Wild chimpanzees appear not to regularly experience menopause

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A pioneering study of wild chimpanzees has found that these close human relatives do not routinely experience menopause, rebutting previous studies of captive individuals which had postulated that female chimpanzees reach reproductive senescence at 35 to 40 years of age.

Together with recent data from wild gorillas and orangutans, the finding -- described this week in the journal *Current Biology* -- suggests that human females are rare or even unique among primates in experiencing a lengthy post-reproductive lifespan.

"We find no evidence that menopause is common among wild chimpanzee populations," says lead author Melissa Emery Thompson, a postdoctoral researcher in anthropology at Harvard University. "While some female chimpanzees do technically outlive their fertility, it's not at all uncommon for individuals in their 40s and 50s -- quite elderly for wild chimpanzees -- to remain reproductively active."

While wild chimpanzees and humans both experience fertility declines starting in the fourth decade of life, most other human organ systems can remain healthy and functional for many years longer, far outstripping the longevity of the reproductive system and giving many women several decades of post-reproductive life.

By contrast, in chimpanzees reproductive declines occur in tandem with overall mortality. A chimpanzee's life expectancy at birth is only 15 years, and just 7 percent of individuals live to age 40. But females who

do reach such advanced ages tend to remain fertile to the end, Emery Thompson and her colleagues found, with 47 percent giving birth once after age 40, including 12 percent observed to give birth twice after age 40.

"Fertility in chimpanzees declines at a similar pace to the decline in survival probability, whereas human reproduction nearly ceases at a time when mortality is still very low," the researchers write in Current Biology. "This suggests that reproductive senescence in chimpanzees, unlike in humans, is consistent with the somatic aging process."

In other words, human evolution has resulted in an extended life span without complementary extended reproduction.

"Why hasn't reproduction kept pace with the general increase in human longevity" It may be because there hasn't been anything for natural selection to act on, though there is heritable variation in age of menopause," Emery Thompson says. "However, it may be that the advantage older females gain by assisting their grandchildren outstrips any advantage they might get by reproducing themselves."

The oldest known wild chimpanzee, who died earlier this year at approximately age 63, gave birth to her last offspring just eight years ago, at about 55. Female chimpanzees only give birth every 6 to 8 years, on average, and they generally begin reproducing at age 13 to 15. This makes the chimpanzee reproductive profile much longer and flatter than that of humans, whose procreation is concentrated from age 25 to 35.

Emery Thompson and her colleagues gathered data from six wild chimpanzee populations in Tanzania, Uganda, Guinea, and Gambia. They compared these chimpanzees' fertility patterns to those seen among two well-studied human foraging populations, in Botswana and Paraguay.

Source: Harvard University