

MOTIVATION

Polymers are used in many biomedical devices and fail in many ways, but we found that historically material choice was not focused on, instead polymers were chosen because of previous use.

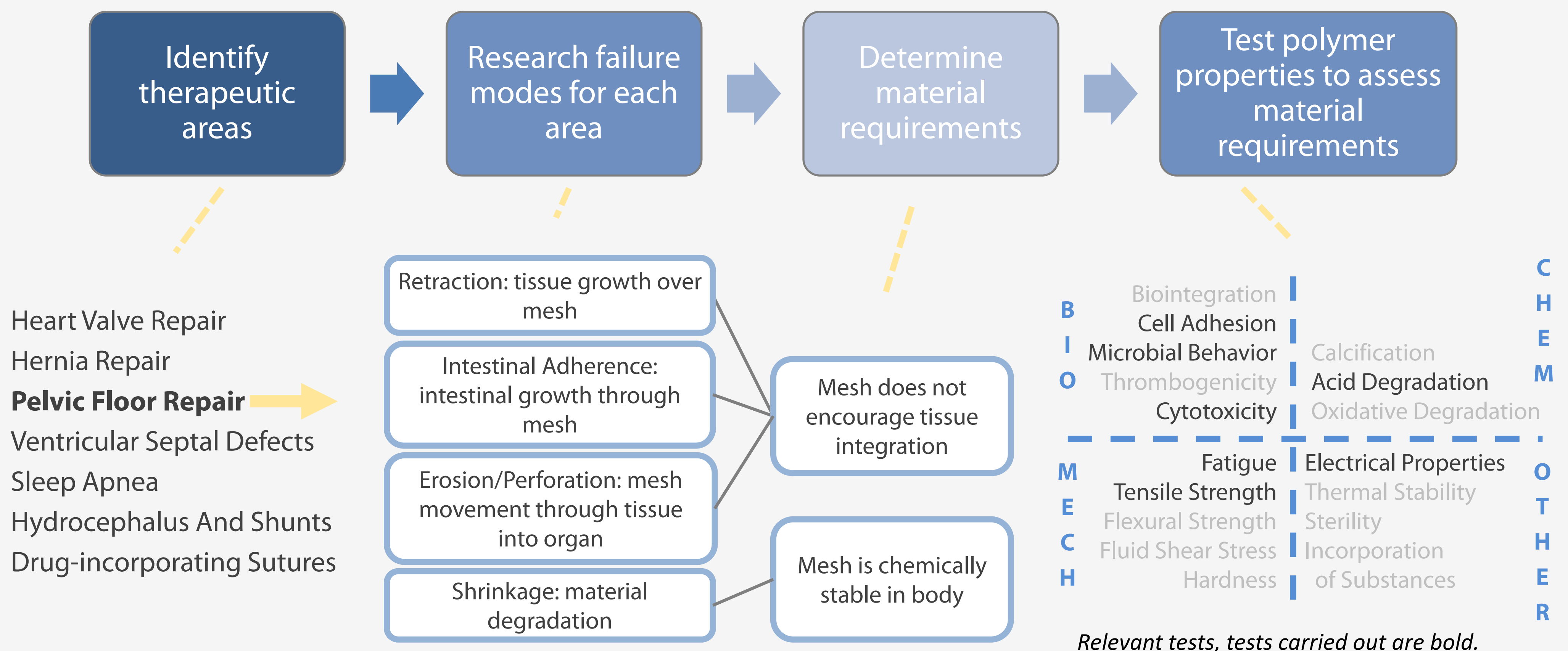
GOAL

Examine **material choice** in devices by **evaluating novel polymers** in the context of specific applications.

OUR PROJECT

We completed six tests on Novel Polymer A and Novel Polymer B to assess their applicability in biomedical devices for pelvic floor repair and other applications.

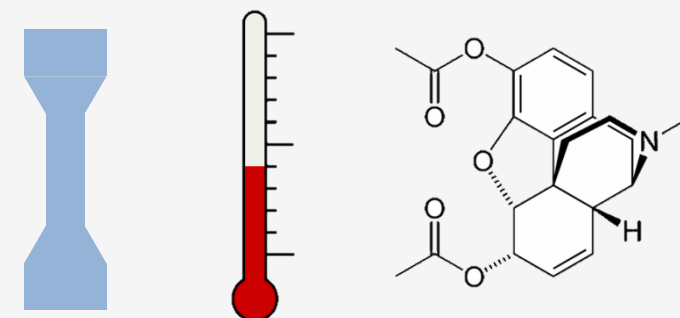
PROCESS



TESTS

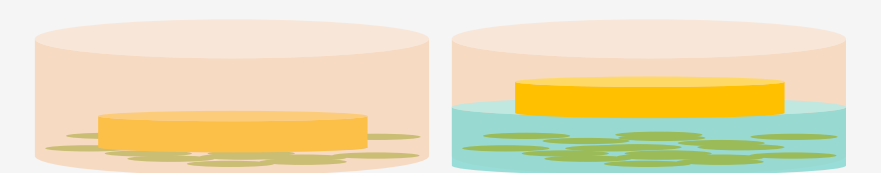
Baseline Characterization

Assess basic mechanical, thermal and chemical properties before other tests are carried out.



Cytotoxicity

Assess whether there is a toxic affect of the polymers on cells by growing cells in direct contact with or below agar and the polymer.



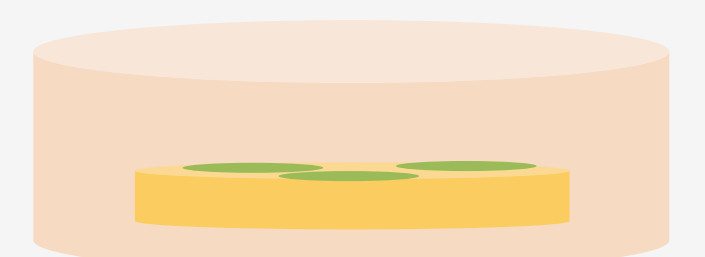
Fatigue

Determine cycles to breakage to gain insight into long-term durability of the material.



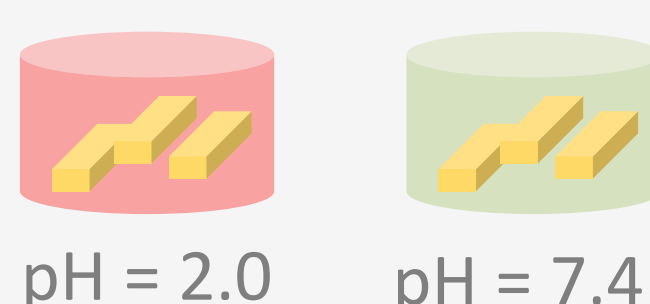
Cell Adhesion

Address how cells adhere to polymers by growing cells on polymers and counting adhered cells to gain insight into tissue ingrowth.



Acid Degradation

Assess material degradation in an acid environment, especially important for application in the stomach.



Microbial Behavior

Assess bacterial adherence by culturing polymers with bacteria and counting adhered bacteria to better understand the likelihood of infection.

