

Age-Related Processing Difficulties Help for Senior and Middle-Aged Adults

It seems inevitable that as we begin to age, our processing of what we hear and see begins to decline. We sheepishly begin to use reading glasses. We can hear the sound of people's voices, but can't make out what they are saying. Family members remark about how loud we have the TV turned up. After asking someone to repeat something three or four times, we are too embarrassed to ask again, so we act like we've heard when in reality we still have no idea what was said.

In addition, our mental abilities begin to decline. We begin to joke about how forgetful we have become, but it's no joke when we forget the names of people we have known for years. We begin to worry that we might be developing Alzheimer's. Our response time slows down—mentally, physically, and conversationally. We find ourselves having more trouble comprehending complex thoughts, both in reading and in conversation. We have a harder time “hanging in there” with tasks that require a long time to complete.

As we become increasingly frustrated with the mental limitations that age seems to be causing for us, we find ourselves saying or thinking, “If this is what getting older is all about, I don't want anything to do with it!” or “Getting older is for the birds!” We joke about it and commiserate with others our age who are having similar difficulties, but it's really a lot more scary than it is funny.

It has always been assumed that these problems were a natural part of aging, and that nothing could be done about them. It was thought that as we grew older the brain lost its flexibility and slowed down in its capabilities. However, recent research in neuroscience (the scientific study of the brain and its workings) have shown that the brain remains remarkably “plastic” as we grow older—that is, it retains its ability to reorganize itself to adapt to new tasks, maintaining its flexibility as demands are placed upon it. This means that older brains don't “wear out”—they should be fully as capable of meeting challenges and learning new information as younger brains are.

If the brain isn't “wearing out,” what causes those unpleasant changes? What happens as we grow older? Two factors play a part:

1. When we are young, the brain is constantly being exposed to new and novel stimuli. In our younger years, we are constantly exposed to new sights, sounds, and experiences. We go to school, and are exposed daily to new information and are required to build new skills. This forces our brains to constantly build new neural networks in order to deal with and integrate this new data.

But, as we get older, the exposure to new stimuli lessens. Our physical world becomes “old hat” to us. We no longer get the constant stimulation from new information that we did in the classroom. Instead, we begin to apply information that we already know to our jobs—often using the same information over and over again. We settle into a routine both at work and in our personal lives, and we begin to feel

very comfortable with those routines. The end result is that our brains no longer receive the constant stimulation that they did when we were younger. We tend to gravitate toward activities that are more comfortable to do, not realizing that the brain needs the stimulation from more difficult activities if it is to stay active and challenged.

2. As we get older the sensory organs, especially the eyes and the ears, begin to lose their abilities, due to naturally-occurring physical changes. The focusing mechanism of the eye becomes less flexible, often resulting in the need for reading glasses as we approach the age of forty. And, as we age, we often lose high-frequency hearing due to changes in the inner ear; this makes speech less distinct. As a result of such changes, the brain has to slow down its processing in order to better interpret the “fuzzy” signal. Because the brain is processing slower and less clearly, we don’t think as quickly and our memory is not as sharp; the “fuzzier” the signal is, the harder it is to record and store information.

In addition, we naturally begin to compensate for inefficient processing. If it is harder to clearly understand speech from the television, we increase the volume. If we have difficulty hearing someone who is talking to us, we watch their lips or take clues from the context of what they are saying. Unfortunately, when we compensate, the brain does not have to work so hard, and adapts to the lesser demands that we are placing upon it. This, combined with the fact the brain is no longer being stimulated as intensely as it was when we were young, starts a cycle that results in what can become a permanent loss of processing efficiency. The brain is actually adapting, but in the wrong direction.

The Posit Science Brain Fitness™ program was designed by neuroscience researchers to stop and ultimately reverse this cycle. The program improves brain function by challenging the brain with unfamiliar tasks that get increasingly difficult, and that are always on the very edge of what the brain is capable of handling. The program forces the participants to directly deal with the processing difficulties rather than avoiding them or compensating for them. The activities require focused attention, and are designed to stimulate the production of brain chemicals that are essential to rapid processing. The program is computerized, because the computer can deliver signals very precisely, and can customize the program so that the person being trained is always working right at the threshold of his capabilities.

The result of the Posit Science Brain Fitness™ program is often improvement of memory, increased clarity, increased attention, increased processing speed, and increased processing accuracy. For age-related processing difficulties, as with so many types of disabilities that afflict younger people, there is *Hope*.

For additional information, please refer to the website, www.positscience.com.