Carbohydrate Digestion Lecture

MOUTH

- _____ breaks down starches to disaccharides and some trisaccharide units.

SMALL INTESTINE (Hydrolysis vs Condensation)

- Pancreatic amylase produced in the pancreas _____ down the remaining starches into the _____ maltose.
- **Sucrose** (_____ sugar) and **Lactose** (_____sugar) are ingested and not touched until the intestinal enzymes act.
  1. **Maltase**- breaks down _____ into 2 glucose molecules via _____ (add water to break bonds).
  2. **Sucrase** – breaks down _____ into a glucose and _____molecule via hydrolysis.
  3. **Lactase** – breaks down _____ into a glucose and _____ molecule via hydrolysis.

ABSORPTION OF CARBOHYDRATES

1. Carbs absorbed into _____cells of the _____ and microvilli by facilitated diffusion.
2. Moves from _____columnar cells into capillaries by _____.
3. Moves to the _____ by the _____ portal blood system.
4. The liver _____ impurities and stores the excess reducing sugars (monosachs) as _____.

INDIGESTIBLE CARBOHYDRATES

A. Provides food for methane-producing, _____ bacteria like ***E. coli***.
   1. Meals high in carbs like _____(plant matter) and complex fiber provide ample _____ for bacteria.
   2. Bacteria fermentation will produce H2O, CO2, and _____ (methane gas).
   3. The bacteria _____(above) make flatus (gas).

LACTOSE INTOLERANCE

- Often, the small intestine stops producing the enzyme _____ in adolescents.
- This leaves excess _____ (lactose) for the colonic bacteria.
- As bacteria _____ more food, they produce more gas resulting in symptoms like _____, _____, and _____.

WHY WE NEED CARBS?

- Carbs are essential for most cell _____.
- Mitochondria take glucose and convert it to _____ through _____ _____ (Glycolysis, Kreb's, ETC).
- ATP is then utilized throughout the body for a _____of uses
- Uses include _____, cell building, _____, digestion, blood pumping, _____ _____, etc.