

Immune System

Student's Name

Institution

mceessay.com

Immune System

Acquiring infections is inevitable. People often get sick and end up in hospitals seeking treatment. Sompayrac (2019) states that people are said to be immune when their bodies are in a position to resist particular infections resulting from foreign organisms such as bacteria, viruses, and parasites. The immune system consists of structures and processes within the body. They play a significant role not only in humans but also in animals. Although the immune system acts to defend against foreign bodies, there are times when infections and illnesses occur when the system has a problem. According to Sompayrac (2019), foreign bodies bring about acute or chronic inflammation. Acute inflammation is noticeable when the affected area becomes red, swelled, and painful. On the other hand, symptoms of chronic inflammation are mainly subtler, making them easy to overlook (Sompayrac, 2019). They occur in the form of fatigue, abdominal pain, chest pain, and fever. In this context, the paper aims to analyze the functioning of the human immune system, issues associated with it, and how such problems put human life in danger.

The immune system is a combination of structures and processes that identify threats brought about by viruses, bacteria, and parasites. Since the body also has its issues, the immune system distinguishes them from the invasive organisms (Sompayrac, 2019). The system is huge, and sorting it out into categories makes it easier to understand its functioning as well as the processes involved. During birth, every individual develops an immune system, which is known as innate immunity. Innate immunity consists of protective barriers found in and out of the body, ensuring that foreign organisms are kept away from the body. Innate immunity is composed of components such as the skin, stomach acid, mucus, cough reflex, and enzymes which are mainly found in tears and skin oils. Interferon and interleukin-1 are also chemical components of this

system. Notably, innate immunity does not protect against any specific threat, hence, is known to be non-specific.

Acquired immunity, also known as adaptive is specific as it targets particular threats to the body. According to Sompayrac (2019), acquired immunity is more complicated than innate immunity. More processes are involved as the foreign bodies are identified and worked on accordingly. Fundamentally, when the neutralization of the threat occurs, the adaptive immune system ensures that future attacks are handled because the system can recognize the microorganisms at ease. Leucocytes, thymus, bone marrow, lymphocytes, and spleen are among the significant components of the immune system.

Apart from the immune system, the body is made up of other organ systems. They include the circulatory, digestive, respiratory, nervous, endocrine, integumentary, skeletal, muscle, and reproductive systems (Sompayrac, 2019). In essence, the immune system functioning is essential and beneficial to other systems. Proper functioning of the human body depends on these systems working together. An immune response aims at protecting the invaded part of the body regardless of the system under attack. The most important cells involved in fighting against infections are the leucocytes. These cells are commonly known as white blood cells. They exist in two basic types. They combine their functions, thereby facilitating the destruction of microorganisms. Leucocytes are said to be lymphoid organs because they are produced and stored in various body places. They are found in the thymus, bone marrow, and spleen.

Whenever there is an attack on a specific area of the body, leucocytes circulate by the help of the lymphatic and blood vessels. The immune system then works in a coordinated manner to monitor the body for disease-causing substances and germs. The other systems, thus,

benefit from the immune system as foreign bodies are detected by the white cells and a response action taken immediately. Since the immune system recalls the invasive organisms, the white blood cells ensure that the body responds appropriately to a similar attack (Sompayrac, 2019). White blood cells perform their respective functions depending on the type of parasite invading the body. For instance, neutrophils are specifically known to fight against bacteria. Doctors suspecting a bacteria attack recommend a blood test in an attempt to find out whether there are neutrophils triggered by the infection.

There are specific problems that could lead to improper functioning of the immune system, thereby hindering effective and efficient purpose. At times, a part of the immune system may not be working, leading to immunodeficiency disorders. Drugs and certain types of infections may also bring about the immunodeficiency type of disorder. In the process, the functioning of the B lymphocytes, T lymphocytes, and phagocytes are interfered with (Sompayrac, 2019). However, immune-suppressive agents and corticosteroids are potential products that can be used to treat immunodeficiency disorders. When the immune system accidentally attacks the healthy organs of the body, autoimmune disorders are experienced. The immune system may overreact to the environmental antigens, thereby causing allergic disorders. Allergens provoke attacks where swelling and sneezing may be encountered. Besides, cancers of the immune system may cause uncontrollable cell growth. When all these conditions occur, the immunity of an individual is diminished.

Immune system problems interfere with human life because when the system is compromised, it can be lethal. For instance, abnormal overgrowth of leucocytes causes leukemia. Allergic reactions interfere with a person's health as exposure to specific environmental antigens causes discomfort. Anaphylaxis is among the life-threatening diseases that people with allergic

reactions can acquire. In cases of autoimmune disorders occurrence, conditions such as juvenile dermatomyositis damage the skin and muscles. An individual experiences inflammation in addition to pain and swelling. Therefore, a problem in the immune system becomes a threat to the other systems and the entire body.

In conclusion, the health of the entire body depends on the functioning of the immune system. Although the human body is made up of many systems, the immune system responds to attacks in other parts immediately, a foreign body is detected. Both innate and acquired immunities are useful since birth as they work together to ensure that the body is healthy. Illnesses and infections encountered means that the immune system has a problem, and a quick action towards solving the problem is necessary. Notably, there are certain disorders of the immune system that cause interference with human life. When a person has cancer, allergy, or autoimmune diseases, one requires tentative care in response to what the immune system is unable to offer. A blood test enables caregivers to diagnose the presence of immune deficiencies by determining the levels of immune elements. Some immune complications can be solved while others, like cancer, are difficult to control. For instance, in overactive conditions, the immune response can be reduced using corticosteroids or immune-suppressive agents.

References

Sompayrac, L. M. (2019). *How the immune system works*. Wiley-Blackwell.

messayay.com