

How schooling leads to good health

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People who go to school lead healthier, longer lives. That connection is well documented and unsurprising. But as obvious as this link is to us, the fact is we don't really know why that's the case. What is it about formal education that translates — sometimes way down the road — into better health choices? What's going on in the mind, at the basic cognitive level, that gives rise to lasting life skills?

One possibility is that schooling simply conveys knowledge about illness and disease prevention, and that better informed people make sounder judgments. But there is good reason to doubt this explanation. For example, massive and expensive public information campaigns aimed at smoking and drug use have for the most part failed to reduce such risky choices.

Another possibility is that formal schooling teaches people to think — not about any health issue in particular but simply to think — and that these cognitive skills endure into adulthood and lead to healthier life choices. According to this theory, formal education sharpens skills like working memory, self-control and attention — all skills that are needed for intelligent decisions. This is the explanation favored by Ellen Peters, a psychological scientist at Decision Research in Oregon, who with her colleagues decided to test the idea in a real life setting.

They chose rural Ghana, for a number of reasons. First, like many sub-Saharan African nations, Ghana has a huge problem with HIV/AIDS infection. Secondly, general access to schooling is a recent development in rural Ghana, and about half of all adults are still unschooled. Peters decided to compare the schooled and the unschooled Ghanaians on a number of basic cognitive abilities, and to see if those abilities diminished risky choices related to AIDS.

Even a small amount of formal education seems to lead to better health, and indeed rural Ghanaians don't get much in the way of schooling. Peters studied middle-aged adults in four agrarian villages — mostly subsistence farmers — who had a little over six years of schooling on average. But their education levels varied widely. Peters gave men and women volunteers a variety of cognitive tests, including measures of working memory, planning ability, attention-shifting ability and ability with numbers or numeracy.

One of the numeracy tests related directly to HIV infection risk. The so-called Stickman task presents two hypothetical villages as circles, each populated with stick figures: red stick figures are HIV-infected, and black stick figures are not. The idea is to judge the risk associated with a randomly selected villager based on the population of stick figures. One village might have four red figures out of eight, for instance, and another three red figures out of four. Those with poor numeracy skills will look at the absolute number of infected villagers (four is greater than three) rather than the percentage — the real indicator of risk. We all make the same mistake — sometimes called “denominator neglect.” I discuss this kind of innumeracy at length in my [new book, “On Second Thought: Outsmarting Your Mind’s Hard-Wired Habits.”](#) But in rural Ghana, this cognitive quirk can be a deadly miscalculation.

Peters combined numeracy and all the other cognitive test scores for each volunteer, and then she measured their actual knowledge of AIDS and HIV prevention: do condoms protect against the disease? Is it okay to wash and reuse a condom? Can AIDS be transmitted by a blood transfusion? By witchcraft? And so forth.

Finally, she interviewed each volunteer about his or her actual protective behaviors, including: going to AIDS classes, talking with one's sexual partner about HIV and AIDS, getting tested, or urging a partner to get tested and condom use.

Then she crunched all the data together, and the results were unambiguous. As [reported online in the journal *Psychological Science*](#), schooling led to sharper cognitive skills across the board, and these enhanced intellectual abilities in turn led to more protective health behavior. But here's the important part: mere knowledge of HIV and AIDS facts did not in itself predict healthy living. It appears that cognitive abilities like numeracy and working memory better equip people to use their basic knowledge, to extrapolate to new situations and reason statistically in everyday life.

These findings have implications, especially for sub-Saharan African nations. Over the past decade, an estimated \$8.9 billion has been spent in the region to disseminate basic knowledge about AIDS, in an effort to stem the ravages of the disease. These findings suggest that these efforts may not be enough — that they must also include interventions to help at-risk adults reason with the facts they have. Put another way, it may not be a coincidence that this part of Africa is home to both the largest unschooled population in the world and the largest AIDS-infected population.