Welcome.

This is the Loop of Henle.

Its job is to create an osmotic gradient in the interstitial fluid, to later draw water out of the finalized urine.

**You** are a unit of soon-to-be urine.

Your job? Pass through the length of the loop, and exit out the ascending limb – but to do this, you’ll have to play by the rules.

\*Hits ok\*

This is the **ascending limb**. Its walls are **impermeable** to water.

It is in charge of actively pumping out solutes into the surrounding fluid.

However, it cannot exceed a concentration difference of **200 mOsm** with the interstitial fluid!

Drag the correct element into the corresponding position in the interstitial fluid until you’ve reduced the concentrations of the limb as much as possible. Press ‘pump’ when you are done.

\*Hits pump, all correct\*

This is the **descending limb**. Its walls are **permeable** to water.

It participates in a passive exchange of solvent with the surrounding fluid, matching its concentration.

Drag the correct element into the corresponding position in the interstitial fluid until you’ve reached **equilibrium**. Press ‘equi’ when you are done.

\*Hits equi, all correct\*

You’ve set up all the concentrations correctly.

Fluid is transported along the loop, each unit occupying its neighbor’s position. One unit of newfluid will enter the descending limb, and another will exit out the loop.

Press ‘flow’ to move the units of fluid from left to right by one position.

\*Hits flow\*

**That’s it!** You’ve completed the tutorial.

Now you will be restricted to your spot as a single unit of primary urine. Follow the loop’s rules when it’s your turn, and watch how the gradient builds.

\*Hit okay\*