

352-Glucose and human evolution

A new Science paper (1) reframes a central question in human evolution: what fueled the growth of our oversized brain? The usual answer is meat. The authors make a strong case for sugar.

The brain runs almost exclusively on glucose, and the numbers are startling: in adults it burns 20% of our resting energy despite being under 2% of body weight — and in a 5-year-old, a jaw-dropping 66%. Before fire and cooked starch, the only reliable source of that much glucose was fruit and honey. Modeling across 4 million years of hominin evolution, the authors show that diets rich enough in sugar to meet this demand track closely with the timeline of brain expansion.

What makes this compelling is how many independent threads it ties together: our sweet taste receptors extend well beyond the tongue, into the gut and the brain's own appetite centers; sweet-food preference is highly heritable. Very interestingly, the multiple duplications of the salivary amylase gene (AMY1) across human populations, long known to track starch-rich diets, now read less like an isolated dietary quirk and more like one more piece of a single evolutionary story: a lineage under sustained selection pressure to extract glucose efficiently, first from sugars, later from starch.

1. <https://www.science.org/doi/10.1126/science.aed8437>