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IMMUNISATION AND PREVENTION

Meaning of Immunisation

Immunisation is the process of protecting an individual from infectious diseases by stimulating the body's immune system to recognize and fight disease-causing organisms (pathogens). It involves giving vaccines, which train the body to produce antibodies without causing the actual disease.

Immunisation prepares the body in advance so it can defend itself quickly when exposed to germs.

How Immunisation Works

1. A vaccine is given (oral drops, injection, or nasal spray).

2. The vaccine contains a weakened, killed, or part of a germ (antigen).

3. The immune system detects it as foreign.

4. The body produces antibodies to fight it.

5. Memory cells are formed.

6. If the real disease enters later, the body responds instantly and prevents illness.

This is why immunised children rarely develop severe diseases such as measles, whooping cough, polio, or tetanus.

Types of Immunisation

A. Active Immunisation

The person's own immune system produces antibodies.

Long-lasting, sometimes lifelong.

Example: BCG, OPV, Measles vaccine.

B. Passive Immunisation

Ready-made antibodies are given.

Provides immediate but short-term protection.

Example: Anti-rabies serum, Anti-venom, Hepatitis B immunoglobulin.

Importance of Immunisation

Immunisation is one of the most effective public-health strategies in the world. It helps:

i. Protect individuals

Prevents life-threatening diseases such as polio, diphtheria, tetanus, measles, pertussis, hepatitis B, tuberculosis, and more.

ii. Protect communities (Herd Immunity)

When many people in a community are vaccinated, the spread of infectious diseases reduces. Even those who cannot be vaccinated (newborns, immunocompromised children) remain protected.

iii. Reduce child mortality

A major cause of death in children under 5 years is vaccine-preventable diseases.

iv. Reduce health costs

Prevention is cheaper than treatment or hospitalization.

v. Improve overall health and development

Healthy children can attend school regularly, grow well, and develop normally

Vaccines Commonly Given to Children (0–5 Years)

These vary slightly by country, but generally include:

BCG – prevents tuberculosis

OPV / IPV – prevents polio

Penta vaccine – (DPT + Hep B + Hib) prevents diphtheria, tetanus, pertussis, hepatitis B, Haemophilus influenzae

PCV – prevents pneumonia and meningitis

Rotavirus vaccine – prevents severe diarrhoea

Measles vaccine – prevents measles and complications

Yellow fever vaccine

MMR (in some countries) – measles, mumps, rubella

Vitamin A supplementation (not a vaccine but part of prevention programmes)

Prevention: Meaning and Scope

Prevention refers to all actions taken to stop diseases from occurring, spreading, or causing complications. Immunisation is one of the major tools of prevention, but prevention also includes hygiene, sanitation, nutrition, environmental control, and health education.

Levels of Disease Prevention

A. Primary Prevention

Actions taken to prevent disease before it occurs.
Examples:

Immunisation

Exclusive breastfeeding

Good hygiene and sanitation

Adequate nutrition

Safe drinking water

Use of bed nets to prevent malaria

B. Secondary Prevention

Early detection and treatment to reduce complications.
Examples:

Screening for hypertension, diabetes

Antenatal care and routine checkups

Rapid malaria testing

Early treatment of infections

C. Tertiary Prevention

Reducing disability and promoting rehabilitation after disease occurs.
Examples:

Physiotherapy after stroke

Rehabilitation after injury

Long-term treatment of chronic diseases

Prevention Strategies in Children

1. Immunisation

The foundation of child preventive care.

2. Proper Nutrition

Exclusive breastfeeding for the first 6 months.

Adequate complementary feeding from 6 months.

3. Hygiene Practices

Handwashing with soap.

Clean feeding utensils.

Safe disposal of faeces.

4. Environmental Sanitation

Clear stagnant water to prevent malaria.

Proper waste disposal.

Clean surroundings.

5. Disease Prevention Measures

Sleeping under insecticide-treated nets (malaria).

Oral rehydration & zinc for diarrhoea prevention.

Early treatment of fever and infections.

6. Health Education

Parents should be taught:

Importance of vaccinations

Danger signs in children

Proper nutrition

Prevention of home accidents

Personal hygiene

Challenges to Immunisation and Prevention Programs

Misinformation and fear about vaccines

Poor access to health facilities

Inadequate supply of vaccines

Cold chain failures

Cultural or religious resistance

Poverty and illiteracy

## Conclusion

Immunisation and prevention form the backbone of primary health care. They protect individuals and communities from disease, reduce child death, and promote healthy development. When implemented effectively—through vaccination, hygiene practices, nutrition, sanitation, and early treatment—communities become healthier, stronger, and more production.