



* Normal Microflora of Gastrointestinal Tract :-

- => The Gastrointestinal tract is a long tube that starts from the mouth and ends at the anus.
- > Anus that means (मलद्वार)
- > It is responsible for the digestion, absorption, of nutrients, and elimination of waste materials.
- > The GI tract is continuously exposed to food, water, and microorganisms.
- > Therefore, it contains a large number of normal microflora.
- > The number and type of microorganisms vary in different parts of the GI tract depending on pH, oxygen level, digestive enzymes, bile salts, and food availability.
- > The parts of GI tract is :
 - Stomach
 - Small intestine
 - Large intestine (Colon)
 - ~~Rectum and Anus~~
- => Stomach :-

The stomach contains very few microorganisms because it has a highly acidic environment (pH 1-3). Gastric acid destroys most bacteria.

- => Common Microorganisms present in stomach is Acid resistant bacteria, Lactobacillus etc.
- Lactobacillus
 - Acid-resistant bacteria

=> Small Intestine :-

The small intestine consists of 3 parts :-

- Duodenum
- Jejunum
- Ileum

Duodenum :-

The short, C-shaped first section directly connected to the stomach, where bile and digestive enzymes break down food.

Jejunum :-

The coiled middle section responsible for the vast majority of nutrient absorption.

Ileum :-

The final, longest section that absorbs remaining nutrients, Vitamin B12, and bile acids before passing waste to the large intestine.

- => The number of microorganisms gradually increases from the duodenum to the ileum because the pH becomes more suitable and nutrients are available.



- ⇒ Common microorganisms :-
- Lactobacillus
 - Enterococcus
 - Small numbers of E. Coli

⇒ Large Intestine (Colon) :-

The large intestine has the highest number of microorganisms in the human body.

- It provides an ideal environment due to neutral pH, slow movement of contents, and abundant nutrients.

⇒ Common microorganisms :-

- Bacteroides
- Clostridium
- Enterococcus

- These bacteria help in digestion, vitamin production, and protection against pathogens.



* Normal Microflora of Urogenital Tract :-

=> The urogenital tract is a body system that includes both the urinary system and the reproductive (genital) system.

-> It plays an important role in urine excretion and reproduction.

-> Most parts of the urinary tract are sterile, whereas some parts of the genital tract contain normal microflora that help protect against infections.

-> The urogenital tract is divided into ~~separate~~ parts :-

1. Urinary tract
2. Male genital tract
3. Female genital tract

=> Urinary Tract parts :-

- Kidneys
- Ureters
- Urinary bladder
- Urethra

-> Normally, the kidneys, ureters, and urinary bladder are sterile.

-> Only the lower part of the urethra contains a small number of microorganisms because it is exposed to the external environment.



⇒ Common Microorganisms:-

- *Corynebacterium*
- *Streptococcus*

⇒ Male Genital tract:-

The male genital tract has very few normal microorganisms.

→ The distal urethra contains bacteria such as:-

- *Staphylococcus epidermidis*
- *Corynebacterium*

→ The upper genital tract is normally sterile.

⇒ Female Genital tract:-

The female genital tract contains a rich normal microflora, especially in the vagina.

→ The dominant organism is *Lactobacillus*, it converts glycogen into lactic acid, maintaining an acidic pH (3.8-4.5), which prevents the growth of many pathogenic microorganisms.

→ Microorganisms include:-

- *Streptococcus*
- *Corynebacterium*
- *Candida* (small numbers)