

And to tell you a bit more about how we think that works, I'll tell you a little bit more about how the human brain develops by if we can show this video that summarizes how the stem cells in the brain generate the cerebral cortex. So this shows then a schematic movie through a fetus and here's that developing cortex. The ventricle is a hollow fluid-filled space and the cortex develops in the lining of that tube. And then if we look at a close up of the fluid filled space is at the bottom, and that lining contains the neural stem cells that have these very elongated outer processes called radial neuroepithelial cells or radial glial cells and they divide to form the post-mitotic cells, which are represented by those little bubbles that then look like they're floating to the surface because the post-mitotic, non-dividing neurons actually migrate from the inner part of the brain to the outer part of the brain in what is actually a very complicated process all its own that we don't have time to go into detail. So you can see the migrating cells going up. The first born cells that first reach the cortex actually end up forming the bottom layer of the cortex and the later born neurons actually migrate past them. So the last born neurons of the cortex are always being added to the top, like layers of a cake. And so the very last born neurons are in the very outermost part of the brain. The first born neurons are now being shaded red and those end up occupying the bottom of the brain. And so the longer these stem cells divide the greater the number of neurons that get added and these last born neurons tend to be added to the outer most part of the cortex.