

Health Sciences Bulletin

The Importance of Maintaining a Healthy Immune System

The American Academy of Allergy, Asthma and Immunology estimates that 50 million Americans suffer from allergic conditions annually. These conditions are considered to be the sixth main cause of chronic ailments in the United States and their prevalence increases in response to the proliferation of allergens both indoors and outside the home. The cost to the health care system is approximately \$18 billion per year.¹ One of the allergies is rhinitis, a nasal congestion that can cause respiratory difficulty. This, alone, results in upwards of 9 million visits to doctors each year.² Other conditions include food allergies, asthma, sinusitis, and dermatitis.

One reason for these alarming statistics is that lifestyle trends lead people to spend more time inside the home. Research findings indicate that 85% of Americans are unaware that the air quality at home may be a health hazard. Indeed, the World Health Organization argues that 40% of all buildings worldwide are a serious hazard to our health because of polluted air.³ Thus a real need exists to protect our immune systems and lead healthier lives.

The human body has an intricate web of defense mechanisms that allows it to recognize, eliminate or neutralize potentially harmful foreign invaders such as viruses, bacteria, fungi and other organisms. Physical barriers like skin and mucous linings make up the first line of defense to keep out harmful microorganisms. When an organism succeeds in penetrating these barriers, the cells of the immune system come into play.

The immune system consists of two kinds of immune responses. One kind, called the *specific* response, is distinguished by its ability to recognize specific invaders (antigens), and by its capacity to remember and quickly mount a response to them when encountered again. The principle “soldiers” of this arm of the immune system are a class of white blood cells called lymphocytes that include T-cells, B-cells and NK cells. Some of these cells destroy antigens directly. Others secrete antibodies that combine with an antigen to destroy it.

The other kind consists of *non-specific* immune mechanisms. These help eliminate infections by rapidly killing bacteria and viruses upon first contact. Two of the primary cells, macrophages and neutrophils, are white blood cells that engulf and destroy foreign material. Natural killer cells, another non-specific immune helper, target and kill abnormal cells. These natural killer cells are part of the “surveillance and clean-up” team and are crucial immune defenders.

As for our susceptibility and exposure to germs, we live in a veritable sea of them and some people work (and live) in environments, such as hospitals and health care facilities, where exposure is prevalent and sometimes dangerous. The good news is the immune system’s astonishing capacity to recognize the unique features of a germ or its “family” so that it will seldom have to fight it off again, unless there are more systemic autoimmune deficiencies at work in the body.

Of course, over and above germs circulating in the environment, there's the problem of compromised immune functioning resulting from psychological stress. When the mind is stressed, research shows that there's an increased incidence of illness and disease.⁴

The best preventative measure to maintain a healthy immune system is to pay special attention to nutrition. This means identifying any deficiencies of diet and supplementing it as appropriate. As well as scheduling regular check-ups with your primary care doctor, you may wish to contact an allergist/immunologist who may provide you with some health recommendations in the field of alternative and complementary medicine. And it never hurts to recall the value of moderate exercise and adequate rest, health remedies all too often overlooked in modern, fast-paced societies.

References

1. American Academy of Allergy, Asthma and Immunology (AAAAI). *The Allergy Report: Science Based Findings on the Diagnosis & Treatment of Allergic Disorders, 1996-2001*
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- 3 http://www.lungusa.org/air/indoor_factsheet99.html
4. Miller, GE. Cohen, S. Ritchey, AK. *Chronic Psychological Stress and the Regulation of Pro-Inflammatory Cytokines: A Glucocorticoid-Resistance Model*. Health Psychology, 2002, 21 (6) 531-541.