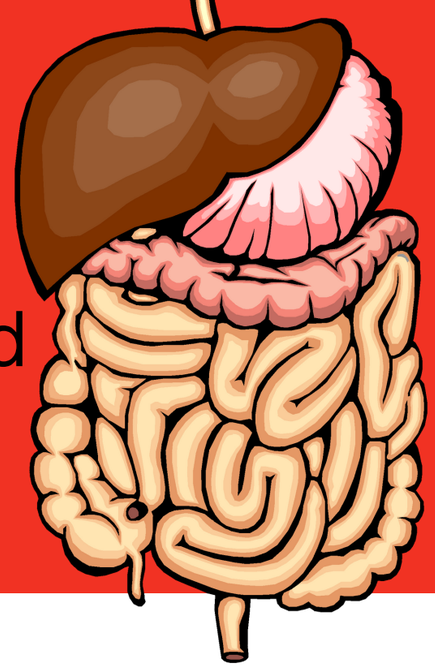
Digestive System Fact Sheet:



Introduction:
The digestive system is a complex network of organs and processes responsible for breaking down food, extracting nutrients, and eliminating waste.

KEY PROCESSES

1. PROCESSING AND DIGESTION:
Processing and digestion are the initial steps in the digestive system. These processes involve the breakdown of ingested food into smaller, more manageable components that the body can absorb and utilize.
A. Mechanical Digestion: When your body physically breaks down food such as when you chew food in your mouth. Your stomach also breaks down food mechanically when it squeezes and churns.
B. Chemical Digestion: When your body breaks down food using chemical reactions. Various digestive enzymes and gastric juices break down macronutrients into their constituent parts. For example, amylase digests carbohydrates, protease breaks down proteins, and lipase processes fats.
2. ABSORPTION:
Nutrients and water move into the bloodstream.
Occurs in the small intestine with villi.
3. WASTE ELIMINATION:
Removal of indigestible waste.
Feces formed in the large intestine, expelled through the anus.

Fun Facts:

a. The small intestine has an internal surface area of about 250 square meters, roughly the size of a tennis court.
b. The liver can regenerate, even after partial removal.
c. The digestive process involves the coordinated effort of multiple organs and systems, including the endocrine and nervous systems.
d. The gastrointestinal tract is home to a diverse community of bacteria, known as the gut microbiome, which plays a crucial role in digestion and overall health.

Common Digestive Disorders:

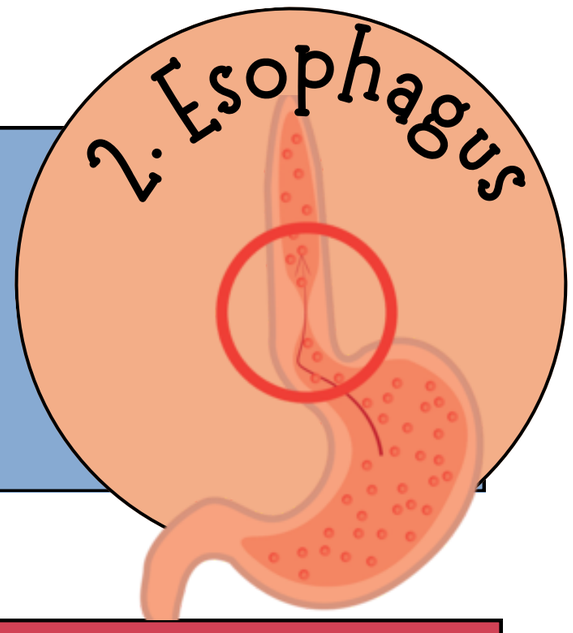
a. Gastroesophageal Reflux Disease (GERD):
- A chronic condition characterized by acid reflux into the esophagus, causing heartburn and irritation.
b. Irritable Bowel Syndrome (IBS):
- A functional gastrointestinal disorder that leads to abdominal pain, bloating, and changes in bowel habits.
c. Celiac Disease:
- An autoimmune disorder triggered by gluten consumption, resulting in damage to the small intestine's lining.
d. Inflammatory Bowel Disease (IBD):
- Includes Crohn's disease and ulcerative colitis, chronic conditions causing inflammation of the digestive tract.

JOURNEY OF FOOD IN THE DIGESTIVE TRACT

1. Mouth

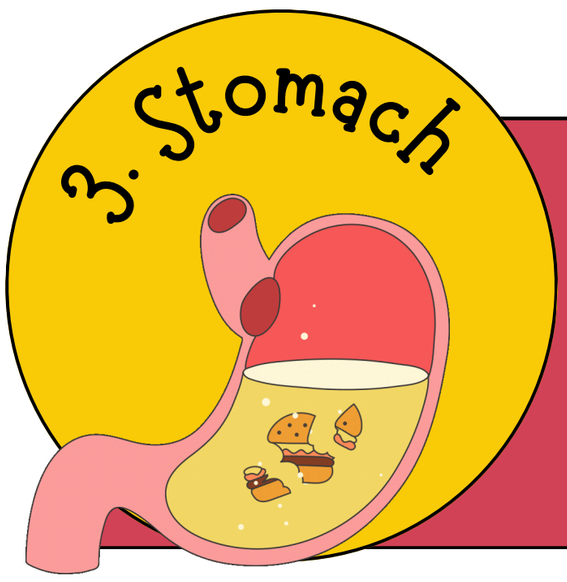
- Where digestion begins
- Chewing (mechanical digestion) stimulates **SALIVARY GLANDS** to release saliva (chemical digestion), which breaks down food into a soft ball. The ball then goes to.....

2. Esophagus



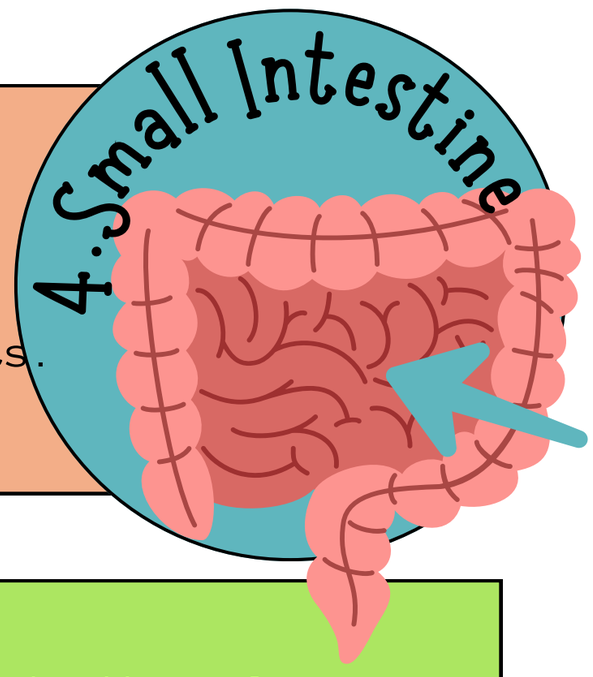
- That's here it gets pushed down by squeezing action, or muscle contraction, called **PERISTALSIS.**

3. Stomach



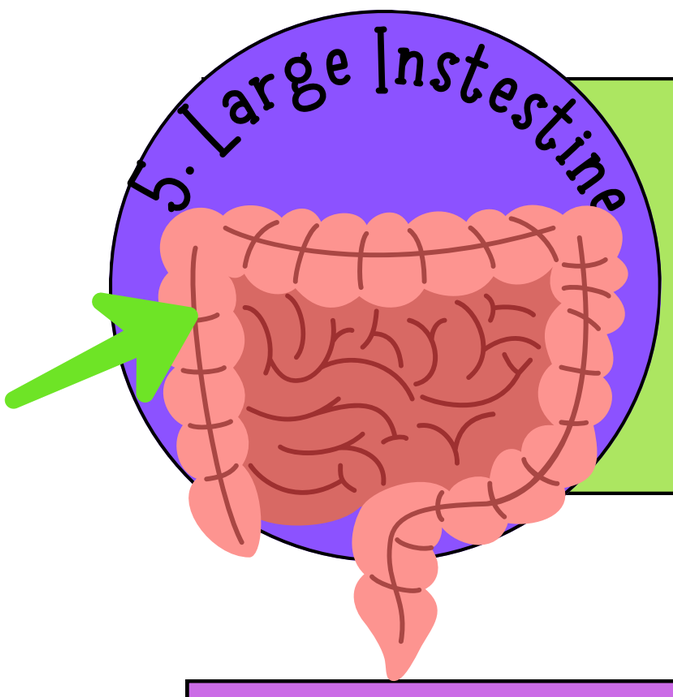
- Food enters the stomach, where gastric juices are secreted.
- These juices contain hydrochloric acid and enzymes like **pepsin.**
- The acid helps break down food further, while pepsin begins to digest proteins.
- The food is mixed and churned with gastric juices, forming a semi-liquid mixture called **CHYME**

4. Small Intestine



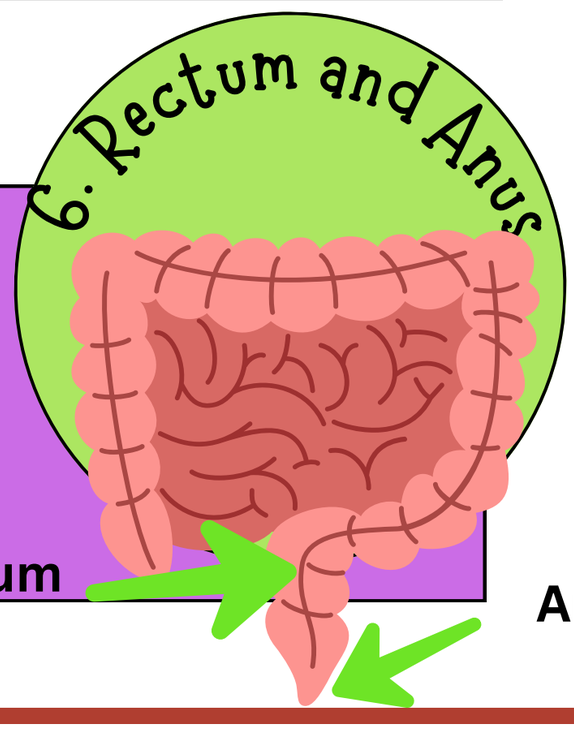
- Chyme enters the small intestine, where most digestion and nutrient absorption occur.
- The **pancreas** releases enzymes to further break down carbohydrates, fats, and proteins.
- Bile, from the gallbladder, helps emulsify and digest fats.
- The small intestine is lined with villi and microvilli, increasing the surface area for nutrient absorption.

5. Large Instestine



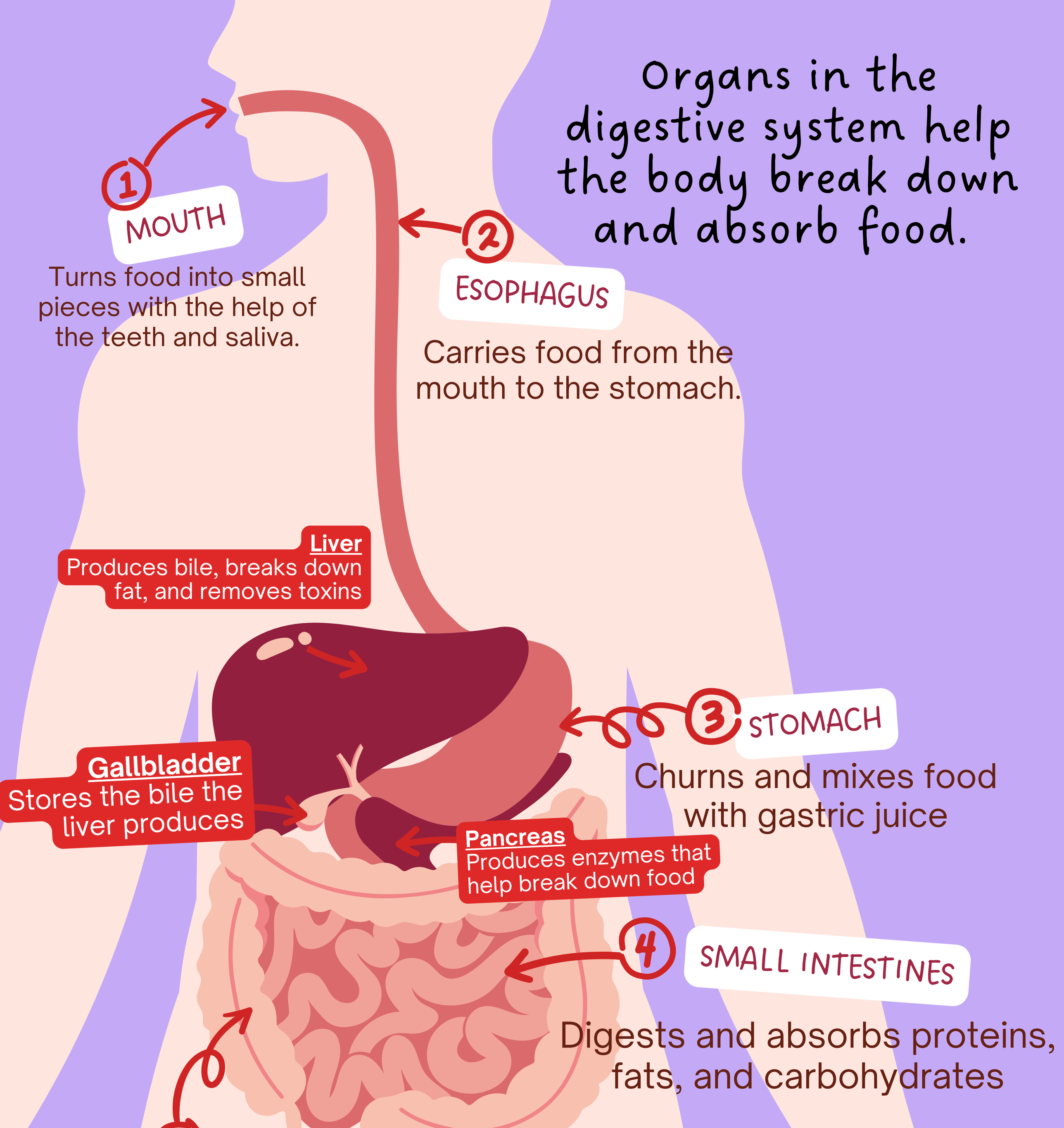
- What's left, along with water, moves to the colon.
- Absorption of Water: The colon absorbs water from the remaining material.
- Formation of Feces: This process thickens the waste, creating feces.

6. Rectum and Anus



Waste is formed into **feces** which will be stored in rectum and expelled through the anus.

Organs in the digestive system help the body break down and absorb food.



1 MOUTH

Turns food into small pieces with the help of the teeth and saliva.

2 ESOPHAGUS

Carries food from the mouth to the stomach.

Liver
Produces bile, breaks down fat, and removes toxins

Gallbladder
Stores the bile the liver produces

Pancreas
Produces enzymes that help break down food

3 STOMACH

Churns and mixes food with gastric juice

4 SMALL INTESTINES

Digests and absorbs proteins, fats, and carbohydrates

5 LARGE INTESTINES

Absorbs salt and water from food, leaving a soft mass called stool

6 RECTUM

Acts as the stool's temporary storage

7 ANUS

Where stool exits the body