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# Large Intestine

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11:00 AM

1. Describes the function of the colon.
    a. Storage
    b. Absorption of salt and water
    c. Digestion and absorption of other stuff
    d. Excretion
2. States the mechanism of colonic absorption of salt and water.
    a. Absorbs salt --> 1.5 l/day of water
    b. Na+ absorption in proximal colon is by Na+-H+ exchange in apical membrane coupled to Cl--HCO3- exchanger
    c. In distal colon, electrogenic Na+ absorption via amiloride sensitive sodium channel
        i. Regulated by aldosterone
        ii. When Na+ deficient, Na+ retention in colon is very efficient
    d. Na+ entering cells is pumped out via Na+/K+ ATPase (ouabain inhibited) or secreted by crypts on basolateral membranes
    e. K+ also pumped out basolaterally via channel
    f. HCl
    g. Colonic H+/K+ ATPase in distal colon to secrete H+/absorb K+
    h. Water is probably absorbed via aquaporins
        i. Colon can absorb up to 4400 ml/day; excretes at least 100 ml/day
        ii. Small intestinal disease can lead to diarrhea b/c too much water coming in from small intestine
        iii. Colonic disease may result in net secretion of water --> diarrhea
3. States the mechanism of colonic potassium and bicarbonate secretion.
    a. See 2
4. States the effects of aldosterone on sodium and potassium transport across the colonic epithelium.
    a. See 2c
5. Defines "dietary fiber."
    a. Dietary fiber is mainly carbohydrates that we cannot digest
    b. Increases stool weight
    c. Decreases transit time
6. Describes the role of colonic bacterial metabolism in gas formation (flatus).
    a. Intestinal bacteria ferment carbohydrates --> H2 gas, SCFA
    b. Bacteria metabolize bile acids and Vit K
    c. Ingestion of certain foods rich in indigestible carbohydrates increases flatus
    d. More anaerobic bacteria than aerobes; more total bacteria than small intestine
7. Describe the production and absorption of short chain fatty acids in the colon.
    a. Produced form carbohydrates by colonic bacteria
    b. Absorbed by colonic mucosa