

**Al-Mustaqbal University**  
**College of Pharmacy**  
**5th stage**  
**Clinical Toxicology**  
**Lab 7**



# Food poisoning

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# Food Poisoning

- **CAUSES**

- 1. Microbes: bacteria, viruses, protozoa
- 2. Parasites
- 3. Fungi
- 4. Plants
- 5. Fish
- 6. Chemical additives.

- **DIAGNOSIS**

- ■ History.
- ■ Clinical picture.



# GENERAL TREATMENT MEASURES of Food Poisoning

- **1-Oral Rehydration Therapy (ORT) by ORS**
- **2-Intravenous Rehydration**
  - This is necessary when dehydration is severe ( $> 10\%$  fluid deficit or shock).<sup>\*</sup> 20 ml/kg boluses of **Ringer's lactate**, normal saline, or similar solution is administered until pulse, perfusion, and mental status return to normal.
  - **Two separate IV lines** may be required,
  - or even alternative access sites such as femoral vein, venous cut-down, or intra-osseous infusion.
  - Oral rehydration is commenced when condition improves.
- **Non-specific antidiarrhoeal agents**
  - Use of such agents such as kaolin-pectin, antimotility drugs (e.g. loperamide), antisecretory drugs, or toxin binders (e.g. cholestyramine), is controversial.

# PREVENTION OF FOOD POISONING

- **1-Buying groceries**
- Do not buy items containing undercooked or raw animal derived ingredients.
- d. Buy only pasteurised milk or cheese.
- e Do not buy eggs which are cracked or leaking
- **2-Storage**
- **3-Hygiene**

# DEFINITION

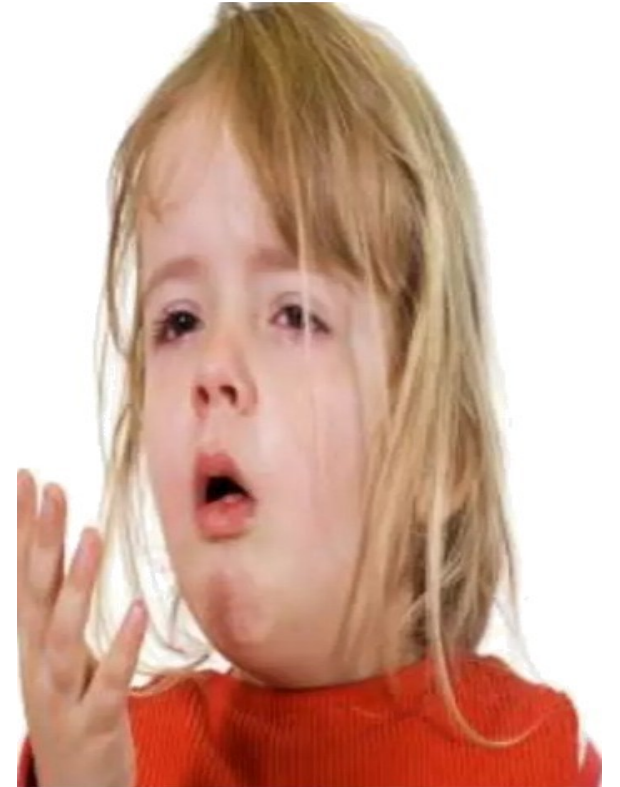
Food – poisoning is an acute gastro-enteritis caused by the ingestion of the food or drink contaminated with either living bacteria or their toxins or inorganic chemical substances and poison delivered from the plant and animals.

# Type of Food Poisoning

- **Bacterial food poisoning**
- **Non- bacterial food poisoning**
- Bacterial food poisoning is most frequently caused by  
*Staphylococcus*, followed by  
*Clostridium perfringens*,
- *Salmonella*,
- *Shigella*, and
- *Streptococcus* in descending order of frequency.

# CHARACTERISTICS

- 1 There is history of the ingestion of the common food
- 1 Attack of the many persons at the same time
- 1 Similarity of the sign and symptoms in the majority of the cases





# **A. NON – BACTERIAL TYPE OF THE FOOD POISONING**

It is caused by the chemicals such as

- A. Arsenic**
- B. Certain plants & sea foods**
- A. Fertilizer**
- B. Pesticides**
- C. Cadmium**
- D. Mercury**

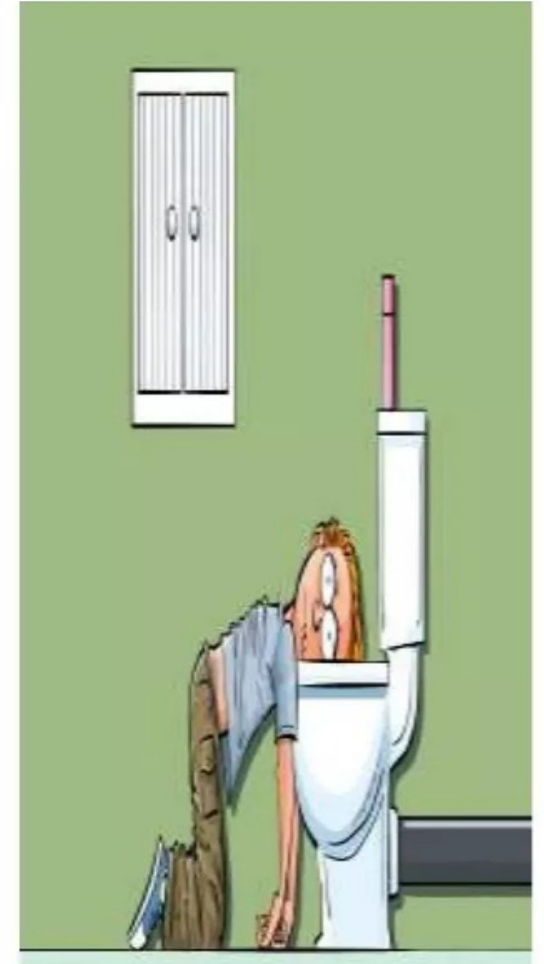




# Bacterial food poisoning

It is caused by the ingestion of the food contaminated by the:-

1. Living bacteria or their toxins
2. Some times both-Multiplication and toxins production .



# Staphylococcus aureus

## Food Poisoning

- It is said to be the **commonest cause** of **bacterial food poisoning**.
- **Source**
- Previously cooked, proteinaceous food: meat, fish, milk,
- and milk products.
- **Staphylococcal toxins** are formed within a few hours when food is kept at room temperature.
- a. Most foods (particularly those high in protein) will support staphylococcal growth, especially custard or cream filled pastries, mayonnaise, ham, and dairy, poultry, potato and egg products.

# Staphylococcus aureus

## Food Poisoning

- **Pasteurising milk** will kill the bacteria, but unfortunately will **not inactivate** the toxins.
- c. Other sources include **canned mushrooms, rice, noodles, salads, and cooked food that has been left at room temperature.**
- **2. Common carriers of *Staphylococcus aureus* comprise **food handlers** (especially those with purulent secretions or nasal discharge).**

# Staphylococcus aureus

## Food Poisoning

- *Toxin*

- Relatively heat-stable enterotoxins (A, B, C<sub>1-3</sub>, D, E, and H).
- The commonest type is **A. Enterotoxin B (SEB)**, a pyrogenic
- toxin, also commonly causes food poisoning after ingestion
- of improperly prepared or handled food material

- *Incubation Period*

- 1. Oral: 1 to 6 hours.
- 2. Inhalation: 3 to 12 hours

# ***Clinical Features***

## **Food Poisoning**

- **1-Nausea and vomiting**
- with violent retching, diarrhoea, crampy abdominal pain.
- **Diarrhoea** is usually mild, while vomiting is severe.
- **2. Fever is usually absent.**
- **3. Headache, weakness, and dizziness** may be present.
- 4. Inhalation of the toxins can cause sudden onset of fever,
- headache, chills, myalgia, non-productive cough, dyspnoea, and retrosternal chest pain.
- Nausea, vomiting, and diarrhoea may occur as a result of inadvertent swallowing of the toxin.
- Conjunctival congestion may be present.

# Treatment

## 1-Supportive measures

**The illness usually lasts for no more than 20 to 24 hours, and is self-limiting**

- All persons with significant toxicity, dehydration, abnormal electrolyte levels, or a history of poor compliance should be admitted for. **intravenous fluid therapy**
- Significant nausea and vomiting can be controlled with an **antiemetic agent**.
- However, antiemetics are not usually required if alteration of the diet is successful





# **SALMONELLA FOOD POISONING**

# SOURCE

Salmonellosis is primarily a disease of the animals. Man get infection from the farm animal & poultry through:

1. Contaminated Meat
2. Milk & Milk Products
3. Sausages
4. Custards
5. Eggs & Eggs Products
6. Rat & mice are another source, they are often heavily infected and contaminate the foodstuffs by their urine & faces

