Evolution of grandparents may explain genes that protect against dementia

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“Survival of the fittest” is one of the most misunderstood terms in biology. Evoking images of physical prowess, it actually refers to an individual inheriting traits that increase the chances of having fertile offspring, such as brilliant plumage or a high sperm count. But according to an intriguing study published recently in Proceedings of the National Academy of Sciences, for we humans, natural selection may favor grandparents who enjoy what appears to be genetic protection against dementia. The reasoning: maintaining cognition and memory well into old age enables elders to impart their wisdom to and care for their grandchildren, while elders with dementia require care themselves.

The granny hypothesis fits in well with a decades-old idea called kin selection. That is, individuals can perpetuate their genes not only by having offspring, but also by easing survival of younger relatives, with whom they share gene variants. Human grandparents who can think clearly, the hypothesis holds, increase the odds of survival of their children’s children by being able to teach them life skills, metaphorical ant bridges.

Humans and toothed whales are the only mammals that live past the age of reproductive utility. Orcas can survive post-menopause, supposedly, because they know the environment well enough to teach young whales how to successfully forage when food is scarce. Humans may have gone down the same evolutionary road until late-onset dementia of the Alzheimer’s type arose, which is apparently unique to us.

Read full, original post: Genes That Protect Against Dementia (Maybe)