

Gerontology: October 22, 2012

New Ideas about the Aging Brain

Central Nervous System

- Brain
- Spinal Cord

Autonomic Nervous System

- Nerves in the rest of the body

Changes in CNS (Central Nervous System)

- Age-related changes begin very subtly, microscopic, & difficult to document.
- Changes occur mainly at the level of the individual brain cell or neuron and neurotransmitter.

What major changes occur in neurons?

Challenge: Differentiating between normal and abnormal brain aging; many of the same things.

Examples:

- Develop neurofibrillary tangles
- Production of neuritic plaques
- Occurs with normal aging, but also characteristic of Alzheimer's Disease

How does neurons' ability to communicate with each other change with age?

- Age-related changes in neurotransmitters:
 - Affect efficiency of information transmission between neurons
- Decrease in the level of dopamine (controls motor movements)
 - Extreme decline: Parkinson's Disease
- Declines in acetylcholine (linked to memory)

The Good News: Brain Aging

- Aging brain: Enhanced creativity
- Challenging the brain keeps brain young