

UNDERSTANDING BACTERIAL OVERGROWTH

Description

Cause

Diagnosis

Treatment

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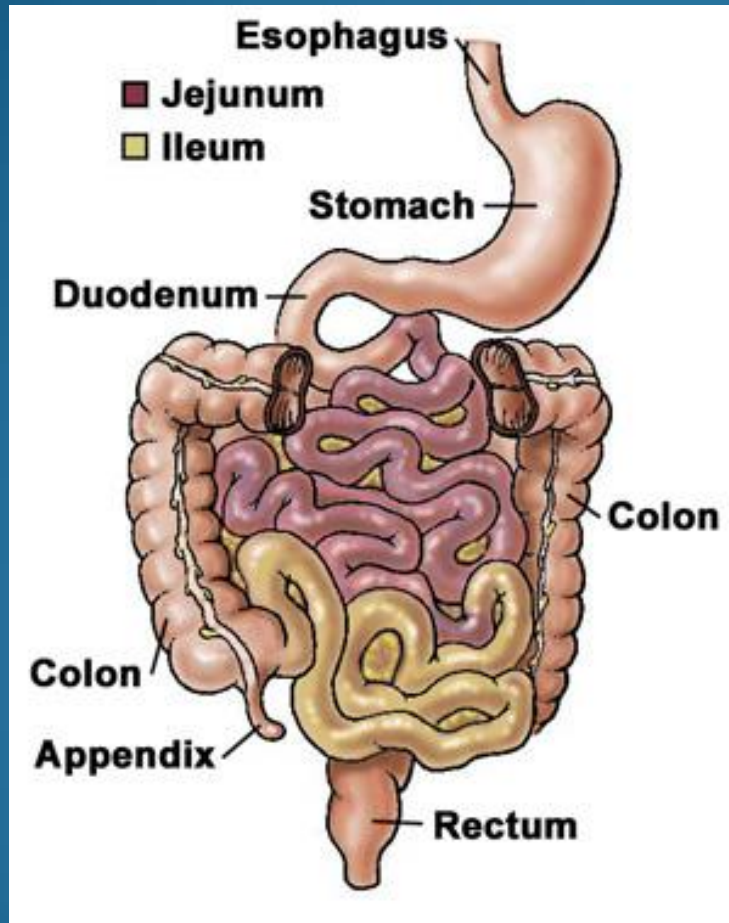
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BACTERIAL OVERGROWTH

- Too many bacteria in small intestine (>100,000 cfu/ml) (SIBO)
- Colonic bacteria in small intestine.
- Wrong type of bacteria in colon
 - D-lactic acidosis
 - Auto brewery syndrome
- Adverse symptoms and consequences



GASTROINTESTINAL TRACT

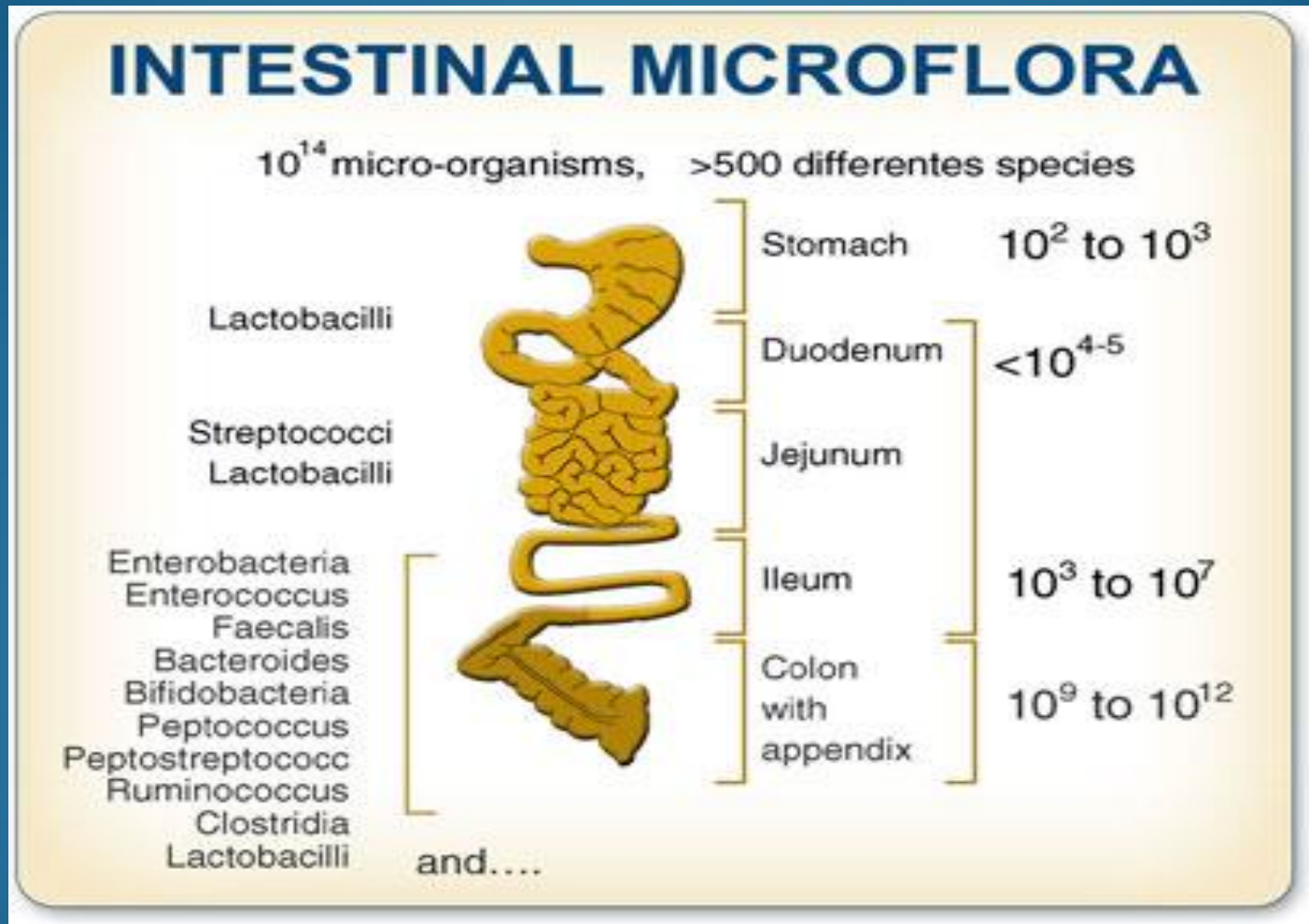


1- 4 hour stomach emptying time

3 hour small bowel transit time

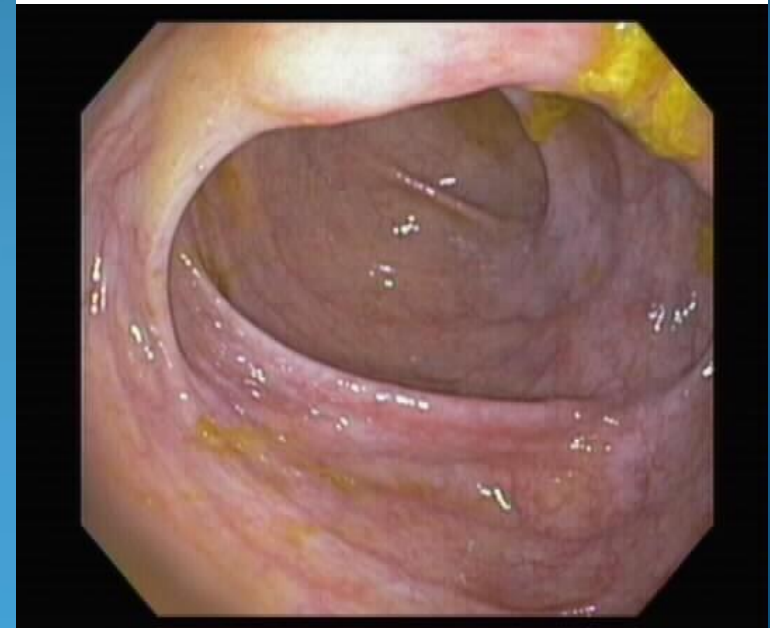
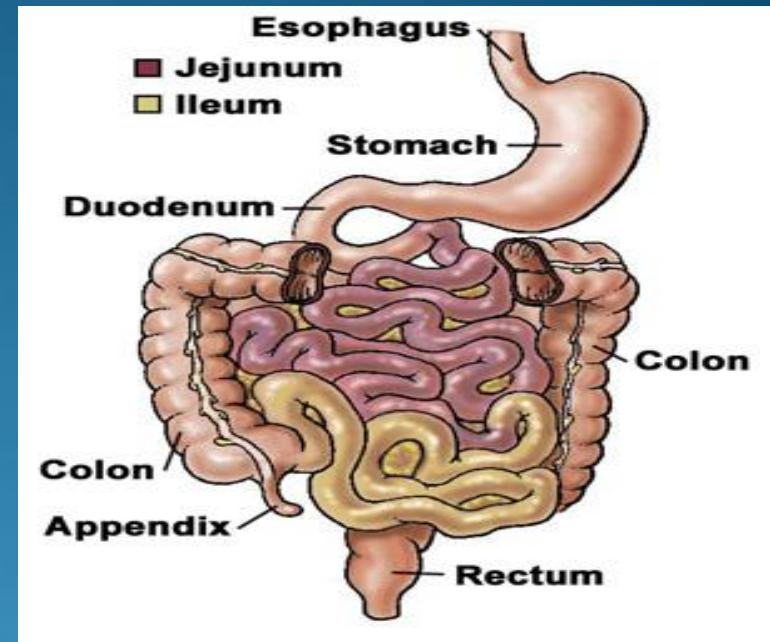
12 - 24 hour colon transit time

Normal Intestinal Flora (Microbiotica)



NORMAL MAINTENANCE OF GI FLORA

- Stomach acid
- Bile
- Pancreatic enzymes
- Secretory IgA
- Peristaltic contractions
- Ileocecal valve (ICV)
- Limited CHO avail



FACTORS CONTRIBUTING TO SIBO

- Decreased gastric acid
- Decreased bile or pancreatic enzymes
- Decreased secretory IgA
- Lack of ileocecal valve
- Decreased intestinal motility
- Intestinal strictures, blind loops, fistulas, diverticulosis
- Unabsorbed carbohydrate
- Antibiotics

SIGNS & SYMPTOMS OF SIBO

- Gas and Bloating
- Abdominal pain or discomfort
- Diarrhea
- Steatorrhea (fat in stools)
- Weight loss

ADVERSE CONSEQUENCES OF SIBO

- Symptoms
- Inflammation and damage of intestinal mucosa
- Decreased nutrient absorption
 - B₁₂
 - Fat and fat-soluble vitamins (A, D, E)
 - Carbohydrate (especially lactose)
 - Protein



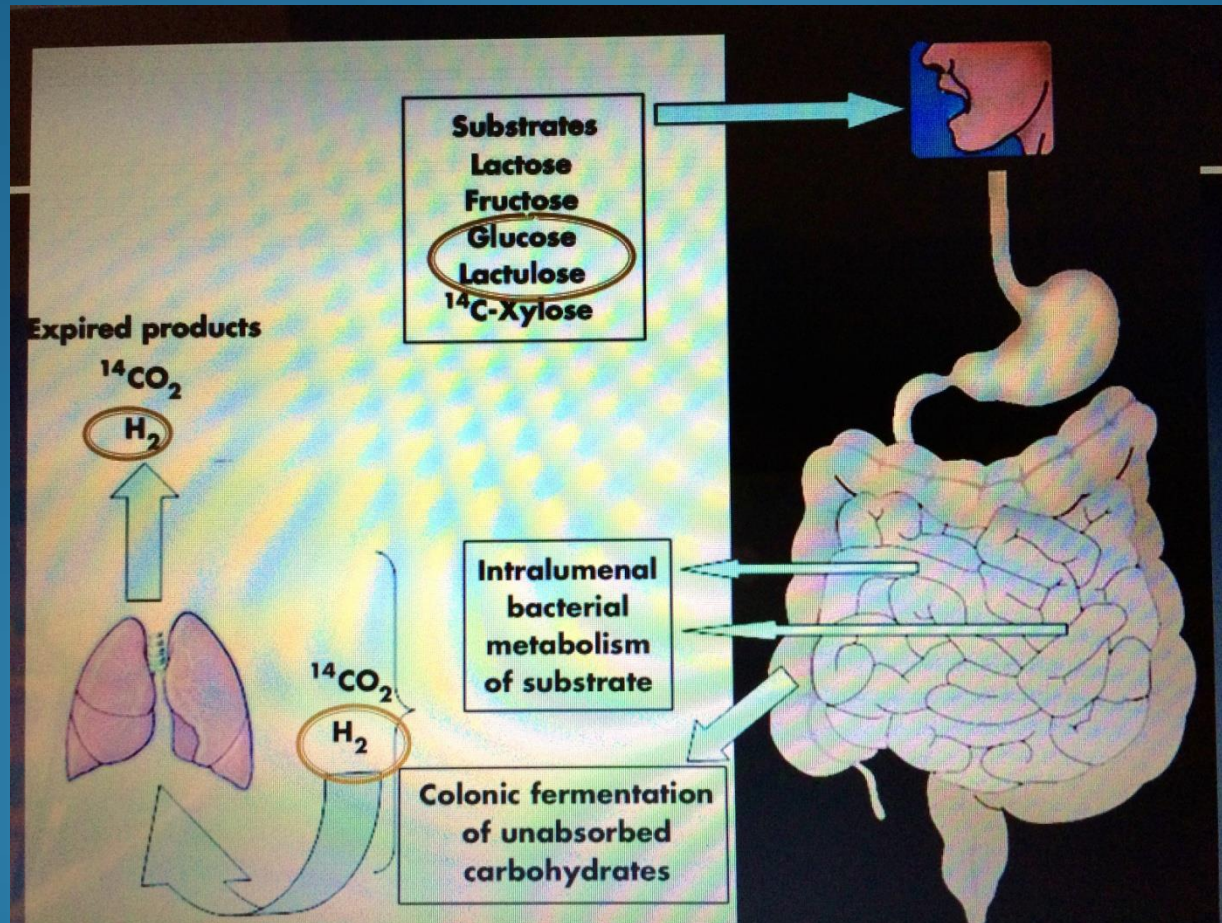
DIAGNOSIS OF SIBO

- Small bowel aspirate
- Hydrogen and methane breath tests
- Symptoms and response to therapy

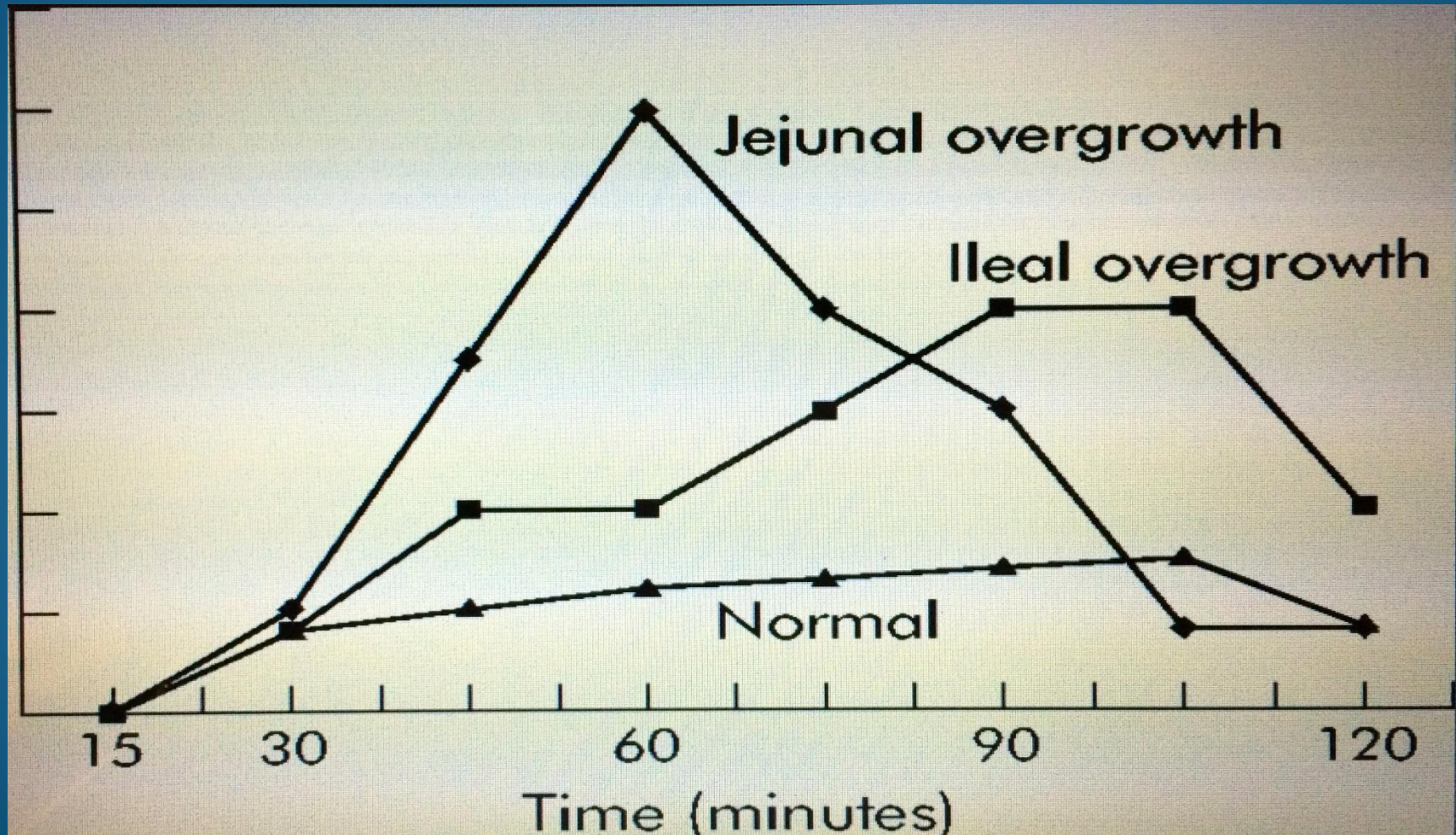
SIBO DIAGNOSIS BY SMALL BOWEL ASPIRATE

- Collect small bowel fluid by endoscopy
- Culture aspirate ($>10^5$ cfu/ml = abnormal)
- Limitations
 - Expensive
 - Invasive
 - May miss organisms in lower bowel
 - Offending organisms may not grow in culture

SIBO DIAGNOSIS BY HYDROGEN AND METHANE BREATH TESTS



HYDROGEN OR METHANE BREATH TESTS



LIMITATIONS OF BREATH TESTS

- Not all offending bacteria produce hydrogen or methane
- Rapid GI transit distorts results
- Delayed gastric emptying impacts results
- Test may cause abdominal symptoms or diarrhea

SIBO DIAGNOSIS BY SYMPTOMS AND RESPONSE TO THERAPY

- Presence of symptoms consistent with SIBO
- Known risk factors for SIBO
- Response to therapy

TREATMENT OF SIBO

- Poorly absorbed antibiotics
- Herbs/botanicals
- Probiotics
- Fecal transplants
- Motility agents
- Review need for acid blocking meds
- Reduce carbohydrate intake
- Replete nutritional deficiencies
- Correct anatomical abnormalities

CONCLUSION

- Bacterial overgrowth is a complex problem, with multiple contributing factors, leading to its development. More research is needed, to develop better diagnostic and treatment options.

