to experience, is a major feature of the brain; unless inhibited, reactive neuroplasticity is a normal consequence of minor, focal brain injury.

A. Normal Maturation of Brain

- Although cellular proliferation of brain is complete prenatally, critical changes continue; neuronal and glial counts are fixed and myelination is approximately 90% of adult values by age 3.
- Electrical coherence in the left hemisphere approaches adult levels by age 5; for the right hemisphere the asymptote does not occur until age 9-10. A mature electroencephalographic pattern does not occur until age 25-30.
- Dendritic growth and myelination continues to occur at least until age 40 or 50. One of the last regions to mature is the frontal lobe. There is evidence that dendritic growth continues to occur, assuming the brain is healthy, as long as the person lives.

B. Enrichment Studies

- Very young rats were exposed to a few hours per day of enhanced stimulation. The most significant changes occurred, often within a few days, within the fourth and fifth order basilar dendrites of the pyramidal cells of the cerebral cortices.
- When older rats are learn new tasks, the major changes occur in the apical fourth and fifth order dendrites of pyramidal cells in the upper layers.
- Early learning and experience appears to be related to the prevention of loss of neurons and synapses while learning in the adult is associated with the formation of new synapses.

C. Aberrant Growth

- Maintained hormonal or transmitter activity in selected brain areas can modify dendritic patterns; for example excessive dendritic spines are found in the orbital frontal cortices of some schizophrenic patients.
- If there is a mild damage in a focal region of the cortex or its input is diminished, the area will be recruited by adjacent cortical regions.
- The fine dendritic and axonal terminals in the temporal lobes of people with seizures foci in this region, actually reorganize into the areas that have been destroyed by the seizure.
- Even with disease, the brain attempts to grow.