Introduction
Regenerative therapy is a promising treatment for early intervertebral disc (IVD) degeneration. It may restore tissue functionality via biomaterials containing stem cells, growth factors or agents blocking tissue catabolism (Fig. 1).

Objective
The goal of this project is to develop a computational mechanoregulation model of a degenerated IVD to evaluate the effectiveness of regenerative strategies.

Methods
We are developing an iterative mechanoregulation model (Fig. 2) including:
- prediction of cell behavior based on their mechanical environment [1][2],
- influence of nutrient concentration on cell activities,
- effect of nutrient on matrix composition [2].

Discussion
The variation in the cell type prediction over time might be due to simple assumptions for the mechanical model (axisymmetry, axial load, boundary condition).

References