Cut fruits were left uncovered in the refrigerator and an ice scoop was left inside the ice storage compartment, instead of putting it in a separate clean container.

Issue: Improper storage of ready-to-eat food may result in contamination and cross-contamination.

Recommendation: Store food in properly-covered containers in the refrigerator to prevent cross-contamination. Always place the ice scoop in a clean container, instead of the ice storage compartment with the ready-to-consume ice.



ANNOUNCEMENT

UPDATES TO THE CODE OF PRACTICE ON ENVIRONMENTAL HEALTH FOR FOOD RETAIL OUTLETS



The Code of Practice on Environmental Health (COPEH) provides the guidelines to address environmental health concerns in the design of buildings. It spells out the objectives to be met and stipulates the minimum design criteria. In late 2013, NEA formed a panel consisting of members from government agencies, professional bodies, industry representatives and F&B associations to review the COPEH on the requirements for food retail outlets. Industry's inputs help to ensure the relevancy of the revised COPEH requirements and its practicality for adoption by the industry.

The following are some of the key revisions of the COPEH:

- Minimum food preparation area of 10 square metres.
- Flooring to be made of impervious materials and covered at the edges connecting to wall.
- If double-bowl sinks are installed and one of which is

dedicated for hand-washing purpose, it should be installed with two separate water taps.

- Provision of hand washing facilities in refreshment area of foodshop without toilet facilities and is serving cuisines to be consumed with hands.
- Minimum centralized washing area for food shop with more than 6 to 15 food stalls shall be 5 square metres. For foodshop more than 15 food stalls, the minimum centralized washing area shall be of 7 square metres.
- Waste sump and screen chambers shall also not be sited within food preparation area.

The revised COPEH will apply to all new developments and premises undergoing major renovations. The new requirements will take effect from 1 April 2016.

RELOCATION OF LICENSING UNITS AT NEA REGIONAL OFFICES

Over the past few years, food establishment and swimming pool licensing services have progressively been made available online. Many of NEA's licensees are already using the Online Business Licensing Service (OBLS) and LicenceOne (with effect from 7 December 2015) to access licensing services such as applications, renewals and payments, instead of visiting licensing counters at the Regional Offices.

To better serve the smaller pool of licensees who still require face-to-face counter services, NEA has centralised its licensing units at the five Regional Offices. Licensing units at the five Regional Offices had ceased to provide licensing transactions from the dates stated below.

REGIONAL OFFICE LICENSING UNIT	RELOCATION DATE
North West	16 November 2015
North East	16 November 2015
South East	4 January 2016
South West	4 January 2016
Central	15 February 2016

From 16 November 2015 onwards, a new central licensing unit will be in operation at Level 2, Customer Service Centre, Environment Building, 40 Scotts Road, Singapore 228231. At this new location, licensees who require face-to-face transactions will be able to submit applications, make payments and enquiries at dedicated licensing counters from 8.30am to 5.30pm on Mondays to Fridays. Applicants who need to have a face-to-face consultation with our officers can look forward to pre-booked appointments, so as to reduce waiting time. The Service Centre will also have e-booths to allow those who wish to make electronic submissions, but do not have access to computers or smartphones, to access the online licensing portals.

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