Innate Immunity Barriers

The immune system has innate barriers that are always protecting the body from pathogens and foreign substances. The skin is the largest barrier to pathogens, as it protects the body and physically separates the inside of the body from the outside environment. It is necessary for maintaining physiological conditions. There are also bacterial flora that exist naturally in the body, and they outcompete dangerous pathogens for resources and nutrients. Saliva, tears, and mucus have lysozymes that lyse open pathogenic cells, and mucus traps pathogens for removal. Cilia remove mucus and expel it out of the body, containing pathogens and other foreign substances. FInally, acid and digestive enzymes in the stomach will kill pathogens that are not resistant to acidic environments.

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Skin Protects Against Pathogens

Skin-suit men protecting against Pathogens

The skin is the largest barrier, as it separates and defines the internal body from the outside environment. It physically prevents most pathogens from entering the body.

Normal Flora Outcompete Pathogens

Flower Overgrowth blocks Pathogens

The body also has a normal set of bacterial flora that can outcompete pathogens for resources and nutrients if they do manage to get into the body. The body's own flora are beneficial and help with digestion, as well as other physiological needs.

Lysozyme in Saliva, Tears, and Mucus

Laser-enzymes in Saliva of Crying Mouth

Lysozyme is an enzyme which lyses pathogen cells open, and it is present in saliva, tears, and mucus. This helps prevent pathogens from surviving entry through the eyes, mouth and nose.

Mucous Traps Pathogens

Mucous Trapping Pathogens

Mucus attempts to trap pathogens in the respiratory tract, so that when the mucus is expelled, the pathogens are also removed. In this manner, mucus also helps to filter foreign particles that could cause potential respiratory tract issues.

Cilia Remove Mucus

Celery batting Out Mucus covered pathogens

Cilia remove mucus and the stuck pathogens out of the body by forcing expulsion of mucus through the respiratory tract and out of the body.

Acid and Digestive Enzymes in the Stomach Kill Pathogens

Acidic-lemons and Enzyme-fish killing Pathogens

Should any pathogens advance far enough to make it to the stomach, the harsh acidic environment and digestive enzymes make it unlikely that those pathogens survive. There are some pathogens that are resistant to acidic conditions and can survive in the stomach, but most will die and be expelled through the excretory system.

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