

WASTES

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“Something which is not put into proper usage at a given time”.



BIO-MEDICAL WASTE: -

Any **waste** which is generated during the **diagnosis, treatment or immunization** of human beings or animals or in research activities **pertaining thereto** or in the production or testing of biological.



CAUSES

Improper:-

- ✓ Packaging
- ✓ Segregation
- ✓ Treatment and disposal

of biomedical
waste.



CLASSIFICATION OF BIOMEDICAL WASTE:

**INFECTIOUS
WASTE.**

**PATHOLOGICAL
WASTE.**

SHARPS.

**PHARMACEUTIC
AL WASTE.**

**GENOTOXIC
WASTE.**

**CHEMICAL
WASTE.**

**WASTES WITH
HIGH CONTENT OF
HEAVY METALS.**

**PRESSURIZED
CONTAINERS**

**RADIOACTIVE
WASTE**

CLASSIFICATION OF BIOMEDICAL WASTE:

1. INFECTIOUS WASTE:

Infectious waste suspected to contain pathogens (bacteria, viruses, parasites, or fungi) in sufficient quantity to cause diseases in susceptible hosts.



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This category includes:-

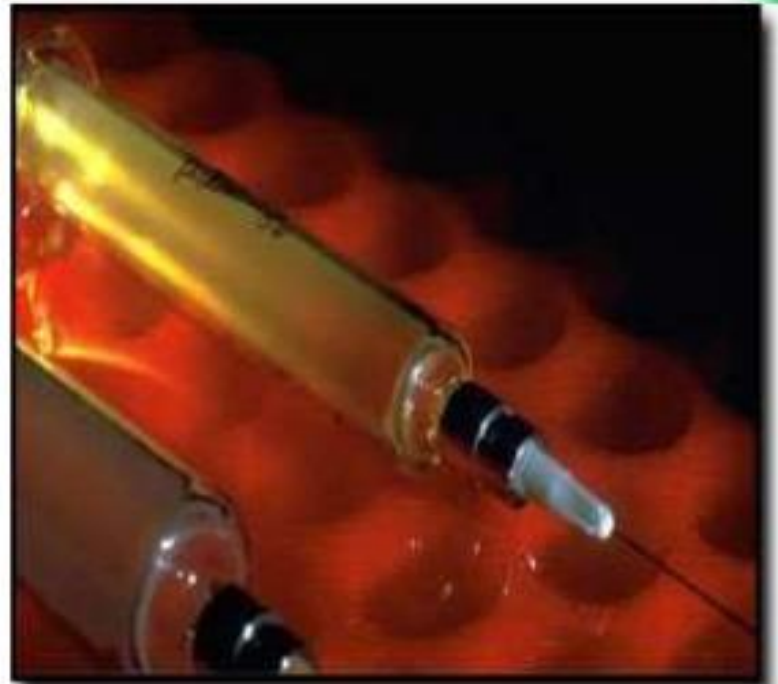
- Cultures and stocks of infectious agents from laboratory work.
- Waste from surgery on patients with infectious disease.
- Infected animals from laboratories.



Classification continue...

2. PATHOLOGICAL WASTE:

It consists of tissues, organs, body parts, human fetuses, and animal carcasses, blood, and body fluids.



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3. SHARPS:

These are the items that could cause cuts or puncture wounds, including;

- ✓ Needles,
- ✓ Scalpel and other blades,
- ✓ Knives,
- ✓ Infusion sets,
- ✓ Saws,
- ✓ Broken glass, and nails.



Classification continue...

4. PHARMACEUTICAL WASTE:

It includes expired, unused, spilt, and contaminated

- ✓ Pharmaceutical products,
- ✓ Drugs,
- ✓ Vaccines, and sera



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5. GENOTOXIC WASTE:

- Genotoxic waste is **highly hazardous** and may have;

✓ Mutagenic,

✓ Teratogenic, or

✓ Carcinogenic properties.



Classification continue...

6. CHEMICAL WASTE:

It consists of discarded

✓ Solid,



✓ Liquid, and



✓ Gaseous chemicals



Classification continue...

7. WASTES WITH HIGH CONTENT OF HEAVY METALS:

It represents a subcategory of hazardous chemical waste, and is usually **highly toxic**.

It includes

- ✓ Batteries,
- ✓ Broken thermometer,
- ✓ Blood-pressure gauges.



BROKEN MERCURY THERMOMETERS



Classification continue...

8. PRESSURIZED CONTAINERS:

Many types of gas are used in health care, and are often stored in **pressurized cylinders, cartridges, and aerosol cans.**

Most common gases used in health care includes:

- ✓ **Anesthetic gases**
- ✓ **Ethylene oxide**
- ✓ **Oxygen**
- ✓ **Compressed air**



Classification continue...

9. RADIOACTIVE WASTE:

It includes the **X- rays**, **α - and β - particles**, and **γ - rays** emitted by radioactive substances.

- **α -particles**, are **heavy positively charged**, and include **protons** and **neutrons**.
- They have low penetration power, and are hazardous to humans mostly when inhaled or ingested.



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- **β - Particles**, are negatively or positively charged electrons with significant ability to penetrate human skin, they affect health through ionization of intracellular proteins and proteinaceous components.
- **γ - Rays**, are electromagnetic radiations similar to X- rays but to shorter wavelength. Their penetrating power is high and lead shielding is required to reduce their intensity.



SOURCES OF BIO-MEDICAL WASTE



**HOSPITALS,
HEALTH CARE
CENTERS**



BLOOD BANKS



**BIO TECHNOLOGICAL
INSTITUTION**