

## Why did most mammals stop laying eggs?

About a decade ago, Vincent Lynch emailed Frank Grutzner to ask for a tissue sample from a pregnant platypus. He got a polite brush-off instead.

Then, around eight years later, Grutzner got back in touch. His team had collected tissues from a platypus that had been killed by someone's dog. They had some uterus. Did Lynch still want some?

"Hell yes!"

The platypus was the final critical part of a project that Lynch, now at the University of Chicago, had longed to do since he was a graduate student. He wanted to study the evolution of pregnancy in mammals, and specifically the genetic changes that transformed egg-laying creatures (like platypuses) into those that give birth to live young (like us).

The move from egg-laying to live-bearing was huge. Mammals had to go from holding a shell-covered embryo for weeks to nourishing one for months. To understand how they made the leap, Lynch compared 13 different animals, including egg-layers like the platypus, marsupials like the short-tailed opossum, and eutherians like the dog, cow, and armadillo. He catalogued all the genes that each species switches on in its uterus during pregnancy. He then compared these different sets to work out when mammals started (or stopped) using those genes during reproduction.

He found thousands of differences, many more than he anticipated. For example, hundreds of genes are involved in making eggshell minerals; they're active in the uterus of a platypus but silent in those of other live-bearing mammals. Conversely, the marsupials and eutherians started activating hundreds of genes involved in suppressing the immune system, and in passing hormonal signals between the mother and foetus.

**Read full, original article:** [Jumping DNA and the Evolution of Pregnancy](#)