Immunization

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The immune system within our body is considered a vast network of organs, chemicals, white blood cells, and of course, proteins mostly called antibodies. If any foreign invaders enter your body and the immune system detects and identifies them as threats, it will proceed to kill and destroy them to prevent the body from being harmed. A healthy lifestyle that consists of following a well-planned workout routine and a balanced, nutrient-rich diet while maintaining your weight can help keep your immune system active.

The possible invaders of the body are bacteria, viruses, fungi, and parasites, which can cause many conditions such as infections, diseases, and illnesses.

Our immune system is active in maintaining our health by keeping germs out of the body, limiting the harm they are doing within the body, or, if possible, killing them. If your immune system is working correctly, it can make the difference between the cells that are healthy and are yours from those which are not your cells. If you are exposed to a specific new germ - virus, bacteria, fungi, parasite - it will start to learn about it and does its work by producing a particular protein called an antibody. This antibody is specifically designed to attack and kill that specific germ.

To break down this procedure, we can make an example by talking about vaccines, which is our main subject today. When you get vaccinated, the immune system starts building up antibodies to foreign cells in the vaccine and instantly will remember that those foreign cells are harmful and must destroy in case of exposure. Another thing that can help the immune system with its task is antibiotics which help kill certain bacteria.

On the other hand, When the immune system is not working as it should, it cannot win the fight against a specific invader. When this happens, the invasion of the germ may turn into a problem like an infection.

Another problem caused by an immune system that does not work correctly is allergies or autoimmune diseases. These conditions happen when the immune system wins an attack against an invader but does not stop there and keeps attacking other cells, or the immune system starts attacking even though there are no invaders.

To be more specific about keeping the immune system working correctly, remember that just like other parts of your body that need caring and maintenance, the immune system needs nourishment, rest, and a healthy environment to stay strong. Some confident lifestyle choices need to be made to help your immune system work as it should so you can avoid getting ill. These choices can be as simple as:

Giving up smoking

Maintaining a healthy and ideal body mass

Following a healthy diet that contains just an adequate amount of fruits, vegetables, and nutrients

Limiting or, if possible, avoiding alcohol use

Following a healthy sleeping routine

Following a well-planned workout routine

Decreasing stress and focusing on mental well-being

Getting updated on vaccines

How does vaccination work?

The immune system learns about a new threat through vaccinations and creates suitable antibodies to fight it off and destroy it. When we are exposed to a new kind of germs like a new bacteria or virus, they will start attacking the body and multiplying in the body, leading to an infection that is the basis of an illness. As we all know, our red blood cells are responsible for carrying oxygen and delivering them to the tissues and organs of the body, while the white cells are tasked with fighting those infections. White cells are also called immune cells.

At first, when the vaccine enters the body, it will imitate an infection, so the immune system can recognize it as a threat and starts to learn it. However, this imitation of disease rarely causes an illness while the immune system produces T-lymphocytes and antibodies to fight it off. Sometimes, as a natural side effect of some vaccines, the imitation infection may cause some minor symptoms like a fever. These side effects are typical because the body has started to build immunity against the vaccine's illness.

As a result, after the imitation infection is gone, the body has produced a supply of "memory" T-lymphocytes and B-lymphocytes that react to a specific disease if exposed. But the production of "memory" T-lymphocytes and B-lymphocytes may take up to a few weeks after the vaccination. It is also possible for someone who is either already infected or is infected right after getting the vaccine to get the disease because still, the antibodies are not yet produced entirely.

According to the Centers for Disease Control and Prevention (CDC), some diseases are almost forgotten today thanks to vaccination.

Polio

Polio is considered a disease that is crippling and also potentially deadly infectious, which is caused by a virus called Poliovirus. This virus is spread from person to person. The areas affected after this virus has become a disease are the brain and spinal cord, which will eventually cause paralysis.

According to the CDC, polio is eliminated in the USA through vaccination. However, it is still considered a threat in some other countries. It is essential to make sure infants are vaccinated with polio vaccination to prevent them from getting infected by this virus.

The Flu is also known as Influenza

The influenza virus causes this disease. This virus infects the lungs, throat, and nose of the infected person, but its effect may differ from person to person. This difference depends on the person's age, health, and immune system. This virus is considered to be dangerous for children of all ages and can cause several symptoms in them, such as:

Coughing

Fever

Aches

Fatigue

Vomiting

Diarrhea

Children younger than six months are at a higher risk of being admitted to the hospital because of the flu virus, but their age does not allow them to be vaccinated. The mother should get a flu vaccination during her pregnancy. Children over six months and adults of any age must obtain the flu vaccination.

Hepatitis B

According to the CDC, over 780,000 people are dying because of the complication caused by Hepatitis B. The spread of this virus happens through blood or other bodily fluids. Exposure to this virus is hazardous for babies because the baby can get infected if the mother gets infected. Babies need to get their first Hepatitis B vaccine shortly after being born.

Hepatitis A

Since 1995, when the vaccine for Hepatitis A was developed, the number of Hepatitis A-related cases has decreased significantly. Hepatitis A is considered a highly contagious liver disease, while the virus is transmitted through contaminated food and water or contact. Vaccinating against Hepatitis A will keep the baby from getting infected by this virus.

Rubella

the rubella virus is spread via sneezing and coughing. This virus is hazardous for pregnant women as well as their unborn children. If the mother is not vaccinated, she can get infected by this virus. This infection may lead to miscarriage or the child's death after being born. If the baby is born and is alive, the disease can be passed to the newborn, which may cause the baby to develop severe congenital disabilities. Be sure to be vaccinated and vaccinate your children with the Rubella vaccine.

Measles

Measles, just like rubella, can spread through the coughing and sneezing of the infected person. It is possible to contract measles after 2 hours of exposure to infected individuals. This condition is considered highly contagious and severe, especially for younger children.

The virus is common in many parts of the world; people who are not vaccinated for this disease can easily get infected while traveling and bring this virus into your country or city. You are at high risk if you are not vaccinated against this virus and are not protected against it. Make sure to get yourself and your children vaccinated for thisvirus.

resources:

https://www.cdc.gov/vaccines/parents/diseases/forgot-14-diseases.html

https://my.clevelandclinic.org/health/articles/21196-immune-system

https://www.cdc.gov/vaccines/hcp/conversations/understanding-vacc-work.html

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/how-they-work.html

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html

https://www.healthline.com/health/vaccinations/6-most-important-vaccines-you-might-not-know-about

https://www.who.int/news-room/events/detail/2021/04/24/default-calendar/world-immunization-week-2021