

# [Stress and the immune system](https://assignbuster.com/stress-and-the-immune-system/)

Acute stressors have been shown to have a negative affect on the immune system. The relationship between stress and immune system functioning has focused on acute stressors and has found a decrease in immune cell function. For example Kiecolt-Glaser (1984) conducted a natural experiment investigating whether short-term stressors had an affect on the immune system of medical students. Blood samples were taken from each student one month before their exams, which represents a low stress period, and then also blood samples were taken during the exam period, which was considered a high stress time for the students.

It was found that NK cell activity was significantly reduced in the second sample in comparison to the first sample. This shows that short-term stressors have a negative affect on the immune system. A weakness to this study is that it has absences of population validity as the study was conducted on 75 people who were all medical students. This means that the results are not representative of the population at large due to the small sample size.

Other students may also react differently and be resilient towards the study because they wouldn’t be medical students therefore they don’t understand the science behind the experiment so won’t react to it as much as understanding medical students would. Marucha et al. (1998) conducted a study to see if exam-related immune changes affect the rate of wounds healing. Marucha et al. ‘ s study was named the ‘ punch biopsy’, which supported Kiecolt-Glaser’s research into acute stress and the immune system.

They’re study was carried out by students being punched in the face either during the summer holidays or 3 days before an exam. The findings were that the wounds took 40% longer to heal at the time of exam periods in contrast to the summer holidays. This evidence supports Kiecolt-Glaser’s research as it shows stress affects the immune system to repair itself. Kiecolt-Glaser et al. (2005) also conducted a study into relationship stress to see whether chronic stress had an affect on the immune system. She tested the impact of interpersonal conflict on wound healing.

She found that blister wounds on the arm of married couples healed more slowly after that had arguments instead of not. They found poorer immune system functioning in woman who had separated during the last year. Malarkey continued this study on in order to support Kiecolt-Glaser by conducting a study with 90 new-wed couples over a 24-hour period in laboratory conditions. They were asked to discuss and resolve marital issues likely to produce conflict, for example finance.

There were high changes in adrenaline and noradrenaline, which could lead to a poor immune system functioning. Segerstrom and Miller took a meta-analysis of 293 studies over the past 30 years and found that short-term acute stressors can in fact boost the immune system as it prompts it to ready itself for infections and challenges to the integrity of the body. They found that long-term chronic stressors had a negative impact on the immune system.

This evidence refutes the study of Kiecolt-Glaser with acute stress as it proves that the small amount of reduction in the NK cells during a small period of time actually boosted the immune system even though there was a negative impact for a small amount of time. Even though Segerstrom and Miller’s meta-analysis refutes Kiecolt-Glaser’s results into acute stress they support the evidence into chronic stress and agree that long-term chronic stressors causes a negative impact on the immune system.