

Researched Persuasive Writing and Speaking

Blood Cell Boat Cruises: “Dangers of Vaping” Tour

Anushka Godambe

Chapter ID: 1107

Secondary Division

Westlake High School

Texas

Welcome aboard; we are thrilled that you'll be joining us on our blood cell boat cruise today! Each of our expeditions involves a visual human anatomy exploration, and this particular journey centers around the dangers of e-cigarettes on various organs. Our purpose of this tour is to advise passengers to be safe over sorry when it comes to vaping, and with that being said, please fasten your seatbelts as you hop into the blood cell boat and we'll take off from the dock!

We begin our journey at the brain; the body's control center. As we pass through the cerebrum, note the soft, jelly-like texture of its reddish-pink walls. Up ahead is our first sight of vaping-induced injury; the prefrontal cortex, whose walls are brown compared to the rest of the brain. Such damage from nicotine in e-cigarettes results in reduced impulse control and mental health disorders among developing brains, according to Nii Addy, psychiatry professor at Yale Medical School (Toreno, 2020). Hold onto your seats as we cruise through the rest of the brain and dive into the spine!

Hang on tight as we travel down the spinal column and pay note to its 33 vertebrae, each with spinal discs in between. Over here lies a degenerated disc, another harmful result of vaping. Note its significantly thinner and weaker appearance compared to the surrounding spinal discs due to chemicals from nicotine. As stated by Stewart Eidelson from Southpalm Ortho-Spine Institute, continued degeneration from these products may permanently destabilize one's spine (Osborne, 2021). Lookout below as we head for our next destination: the lungs!

As we dive into the first lung, take in the surrounding, flat epithelial cells and sponge-like lung tissue. To your left lie some noticeably inflamed epithelial cells constricting air flow within the lung, yet another sign of vaping-induced damage. Such

inflammation results from chemicals in e-cigarette flavorings and may progress into lung disease with continued use. A 2015 study by Harvard Health found links between these chemicals and chronic obstructive pulmonary disease (Canadian Lung Association, 2021). As we exit the lungs, let's prepare for our next stop: the stomach!

We have arrived at the stomach; pay note to the muscle tissue lining its interior and watch out for occasional sprays of gastric acid. While the majority of stomach muscle remains healthy, it is noticeably inflamed in this corner as a result of e-liquid chemicals. Such inflammation spreads toxins to one's gut lining and is directly correlated with indigestion, according to gastrointestinal research at UC San Diego (Vazquez, 2021). As we say goodbye to the stomach, let's head for the bladder!

The bladder marks our final stop aboard this tour, and we are currently surrounded by a thick layer of muscle tissue which expands to hold urine. Pay note to the blood clots and broken-off muscle fragments on the tissue walls; our final sign of vaping-related damage. These are common symptoms of bladder cancer which is more frequent among e-cigarette users. According to a study by Vanderbilt Cancer Center which tested for five chemicals linked to bladder cancer in e-cigarette users, at least two of the five substances were detected in 92% of participants (Bjurlin, 2020). We will now exit the body and head back to the dock.

Upon our completion of this cruise, please watch your hands and feet while stepping out of the blood cell boat. I hope you've enjoyed accompanying me on this journey to visualize the extent of vaping-induced destruction on the human body, and I encourage all passengers to be safe rather than sorry when it comes to vaping by refraining from e-cigarette usage. Thank you!

## References

- Bjurlin, M. B. (2020, March 23). *E-cigarette users had substances linked to bladder cancer in urine, review finds*. UNC Lineberger. Retrieved December 28, 2021, from <https://unclineberger.org/news/e-cigarette-users-had-substances-linked-to-bladder-cancer-in-urine-review-finds/>
- Canadian Lung Association. (2021, January 8). *Vaping - What You Need to Know*. Breathe: The Lung Association. Retrieved December 28, 2021, from <https://www.lung.ca/lung-health/vaping-what-you-need-know>
- Napoli, N. N. (2019, March 7). *E-Cigarettes Linked to Heart Attacks, Coronary Artery Disease and Depression*. American College of Cardiology. Retrieved December 28, 2021, from <https://www.acc.org/about-acc/press-releases/2019/03/07/10/03/ecigarettes-linked-to-heart-attacks-coronary-artery-disease-and-depression>
- Osborne, B. O. (2021, October 4). *The Effects of Nicotine on Spinal Disc Cells*. Osborne Chiropractic Clinic Raleigh. Retrieved December 28, 2021, from <https://osbornechiropractic.com/the-effects-of-nicotine-on-spinal-disc-cells/>
- Toreno, J. T. (2020, May 27). *The Case Against Vaping*. Proto Magazine. Retrieved December 28, 2021, from <https://protomag.com/covid-19/case-against-vaping/>
- Vazquez, J. V. (2021, January 7). *Study: E-Cigarettes Trigger Inflammation in the Gut*. UC San Diego News Center. Retrieved December 28, 2021, from <https://ucsdnews.ucsd.edu/pressrelease/study-e-cigarettes-trigger-inflammation-in-the-gut>