

Chapter 2: Nutrition in Animals

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Steps in nutrition

- Ingestion: Intake of food
- Digestion: Complex → Simple
- Absorption: Absorb energy
- Assimilation: Simple → Complex
- Egestion: Elimination of waste

Digestion in humans

- Food passes through specific canal (elementary canal/ digestive tract)
- Digestive system = elementary canal + Digestive glands
- Parts of elementary canal (first 7) and digestive glands (last 3):

Mouth & Buccal Cavity

- Process of taking food: ingestion
- Large pieces of food broken down
- Food mixes with saliva : secreted from salivary glands
- Tongue: taste of food by taste buds

Esophagus

- Epiglottis directs the food into esophagus

Stomach

- Widest part
- Churned and mixed with mucus (HCL acid & digestive juices)
- Acid kills bacteria
- Juices break down proteins
- Emptied into small intestine

Small intestine

- 7.5m long
- Digestive juices mixed
- Inner wall has finger-like projections:
 - Increase surface area of food

Large intestine

Rectum

Anus

Salivary glands

- Secretes saliva

Liver

- Largest gland
- Secretes bile

Pancreas

- Secretes pancreatic juice
- Breaks down carbs, prots., fats

Digestion in Cow

- Special stomach with 4 chambers:
 - Rumen (largest part)
 - Reticulum
 - Omasum (smallest part)
 - Abomasum
- Ruminant: Animal that can bring back food from stomach
- Rumination: Process of bringing back food from stomach
- Process of digestion of food:
 1. Quickly swallow grass and store in rumen
 2. Food partially digested in rumen: cud
 3. Cud is pushed into reticulum
 4. Reticulum sends back cud back to mouth
 5. Re-chewed food sent to Omasum
 6. Excess water removed, broken down
 7. Goes to Abomasum (True stomach)
 8. Goes into small intestine
 9. Absorption of nutrients
 10. Caecum (sac-like) contains bacteria, breaks down cellulose
 11. Goes into large intestine