# Illness

How many times has every teenager, no matter what era they grew up in, heard their mother's voice schreeching "Where have you been? I've been worried sick!" as they ran into the house a little later than they expected? Although in most cases, the worry that "mom" 'is refering to is not enought to make her sick, it is possible to worry about something so much, and for so long, to make a person physically ill. Stress, whether it comes from a physical or emotional source, can effect many functions of the body in adverse ways. Some physical effects cause minor problems and inconviences, such as muscle aches and headaches, while other effects of stress can cause serious medical problems like heart disease and strokes. Children and teenagers of today's generation face an increased level of stress, and consequently, an increased rate of illness and physical ailments.

How often do you get sick? Could you believe that the frequency of your illnesses may determine how stressed you are? Actually, stress and immunity to illness are very closely linked, and an extremely complex topic to study. With teenagers, generally speaking, the more often they're sick the more school they miss. The decline in school attendance can definitely have adverse effects on the student which will last far beyond the lifetime of their sickness.

There are hundreds of different types of illnesses and diseases a person can contract, ranging from the common cold to malaria to food poisoning. No matter what the disease, however, the body wants to reacts in the same way. The only factor inhibiting how the body reacts to an invading disease is the amount of stress on the body itself. Under non-stressful conditions the body produces lymphocytes and Natural Killer cells (NK cells) to attack the foreign, harmful cells. Once they invaders are attacked and destroyed immunity from them is achieved, the normal body cells remain healthy, and the body doesn't get sick. Stress, in contrast, has a tremendously negative effect on the body's ability to fight disease and illness "... because it suppresses our immune system's capacity to produce and maintain lymphocytes and NK cells." (Goliszek) Thus, the body can not destroy the bad cells, and the good ones fall to the bad. " Scientists at a University of Texas health center in Houston found that stress - related hormones (specifically epinephrine and norepinephrine) appear to block the ability of immune cells to kill cells infected with ... viruses ..." (Faelten) Also, it is commonly believed by psychoneuroimmunologists that "... people who actively manage stress are less likely to develop infectious diseases... " (Constable) A deduction can thus be reached that if a teenager, or any other person, is frequently ill then their level of stress must be higher than another teen who rarely becomes ill.

After the duration of the illness there is still one main problem in the teen's life-- make-up school work. When the student is sick every two weeks or so, they'll ending up missing a lot of time in school. Over an extended period of time ( let's say a semester ) the days of absence will add up, and most likely cause the teen to fall behind their classmates in what was learned in class. In effect, the expected response would be a decrease in GPA averages. The data collected supports this theory. The teenagers who said they are always sick have an average GPA of 2.86. Those teens who say they sometimes get sick have an average GPA of 3.06. Increasing once more are those teens who occasionally get sick, with an average GPA of 3.22. And those students who say they never become ill have an average GPA of 3.20. This information shows that as the frequency of illness increases, GPA decreases. The only statistical error noted in our test's was that there was a very slight decrease in the GPA of those teens who never get sick. An explanation for why there wasn't the expected increase could be sample size, or outliers in the data pool.

One-Way Analysis of Variance  
  
Analysis of Variance  
Source DF SS MS F P  
Factor 3 2.719 0.906 2.45 0.064  
Error 266 98.518 0.370  
Total 269 101.237  
 Individual 95% CIs For Mean  
 Based on Pooled StDev  
Level N Mean StDev ----------+---------+---------+------  
Sick-A 15 2.8247 0.6899 (-----------\*-----------)   
Sick-S 48 3.0625 0.7203 (-----\*------)   
Sick-O 157 3.2161 0.5663 (---\*--)   
Sick-N 50 3.2016 0.5968 (------\*------)   
 ----------+---------+---------+------  
Pooled StDev = 0.6086 2.75 3.00 3.25