

Immunology 101- Part 1

The world prior to Genesis 3:6 was a perfect world. The waters were full of fish, the skies full of birds, and the land was rich in animals and wildlife (big, tall, short, and small). The earth was “good!” Mankind was created and all authority was given to us and there was no disease, infection, nor contamination for the Lord said it was “perfect!” Life after Genesis 3:6 resulted in a major transfer of power and authority to darkness. Plants became poisonous. Infectious bacteria, yeast, fungi, and viruses entered the world. There was no need for antibiotics, antifungals or pharmaceutical companies prior to Genesis 3:6. As mankind lost all authority and power over the earth to darkness, contamination and hard work became common place. Mankind could no longer reenter Paradise. The sin of the world separated us from Paradise. As life continued over the years, many plagues and turmoil were placed on mankind. This was not the fault of the Lord, but by darkness.

Many years later, discoveries were made and treatments were successful in correcting and preventing disease. As knowledge grew, thousands of lives, including animals, were saved and animals could grow to their designed potential and become productive. But darkness pushed back. Very shortly after the great discoveries, bacteria and fungi began to become resistant to the treatments so many more studies were completed yielding good results. Over the generations, the eb and flow of the pharmaceutical tides have resulted in medication resistance and interference of the proper body's function and design. Medications began to cause more harm than good. Side effects weighed more heavily than the effectiveness of many of the synthetic pharmaceuticals.

More researched ensued. The discovery of antigens and antibodies (immunoglobulins) began to gain more popularity. The knowledge that bacteria created a reaction in the body, and the body's own immune system had a developed plan of attack was discovered. When infectious bacteria enter the body, certain proteins on the surface of the bacteria stimulated a calculated host reaction. Recognition, activation, proliferation, and differentiation are terms taken by the host regarding infectious agents. As infectious organisms enter the body, the body recognizes the proteins of the structure of the organism as foreign (“antigens”) and produces antibodies against the antigen. The immune system is complex and interacts with the body daily.

The immune system is broken down into “Humoral Immunity” and “Cell-Mediated Immunity” and further broken down into Nonspecific Host Defenses and Specific Host Defenses. In this article, Immunology 101: Part 1, we will briefly focus on Humoral Immunity (Immunity associated with the fluids of the body). The Nonspecific Host Defense is often called nonspecific immunity or “innate” immunity. Components of this defense system consist of barriers to Infection and induced mechanisms. The body has barriers to infectious bacteria such as the skin layer (epithelium), chemical defenses of the body surfaces including secretions from “normal” bacterial flora that line the epithelium in the gastrointestinal tract, as well as acidic secretions from the stomach. The purpose of “normal” microbial flora is to prevent establishment of infectious bacteria on the epithelium. Induced mechanisms of the body include Inflammation. Inflammation is the tissue's response to injury resulting from infectious

agents (antigens). Inflammation is demonstrated by heat, redness, and swelling at the site of infection. Chemicals from the host cause leakiness of blood vessels at the sites and allow specialized cells from the blood stream called white blood cells (WBCs) to move from the bloodstream into the tissues to confront the invading antigens. Under the induced mechanism component of the Nonspecific Host Defense, various proteins and cells cause damage to the invaders and the WBCs phagocytize foreign agents (bring into the cell and digest with enzymes).

The Specific Host Defense has been called specific, adaptive, and acquired immunity. In this system, specific host cells are produced to battle infectious/foreign agents. These cells are called Lymphocytes and there are B and T lymphocytes. As the recognition of an antigen is discovered by the host (proteins from the cell wall), the Lymphocytes become activated (increase in size) and rapidly proliferate. After the numerous cells are produced, they are differentiated into effector cells (B and T Lymphocytes) or into memory cells. B lymphocytes secrete antibodies that bind to the antigen and attack extracellular infectious/foreign agents (outside the cell membrane). T lymphocytes attack intracellular agents (inside of the host's cells). Memory cells are cells that were not used to fight the battle and they continue to circulate the bloodstream and wait on the next impending battle and some wait in the regional lymph nodes. When the immune system is activated and fighting an infection, lymph nodes swell due to the activation of the cells inside the lymph nodes. This is why doctors look into and feel your throat to see if your body is fighting an infection. Chronic infections tend to exhibit larger lymph nodes than normal.

The B Lymphocytes are responsible for producing antibodies. The antibodies attach, neutralize, and present antigens to WBCs to be eaten (phagocytized) and eliminated and also prevent the infectious agents from attaching to the epithelium of the host, thus they get "flushed" from the host. The antibodies can not cross cell walls and they stimulate WBCs to fight as before mentioned. This is where the T Lymphocytes enter the equation. T lymphocytes can enter the host's cells where the advanced foreign objects can hide and replicate, such as viruses (EHD, Blue Tongue Virus, etc.) and intracellular bacteria.

The body's Natural Immunity has many advanced steps that most producers don't understand. However, education is always critical when producing a complete herd health plan. If this natural system is so effective, why do we need pharmaceuticals and antimicrobials. Most pharmaceuticals do not decipher between host natural bacterial/yeast/fungi (natural "good" flora) from infectious bacteria/yeast/fungi. The biggest problem the host's immune system faces is stress. Stress releases corticosteroids (dexamethasone) which prevents the immune system from working efficiently and effectively. With that in mind, "synthetic stress" can be administered to a patient that is fighting a particular virus (EHD/BTV) by which the immune system of the host over reacts and dexamethasone is a great solution to prevent the immune system from destroying the host.

Going back to "natural immunity", antibodies have been historically used in treatments but have been down played over the years by pharmaceutical companies. Antibiotics do have a role in medicine but their dependence is not guaranteed forever. Concentrating on the body's physiology and understanding how we can combat disease has become more and more favorable. The use of antibody specific proteins against antigens has been around since Genesis.

It is time to go back to God's drawing board and use what He created in order to protect and maintain a better quality of life for the world. Immunology has been established since the beginning of time. It has been a mystery to many folks, but education is only half the battle. We have to apply what we have learned. In Part 2 of Immunology 101, we will discuss new treatment ideas for fusobacterium, truperla, and other common pathogens the body fights with daily. We will discuss how the body simply is the best pharmacy God has developed to fight disease. We will also go through an involved discussion on how vaccines work and what causes Cell-Mediated Immunity to occur in the host. We will discuss how "Natural" vaccines and Recombinant DNA vaccines are involved with the host's immune system and how prevention of disease occurs.

Fast forward a few years. A child was sent to this world to transfer the power and authority from darkness back to mankind so we could re-enter Paradise. Jesus came to teach and train us how to regain authority over disease and darkness. Whatever you can think of, ask for, or pray for, God has already completed it 2000 plus years ago. We just have to speak and believe what He has done to release His power. Repeating what God has already said back to Him is the perfect example of Prayer. Test Him, hold on, and get ready for an awesome ride...

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