Are humans still evolving? Absolutely, says new analysis of long-term survey of human health

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Although advances in medical care have improved standards of living over time, humans aren't entirely sheltered from the forces of natural selection, a new study shows.

"There is this idea that because medicine has been so good at reducing mortality rates, that means that natural selection is no longer operating in humans," said Stephen Stearns of Yale University. A recent analysis by Stearns and colleagues turns this idea on its head. As part of a working group sponsored by the National Evolutionary Synthesis Center in Durham, NC, the team of researchers decided to find out if natural selection — a major driving force of evolution — is still at work in humans today. The result? Human evolution hasn't ground to a halt. In fact, we're likely to evolve at roughly the same rates as other living things, findings suggest.

Taking advantage of data collected as part of a 60-year study of more than 2000 North American women in the Framingham Heart Study, the researchers analyzed a handful of traits important to human health. By measuring the effects of these traits on the number of children the women had over their lifetime, the researchers were able to estimate the strength of selection and make short-term predictions about how each trait might evolve in the future.

After adjusting for factors such as education and smoking, their models

predict that the descendents of these women will be slightly shorter and heavier, will have lower blood pressure and cholesterol, will have their first child at a younger age, and will reach menopause later in life.

"The take-home message is that humans are currently evolving," said Stearns. "Natural selection is still operating."

The changes may be slow and gradual, but the predicted rates of change are no different from those observed elsewhere in nature, the researchers say. "The evolution that's going on in the Framingham women is like average rates of evolution measured in other plants and animals," said Stearns. "These results place humans in the medium-to-slow end of the range of rates observed for other living things," he added. "But what that means is that humans aren't special with respect to how fast they're evolving. They're kind of average."

More information: Byars, S., D. Ewbank, et al. (2009). "Natural selection in a contemporary human population." *Proceedings of the National Academy of Sciences* 106(42). doi: 10.1073/pnas.0906199106

Source: National Evolutionary Synthesis Center