

Erim
Gurlemis

Evolution of Hair Loss in Primates



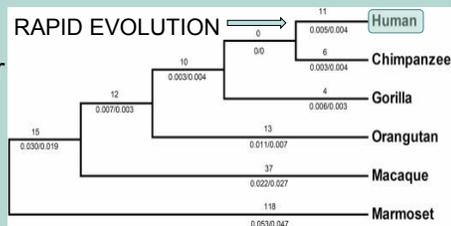
Credit : Tim Evanson / Flickr / CC BY-SA 2.0

Hair, or a body full of fur, is a defining feature of mammals however, as humans we are one of the least hairy species. For a long time, this difference in fur was mystery however scientists were recently able to gain an understanding as to why.

How were scientists able to determine this?

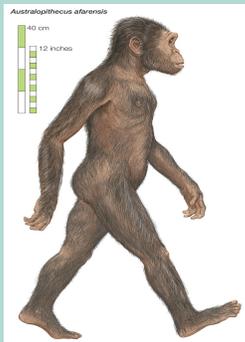
☆ WITH GENETICS ☆

The first gene identified as responsible for hair loss is the **HR gene**. Mutations within this gene is what partially caused complete loss of hair on the body and scalp of early humans.

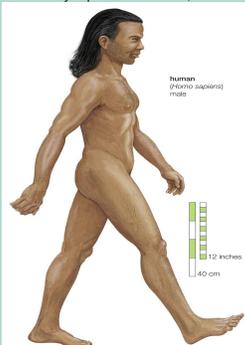


Adapted from Abbasi A. A. (2011). CC BY-NC-SA 3.0

From the analysis of HR sequences in different closely related species, it is shown that the human HR gene **evolves much faster than others**. This increased rate of substitutions might indicate positive selection and a rapid rate of hair loss.



© Encyclopaedia Britannica, Inc.



© Encyclopaedia Britannica, Inc.

Benefits of fur loss

- ☆ Better for regulating temperature and very advantageous for foraging in water
- ☆ Loss of fur decreases chance of external parasite infection
- ☆ Loss of facial fur led to **color vision developing**. Humans could now see color.



Scan this QR code to watch a by video by PBS Eons to find out more about why humans are so bare skinned!

Sources

1. Abbasi A. A. (2011). Molecular evolution of HR, a gene that regulates the postnatal cycle of the hair follicle. *Scientific reports*, 1, 32. <https://doi.org/10.1038/srep00032>
2. Changizi, M. A., Zhang, Q., & Shimmojo, S. (2006). Bare skin, blood and the evolution of primate colour vision. *Biology letters*, 2(2), 217–221. <https://doi.org/10.1098/rsbl.2006.0440>
3. PBS Eons (2020, December 2). *How Humans Lost Their Fur*. Retrieved from https://www.youtube.com/watch?v=E76vqlhmBlc&ab_channel=PBSEons
4. Daley, J. (2018, December 11). *Why did humans lose their fur?* Smithsonian.com. Retrieved April 13, 2022, from <https://www.smithsonianmag.com/science-nature/why-did-humans-evolve-lose-fur-180970980/>