Microbes, like genes, pass from one generation to next

The mountains of genomic-sequencing data generated by the National Institutes of Health's Human Microbiome Project and recent studies provide strong evidence that just as our human genes were transmitted vertically from our parents and from their parents, and ultimately from our distant primate ancestors, the same holds true for our microbial genes.

This intergenerational transfer begins at the moment of birth, when the minimally colonized fetus is exposed to the microbes in its mother's vagina as it transits out through the birth canal. The infant, covered with Mom's microbes, swallows some, which become the founders of the intestinal populations. Babies also inoculate Mom's breast with their new mouth microbes, and she delivers them back, along with constituents in her milk that specifically favor the ancestral microbes. Thus, Mom's skin and mouth are other important sources of baby's early microbes.

Over the course of early childhood the diversity of microbes in and on the baby grows, and by the age of three years it is relatively adultlike. Those first three years, when the microbiome is developing and is most dynamic, are also when the baby's metabolism, immunity and cognition develop. The stages of a child's physical and mental development are subject to highly evolved patterns and constraints, and animal experiments suggest that the same holds true for the succession of microbes and the early-life assembly of gut microbiota.

Read full, original article: Like Genes, Our Microbes Pass from Parent to Child