

Most of us have some mitchoandrial DNA mutations

The arrival of fast and relatively inexpensive genome sequencing is likely to open whole new avenues for diagnosing and treating diseases. But in a new study, scientists show that it can also reveal how some age-related diseases — from diabetes to neurodegenerative disorders such as Parkinson's disease and dementia — establish a foothold in the human body, and in doing so, point the way to preventing such diseases.

The latest research zeros in on mitochrodrial DNA — the much smaller but more diverse packet of genetic material packaged not in the nucleus of a cell, but in the small cellular power plants called mitochondria, which convert energy from food into cellular fuel. Conducting detailed mitochondrial DNA scans of 1,095 healthy humans from 14 distinct populations across the globe, the researchers found that at least 1 in 5 healthy humans carry at least one disease-related mutation in their mitochondrial DNA — a condition called heteroplasmy. And 90 percent have mitochondrial DNA mutation of some sort.

Yet they were all still healthy.

But when nearly all of us seem to carry some mutations in these special genes, what's the tripping point that begins the downward spiral toward illness? And how do healthy people get from having a small number of heteroplasmies to having enough to cause the body to break down?

Read the full, original story: [Almost all of us have genetic defects hidden in our cellular furnaces](#)