

Bacteria the yin and yang of dandruff, says study

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Credit: Laura Tiitto/public domain

Dandruff is not caused by a fungus, as many believe, but by an imbalance between two competing bacteria that naturally colonise the human scalp, according to a study released Thursday.

Think of *Propionibacterium* and *Staphylococcus* as the yin and yang of

healthy hair: when they hold each other in check, so too is dandruff held at bay.

But when one dominates the other, the tell-tale white flecks that settle on shoulders like snowdust begin to proliferate, a team of Chinese and Japanese researchers reported.

Dandruff is the most common [scalp](#) disorder on the planet, a tonsorial bane for about half the world's population.

But experts have differed sharply over the years on its causes and possible cures, though consensus has formed of late around one culprit in particular.

"Micro-organisms on the scalp—especially fungi—have been predominately thought to be the main cause of the development of dandruff," they noted in the study, published in the Nature Group's *Scientific Reports*.

Suspecting this might be wrong, a team anchored by Zhang Menghui of Shanghai Jiao Tong University isolated a large number of variables in the ecosystem of the human scalp to see how they interact.

In 59 Chinese volunteers aged from 18 to 60 years old, they measured levels of water, several dozen bacteria, sebum—an oily secretion that proliferates in adolescence and early adulthood—and the allegedly villainous fungus, called *Malassezia*.

Participants washed their hair 48 hours in advance of the tests, and dandruff samples were taken from eight different sections of the scalp.

"Overall, fungi did not exhibit an important role in the severity of dandruff," they concluded.

"The relationship between the bacteria and the dandruff was significantly stronger."

But the scientists also noticed that prevalence of the pesky white particles was higher when the ratio of two dominant bacteria—which normally cancel each other out—was altered.

"This study suggests that adjusting the balance of the [bacteria](#) on the scalp... might be a potential solution to lessen dandruff," they concluded.

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