

Cognitive Aging Not a Barrier to Working Longer

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Cognitive aging will not impede most people's ability to work through their 60s.

The Center just released its **second brief** on cognitive aging. This one does a deeper dive into cognitive aging and ability to work. Working longer is an effective way to boost individuals' retirement security. Thus, understanding who can work longer and who may struggle is a key issue for researchers and policymakers.

At first glance, one might think that a decline in "fluid" intelligence – the capacity to process new information – and an apparent relationship between fluid intelligence and job achievement could pose a barrier to working longer. However, "crystallized" intelligence – accumulated knowledge – increases with age, and cognitive reserves can offer spare capacity against declining fluid intelligence. As a result, studies comparing the productivity of young and old workers find that age is a crude and unreliable predictor of performance.

The results of studies on age and productivity are robust. While individual studies – which typically examine a subset of workers in specific occupations – can show relatively strong correlations (both positive and negative) between age and productivity, meta-studies that aggregate data across the individual studies and apply results to the whole population find practically no correlation. That is, productivity does not generally decline with age. The questions are: how do aging workers maintain productivity and is anyone left behind?

As noted, older workers remain productive because they can make up for declining fluid intelligence by drawing on their crystallized intelligence. For example, pharmacists need a great deal of fluid capacity in pharmacy school and early in their careers to learn the facts, concepts, and procedures needed to do their jobs well. As pharmacists grow older and more experienced in their jobs, their crystallized intelligence offsets declines in fluid intelligence because: 1) the amount of information they need to learn declines, reducing the need for fluid intelligence; and 2) the steady accumulation of knowledge over time makes up for their loss of fluid capacity.

While skilled workers can use knowledge to offset declining fluid intelligence, many workers – particularly those in jobs that involve simple or routine tasks – may also have more fluid intelligence than their job requires. For example, many clerical positions require workers to perform routine activities that become automatic with time, leaving such workers with enough fluid capacity in “reserve” to act as a buffer against decline.

While most workers can stay sharp on their jobs as they age, two types of workers may struggle to maintain their productivity: 1) those in high-skill occupations with intense demand for fluid intelligence; and 2) those who

experience unusually severe cognitive decline. In terms of the first group, air traffic controllers are a good example. One study of simulated performance of a typical task faced by air traffic controllers showed that older controllers performed no better than younger individuals *who were not controllers*. In terms of the second group, one study found that while the incidence of Alzheimer's disease is less than 4 percent of people under age 65, it rises to 15 percent of 65-74 year olds. This growing risk of serious decline suggests that workers in occupations where errors could significantly harm others, like surgeons, should probably be screened after 65.

Despite these exceptions, the bottom line is that cognitive aging will not impede the ability for most workers to work productively through their 60s. That is really good news given that working longer is probably the most powerful lever for improving retirement preparedness.