

## **Stool Tests**

These tests are usually ordered during diarrhea cases which last for few days, there are only two tests most common in clinical laboratories:

- 1. Stool Analysis or General Stool Examination (GSE).**
- 2. Stool Culture.**

### **1. Stool Analysis or General Stool Examination (GSE).**

The stool analysis is a series of tests done on the stool (feces) sample to help in diagnosis certain conditions affecting the digestive tract. These conditions can include infection (such as from parasites, viruses, or bacteria), poor nutrient absorption.

For a stool analysis, the stool sample is collected in a clean container and then sent to the laboratory. The analysis includes microscopic examination by **direct smear** and **sedimentation method**, and several chemical tests like pH. The fresh stool should be checked for color, consistency, amount, shape, odor, and the presence of mucus.

The stool may be examined for blood (presence of RBCs), fat, meat fibers, bile, white blood cells, and sugars and undigested food. If there is a significant number of bacteria found then a stool culture must be done.

During parasitic infections, detection for ova, cyst, larva or trophozoite is of more importance than other components of patients stool sample. Movement of trophozoite can be noticed during direct smear. Sedimentation method can be done taking only the bottom sediments of fresh stool mixed with 10% formalin and ethyl acetate then centrifuged. This test is usually used to diagnose parasitic infection by getting rid of other

components of stool which have less gravity. The most common parasitic infections are colitis due to *Entamoeba histolytica* and *Giardia lamblia*.

## **2. Stool Culture**

The stool culture is done to identify bacteria or viruses that may be causing an infection. Although more than 50 different kinds of bacteria normally live in the intestines as normal flora, large numbers of abnormal bacteria, viruses, fungi, or parasites can grow in the intestines and cause infections and diseases.

For a stool culture, a stool sample is collected in a clean container and placed under conditions that allow bacteria or other organisms to grow, only one stool sample is needed, or several stool samples over a period of days may be needed.

The type of infection is identified by noticing the growth, by performing chemical tests on the stool sample, and by looking at the sample under a microscope. The procedure of culturing is similar of that for urine culture.

### **Normal flora of Gastrointestinal Tract:**

*Bacteroides spp.*

*Enterococcus faecalis*

*Escherichia coli*

*Enterobacter spp.*

*Coliforms*

*Klebsilla spp.*

### **Pathogens can be found during stool culture:**

#### **Bacteria:**

*Escherichia coli*

*Salmonella spp.*

*Shigella spp.*

*Staphylococcus aureus*

*Clostridium spp.*

**Fungi:**

*Candida albicans*

**Viruses:**

There is a wide broad viruses that cause enteritis and colitis e.g. Rotavirus.