

## Do we have bacteria DNA in our genomes?

Many animal genomes include bacterial and fungal genes acquired by horizontal gene transfer (HGT) during evolution, according to a study published March 12 in *Genome Biology*. Scanning the genomes of fruit flies, nematodes, primates, and humans, among other animals, researchers found evidence to suggest that some of these horizontally acquired genes may even be functional.

When the human genome was first published, the suggestion that it contained bacterial genes was controversial. Subsequent [studies](#) questioned the possibility of HGT, offering alternate explanations for the presence of genes that resembled bacterial sequences, such as [gene loss](#), or convergent or divergent evolution.

“There were methodological issues with both sides of the argument, and the main problem was that we just didn’t have the data back then that we do now,” said [Alastair Crisp](#) of the University of Cambridge, an author on the new study.

More recently, several researchers have reported the lateral transfer of bacterial genes into metazoans under specific circumstances. Examples include the interaction of [insect hosts](#) with the obligate intracellular parasite *Wolbachia*, or the transfer of subsets of bacterial genes into specific kinds of cells, such as [cancer cells](#).

But this latest study is the first to extend across a breadth of species and types of genes. “The study makes a compelling case presenting more evidence of lateral gene transfer from bacteria into eukaryotes,” said microbiologist Julie Hotopp of the University of Maryland who was not involved with the work. “Redoing this type of analysis has been needed for quite some time. People continue to cite the papers from 2000 and 2001 as examples that there is no lateral gene transfer, particularly in humans.”

**Read full, original article:** [Horizontal Gene Transfer a Hallmark of Animal Genomes?](#)