

Video: Soon, kidneys-on-a-chip will rocket to space station

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A kidney-on-a-chip held by UW researcher Ed Kelly. Credit: University of Washington

UW scientists are prepping a kidney-on-a-chip experiment at Cape Canaveral, Florida, awaiting a shuttle launch that will take the chips into space. At an altitude of 250 miles, astronauts will help study how reduced gravity in space affects kidney physiology.

Credit card-sized chip devices will contain microchambers that are lined with human-derived [kidney cells](#). The cells simulate part of a [kidney](#), and act like part of a kidney when fluid medications or toxins are injected into the device.

New tools, like the kidney chips, could help find ways to prevent or treat kidney problems in that occur often in astronauts, as well as in people who will never venture into space. Kidney disease occurs in about 10 percent of adults; treatment can diminish quality of life. Cells age more rapidly in space and can give researchers results that would take much longer on Earth, and without having to test on real people.

A SpaceX Dragon C19/Falcon 9 supply shuttle will deliver the chips to the International Space Station, where they will be exposed to microgravity for about two weeks.

The chief scientists are Ed Kelly, associate professor of pharmaceuticals, UW School of Pharmacy; Jonathan Himmelfarb, [kidney disease](#) specialist at UW Medicine and professor of medicine, Division of Nephrology, UW School of Medicine; and Cathy Yeung, research assistant professor of pharmacy.

The unmanned SpaceX mission CRS17, contracted with NASA, is slated to launch at the end of April, pending favorable conditions.

Read more about the project and where to watch the launch live [here](#).

Provided by University of Washington

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