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## Willpower: The Mind-Body Connection

Why illness, glucose and even PMS influence willpower – and how to take back control

Are you having trouble resisting that tempting dessert, no matter how hard you try? Or, refraining from smoking when you're trying to quit? Or holding your tongue in frustration when you don't mean to be hurtful? When you think of willpower, you may think it's solely a mental strength. Yet, there's a strong "body" connection as well. Illness, premenstrual syndrome and even day-long decision making can have an affect on your ability to exert self-control.

"It is important to understand how willpower works, what its limitations are, and how it is linked to other things going on in one's mind and body," says Florida State University researcher Roy F. Baumeister, Ph.D., author of the new book, *Willpower: Rediscovering the Greatest Human Strength*. "Glucose is special at present because of the wealth of evidence linking glucose to self-control behaviors."

Dr. Baumeister's research on the glucose and self-control connection dates back several years. In 2007, Dr. Baumeister and colleagues at Florida State University published a paper in the *Journal of Personality and Social Psychology* that concluded that self-control relies on a certain level of blood glucose (blood sugar), and that exerting self-control causes blood glucose levels to drop, impairing future self-control.



So what does this mean for how you make choices? Are there other ways the body influences willpower? Is there anything you can do to strengthen your resolve? Dr. Baumeister explains...

### MBMN: Could you speak more on how glucose in the bloodstream affects willpower?

**Dr. Baumeister:** Glucose is a chemical in the blood that carries energy to the brain, muscles and other organs. One can think of it as brain fuel. We have found that glucose levels are affected by actions; after exerting self-control, people show lower levels of glucose, as if some of their fuel had been consumed. Many studies have linked low glucose levels to problems and failures in self-control.

While glucose in your blood can be used for activities like self-control, it is also used for making decisions and for rational, logical thinking. Hence, after making decisions all day, your self-control is likely to be weak. Likewise, the immune system uses a great deal of glucose when it is busy fighting off illness; when you are exposed to the flu, your willpower will be reduced. We also have published work suggesting that behaviors associated with premenstrual syndrome (PMS) are often a matter of reduced self-control caused by the increased demand of the woman's reproductive system for glucose during certain times of the month. If you understand how these things all go together, you can anticipate better when you are most vulnerable to a lapse in self-control.

Meanwhile, when willpower is low, such as from exertion, a dose of glucose seems to restore its powers.

### MBMN: In what important ways does willpower influence health?

**Dr. Baumeister:** People with good self-control live longer than other people, which is probably the ultimate measure of health. Along the way, they report fewer problems with unhealthy habits, such as smoking and drinking. They eat healthier foods and are less likely to be overweight. They exercise more.

There are plenty of indirect effects too. People with good self-control have more success in their work, which tends to contribute to health. They have better, more satisfying and more stable relationships, which also are important for good health.

### MBMN: Do you believe willpower can successfully be used to overcome biological urges, formed from habits, bodily neglect or physiological processes beyond our immediate conscious control?

**Dr. Baumeister:** Absolutely. Unlike many other animals, hungry humans can look at food but resist the urge to eat it. They can resist sexual and aggressive impulses. They can push themselves to resist exhaustion, whether for running a marathon or working all night. They learn to eliminate bodily wastes according to external schedules and in safe, hygienic locales.



In this sense, willpower is an important foundation of what people call free will. By enabling humans to resist their natural impulses, willpower and self-control make human behavior far more flexible and adaptable than what it would be otherwise. It enables us to live as civilized participants in culture, instead of as animals.

**MBMN: Do you believe that the conveniences of this day and age and the ability to find instant gratification has lessened willpower and self-control?**

**Dr. Baumeister:** Comparing the character strength of today's modern citizens to those of other historical eras is difficult. I do think at present American society has turned away from self-control and willpower. Strictly speaking, the availability of instant gratification does not mean less willpower. It may be the other way around: A society of people with lower willpower will create bigger markets and bigger demand for instant gratification.

As to why self-control and willpower might be less today than in the past, one can only speculate. Self-control can be learned, and so suspicion falls on parents and schools as the causes of any decline. They in turn act as part of the broader society and the values it upholds.

Half a century ago, parents worried about discipline and about spoiling their children. Now, parents worry about self-esteem and want their children to be happy. Clearly the latter attitude is less conducive to instilling strong self-control. Ironically, the modern emphases may be self-defeating. People with good self-control are happier than other people. They have less stress, have more positive and fewer negative emotions, and are more satisfied with their lives overall. So if parents really want their children to be happy in the long run, they should focus more on building self-control. Strong willpower is the best gift you can give your children.

**MBMN: What can you suggest to someone who is struggling to overcome a health-harming activity, such as smoking, overeating, inactivity, drinking too much, etc. How can people strengthen their resolve to live a better life?**

**Dr. Baumeister:** Rather than tackling your biggest problem first, I recommend building up self-control by changing some other, easier habits first. You might try to improve your posture, by standing up straight and sitting up straight. You could try to change how you speak, such as by not cursing or by trying to speak in complete sentences. You might start by resolving to clean up the dishes after eating, or by making your bed every day. These small changes improve the capacity for self-control, which then can be brought to bear on bigger problems. A recent article by my former Ph.D. student Mark Muraven showed that building self-control through such simple exercises led people later to be more successful at quitting smoking, which is one of the most difficult habits to break.

Most important, though, willpower can be increased. It works like a muscle, which means that it gets tired when you use it, but it gets stronger with regular exercise.

*Posted in October 2011.*

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