Fighting Germs With More Than White Blood Cells

October 04, 2011

The month of October brings many things: turning leaves, crisp autumn air, Halloween…and the beginning of the cold and flu season. While the human body has developed remarkable defenses against these insidious infections, it turns out our defenses are more than just physiological.

APS Fellow Mark Schaller, a professor of psychology at the University of British Columbia, has been studying what he calls our "behavioral immune system" — an array of psychological mechanisms that helps us identify and respond to the pathogens that surround us. Because most pathogens are invisible to the naked eye, we have to rely on signs that indicate the presence of germs and disease, and so we often avoid the people and things that strike us as abnormal. Schaller's research indicates that the behavioral immune system may contribute to demonstrated prejudices against people who are disabled, obese, or old.

The effects of the behavioral immune system can be seen even at the population level. Schaller and colleagues studied the personality profiles of people in different countries and found that people who lived in countries characterized by higher parasite prevalence were, on average, less extraverted and less open to new experiences.

As aggressive as our behavioral immune system is, it can't always prevent us from coming down with an infection. This is when our physiological immune system and our behavioral immune system combine defensive forces. Although they rely on different physiological mechanisms, these two immune systems interact to fend off pathogenic intruders.

In the May 2010 issue of *Psychological Science,* Schaller and authors reported findings from a study that illustrates this very interaction. Participants who watched a "disease" slideshow, with images of symptoms like sneezing, skin lesions, and pox, showed increased levels of the immunoprotein IL-6 in response to a bacterial stimulus. Participants who saw a "gun" slideshow — with images that were stress inducing and threatening but not disease related — showed no such increase in IL-6. These findings suggest that our two immune systems work together to ramp up defenses when the perceived threat of infection is high.

According to Schaller, further exploration of the behavioral immune system can help us to better understand various aspects of human behavior, including prejudice, sexual attraction, social interaction,

cultural differences, and, of course, health.