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How stress are effect on immune cell ?

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Abstract :

I will discuss in this report about how the stress are effect on immune cell and immunity as general ,as you know Your immune system is your body's version of the military: sworn to defend against all who threaten it, both foreign and domestic. It has some really interesting soldiers that help make this possible Our white blood cells are stored in different places in the body, which are referred to as lymphoid organs, These include the following, The immune system needs to be able to tell self from non-self It does this by detecting proteins that are found on the surface of all cells, It learns to ignore its own or self proteins at an early stage, An antigen is any substance that can spark an immune response, an antigen is a bacterium, fungus, virus, toxin, or foreign body , Everyone's immune system is different but, as a general rule, it becomes stronger during adulthood as, by this time, we have been exposed to more pathogens and developed more immunity , That is why teens and adults tend to get sick less often than children, Once an antibody has been produced, a copy remains in the body so that if the same antigen appears again, it can be dealt with more quickly .

Introduction :

The ability to fend off illness and disease depends on several factors, some of which are beyond our control, but the way we react to stress and the general health of our immune system are things we can influence. If we're not able to change our response to stressors, we'll find ourselves in a constant hormonal battle that will lead to serious health issues like hypertension, diabetes, and heart disease. The brain and the immune system are in constant communication in this delicate balance that can be disrupted by any kind of physical or emotional stress, Are you constantly struck down by colds, flu and other infections – no matter how well you look after yourself , if your answer is "yes" maybe the level of stress are high , When you are stressed (1), First, sympathetic fibers descend from the brain into both primary (bone marrow and thymus) and secondary (spleen and lymph nodes) lymphoid tissues . These fibers can release a wide variety of substances that influence immune responses by binding to receptors on white blood cells, Though all lymphocytes have adrenergic receptors, differential density and sensitivity of adrenergic receptors on lymphocytes may affect responsiveness to stress among cell subsets. For example, natural killer cells have both high-density and high-affinity β 2-adrenergic receptors, B cells have high density but lower affinity, and T cells have the low affinity , in other way , When you are stressed – that is, in 'fight or flight' mode – your body begins producing more of the stress hormone by the hormones gland such as cortisol , Cortisol weakens your immune system for a good reason. During periods of intense stress, as though you were about to face a predator, cortisol is trying to help reduce

inflammation by weakening some of the antibodies that can increase inflammation. It also turns on natural immunity (the ability to fight off problems immediately) and moves resources away from specific immunities (the ability to prevent diseases your body knows how to control). But cortisol is only helpful in short bursts. When you experience prolonged stress, your body needs those T-cells and white blood cells, and unfortunately, cortisol continues to suppress them, thus weakening your immune system over time. The result isn't just that you may get ill. You still need to be in contact with germs and bacteria for this to occur. The main problem is that once you get sick, your body will have a harder time recovering. It needs these cells to attack intruders, and it is harder for your body to do that when your anxiety is squashing your immune system strength.(2)

Discussion :

In studies about this subject I found studies on the mice and the medical students , In a study conducted on mice, it was found that there was a significant reduction of killer cells after being the mice placed in stress for 8 consecutive days (3), and in medical student In the other study, a sample of 38 volunteers was taken from the medical students before one month from exam and in the day of exams , and on the day of the examination and found that there was a significant reduction in the rate of T-cells and B cells and the nature killer cell in the blood and this thing, which can lead to the state of depression in many Medical students as immune cells have been affected(4) , in other study for Stress in health sciences students , only few studies have been conducted on pharmacy students this study represents a cross sectional survey using an interviewer administered questionnaire about stress and students' health states during the fall semester of 2009/2010. At commencement of this study, 222 of pharmacy student, found to perceive stress related to program intensity, lack of exercise and social activities, bad nutritional routines and accommodation. Effects of increased study loads on students' health and immune-related diseases were more pronounced on students, In general, more than 50% of students of each program got ill several times, mainly during the midterm period, had cold/flu, were under medical care and had problems in skin and/or hair(5).

Conclusion:

In this report I explain how stress can affect immune cells , and in some studies and experiments Shows how stress affects people and even animals, and is more affected by medical students in particular, for what they see and are subjected to difficult classroom pressures.

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