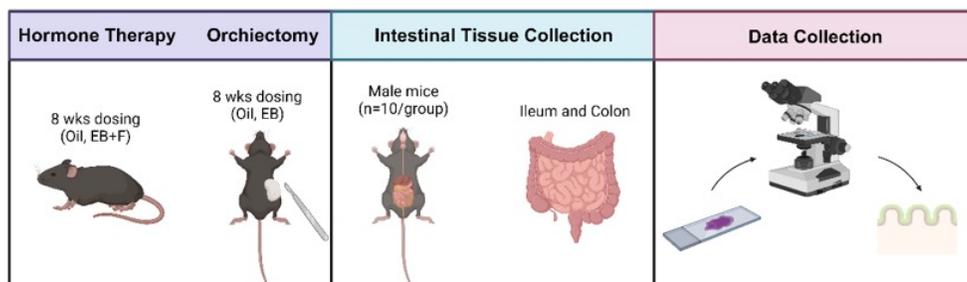


Orchiectomized Male Mice Supplemented with Estrogen Display Increased Perturbations in Gut Mucosa Compared to E-GAHT

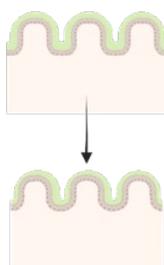
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The effects of estrogen gender affirming hormone therapy (E-GAHT) on gut homeostasis is unknown. We determined whether E-GAHT or orchiectomy (ORX) induced changes in the gut of 8-week-old mice. Forty C57BL6 male mice were grouped (n=10/group) as follows: 1) intact with oil (CTL), 2) intact with estradiol benzoate (EB, 150 µg/kg) and finasteride (F, 0.25 mg/kg), 3) orchiectomized with oil; and 4) ORX with EB (150 µg/kg), and orally dosed daily for 8 weeks. Ileum and colon were collected and sectioned for immunohistochemistry to visualize gut proteins. F4/80, lysozyme, and E-cadherin (E-cad) were measured in the ileum. Colonic goblet cell numbers were quantified using Alcian Blue Periodic Acid-Schiff and mucin-2 (muc-2) was measured in the colon. F4/80, an inflammatory marker for macrophages, was higher in all ORX animals. E-cad, essential for cellular adhesion, and lysozyme, an antimicrobial protein, were downregulated in all ORX groups. ORX:EB animals had significantly increased number of goblet cells compared to all other groups ($p \leq 0.05$). Muc-2, a glycoprotein providing a protective barrier between the gut and pathogens, was less evenly distributed in colon tissue in all ORX animals compared to CTL and Intact:EB+F mice. These data suggest that ORX with or without EB appears to induce morphological changes in the gut as follows: ORX:EB > ORX:oil > Intact:EB+F > Intact:oil. Future studies will include western blot analysis of the colon to determine the density of estrogen alpha and beta receptors following E-GAHT. Supported in part by Rutgers University Faculty Funds and NIH R25ES020721.

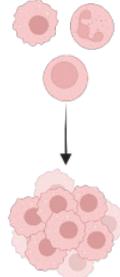


ORX:EB and ORX:oil Caused

Decreased Mucin-2, Lysozyme, E-cadherin Expression



Increased Inflammation



Increased Colonic Goblet Cell Number

