

**Prevention of Teenage Smoking in Local Area Schools**

by

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Psychology 220 (Developmental Psychology)

**Problem:**

Smoking among teens leads to a life-long addiction that can cause severe health problems and death. According to the American Lung Association [ALA] (2006a), almost all tobacco use begins in adolescence. Furthermore, one-third of all smokers had their first cigarette before fourteen years of age, and an astounding ninety percent of all smokers have begun smoking by the age of twenty-one ALA (2006a). These numbers suggest that once a youth becomes hooked to the addictive component of cigarette smoke, nicotine, they are likely to continue smoking into adulthood.

The health implications of smoking are far reaching. According to the U.S. Department of Health and Human Services [DHHS] (2006), tobacco smoke is linked to many diseases in nearly every part of the human body including, but not limited to, the following:

<b>Cancers</b>	<b>Cardiovascular Disease</b>	<b>Reproductive Effects</b>
<ul style="list-style-type: none"><li>• Bladder Cancer</li><li>• Cervical Cancer</li><li>• Esophageal Cancer</li><li>• Kidney Cancer</li><li>• Laryngeal Cancer</li><li>• Leukemia</li><li>• Lung Cancer</li><li>• Oral Cancer</li><li>• Pancreatic Cancer</li><li>• Stomach Cancer</li></ul>	<ul style="list-style-type: none"><li>• Aneurysm</li><li>• Artherosclerosis</li><li>• Cerebrovascular Disease</li><li>• Coronary Heart Disease</li></ul>	<ul style="list-style-type: none"><li>• Fetal Death</li><li>• Fertility Issues</li><li>• Low Birth Weight</li><li>• Pregnancy Complications</li></ul>
	<b>Respiratory Disease</b>	<b>Other Effects</b>
	<ul style="list-style-type: none"><li>• Chronic Bronchitis</li><li>• Emphysema</li><li>• Pneumonia</li></ul>	<ul style="list-style-type: none"><li>• Cataract</li><li>• Diminished Health</li><li>• Low Bone Density</li><li>• Peptic Ulcers</li></ul>

The ALA exclaimed that “cigarette smoke contains over 4,800 chemicals, 69 of which are known to cause cancer” ALA (2006b). In fact, tobacco products, especially cigarettes, can be linked to the top four leading causes of death in the United State in 2004. The top four causes of death in descending order according to National Center for Health Statistics (2004) are diseases of the heart, malignant neoplasms (cancer), cerebrovascular diseases (stroke), and chronic lower respiratory diseases. The Centers for Disease Control and Prevention [CDC] (2004) said “Tobacco use is the leading preventable cause of death in the United States. Cigarette smoking causes an estimated 440,00 deaths, or about 1 of every 5 deaths, each year.” Lastly, the ALA said “If current use patterns persist, an estimated 6.4 million current children smokers will eventually die prematurely from a smoking related disease.”

These numbers leave no doubt that preventing teens from smoking to begin with will improve the quality of or save the lives of many would be smokers. Later, I will describe what some of the causes of teen smoking are, I will describe the effects on the brain that makes nicotine addictive, and I will discuss using the emotional mentality of adolescents to prevent them from starting to smoke.

### **Target Population:**

This program is aimed to aid prevention of smoking in early high school students in the Coldwater, MI area. It would first include educating life science teachers, particularly health and biology teachers, to keep them updated on current findings and statistics. Second would be the education of the adolescents attending these classes.

### **Prevention Program Education Component:**

#### Part One:

The first step in this program would include educating life science teachers (health and biology mainly) in current statistics and facts about smoking. This would be done through a short presentation as well as a short guide with facts and accessibility to further information (please see the attached cd-rom with power point presentations and the handout).

#### Part Two:

This part will require the education of adolescents in class and by taking a short field trip to a local hospital or respiratory care facility. A separate power point presentation would be created to use in the class rooms. If a projector is not available, the power point could be printed onto transparencies for an overhead, or printed as handouts to be given to the students (please see the attached cd-rom with power point presentations).

### **Legislation and Rules Changes:**

Not many changes would be necessary in order to implement this program. It would be necessary to set aside the time needed for the educators to view the presentation. Furthermore, time and space would need to be fit into the current health curriculum to fit in the presentation and field trip. The best avenue to achieve these allotments would be to first contact the Superintendent and Principal of the school to be followed by the appropriate board of education for that school.

## **Program Description:**

In part one, life science teachers will be expected to attend a short presentation in which current information will be presented covering the effects of smoking, current statistics, and a brief overview of how nicotine addiction works. Naturally, the majority of said teachers are likely to already know this information; however, a refresher with current info would likely prove beneficial. They will also be introduced to the information to be presented to the students. This will be mostly information on the affects of smoking and graphic images of those affects.

The only problem I foresee with the first part would be reluctance of the faculty to participate because some may feel it unnecessary. For this, I would ask the school system to make it mandatory for the teachers to attend once per year.

In part two, the information is passed onto the students. The goal here is to take the same emotional nature that causes many teens to start smoking and use it in a manner as to instill fear of smoking in them as a method of prevention. The first step is presentation of the affects and images. Some of these are disturbing, but I feel it is necessary in order to give an actual perspective on what can happen.

The second step of part two is a field trip to a health care facility that caters mainly to cardiovascular and pulmonary health. This trip is the core of this program. While statistics and logic are good sources of information, the adolescent mind is motivated more by emotion than by logic. This will be further discussed in the justification section of this program. The end goal is the elicit empathy for the people suffering from the effects of smoking and generate fear of what the future may hold for them if they should start smoking.

The main obstacle part two may face is making room in the current curriculum to fit this in. The presentation could easily be fit into the portion the health or biology curriculum in which the cardiovascular and pulmonary system is taught. Scheduling of the field trip to a health care facility may present more of a challenge. First, hospital administration would need to be contacted to schedule the visit. Next, resources, such as transportation to and from, would need to be secured. Finally, parental consent for the adolescent to attend would need to be obtained.

Eventually, I would like to see this as an easy to implement program used by any and all schools willing to use this program. On another contingency, in school districts without the resources or a local health program willing, a video could be made and distributed

showing these hospitals and possibly interviewing willing participants. While video is not a replacement for seeing something in person, it is better than not seeing it at all for the purposes of this program.

### **Justification:**

What causes teens to smoke? The answer is not completely clear, but I will discuss a few ideas as to why. The teenage years are a time of turmoil and a search for identity. Erik Erikson (as cited in Pechmann, C., Levine, L., Loughlin, S., and Leslie, F., 2005, pg. 209) believed that “the primary struggle to formulate an identity that is independent of parents, a struggle that typically lasts until late adolescence or early childhood. Often times, during these years, teens will turn to peers to help forge these identities (Pechmann, C., et al 2005). Due to this, teens may be likely to start smoking because they have a friend that smokes. In fact the APA said “the most common situation for first trying a cigarette is with a friend who already smokes” (2006a), however, the parents are not wholly without a part in teen smoking. In homes where children are exposed to cigarette smoke by both parents, the children are twice as likely to start smoking as children from non-smoking homes (APA, 2006a).

The aim of the program is to reduce smoking in teens. By reducing this number, it stands to reason that fewer teens will start smoking due to social reasons such as peer influence.

There may also be physiological reasons why teens may try smoking. Differences in the adolescent brain cause teens to feel strong emotional urges, but have weak emotional inhibitory control (Pechmann, C., et al 2005). This is due mainly to a well developed limbic system, the parts of the brain that control emotion, and a less developed frontal cortex, which is the part of the brain responsible for regulation of emotion (YoungMinds, 2006). This discrepancy between emotion and the teens lessened ability to make logical choices over choices based on emotion can lead to risk taking behavior such as smoking and drinking. In fact, some studies have shown that this difference in adolescent brain structure may leave them more sensitive to the addictive properties of nicotine (Pechmann, C., et al 2005).

Again, the aim of this program is to reduce smoking in teens. A field trip to the health center is based on the idea that adolescents think more emotionally than logically. Basically, they are more likely to fear living with emphysema after seeing someone that is disabled because of smoking than they would by giving them statistics that would appeal more to logical thinking.

Why is nicotine in cigarette smoke addicting? When a person inhales cigarette smoke, the

nicotine rapidly moves through the blood stream and enters the brain. Within eight seconds, nicotine is in the brain changing how it works (National Institute on Drug Abuse [NIDA], 2006a). After entering the brain, it attaches nicotinic acetylcholine receptors and stimulates the release of dopamine, which is a neurotransmitter that acts on the reward (limbic) systems in the brain (NIDA, 2006a). While the exact reason is not known, cigarette smoke reduces the reuptake of dopamine into neurons due to heightened exposure to high levels from smoking, and the brain responds by lowering normal production of dopamine (NIDA, 2006a). They also point out that this means the smoker must now have nicotine to reach normal levels of the neurotransmitter. This produces feelings of pleasure, which causes the habit to be positively reinforced every time a person smokes a cigarette. Interestingly, the calming effect people feel when they smoke is caused by reduction in withdrawal and not the direct effects of nicotine (NIDA, 2006b).

Based on the fact that their mind is more emotional than logical, more easily influenced by peers, and the fact that the nicotine directly stimulates the parts of the brain responsible for the emotional state of adolescence as a whole, it is easy to see how they may become addicted. By showing them what it would be like to be disabled due to smoking, I am hoping to appeal to the emotional mind and set them down a path that will surely improve the quality of their adult lives.

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