Chapter highlights – Aging (Ch 8)

The purpose of “chapter highlights” is to offer a framework in which to think about the specific information discussed in each Brain Facts chapter. These highlights draw upon information in the chapter and on the new Brain Facts web site (http://www.brainfacts.org) and occasionally, on our own knowledge of neuroscience that may not be discussed in Brain Facts. Questions for Brain Bee will come from Brain Facts (new 2012 publication) and entries from the new Brain Facts web site that have “brainfacts.org” in the URL. Some but not all relevant entries are cited below.

Aging (http://www.brainfacts.org/across-the-lifespan/youth-and-aging/)

- There is a difference between the normal process of aging and diseases associated with aging
  - Normal aging: subtle changes to neuron structure and chemistry
  - Disease: widespread neuronal loss, progressive and severe impairment

- In the recent past, society has undergone a change in perception of what it means to age
  - No longer means inevitable decline, some individuals show almost no cognitive decline into their 80s
  - Change in perception due to advances in technology, increased lifespan and more knowledge of aged people

- Even though the challenges associated with normal aging are subtle, they are detectable
  - Individuals have particular trouble storing new information, speed to task completion increases
  - Smaller deficits are evident when dealing with information that is already stored or with learned information

- Aging does not just have negative consequences http://www.brainfacts.org/across-the-lifespan/youth-and-aging/articles/2012/aging-changes-in-intellectual-capacity/
  - Experience matters to intelligence
  - Vocabulary improves with age

- Keeping neuronal circuitry intact is one of the most important things for brain health
  - The brain is incredibly resilient and able to compensate for neuron loss
  - Aging disorders threatening the circuitry: Alzheimer’s, Stroke

- Enriched environments increase dendritic outgrowths and synapses
- Physical exercise can increase blood flow and cognitive performance
- A healthy diet promotes a healthy brain
- Avoiding prolonged stress also promotes a healthy brain