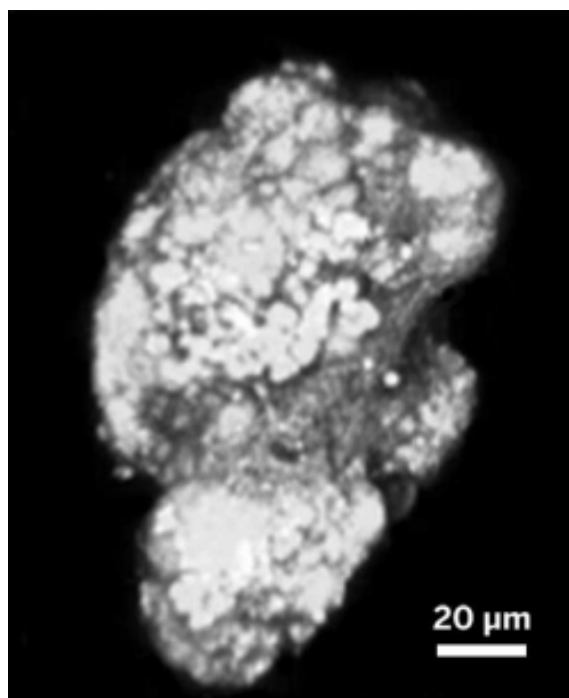


**Fruit flies** are more like humans than a lot of people realize, says **Pankaj Kapahi**, who uses the insects in his studies at the Buck Institute for Research on Aging, in Novato, Calif. For instance, both animals get kidney stones. Researchers led by Kapahi and **Marshall L. Stoller** of the University of California, San Francisco, decided to explore that phenomenon by studying mineralized samples from the renal tubules of both species using micro X-ray spectroscopy. They discovered that zinc appears to play a hitherto unrecognized but critical role in creating kidney stones (*PLOS One* 2015, DOI: [10.1371/journal.pone.0124150](https://doi.org/10.1371/journal.pone.0124150)). To solidify the connection, the team inhibited zinc-transporting membrane proteins in fruit flies prone to getting kidney stones. Several of these proteins are also found in humans. The researchers observed that hindering the transporters diminished the flies' average kidney stone size. Feeding flies less zinc or giving them a zinc-chelating supplement had a similar effect. It's unclear how zinc initiates mineralization in renal tubules, Kapahi says, but the team is working to better understand how zinc interacts with proteins, minerals, and metabolites to form kidney stones.

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Confocal microscopy reveals that fruit fly renal “concretions” resemble human kidney stones—in miniature.

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