



TECHNICAL ASSISTANCE TO BUILD FOOD SAFETY CAPACITY FOR THE FISHERIES SECTOR



Introduction to Food Safety

Training for Ocean Delight, Suriname



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Learning Outcomes

At the end of this session, you should be able to:

- Understand the basic principles of food hygiene
- Know the meaning of:
 - Food safety
 - Food safety hazards
 - Contamination and cross-contamination
 - Food poisoning/foodborne illness
- Highlight how good food handling practices can prevent foodborne illness



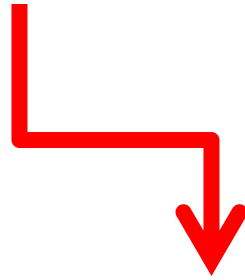
What is food safety?



The things we do to make sure our food is safe to eat




FOOD SAFETY



BEHAVIOUR



Fish Processing Factory In Kepong Shut Down!

On 26 January 2021, the DBKL Health & [Environment](#)  Department inspected a fish processing factory at Jalan 4/33 B MWE in the Kepong Commercial Park.



019-9154402







Fish Processing Factory In Kepong **Shut Down!**

On 26 January 2021, the DBKL Health & [Environment](#) Department inspected a fish processing factory at Jalan 4/33 B MWE in the Kepong Commercial Park.

They discovered that this fish processing factory was unhygienic, shutting it down under Section 11 of the [Food](#) Act 1983, based on these reasons :

- the premises were unsanitary
- the walls and floors were untiled and covered in moss
- the walls and floors in the food processing area were covered in dirt and dried blood
- the fish were processed on the floor
- there was no oil trap
- fish blood and waste water were poured into the public drain
- equipment used were filthy and improperly maintained

Food safety hazards

“Agents that can **contaminate**
food and cause
illness or injury”

Types of food safety hazards



MICROBIOLOGICAL – results in food poisoning
(*eg bacteria, viruses, fungi/moulds, parasites*)

CHEMICAL – results in chemical poisoning/allergic reaction
(*eg cleaning agents, pesticides, allergens*)



PHYSICAL – results in injury
(*eg broken glass, hair, insects*)

WHAT TYPE OF FOOD SAFETY HAZARD IS THIS FLY?



What is a microbiological hazard?



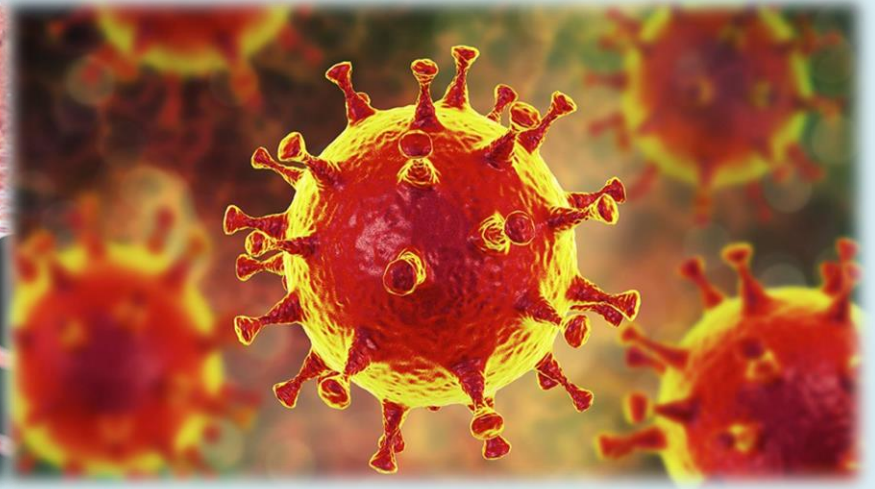
BACTERIA



PARASITES



MOLDS/FUNGI



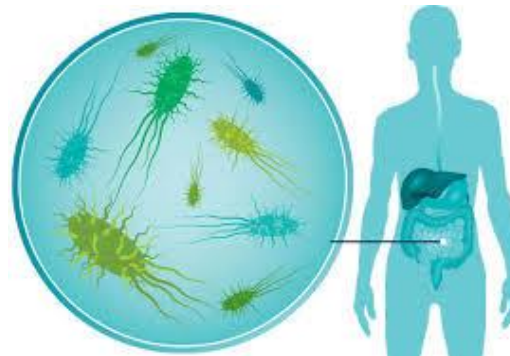
VIRUSES



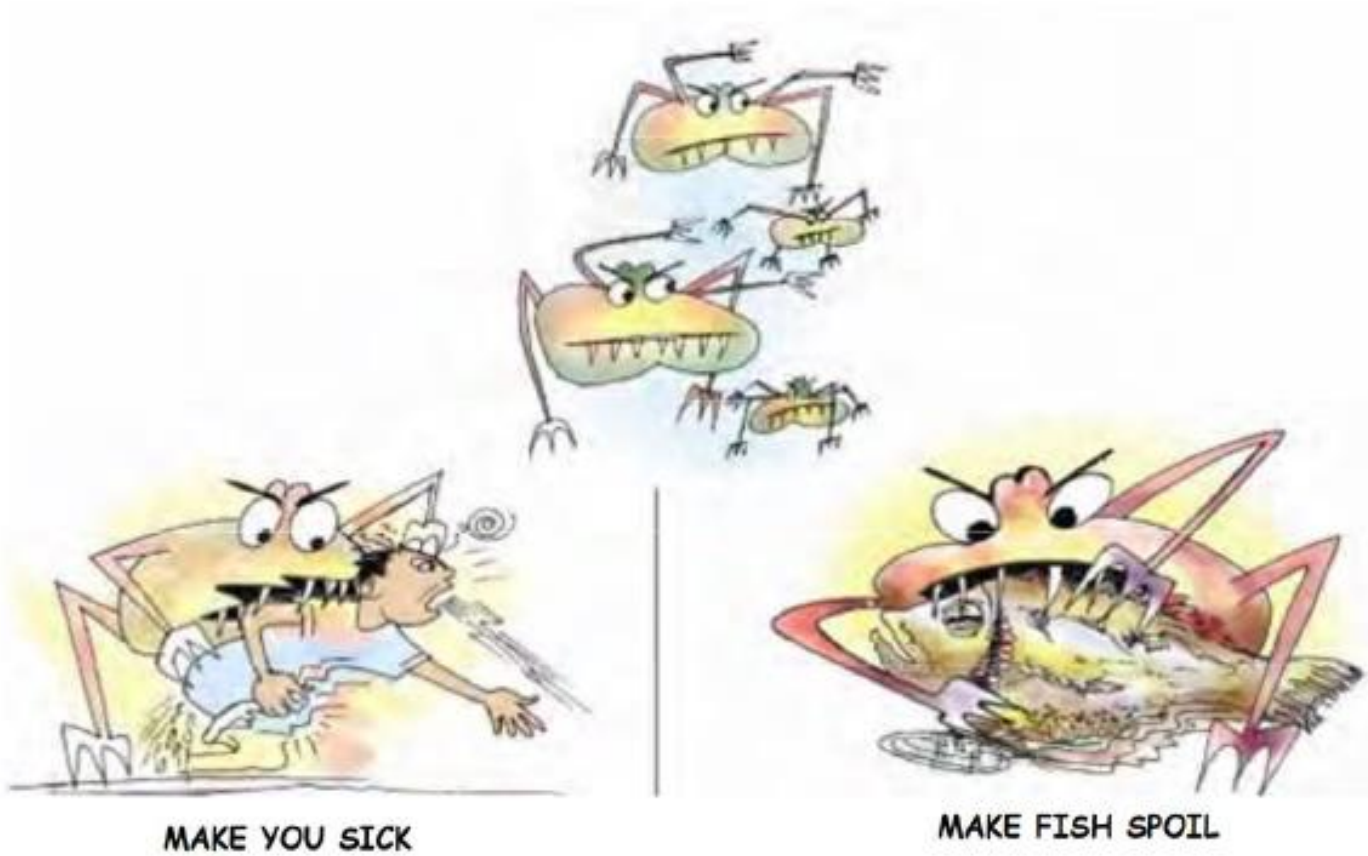
In many food businesses, microbiological hazards are the **MOST IMPORTANT** because they can make people very ill or can spoil food!

Types of Bacteria

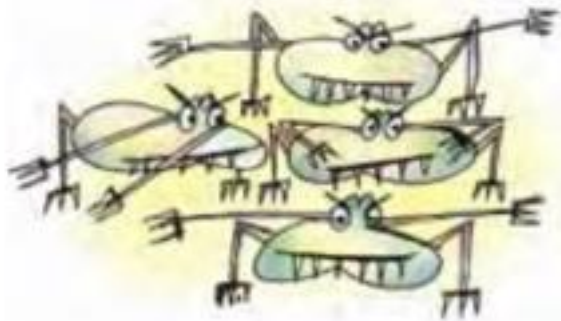
- Pathogens – make people sick
- Spoilage – cause food to spoil
- Essential –
 - ❖ Human body
 - ❖ Food industry



Bacteria can...



What do they like?



WATER



WARMTH



FOOD



What do they hate?



DRY CONDITIONS



VERY HOT TEMPERATURES



COLD

Where can we find them?

DIRTY TOILETS



DIRTY CLOTHES AND FEET



ANIMALS



IN THE AIR



HANDS



INSECTS

Possible sources of microorganisms in food establishments

- People
- Raw materials **(Can be found on and in RAW FISH)**
- Equipment/Utensils
- Insects
- Rodents
- Animals
- Soil/dirt
- Waste

**How can we stop bacteria from
multiplying?**

**Proper handling, hygiene and storage practices
can stop bacteria from multiplying**



Bacteria can be killed/inactivated by adequate cooking



Effective cleaning, disinfection and hygienic practices can prevent bacteria from multiplying



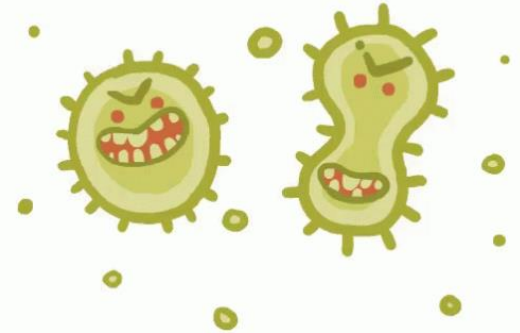
Bacteria that can make you very sick are called **PATHOGENS. They come from the intestines of humans and animals.**

They can cause **FOOD POISONING or **FOODBORNE ILLNESS**.**

Symptoms of Food Poisoning



Food poisoning myths



TRUE OR FALSE

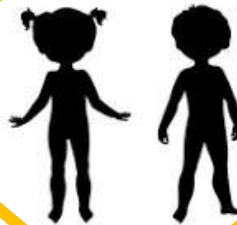
- | | |
|--|--|
| 1. Food with enough bacteria to make you sick will look, smell or taste bad. | Food with enough bacteria to make you sick may look, smell or taste good. |
| 2. Really fresh food cannot make people sick. | Really fresh food can cause food poisoning if it is not properly handled. |
| 3. Food poisoning is always caused by the last thing you ate. | Food poisoning can be caused by what you ate several hours to even a week ago. |
| 4. Properly cooked food can never cause food poisoning. | Food poisoning can occur even when foods are properly cooked, if contaminated after cooking. |

Food poisoning onset and duration

- ❑ Food poisoning usually occurs within 1 to 3 days of eating contaminated food
- ❑ Symptoms typically last for 1 to 7 days



High risk groups



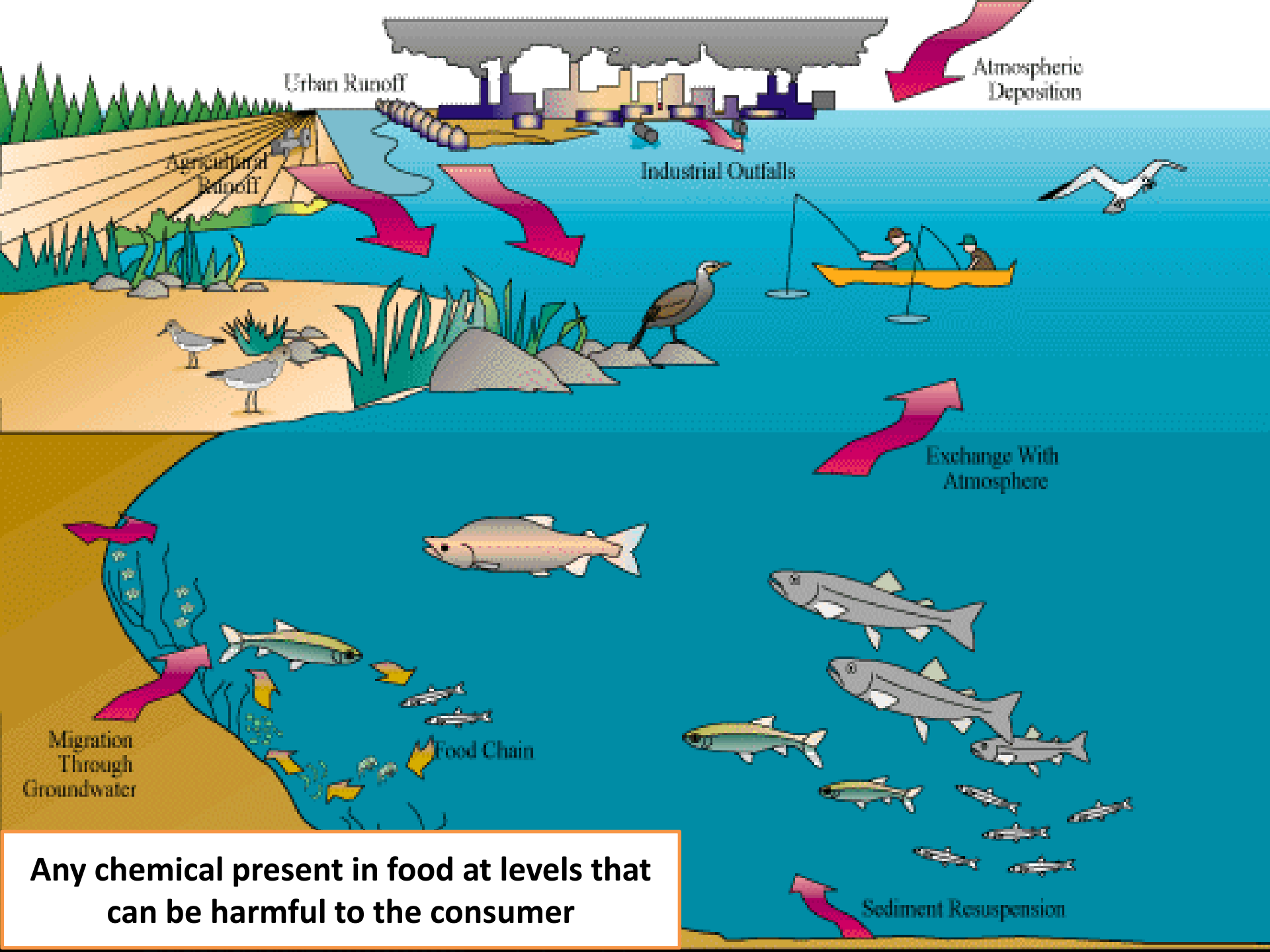
Foodborne illness can affect anyone, but some groups are more at risk than others because of the severity of their illness (can lead to death in some cases)

Chemical hazards



Chemical hazards may lead to acute foodborne illness or chemical poisoning when excessively high doses of chemicals are consumed.

**What is a chemical
hazard?**



Any chemical present in food at levels that can be harmful to the consumer

Chemical hazards

Naturally occurring

Intentionally added

Unintentionally added



Types of chemical hazards

Naturally occurring

- Food allergens
- Mycotoxins (eg aflatoxin)
- Scombrototoxin (histamine)
- Ciguatera
- Shellfish toxins (eg Paralytic shellfish poisoning)

Environmental & other contaminants

- Polychlorinated biphenyls (PCBs)
- Pesticides
- Antibiotics
- Heavy metals
- Lubricants
- Cleaners
- Sanitizers
- Paints

Food additives

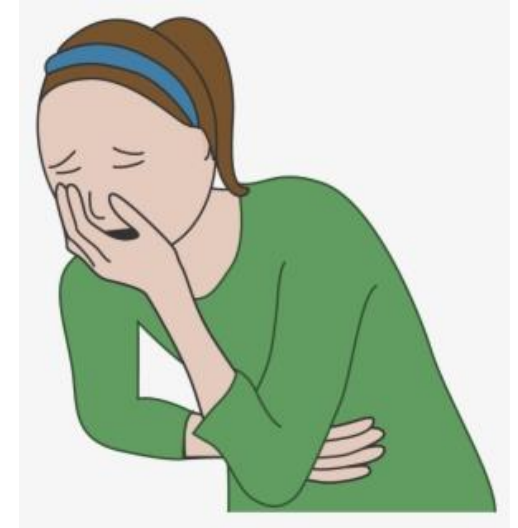
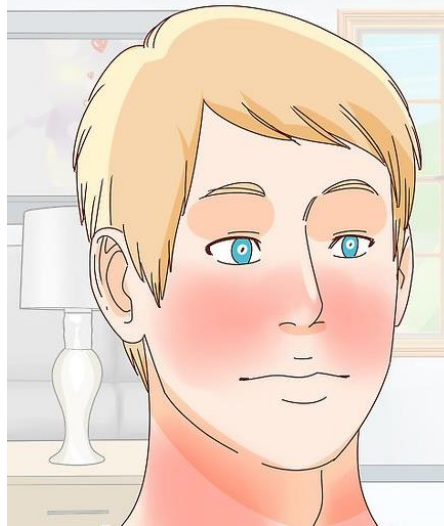
- Polycyclic aromatic hydrocarbons
- Carbon dioxide
- Sulphur

From packaging material

- Plasticizers
- Vinyl chloride
- Printing/coding inks
- Adhesives



Symptoms of Chemical Food Poisoning /Allergic Reaction



Food poisoning cases related to fish and fish products...



Sweden reports histamine outbreak from imported fish

By [News Desk](#) on April 15, 2021

Almost 20 people have fallen ill in Sweden this month from histamine poisoning in fish from Vietnam.



Photo illustration of grouper fish

Ciguatera cases linked to imported fish in New Zealand

By Joe Whitworth on June 9, 2020

Five people from two households in New Zealand became ill with ciguatera poisoning after eating fish imported from Fiji earlier this year.

The outbreak in Christchurch affected three males of 19 to 58 years old and two females – one aged in her 40s and the other in her 50s. One person was hospitalized and diagnosed with ciguatera poisoning but has since recovered.



**How can chemical hazards be
controlled at your facility?**

**Use approved suppliers for
chemicals and packaging**



Use approved food-grade chemicals



Store chemicals in designated areas away from food, packaging and food contact surfaces



Don't store chemicals in unmarked containers



**Follow correct dilution procedures
for cleaning chemicals**



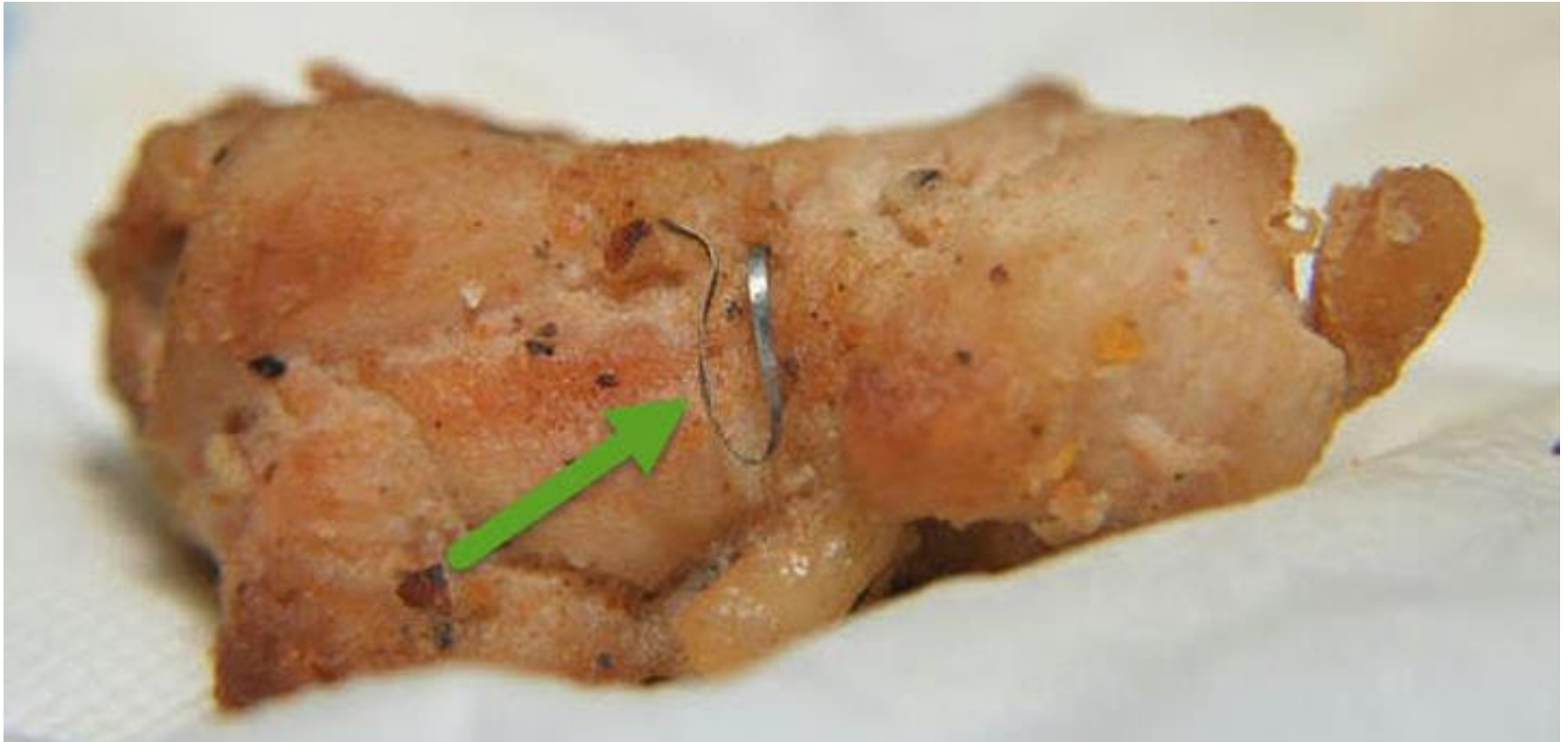
Physical hazards

Some physical hazards can injure consumers.



**What is a physical
hazard?**

Any foreign object that is found in a food product, which is either naturally occurring or not normally present within that specific food, that can cause injury to consumer.



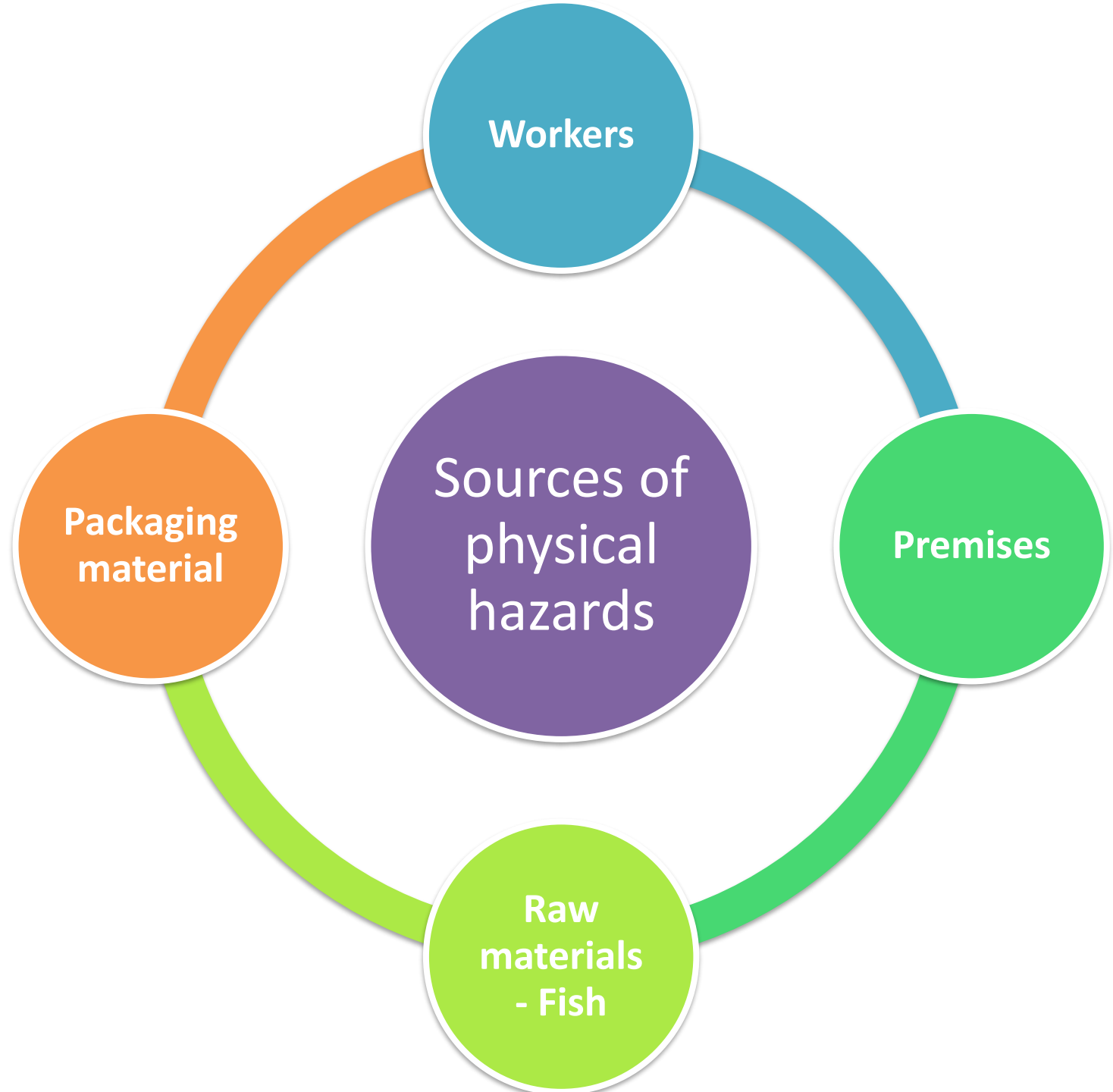
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graph TD; A[Physical hazards] --> B[Naturally occurring]; A --> C[Unnaturally occurring];
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Physical
hazards

Naturally
occurring

Unnaturally
occurring







Control of physical hazards

Physical hazards can be eliminated in food by:

- Workers following the strict food safety guidelines of your organization (e.g. no glass items in the processing area)
- Conducting thorough inspections of the food (e.g. using metal detector for any metal inclusions)

What is contamination?

The unintended presence of substances or microorganisms in food that can cause illness or injury.





**How can fish in
your factory
become
contaminated?**



**Unclean
equipment,
utensils or
surfaces**





**Poor
standards of
sanitation
and waste
disposal**






**Spread
from
pests**





Spread from workers
– clothes, skin, hair,
sneezing/coughing



**Workers can
contaminate the
fish that they are
handling,
if not handled
properly.**

Food Handlers and Contamination

Workers can contaminate food by:

- Working while sick
- Touching pimples or sores on their face or skin
- Touching something dirty and not washing hands
- Not covering sores or wounds
- Not washing hands (properly) after using toilet



**Not washing your hands after
the toilet is as good as ...**



Ways to reduce contamination



What is cross-contamination?

This happens when harmful bacteria or other microorganisms are unintentionally transferred from one place, object or person to another





Ways to avoid cross-contamination...





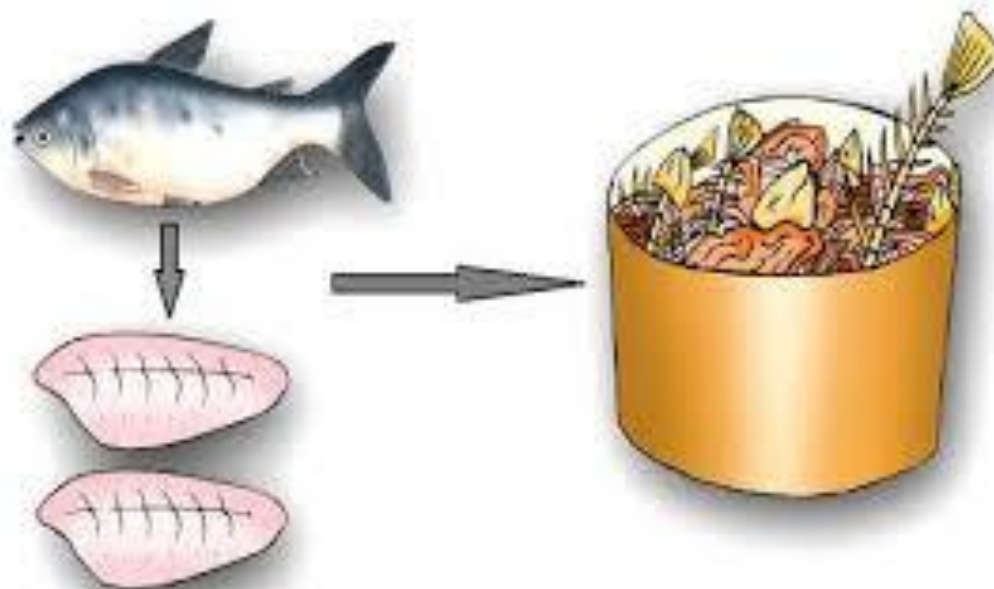
Proper employee hygiene, clothing and handling practices



**Restricted and controlled traffic/movement
about the plant
(employees, product, equipment).**



Adequate separation of raw and processed fish.



Proper waste disposal.



Adequate cleaning and disinfection of utensils, equipment and food handling/processing areas.



Use of safe, clean water for making ice and cleaning processing plant.

Everyone has a role to play at Ocean Delight!



Remember these good food handling practices...

- ☐ Avoid excessive handling of the fish
- ☐ Avoid contamination during processing and packaging
- ☐ Report any symptoms of foodborne illness immediately
- ☐ Use good handwashing and personal hygiene techniques
- ☐ Store chemicals away from food processing area
- ☐ Keep food processing area clean and tidy
- ☐ Effectively clean and sanitize equipment and utensils

QUIZ – true ✓ or false ✗ ?

Food safety means protecting our food from hazards so it is safe to eat.



It is okay to store raw fish with fish that has already been processed.



Always store cleaning chemicals away from processing area.



Bacteria and viruses are chemical hazards.



Workers can contaminate fish with dirty hands.



Fish processing areas should be adequately cleaned and disinfected.



Any questions?

