Recently there has been a significant insurgence of VAPING across Vermont high schools. Contrary to what manufacturers would have you think, there are a number of serious health issues to be aware of.

1. **Vaping lowers the body’s ability to fight infections** by suppressing the immune activity in the cells of 594 genes (research reflects 300 more genes exhibiting decreased activity by vaping than by use of cigarettes). Evidence suggests it is the liquid used to create the vapor that has this immunosuppressive effect on the body.

2. **Chemicals in vape smoke cause “Popcorn Lung”**, a permanent and sometimes fatal scar buildup in the lungs. So-called because of the chemicals that used to flavor popcorn oils including diacetyl destroy the lungs’ smallest airways and as a result may develop into bronchiolitis obliterans, or “popcorn lung.” Interestingly, these chemicals are no longer allowed in food products.

3. **Lithium ion-powered Vape pens have blown up.** Think of Samsung cell phones, but exploding in a mouth knocking out teeth, creating a hole in one’s tongue, burning one’s hand- yes, it has happened!

4. **Nicotine levels are not regulated**, claims of using vape as a method to reduce or kick cigarette smoking are poorly documented. Even vape cartridges labeled as nicotine-free have contained traceable amounts of nicotine. Newer delivery systems often burn hotter (so to speak)- higher voltage batteries deliver higher concentrations of nicotine.

5. **Poison Alert! Ingestion of vape liquid is toxic.** Poisoning by e-cigarette liquid can occur through ingestion, inhalation, or absorption through skin and eyes. These liquids are also found to cause moderate to severe skin irritation when accidental exposure occurs. Such risks raise concerns regarding use of refillable cartridges.

6. **Vape smoke contains metal particles!** Tin, nickel, silver, aluminum, silicate, and chromium have been found in measurable concentrations in vape smoke, in quantities equal to or greater than traditional cigarettes. These nanoparticles are known for penetrating deep into the respiratory system and reaching vulnerable sacks in the lungs, often causing irreversible damage and permanent scarring. Internal bodily exposure to these metals are also linked to cancer and abnormal cell growth.

7. **Formaldehyde (embalming chemical)** is found in significantly higher concentrations in vapes as compared to cigarettes. Vaping 3 milligrams of liquid at voltage commonly used in vapes produces 14 milligrams of formaldehyde. A pack of cigarettes would deliver 3 milligrams per pack. When inhaled, both formaldehyde and the chemical acetaldehyde, are associated with cancer risks.

8. **“Dripping”-** the practice of taking off the outside cover and using an eyedropper to drip the liquid directly onto the devices coils intensifies the vapor cloud and creates a bigger throat hit. Causing the liquid to get super-hot also intensifies and transforms chemicals, increasing the toxicity of many, some which are perhaps harmless when in their cold stage. Some use an atomizer attachment to “drip” more effectively.

9. **Flavorings are not harmless-** scientists examined the effect of cinnamon flavored e-cigarettes containing cinnamaldehyde on tissue cells from smokers’ nasal cavities which showed suppressed function of immune cells in the nasal mucosa.
there is the **economic commercial side of vaping**: companies want to create an excited youth market by flavoring the vape “juices” and generating a new market for their products. Today the vape industry is increasing at a rate of 42% per year, this includes big tobacco companies shifting to enhance their e-cigarette products. There are now over 7000 flavors used in e-cigarettes- the impact of many of these chemicals is still unknown.

**Behavioral links of vaping and increased potential for other substance usage.**
Some youth have moved from vaping to traditional tobacco use (rather than this being a solution to smoking). Concern youth will move from use of vaping to other forms of inhaled substance use.

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