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# Parenting for Prevention

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Student Assistance Services Corp., 660 White Plains Road, Tarrytown, New York, 10591, May, 2018

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As the 2017-2018 school year draws to a close, the May and June newsletter will highlight some of the latest research about issues that we have highlighted during the past year.

Vaping has emerged as one of those issues as its popularity with teens happened very quickly. School personal, parents and substance abuse professionals were surprised at the popularity of e-cigarettes and the emergence of a new culture. At first no one knew what Juul meant or what the word “juuling” meant. Now most know that Juul is one of the most popular e-cigarettes and “juuling” means to chill out and use your Juul.

Most adults also were not aware that vaping even substances without nicotine was dangerous or that vape devices are often used by students to use concentrated marijuana products such as THC oil.

The summer is almost here and during this time, students often gather in unsupervised settings. This provides a teen to engage in sexual activity when the most recent research is showing that there has been an increase in the incidences of sexually transmitted diseases and they are at an all time high.

**Editor: Patricia Murphy Warble, MSW, CPP**

## Spring Update: Vaping, STDs and Resiliency in Families With Substance Use Disorders

### Vaping

The National Academies of Sciences, Engineering and Medicine released a report in January, 2018 assessing studies about the health effects of e-cigarettes. The panel of experts conducted a comprehensive review of research in the field.

There is substantial evidence that e-cigarette use can be addictive. Factors contributing to addiction include: the amount of nicotine, the type of device used; and the individual “vaper’s” practices. Specifically, the actual use and ritual of e-cigarettes is addictive like the use of other devices used by teens. In addition, the cartridge in a Juul, one of the most popular e-cigarette devices, contains as much nicotine as a pack of cigarettes.

The January, 2018 study found that teenagers who use e-cigarettes may be at higher risk for also smoking traditional cigarettes because vaping may entice teenagers to try regular cigarettes.

**Hopkins researchers reported that the concentration of lead, chromium, manganese and nickel has been linked in the past to lung, liver, and brain damage.**

### Toxic substances

There is conclusive evidence that most e-cigarette products contain and emit numerous potentially toxic substances and that they increase airborne particulate matter and nicotine indoors

In addition to this report, a study published in February, 2018 by the Johns Hopkins Bloomberg School of Public Health in the Journal Environmental Health Perspectives reports that the tiny metal coils that heat the liquid nitrogen in e-cigarettes may contaminate the resulting vapor with lead, chromium, manganese and nickel.

"We analyzed 15 metals in e-liquid from the refill dispenser -- before the liquid meets the heating element -- in the vapor, and in the remaining



e-liquid in the tank after vaping," explained study author Pablo Olmedo, a scientist at the Johns Hopkins School of Public Health's department of environmental health and engineering, in Baltimore.

"We found that the metal concentrations were generally higher in the tank and aerosol compared to the refill dispenser," said Olmedo. "That suggests that the heating coil is the smoking gun," he added. The co-author of the study, Ana Maria Rule, pointed out that their team also found "the presence of some metals in some of the liquids even before they are in contact with the coil."

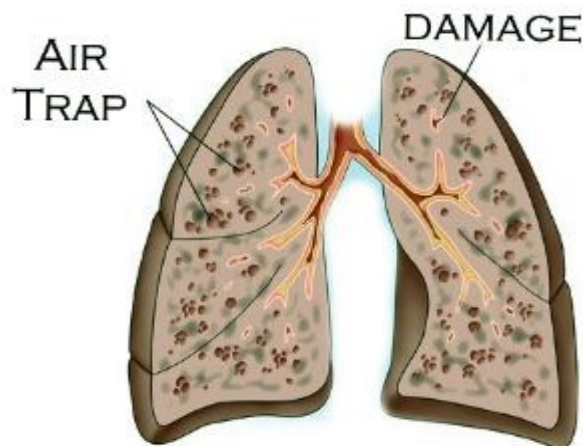
That could mean that "in addition to the metal coil, other factors could play a role in e-cigarette metal exposure, such as the voltage used to heat the coil," said Rule, also an assistant scientist at Hopkins.

## Health Effects of Vaping

The Hopkins researchers reported that the concentration of lead, chromium, manganese and nickel has been linked in the past to lung, liver, and brain damage.

The National Academies of Sciences, Engineering and Medicine Report in January, 2018 said that although there is not a lot of long term evidence about health effects of e-cigarettes since the devices are so new, they do report that there is an increase in heart rate and blood pressure from inhaling nicotine in e-cigarettes, as does blood pressure.

On the other hand, the American Lung Association (ALA) reports that the chemical diacetyl, found in many e-cigarette flavors causes a condition called "popcorn lung." When inhaled, diacetyl causes bronchiolitis obliterans which is a scarring of the tiny air sacs in the lungs resulting in the thickening and narrowing of the airways. While the name "popcorn lung" may not sound like a threat, it's a serious lung disease that causes coughing, wheezing and shortness of breath, similar to the symptoms of chronic obstructive pulmonary disease (COPD).



In fact, the ALA also reports that researchers at Harvard found that 39 of 51 e-cigarette brands contained diacetyl. The study also found two similarly harmful chemicals, pentanedi-one and acetoin, present in 23 and 46 of the 51 flavors it tested. Approximately, 92 percent of the e-cigarettes had one of the three chemicals present.

## Sexually Transmitted Diseases

The most recent statistics about sexually transmitted diseases (STD) shows that STD's have spread at an alarming rate across the Lower Hudson Valley. The Center for Disease Control and Prevention (CDC) tracks STD rates across the country and their most recent data shows that chlamydia, gonorrhea, and syphilis are at the highest number ever recorded.

More than two million cases of the three nationally reported STDs, chlamydia, gonorrhea, and syphilis, were reported in the United States. In Westchester County the rates are as follows ;

- The Chlamydia rate was 2776.0 and 2048.2 per 1,000,000 population among those aged 20 to 24 and 15-19 years respectively.
- The Gonorrhea rate in females aged 15-44 was 107.5 per 100,000 population. However, the highest rate was in females 15-19 years with a 208.1 rate per 100,000. The rate in males aged 15-44 was 130.2 per 100,000 and the highest rate was among males 20-24 with 282.4 per 100,000.
- Syphilis is found primarily among males and the rates were 14.7 per 100,000 and the rates for women is .06 per 100,000. A woman who is pregnant can infect their baby with syphilis.

According to Substance Abuse and Mental Health Services Administration (SAMSHA) drinking alcohol and using drugs can alter the judgment of young people, lower their inhibitions, and impair their decisions to make healthy choices regarding sex. As a result a teen may have unplanned and unprotected sex, have a harder time using a condom the correct way, and have more sexual partners. All of these behaviors increase the likelihood of exposure to an STD.

SAMSHA research also showed that drug abuse may make a person more susceptible to infection and contracting an STD. Alcohol, for example, can have a substantial effect on the immune system of a heavy drinker, interfering with the body's natural virus killing powers. So a person who has sex with a person who is infected is much more likely to actually contract the STD, especially if they are a heavy drinker.

There are also other ways that the link between drug abuse and STDs can be explained. For example, drugs like crack cocaine and amphetamines can delay ejaculation. So these drugs may be associated with longer or more vigorous sexual activity. This type of sexual activity can increase the potential for physical trauma during sex that makes it more likely to transmit sexual disease.

Sadly, females who contract a STD may be unaware of the infection until it has progressed. This can have disastrous consequences. Untreated, about 10-15% of women with chlamydia will develop Pelvic Inflammatory Disease. Chlamydia can also cause fallopian tube infection without any symptoms. These "silent" infections in the upper reproductive tract may cause permanent damage to the fallopian tubes, uterus, and surrounding tissues, which can lead to infertility.

In addition, as a result of a rise in syphilis among women, there has also been an increase in congenital syphilis which occurs when syphilis passes from mother to baby during pregnancy. As a result, there has been an increase in the number of deaths and severe health complications among newborns.



## Resiliency

### *Substance Use Among Teens From Families With Substance Use Disorders*

University of Michigan researcher, Meghan Martz, Ph.D., has just published in *Drug and Alcohol Dependence* the results of a study that considers why some teens are resilient in the face of being raised in a home where alcohol and other drugs were abused.

The results of that study reports that brain function plays an important role in determining whether youths abstain from drugs and alcohol.

After considering sociodemographic differences, the number of parents with a substance use disorder and psychological factors related to impulse control and acting out, the researchers reviewed the teens' MRIs to see if brain activity could give them some insight into why some teens were more resilient than others. The teens were also given a task that showed how the teen's brain responded to the anticipation that they were going to get a reward if they successfully completed the task.

Those students who showed heightened brain activation in the prefrontal cortex were more resilient. This activity was interpreted by the researchers as the resilient teens were better able to regulate their impulse control which could be an important element to preventing unhealthy behaviors.

Dr. Martz said "the brain is complex—what more can it tell us about risk and resilience? Learning from youth who are putting on the brakes and doing well may help inform prevention efforts to boost self-control. "

