Increased Energy Efficiency/Conservation

1) Humans ability to safely store subcutaneous fat at expense of En consuming muscle, freeing En for brain
2) Neonates born fat with reserve for brain that uses >80% of body En & human young grow/develop slowly
3) Human gut is simplified & short, thus using less En & able to redirect En to brain

The NRF2 system co-opts highly varied plant chemicals to increase antioxidant, anti-oxidant cell protection, possibly for energy efficiency & increased cell life (longevity) & stability (low degeneration & cancer risk)

Increased Energy Uptake

Technologies – agriculture: animal/plant domestication, breeding, mass mechanized farming & food production, synthetic chemical use, transport, mega-structures, electricity, trade, city living, electronic communication

Omnivory → more energy from animal fat brain muscle + micronutrient (mineral) + fruit sugars/seed oils

Expansion of brain cortico-Limbic-Striatal reward, motivation and fine motor coordination for energy dense food procurement

Cranial capacity

- 1500 cm³
- 1000 cm³
- 500 cm³

Homo sapiens sapiens
Homo sapiens neandertalensis
Homo erectus
Homo habilis
Australopithecus
Sahelanthropus

Last common Primate ancestor with Apes →

Millions of years ago

-10 → -9 → -8 → -7 → -6 → -5 → -4 → -3 → -2 → -1 → 0