

## METABOLISM

### Fat-molecule drop boosts metabolism

Metabolic health can be improved in mice by inhibiting the formation of compounds called ceramides in fat cells under the skin.

Ceramides are fatty molecules that have been associated with obesity and metabolic disease. Bhagirath Chaurasia at the University of Utah in Salt Lake City and his colleagues found that obese mice that could not make ceramides in fat tissue had improved energy metabolism. The mice also showed decreased inflammation and increased sensitivity to insulin (diminished sensitivity is a hallmark of type 2 diabetes). The reduction of ceramide levels in subcutaneous fat cells was linked to a cellular shift from an energy-storage mode to an energy-burning one.

The authors also report that patients with obesity and type 2 diabetes had more ceramides in subcutaneous fat cells than people of the same weight without diabetes.

*Cell Metab.* <http://doi.org/bsn2> (2016)

## ZOOLOGY

### Thorny devil may drink from sand

A desert lizard survives in arid conditions by harvesting and drinking water from puddles, and possibly even from moist sand.

The Australian thorny devil (*Moloch horridus*, pictured) has a micro-structured skin surface with capillary



channels that collect and transport water to the animal's mouth. Philipp Comanns at RWTH Aachen University, Germany, and his colleagues found that this capillary system fills up completely when the animal stands in a puddle, allowing the lizard to drink the water. Conversely, when the lizard stands on moist sand, the capillary network fills to only about 59% of its capacity, and the animal is not able to drink this water. But tests of wet sand on skin replicas showed that moisture can be extracted from sand and pulled into the

capillaries by gravity to fill them.

*M. horridus* has been observed in the wild shovelling wet sand onto its back, and the authors say this increases the contact area between skin and sand, boosting the volume of water it can collect and drink. *J. Exp. Biol.* 219, 3473–3479

## EVOLUTION

### Cat DNA shaped by diet

Carnivores have experienced stronger natural selection than plant-eating animals, perhaps

measured the way the seismic waves travelled through the ground. They confirmed that the rock beneath the mountain is too cold to create magma. Instead, the molten rock that feeds the volcano seems to come from off to the east.

The sideways plumbing helps to explain why the mountain remains active despite lying to the west of most neighbouring volcanoes.

*Nature Commun.* 7, 13242 (2016)



## GEOPHYSICS

### Volcano sneaks in magma sideways

The Mount St Helens volcano in the United States has crooked plumbing. Rather than sitting above the magma source that feeds it, the mountain is off to one side.

A major eruption in 1980 saw 57 people killed by the volcano, which is in Washington state. Steven Hansen at the University of New Mexico in Albuquerque and his colleagues set off explosives around Mount St Helens and