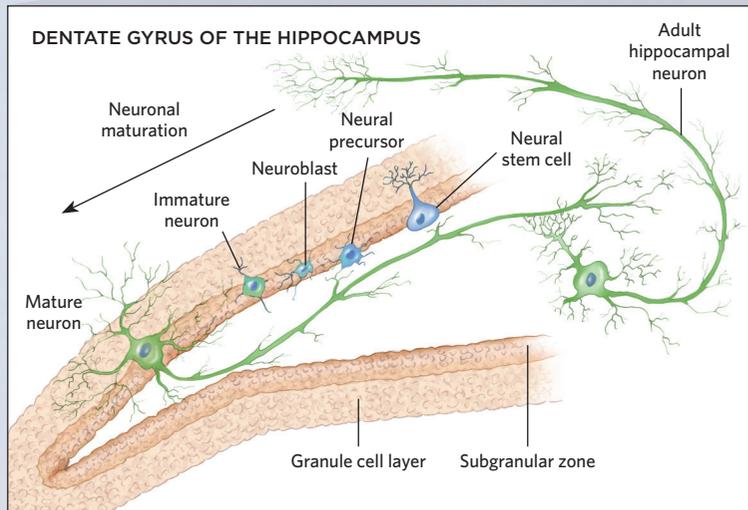
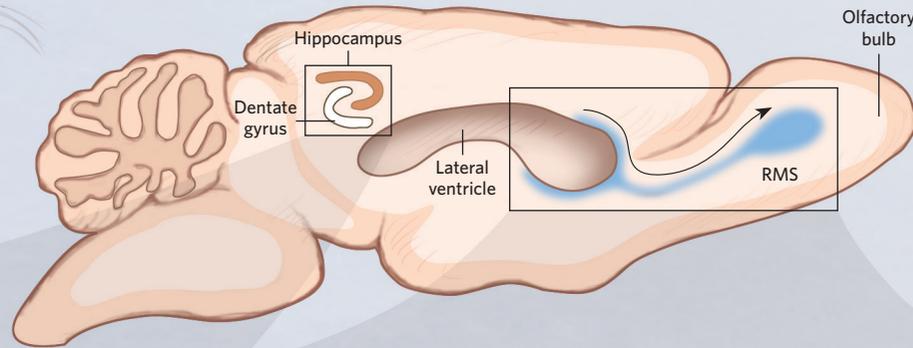




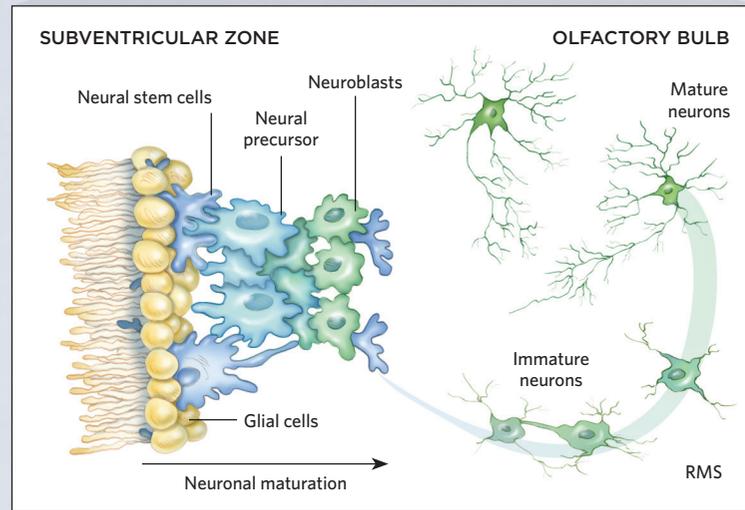
NEUROGENESIS IN THE ADULT MAMMALIAN BRAIN

RODENTS

In rodents, there are two populations of neural stem cells in the adult brain. The majority of new neurons are born in the subventricular zone along the lateral ventricle wall and migrate through the rostral migratory stream (RMS) to the olfactory bulb. About one-tenth as many new neurons are produced in the subgranular zone of the dentate gyrus (white) of the hippocampus.



In the dentate gyrus, neural stem cells differentiate into neuroblasts before maturing and integrating with hippocampal circuits important in learning and memory.



In the subventricular zone, neural stem cells differentiate into neuroblasts, which make their way to the olfactory bulb, where they complete their development.

HUMANS

Researchers have also demonstrated that neurogenesis occurs in the adult human brain, though the locations and degree of cell proliferation appear to differ somewhat from rodents. Strong evidence now exists that new neurons are born in the dentate gyrus of the hippocampus, where they integrate into existing circuits. But so far, there is no definitive support for the migration of new neurons migrating from the subventricular zone (SVZ) of the lateral ventricle to the olfactory bulb, which is atrophied relative to the olfactory bulb of rodents and other mammals that rely more heavily on smell. However, one study did report signs of neurogenesis in an area next to the SVZ, the striatum, which is important for cognitive function and motor control.

