SWEET MEMORIES

Paul R. Solomon, PhD.

Eating a candy bar may not be good for your waistline, but the sugar may help your memory. The pharmaceutical industry is investing enormous efforts in developing drugs and nutaceuticals (the in vogue term for food supplements such as ginseeng or ginko biloba) to help our aging population with their memory. They have not, however, paid much attention to what might be a very simple and safe remedy. Beginning in the 1980s, neuropsychologist Paul Gold and his colleagues at the University of Virginia reported that rats remembered better when they were given glucose (a sugar). They initially placed rats in a box that had a lighted compartment and

a dark compartment. Rats started in the lighted compartment, but because they prefer dark places, they quickly moved to the dark space. But in this experiment they received a mild foot shock when they traveled to the dark compartment. They were then placed back in their cages and given either glucose or a placebo (in this case Nutrasweet; a substance that was sweet like glucose, but did not contain glucose). The next day, the researchers performed a memory test. They placed the rats back in the light compartment and measured how long it took them to return to the dark compartment. They reasoned that if the rat remembered being shocked in the dark compartment, they would take longer to re-enter the dark side. They found that the rats who took glucose took much longer to enter the dark chamber than the rats who took the placebo.

They next turned their efforts to people. They performed a series of experiments with people in their seventies. In this study, volunteers first listened to a short story, about 5 or 6 sentences. They then drank juice that was either sweetened with glucose or a Nutrasweet like substance. Later they were asked to recite as much of the story as they could remember. The researchers found that the volunteers who consumed the glucose remembered much more than those who consumed the Nutrasweet. As with the rats, humans who consume glucose seem to remember better. Since these initial studies, other researchers have found that consuming glucose helps memory in a variety of situations. We have also recently learned that individuals who do not process glucose efficiently, for example diabetics, have difficulty with memory.

Based on these studies should we all start eating candy bars when we need our

memory to be at its best.? Perhaps, but we need a bit more information,. What is the proper amount of glucose? When do we take it? How often should it be taken? To now, the pharmaceutical industry has not been interested in evaluating glucose in memory. But this appears to be changing. Several groups are now beginning to evaluate the effects of glucose on memory. This certainly leads us to speculate that these groups are considering marketing a pill containing a glucose-like solution for memory. But there is considerable work to be done. Will this pill only help people with memory deficits due to diseases such as Alzheimer's disease? Perhaps the pill will also help people who have age associated memory change that is simply part of the normal aging process. Perhaps glucose can even enhance memory in younger people. As these research studies progress, the answers will emerge.

--
Paul R. Solomon
Department of Psychology
Williams College
Williamstown, MA 01267

Phone: 413-597-2403
FAX: 413-597-3746
psolomon@williams.edu