

Lab .5  
General Stool Examination  
(GSE)

Importance of stool analysis: -

Stool analysis of important tests for the diagnosis of many diseases, such as:

1. Parasites and bacteria which live in the host's body and appear in the stools.
- 2-Gastrointestinal diseases.
3. Liver and pancreatic diseases.
4. Worms of all kinds through the vision of egg cell in the patient's stool.
- 5-Ulcerative colitis.
6. Mal-absorption and others.
7. Evaluation of diseases in the presence of diarrhea and constipation.

Stool examination: -

**Stool analysis includes three main tests, namely:**

- A. Examination with the naked eye.
- B. Chemical examination.
- C. Microscopic examination.

**A:-Examination with the naked eye:-**

1. Color
2. Textures
3. Odor
4. Mucus
5. The presence of blood
6. The presence of parasites
7. undigested food.

**First:-) examination with the naked eye:-**

**1-Color:-**

**- Normal stool color:-** is brown due to the presence of Astroco-beilinugen generator secreted by the liver as a yellow derivatives.

Stool color change in abnormal situations: -

**1)Black stool:-** due to ingestion of iron compounds, breaking RBCs from anemia, and the presence of certain types of parasites or bleeding from the upper part of the digestive tract.

**\* Note:-** Newborns normal color of their feces is black.

**2)Bloody color:-** due to the presence schistosoma, Ascaris worm, amoebic dysentery advanced, or the presence of inflammation in the intestine.

**3)-Red or pink color:-** is bleeding from the lower part of the digestive system due to the presence of tumors, hemorrhoids, or inflammatory.

**4) White or yellowish oblique:-** is the result of intake barium compounds detected during radiation or in **infants** as a result of **lack of fat digestion** or as a result of infection by **cholera**.

**5)- Green:-** as a result of infection of **typhoid** may be normal in infants.

**6)-Gray:-** a **liver disease** or **signs of suffocation in the gall bladder duct** in newborns.

**Note:-** must know another food eaten patient prior to analysis because there are foods affect the analysis, such as watermelon increases the redness of the stool. Meat cause false results in occult blood stool analysis

### **2-Consistency:-**

- Normal feces is coherent, and has a solid forms of abnormal or fossilized, semi-solid, aqueous, and diarrhea, and the reasons are many; record result and consideration later.

#	Type of stool	Likely Reason
1.	Watery	Diarrhea
2.	Clay colored	Obstructive jaundice or presence barium sulfate
3.	Reddish colored	Bleeding from lower GIT, Beef consumption
4.	Black	Bleeding from upper GIT, Iron, charcoal
5.	Green	Ingestion of spinach, antibiotics.

### **3- Odor or smell:-**

The stool odor is known, but in some cases the patient have a strange smell musty may be due to the presence of protein and fatty acids and lactose is digested or excessive intake of carbohydrates or because of a medical condition.

### **4. -Mucus and blood:-**

**Mucus:-** is a transparent gel appears on the surface of the stool may be due to inflammation of the colon mucosa, or difficulty in defecation. If mucus found with diarrhea with white and red blood cells under the microscope may be due to:

- Colitis inflammation
- Bacillary infection "caused by Shigella germ contamination"
- Enteric Ulcer.

- bowel Inflammatory.
- Amoebae infection.

If mucus found with adherent blood in the stool may be due to:

-Inflammatory Malignancy in the colon or inflammation of the anal canal.

#### 5- Presence of parasites:-

Such as tape worms, Ascaris and asciors, and if you cannot find parasites in the sample despite the presence of symptoms of the patient, preferably a sample gathered daily for 3 days, to increase the chances of getting parasites found when the patient. And the laboratory chooses the appropriate section of the sample such as that contain blood or mucus, because that increases the chance of having parasitic phases.

#### 6- Undigested food:-

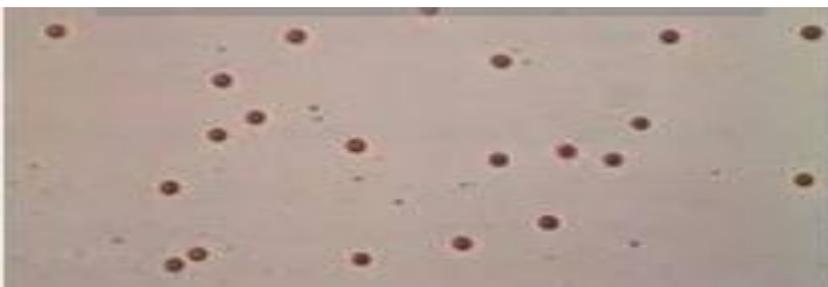
The presence of the food is digested in the stool recorded in the results, the patient may suffer from indigestion due to diseases of the stomach or parasite infections and inflammations of the pancreas may be due to the speed of chewing and others.

#### C) Microscopic examination of the stool:-

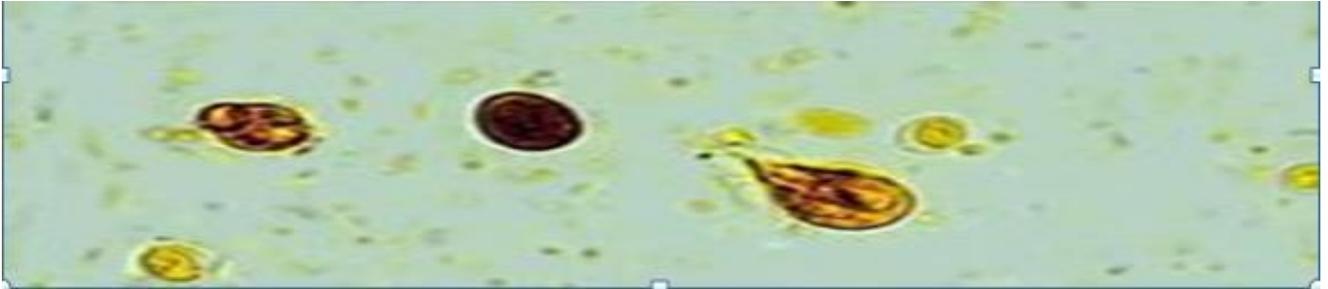
A. White blood cells (pus) show the result: The presence of inflammation in the intestine or colon Ulcer or Bacteria and germs.

B- Red blood cells RBCs and appear as a result of:-

Incidence of certain worms cause bleeding in the digestive tract, cancer Hemorrhoids.



**C-Fats cells:-** Presence large amount of fat cells due to **pancreatic problem** **caused fat indigestion** or **Parasitic infections**. It is large than WBCs and it is look like shiny lemon color.



**D- Indigestive Food:-**

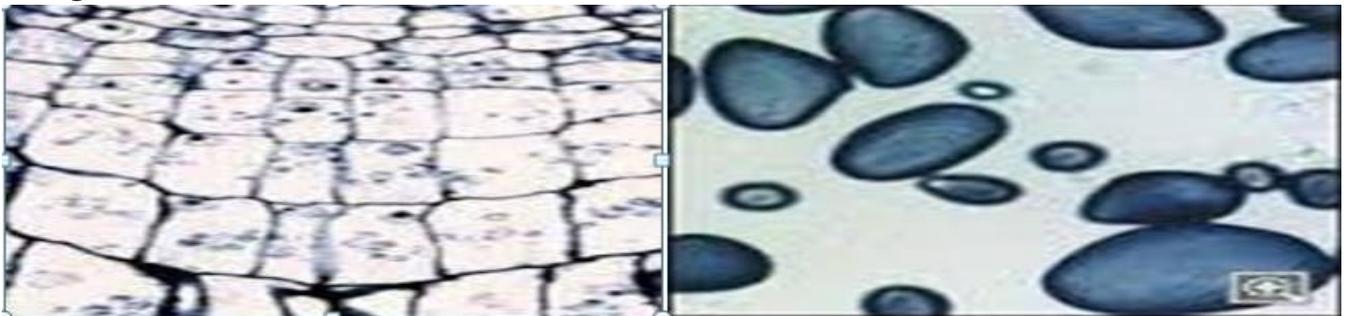
It is the result of:

- \* Indigestion
- \* Parasitic Infection
- \* the pancreas Inflammation

It takes the form of an irregular Black or brown seared

**E-Starches:-**

The reason for the quality of mal absorption him descend with feces and has many forms, but the most important form of a bee hive shaped Or a rectangle of light brown color.



**F-Muscle Fiber:-**

It is the result of indigestion and takes the form of thread, color Black

**G-Occult blood stool:-**

It takes the form of patches and pink In the case of frequently requires occult blood stool analysis of these spots so as to risk **for pancreatic cancer**

**H-Bacteria:-**

It takes many forms and the meaning of their existence has to be farm work to identify the type of bacteria and give appropriate antibiotic

## I-Parasites:-

Which forms a regular basis under an optical microscope and its existence as a result of infection of the parasite and must give proper treatment to hi

### Procedure for the microscopic examination of stool samples for parasites:-

1. place a drop of saline a clean slide.
2. place a small piece of stool on the slide and mix with saline, cover with a cover slip. If the specimen contain mucus, the examination prefer to be done without saline. The mucus is put on the slide and covered with cover slip.
3. examine under 10X and 40X objectives.
4. report the presence of :
  - Large numbers of pus cells
  - RBCs
  - Amoebas, flagellates
  - Eggs, larvae & cysts.

Using of Saline: Normal saline (0.85%) is used for routine examination of stool samples, as it is isotonic.

Using of Iodine: Iodine is used to examine the nuclei of cysts.

Using of Eosin 1%: this provide a pink background and that will help to clear the unstained objects.