



9-MONTH MIRACLE
Kidneys

Thanks to developmental tricks inherited from its fish and amphibian ancestors, this 44-day-old embryo has already grown two sets of kidneys—and started work on another (circled). In this case, the third time's indeed the charm: By around 9 weeks, this final pair will take over. The first and second pairs of kidneys—the pronephros and mesonephros—mostly degenerate within weeks, but certain parts remain (they have roles to play). A section of the pronephros keeps growing, eventually becoming part of the bladder, and parts of a male's mesonephros will be used for sperm storage and transport.

As an embryo's torso lengthens, the third pair of kidneys, called the metanephros, shifts from the original location near the hips toward its final destination mid-back, and the complex, tube-shaped structures that fill the organs begin to form. These tubes, called nephrons, are the workhorses, filtering waste from the blood and balancing the body's level of water and electrolytes, such as sodium and potassium, before releasing the end product—urine. For now the fetus depends on the mother to help take care of that job, but by the end of gestation, the kidneys are ready to do a lifetime of dirty work. —Diane A. Kelly

“But I know
all about
love already.
I know
precious
little about
kidneys.”

—Shearwater, in Aldous
Huxley's *Antic Hay*