

*D.A.R.E.*

# High School Vaping Lesson

Student Handout





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### Activity 3: The Swiss Cheese Model of Addiction

*"To explain the devastating changes in behavior of a person who is addicted, such that even the most severe threat of punishment is insufficient to keep them from taking drugs—where they are willing to give up everything they care for in order to take a drug—it is not enough to say that addiction is a chronic brain disease. What we mean by that is something very specific and profound: that because of drug use, a person's brain is no longer able to produce something needed for our functioning and that healthy people take for granted: free will."*

**Nora Volkow,**

M.D., Director of the National Institute on Drug Abuse

*Find out more: <https://www.drugabuse.gov/about-nida/noras-blog/2015/06/addiction-disease-free-will>*

What does she mean by "give up everything they care for?"

.....  
.....

What is meant by free will?

.....  
.....

What would it mean for your life to lack free will?

.....  
.....

Why do you think some people become addicted to substances they try, while others don't?

.....  
.....

*Swiss Cheese Model of Addiction Video: <https://youtu.be/SuflpGPauI>*

**If you feel like you might be addicted to nicotine, visit the Truth Initiative for information about quitting:**

<https://truthinitiative.org/news/quitting-vaping-here-are-5-tips-handling-nicotine-withdrawal>

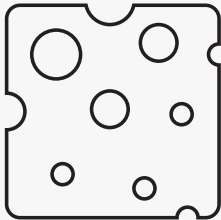
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Swiss Cheese Model of Addiction Video: <https://youtu.be/SufLpGPauI>

- Cheese slices are your protective layers, or defenses
- Holes in the cheese are your risks, or weak spots
- Building up healthy habits strengthens, or is protective – like adding a slice of cheese
- Participating in risk behaviors is like increasing the size of the holes

Write down one personal protective factor and one risk for each slice:

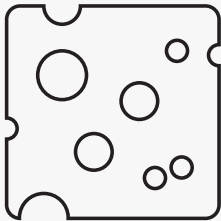
## Genetic/Biological



Protective: .....

Risk: .....

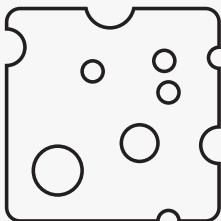
## Brain/Mental Health



Protective: .....

Risk: .....

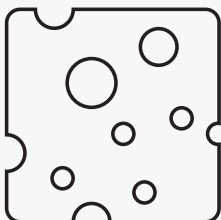
## Family/Social Environment



Protective: .....

Risk: .....

## Physical Environment



Protective: .....

Risk: .....

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Think about the following questions and write your response. Turn to the person next to you and share your responses. After conversation, share insights with large group.

In what ways would nicotine addiction limit your independence?

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What plans or goals for your life would be difficult to achieve with an addiction to nicotine?

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## Activity 4: Vaping Timeline

In the early 2000's, the technology to effectively vaporize nicotine became available for commercial use, and the first "e-cigarettes" began to be produced. In 2011, the Food and Drug Administration (FDA) determined that they would regulate e-cigarettes like traditional cigarettes under the Food, Drug, and Cosmetics Act. By 2012, most large tobacco companies had introduced e-cigarette devices, modified devices became more common, and they wanted people to believe they were safe. In 2015, JUUL devices became available to consumers and were introduced with a massive advertising push – some say aimed at young people...

### What happened next?

2016	
2017	
2018	
2019	

## Activity 5: Journal Questions

What vaping risks are you most concerned about?

.....  
.....

What is your reason not to vape?

.....  
.....

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## More Info about Youth, Nicotine, and Addiction:

- Exposure to nicotine among youth is particularly dangerous since it has been shown to have an effect on key brain receptors, making young people more susceptible to nicotine addiction.
- There is some evidence that the effect of nicotine on developing brains may result in nicotine addiction and greater vulnerability to addiction to other drugs as well.

<https://truthinitiative.org>

Youth who use multiple tobacco products are at higher risk for developing nicotine dependence and might be more likely to continue using tobacco into adulthood

[\*Reducing Tobacco Use: A Report of the Surgeon General\*](#)

Brain imaging studies of adolescents suggest that those who begin smoking regularly at a young age have **reduced activity** in the prefrontal cortex (of brain) and perform less well on tasks related to memory and attention compared to people who don't smoke. These brain changes are also linked with increased sensitivity to other drugs as well as greater impulsivity.

<https://www.ncbi.nlm.nih.gov/pubmed/16937098>

*"After only a few months of using nicotine [these teens] describe cravings, sometimes intense ones. Sometimes they also lose their hopes of being able to quit. And interestingly they show less severe symptoms of withdrawal than adults, but they start to show them earlier on."*

<https://www.businessinsider.com/vaping-brain-effects-juul-2018-4>

There is substantial evidence that e-cigarette use increases risk of using combustible tobacco cigarettes among youth and young adults. Teens who use e-cigs are between two and seven times more likely to eventually smoke conventional cigarettes compared with young people who never try them.

<https://www.nap.edu/catalog/24952/public-health-consequences-of-e-cigarettes>

- Nicotine salt solutions (like JUUL pods) contain nicotine concentrations 2 to 10 times those found in most free-base-nicotine e-cigarette products.
- Combustible cigarettes deliver high doses of nicotine as well, but the bad taste and sensations of the initial smoking experience discourage some young people from continuing to smoke.
- Pod mods may deliver an addictive dose of nicotine without an bad user experience or other tobacco-related deterrents — which may be one reason why 80% of 15-to-24-year-olds who try JUUL continue using the product, and why social media posts saying "addicted to my JUUL" are common.

<https://www.nejm.org/doi/full/10.1056/NEJMp1805758>

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