

# **Structural and Functional bladder changes**

Ali Teimouri, MD & Lauren Hamilton



# Background & Purpose



Bladder cycle: Natural process of filling, storing, and excreting urinary waste from the bladder.

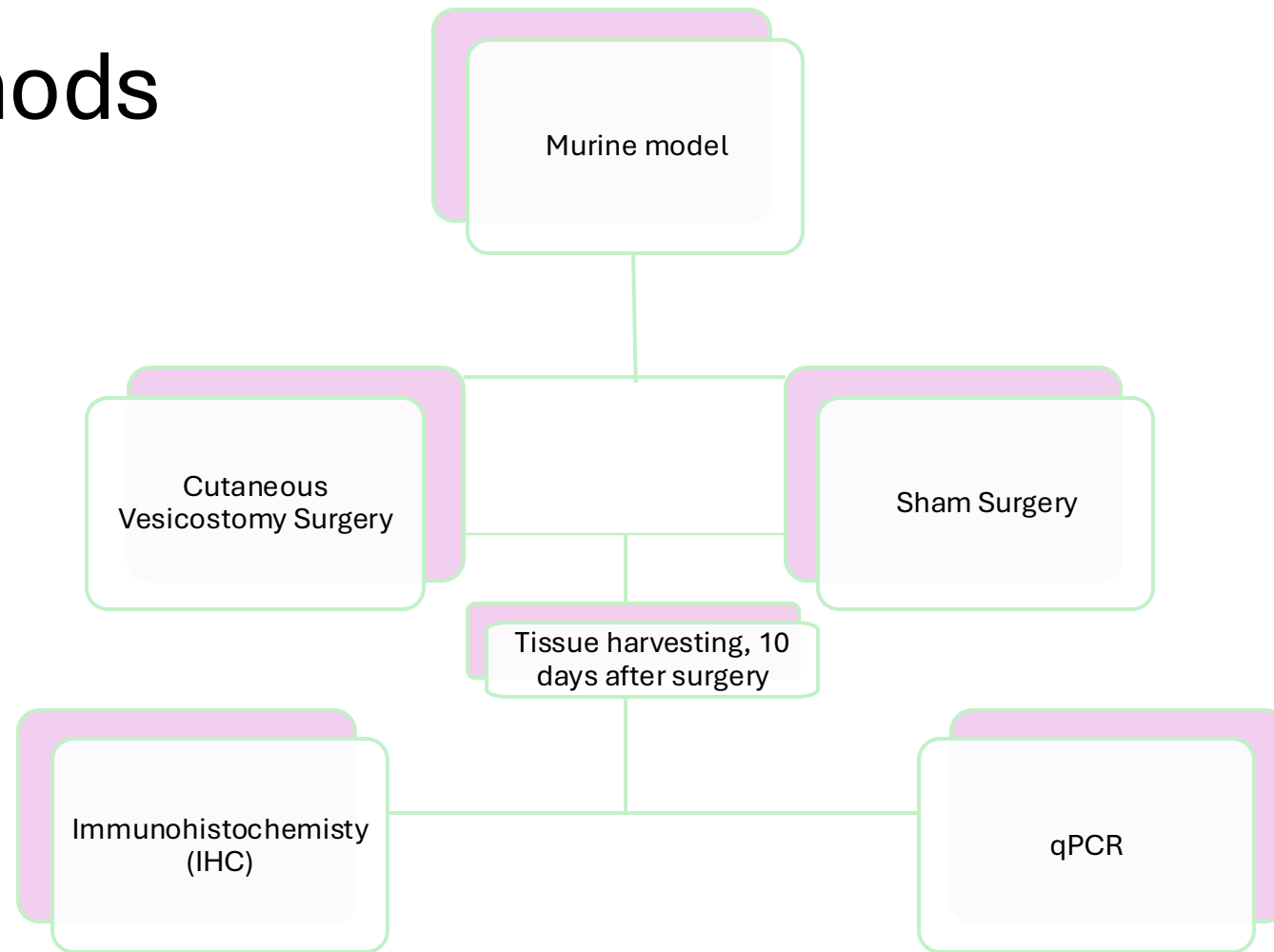


Problems in this cycle can cause weaker bladder muscles, more scar tissue (fibrosis), less bladder flexibility, and poor response to nerve signals.



Through creating a mouse model to study, we aim to determine what happens when the bladder cycle is disrupted.

# Methods



Blocksom Vesicostomy Procedure in Human

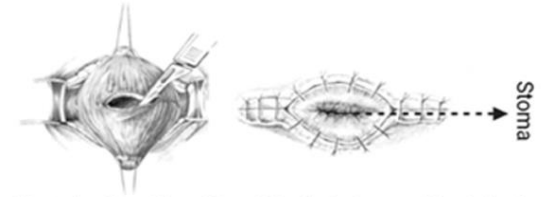
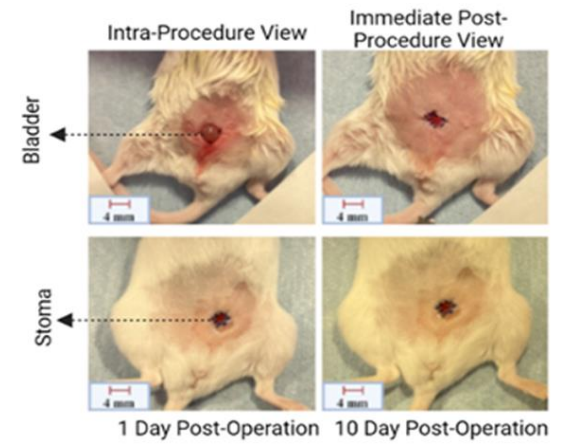


Illustration from: Rhee AC, et al. Pediatric Surgery, 7th ed. Mosby, 2012, pp. 1487-1496.

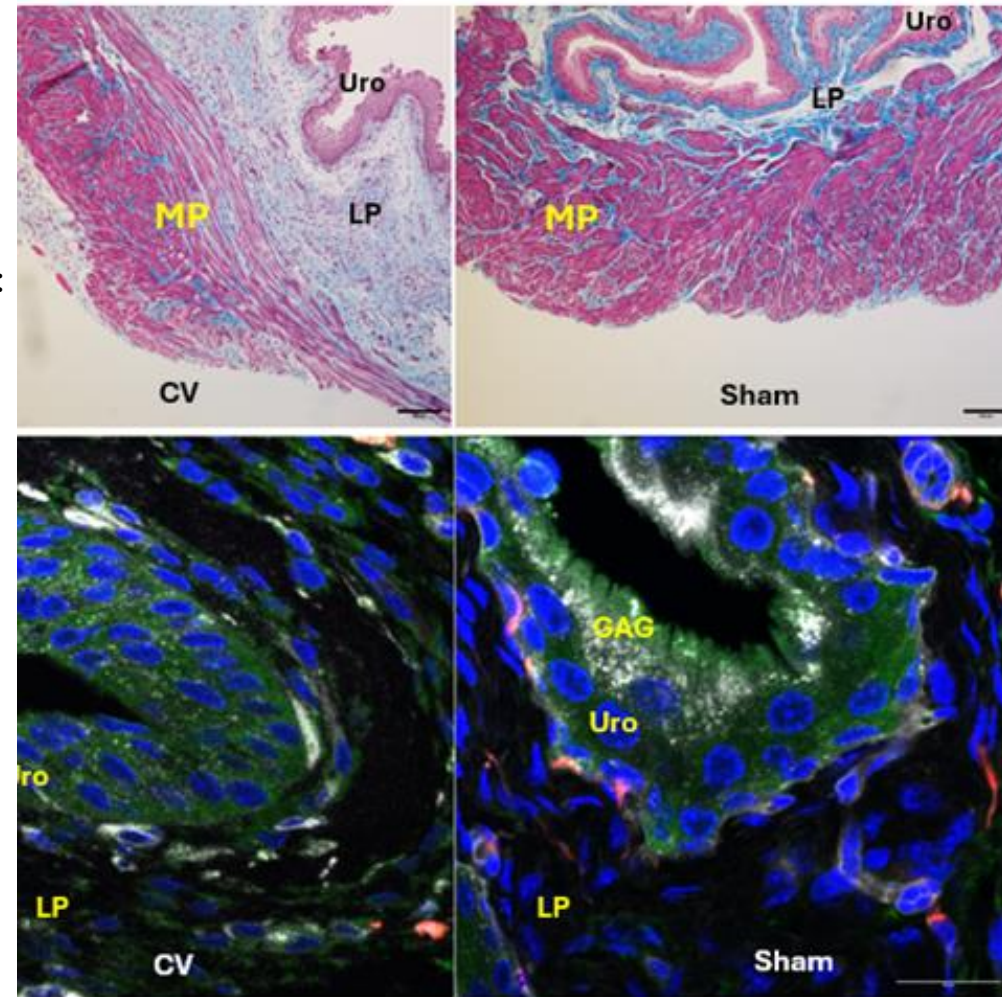


# qPCR Workflow

- RNA purification trizol
  - Lyse cells and separate RNA phase
- Reverse Transcription
  - Convert RNA to cDNA
- PCR
  - Amplify cDNA with sequence specific primers

# Immunohistochemistry

1. Deparaffination
  - Xylene
  - Ethanol (ETOH) bath, 90%, 80%, and 70%
  - Rehydration in distilled water
  - Heat induced antigen revival
2. Blocking:
  - 5–10 % serum or BSA, 30 min, room temperature
3. Primary Antibody Incubation:
  - Dilute in blocking buffer; 1–2 h RT or overnight 4 °C
4. Washes:
  - PBS, 2×, 5 min each
5. Secondary Antibody & Detection:
  - Fluorescent or HRP-conjugated; 30–60 min RT
  - Wash 3×
6. Counterstain & Mount:
  - DAPI for nuclei
7. Microscopy:
  - Fluorescence; capture images at appropriate wavelengths and magnifications



# Effects of Disrupted Bladder Cycling

- Diminished nerve-driven bladder responses
- Early fibrotic (scar) changes in bladder wall
- Weaker contractions and overall thinning of the detrusor muscle (bladder muscle)



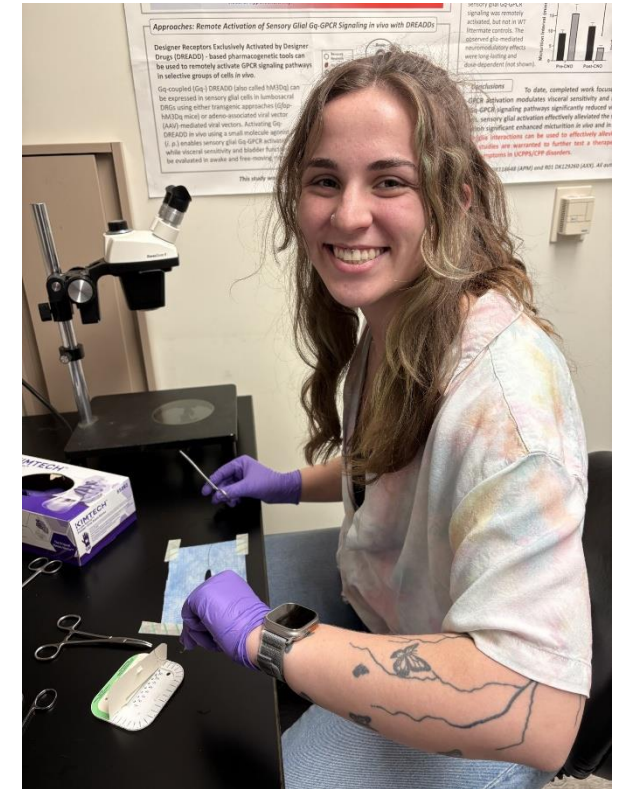
# Cultural Exchange & Learning

## Social and Political views

- Sex versus gender in science

## Government policy

- Importance of education
- Political freedoms





**Thank you!**