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Microbial population influence between frequent kissers

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When two people kiss, they (perhaps unknowingly) exchange bacteria.

This phenomenon was explored to some extent in one of the studies honored by the 2015 Ig Nobel Medicine Prize. That prize-winning study is “Prevalence and Persistence of Male DNA Identified in Mixed Saliva Samples After Intense Kissing,” Natália Kamodyová, Jaroslava Durdiaková, Peter Celec, Tatiana Sedláčková, Gabriela Repiská, Barbara Sviežená, and Gabriel Minárik, *Forensic Science International Genetics*, vol. 7, no. 1, January 2013, pp. 124–128. The researchers, in Slovakia, report:

12 voluntary pairs were tested at various intervals after intense kissing and salivasamples were taken from the women to assess the presence of male DNA. [Assays] confirmed the presence of male DNA in female saliva after 10 and even 60 min after kissing, respectively...

Our study confirms that foreign DNA tends to persist for a restricted period of time in the victim’s mouth, can be isolated from saliva after prompt collection and can be used as a valuable source of evidence.

Detail from the study “Shaping the Oral Microbiota Through Intimate Kissing.”

A Dutch study, published the year after the Slovakian study, examined this process more from the perspective of the microbial communities of the kissers.

“Shaping the Oral Microbiota Through Intimate Kissing,” Remco Kort, Martien Caspers, Astrid van de Graaf, Wim van Egmond, Bart Keijser, and Guus Roeselers, *Microbiome*, vol. 2, no. 41, 2014. The authors, at TNO Microbiology and Systems Biology, Zeist, The Netherlands, and Micropia, Natura Artis Magistra, Amsterdam, report:

[W]e investigated the effects of intimate kissing on the oral microbiota of 21 couples... in a controlled kissing experiment. In addition, we quantified the number of bacteria exchanged during intimate kissing by the use of marker bacteria introduced through the intake of a probiotic yoghurt drink by one of the partners prior to a second intimate kiss.

Results: average partners have a more similar oral microbiota composition compared to unrelated individuals, with by far most pronounced similarity for communities associated with the tongue surface.... In control experiments for bacterial transfer, we identified the probiotic *Lactobacillus* and *Bifidobacterium* marker bacteria in most kiss receivers, corresponding to an average total bacterial transfer of 80 million bacteria per intimate kiss of 10 s.

