

Always On The Defense

The Immune System Wages Micro War On Many Fronts

The human immune system is always being challenged on a number of fronts. From outside the body, its defenses must protect against harmful transmissions that approach through the air, water and liquids, foods, blood, insects (and their bites), sexual fluids, and direct skin contact. Within the body, the functioning and strength of the system is effected by health, genetics, diet, stress, sleep, and many other factors.

Add aging to this list. The ability of the constantly-on-duty immune system typically decreases in our elder years. Also known by the long, hard to pronounce term immunosenescence, this process results in an increased possibility of infectious diseases and pathological conditions that are related to inflammation and autoreactivity. It is also one of the reasons why illnesses such as Covid-19, cardiovascular disease and rheumatoid arthritis are so prevalent within the senior generation.



While we enjoy milk (and cookies), the immune system is on duty in search of bacteria that can lead to diarrhea or other illnesses.

Susceptibility

There are a variety of diseases that can result from an impaired/weak immune system that is more susceptible to viruses, bacteria, fungi or parasites. These can range from an annoying, but harmless common cold to life-threatening conditions.

The list of maladies include:

- ◆ Autoimmune diseases such as rheumatoid arthritis, anemia, Crohn's disease and juvenile diabetes.
- ◆ Immune complex diseases such as viral hepatitis and malaria.
- ◆ Immunodeficiency diseases such as allergies, other forms of hypersensitivity and acquired immunodeficiency syndrome (AIDS).
- ◆ Cancer of the immune system.

Note: The healthy (or compromised) immune system also plays a vital role in organ and tissue transplants - acceptance and rejection.

Two Major Categories

We were born with much of the ability to fight off microscopic intruders. However, our immune system also learns from past experience.

- ◆ **Natural Or Innate Immunity** - The body has natural barriers ready to repel and fight infectious agents. The skin plays a big part in this process. Also, there are antibodies passed from mother to child. In addition, there are various protective substances in the mouth, on the surface of the eye, in the stomach and in the urinary tract.
- ◆ **Acquired Immunity** - The immune system remembers previous exposures to harmful organisms and toxins, along with adaptations it developed to fight them off. That's why once a person is exposed to chickenpox, specific antibodies are recalled and produced to fight off a reoccurrence. (In this case, a vaccine can also be used to assist the body in building an acquired immunity.)

(Sources: medicalcenter.osu.edu, impactaging.com, immunityageing.com)

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