More Study Needed Linking Microbes, Circumcision to HIV Risk

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Male circumcision lowers the population of microbes on the penis, which may partially explain how the surgery helps reduce the risk of HIV transmission from women to men, the Los Angeles Times reports. Various other news outlets have erroneously reported that the findings of the study, published in the journal mBio, fully and neatly explain why circumcision reduces heterosexual transmission of the virus by an estimated 50 to 60 percent. But the study qualifies the link between penile microbes and HIV susceptibility as still speculative.

The investigators recruited 79 men in Rakia, Uganda, who agreed to receive a circumcision, and included 77 uncircumcised men as a control group, and then compared bacterial samples between the two groups. A year after the operation, all men experienced a drop in bacterial load, although among the circumcised men this drop was significantly more pronounced. (It is possible the men in the control group experienced a drop in microbes as a result of overall improvements in genital hygiene prompted by the health and hygiene information all participants received.) Most notably, the circumcision group experienced a drop in what is known as anaerobic bacteria, which prefer low-oxygen environments.

Study author Lance Price, PhD, of the Translational Genomics Research Institute (TGen) in Flagstaff, Arizona, and George Washington University in Washington, DC, said in a statement, “From an ecological perspective, it’s like rolling back a rock and seeing the ecosystem change. You remove the foreskin and you’re increasing the amount of oxygen, decreasing the moisture—we’re changing the ecosystem.

“From a public health perspective, the findings are really interesting because some of these organisms that are decreasing could cause inflammation,” he added.

Previous research has suggested that genital bacteria may affect the penis’s susceptibility to sexually transmitted infections. Higher populations of bacteria may interfere with immune cells known as Langerhans cells, which would ordinarily initiate an immune defense against a pathogen such as HIV. In the face of the inflammatory reaction to the microbes, Langerhans cells may wind up becoming a kind of Trojan horse, carrying HIV to CD4 cells instead of priming the body to react against the virus.

Price and his colleagues intend to conduct further research to determine whether penile microbial

population is directly linked to HIV risk.

To read the release, click here.

To read the LA Times story, click here.

To read the study, click here.

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http://beta.docker.poz.com/article/circumcision-microbes-23804-6949