

NOMADIC HAND-ME-DOWNS

WHAT IS TO BLAME FOR OBESITY, LACTOSE INTOLERANCE, AND ADHD? SOME RESEARCHERS ARE POINTING SQUARELY AT HUNTER-GATHERERS.

The ADHD children of the world may have their wandering ancestors to blame. A genetic variant associated with impulsivity, novelty seeking, and attention deficit hyperactivity disorder (ADHD) might have actually been adaptive in nomadic populations, according to a recent study by Dan Eisenberg at Northwestern University. Kenyan nomads with this variant, he says, may have been better at searching for food and defending their resources, giving them a survival advantage. But the study shows that the nomads' settled descendants who carried this gene were more often malnourished than those without the gene. "Just because we don't see a trait as being currently advantageous," Eisenberg says, "does not preclude the trait from having had a function in the past." Geneticists continue to unravel our ancestral evolution in hopes of better understanding how formerly advantageous genes have led to modern-day health problems.

HIGH BLOOD PRESSURE

High blood pressure may be caused by a gene that was key to nomadic survival. The ability to retain salt—controlled in

part by a gene called *CYP3A5*—varies by latitude, according to geneticists at the University of Chicago. The closer a population lives to the equator, the better individuals are at retaining salt. "Since hunter-gatherers weren't assured of getting sodium every day, they needed to be sure not to lose what they did acquire," says Alan Weder, a hypertension specialist. But bring this gene to a modern setting—with couch lounging and salty snacking—and it is easy to retain more salt than is needed, which can lead to medical problems like high blood pressure.


LACTOSE INTOLERANCE

Whether or not you can drink milk may depend on where your nomadic ancestors settled down. Early humans, like other mammals, were able to digest milk only during infancy. But when humans started raising cows and milk became widely available, an ability to digest it brought a selective advantage, according to genetic research by Cornell University biologist Paul Sherman. DNA analysis of skeletons from between 5840 and 5000 B.C. found evidence that the early wave of European farmers could not produce the enzyme

lactase, which permits the digestion of milk, while later farmers could. In regions where dairy farming is currently not safe or economical because of an extreme climate or cattle diseases, Sherman says, populations still possess ancestral genes that make them lactose intolerant.

OBESITY

Could our growing waistlines be blamed on nomadic ancestors? Some scientists think so. The Pima Indians of Arizona are a recently settled group whose members today have sky-high rates of obesity and diabetes, thanks to their genes, say Leslie Baier and her colleagues at the National Institute of Diabetes and Digestive and Kidney Diseases. Eight years ago, Baier identified a genetic variation in the Pimas associated with slowed metabolism and increased glucose conservation. Researchers think that the gene helped Pima ancestors survive food shortages. Though most of us are not Pimas, our own hunter-gatherer forebears would also have needed to survive food shortages and scarcity—conditions that favor the evolution of similar fat-storing mechanisms, which are a problem in times of plenty. **Emily Anthes**



Two members of a nomadic tribe look out over the Chalbi Desert in northern Kenya.