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<https://youtu.be/IKwDKj8uS98>

Build-up a strong immune system for the coronavirus vaccines to reveal their efficacy.

Transcript: “Your immune system is an intricate device, including white blood cells (lymphocytes), antibodies, complex proteins, networks, and organs. Some cellular parts of the system act as barriers, preventing viruses and bacteria entering and destroying the organs, while others hunt and remove invaders from your body”.

Let us talk about this magic device we possess to maintain a healthy lifestyle.

These days we read a lot about the variations of coronavirus vaccines available for inoculation against the COVID-19, the side effects their efficacies and so on, but little information on emphasis in boosting your innate immune system to produce strong antibodies to combat with the virus.

Unless, you have a strong built-in immune system, the efficacy of the vaccine is questionable.

It is also observed that a strong immune system will not prevent you from contracting COVID-19.

It is possible that such candidates due to a poor innate immune system have not got sufficient existing antibodies to mount a defense.

However, developing a strong immune system while you are healthy can sustain your body as it familiarizes itself with the new virus in the event you get sick.

For that reason, it remains imperative to continue practicing social distancing, good hand hygiene and cough etiquette.

Before discussing how one can have a strong immune system, let us talk about our immune system.

Immune system is akin to the fire brigade in a town. The fire trucks are well maintained to start without hiccups by the firemen when an urgent call comes with a fire in the town, and off the fleets of trucks will approach the site of fire.

That is exactly what the immune system does to protect your body from harmful substances, germs, and cell changes that could make you ill.

Our immune system goes one step further than the fire brigade by scavenging the unwanted debris in our circulation.

We have an innate immune system and a specific immune system

This system in our body is made up of various organs, cells, and proteins. The cells can be compared to the firemen, and the streets in the town are the lymphatic and circulatory pathways for easy access to the site.

The cells in the immune system are akin to the firemen -are the T and B lymphocytes originating in our bone marrow.

T cells are predominantly produced in the thymus gland. They recognize foreign particles, that is antigens by producing T cell receptor.

The B cells remain in the marrow to mature, while the T cells travel to the thymus gland which is at the base of your neck behind and below the notch of the sternal bone, between the lungs.

Thymus gland grows during your teens and gradually shrinks. It produces a hormone called thymosin, which in turn aids in the production of T cells.

While in the thymus the T cells multiply, acquire different antigen receptors, and differentiate into helper T cells and cytotoxic killer T cells. There are various proteins such as CD4 and CD8 found on the surface of the T cells.

Cytotoxic T cells kill target cells bearing specific antigen of the pathogens while sparing neighboring uninfected cells.

After the T cells mature in the thymus and the B cells in the bone marrow, they then travel to the lymph nodes and spleen where they remain to be activated for an emergency, like the firemen waiting for a call.

Lymph nodes are found throughout the body. They are like the substation fire brigades.

The spleen an organ hidden in the upper left side of the abdominal cavity plays an important part in our immune system.

The spleen keeps the white blood cells and platelets in storage to be fired at a time of an emergency. Spleen also identifies germs that may cause infection.

There is lymphoid tissue, in addition to the lymph glands mentioned, in relation to the mucus surfaces as in the gastrointestinal tract, nasopharynx, thyroid, breast, lungs, salivary glands, eyes and skin. They are also referred to as the mucosa-associated lymphoid tissue.

The bone marrow and thymus are primarily lymphoid tissues and the sites of lymphocyte development, and the lymph nodes scattered in your body, spleen, tonsils, and Peyer's patches in your gut lining are examples of secondary lymphoid tissue.

These tissues are packed with leucocytes or white blood cells, that is T cells and B cells which form part of our immune system.

There are also plasma cells and macrophages in these lymphoid tissues, each of which is well situated to encounter antigens, that is offending pathogens, passing through the mucosal epithelium.

Macrophages are specialized white cells involved in detection and engulfing called phagocytosis and destructing the viruses and other harmful organisms. In addition, they can also present antigens to T cells and initiate inflammation by releasing molecules called cytokines that activate the cells.

These macrophages are present in many sites and organs and takes a big role in killing foreign harmful particles in circulation.

They are present in lung tissue, in the liver called Kupffer cells, in the central nervous system called microglia, and in the spleen called splenic macrophages.

Natural killer cells

These are lymphocytes in the same family as T and B cells, and they respond quickly to a wide variety of pathological challenges. They kill virally infected cells and detecting and controlling early signs of cancer.

We all have two levels of immunity: specific and non-specific immunity the non-specific immunity is also called the innate immunity. Through this immunity viruses and bacteria can be attacked. So, the first line of innate immunity includes your skin, and mucous membranes.

In specific immunity we have the white blood cells called lymphocytes as described earlier, produced in our bone marrow called T cells and B cells.

So, I have described the fined tuned immune system we have in our body to attack invaders.

We need to fine tune this system for the vaccine inoculations to work more efficiently in our body to prevent COVID-19.

There are certain vitamins you could take daily to boost your immune system. Vitamin C has antibodies which help fight against bacterial and viral infections.

Vitamin D is also used to flight off infections by maintaining strong bones. However, vitamin D also has an important role on the body's immune system by modulating the innate and adaptive immune systems.

Vitamin A helps regulate the immune system and protects against infections by keeping your tissues and skin healthy.

Vitamin E is another essential antioxidant whose job is to fight cell damage.

Zinc is another antioxidant that boosts your metabolism.

Daily exercise and activity no doubt enhances your immune system.

“Moderate intensity physical activity is associated with better immune function, lower levels of anxiety, and perceived stress,” says Liz Joy, MD, senior medical director of Wellness and Nutrition at Intermountain Healthcare.

Good vegetable-based nutrition, psychological wellbeing, and lifestyle choices can all benefit your immune system.

“Balanced nutrition can enhance your ability to resist infections and remain healthy.

Get sufficient sleep, because it is proven that adequate sleep is one of the most important health behaviors for optimal immune functions, mental and physical health, and quality of life.

Hope this talk was useful to understand the basis of your immune system and how you could boost it to facilitate the coronavirus vaccine to work to its best efficacy.

Thank you for watching.

Stay safe and goodbye for now.

Some countries where vaccinations have already started are achieving remarkably fast rollouts. Israel, the country with the fastest on a per-capita basis, has been delivering more than 100,000 doses per day and the UK has topped 400,000 doses per day.

The emergence of several new coronavirus variants has triggered a fresh wave of concerns over how quickly the virus is changing and new questions about whether COVID-19 vaccines will be able to keep up.

Early evidence suggests the new variants are likely to be covered by existing COVID-19 vaccines, though some mutations might slightly blunt the vaccines' effectiveness.

Pfizer [recently reported](#) its COVID-19 vaccine — which has been [approved for use in Australia](#) — appears to be just as effective against the UK variant as earlier versions of the virus. The company did this by analysing the antibodies of vaccinated people against the new variants.

Moderna, which also makes an mRNA COVID-19 vaccine, [found the same](#).