Adult Neurogenesis: Stem Cells and Neuronal Development in the Adult Brain

Gerd Kempermann
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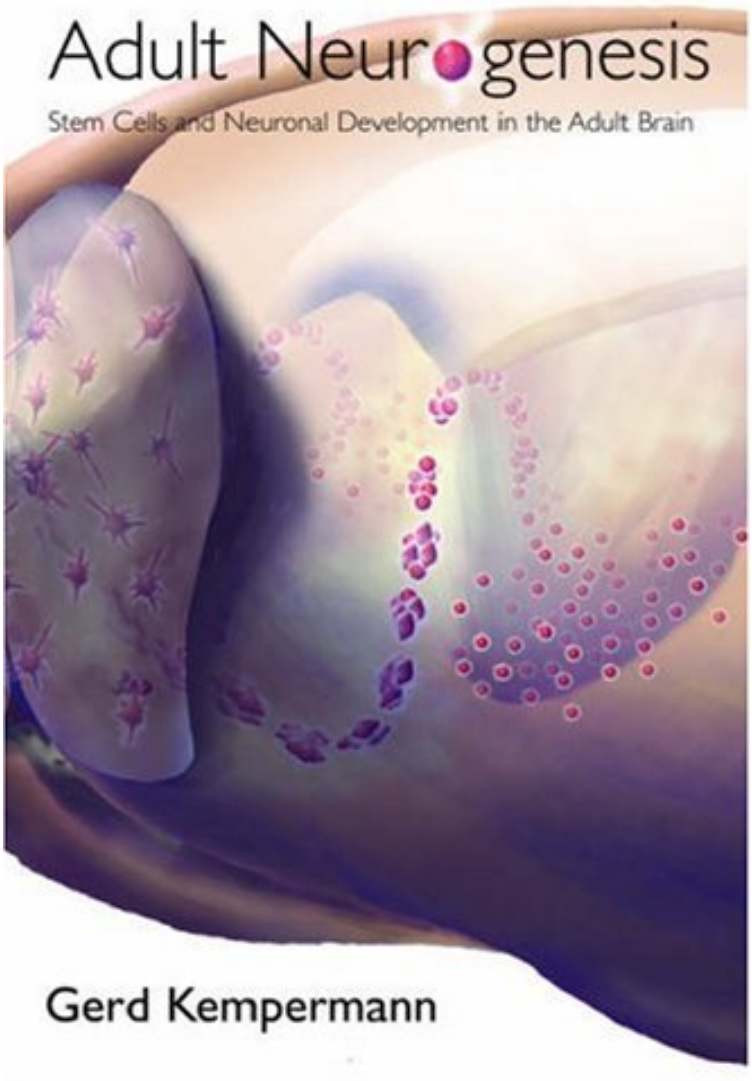

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Gerd Kempermann : Adult Neurogenesis: Stem Cells and Neuronal Development in the Adult Brain before purchasing it in order to gage whether or not it would be worth my time, and all praised Adult Neurogenesis: Stem Cells and Neuronal Development in the Adult Brain:

The discovery of adult neurogenesis and of stem cells in the brain has changed our view of the mature brain. Though we now know that the adult brain can make new neurons, it normally does so only in two privileged regions, the olfactory bulb and the hippocampus. Yet stem cells, which have the potential to produce new neurons, can be found throughout the adult brain. So why does the brain not make wider use of its potential for neurogenesis? And what is the function of new neurons and of neural stem cells in areas where they occur? After all, the brain regenerates poorly and many neurological and psychiatric disorders are chronic because cell replacement has not taken place. This is the first comprehensive, integrated account of one of the most exciting areas of neuroscience. It begins with the historical background and discusses theories of adult neurogenesis and neural stem cell biology in the context of learning and memory processes as well as structural plasticity. It describes in detail neurogenesis in the adult hippocampus and olfactory system and then surveys the regulatory, functional, and comparative aspects, concluding with a chapter on the provocative hypotheses that link failing adult neurogenesis with such diseases as temporal lobe epilepsy, major depression, brain tumors, and dementias. For graduate students, investigators, and clinicians in the neurosciences, developmental biology, and stem cell research, this book is a unique resource that sifts through the evidence for exciting scientific ideas and fosters a realistic view of the therapeutic possibilities for the use of stem cells in the adult brain.