The Effects Of Traffic Air Pollution On Washington Health By: Kiani Valencia

ABSTRACT

As urban traffic air pollution intensifies, the health of city residents deteriorates. This issue should be of the utmost significance to local urban citizens since most of them are in close contact with traffic air. The biggest risk of this could be cancer, and no average person wants to deal with the insidious toll that cancer projects onto the human body. That is why the purpose of my research is vital so I can warn those it pertains to that they need to be aware and cautious of these ramifications. So as traffic air pollution progresses over time, cancer and other health conditions will rise and maybe even spread to others outside of urban areas, creating a toxic world for everyone.





This graph shows the incidence of lung and bronchus cancer over a 5 year period of time in Washington State. As you can see. the incidence of these cancers has decreased in our state, but overall there is still a large concern as rates are high compared to national statistics.

Washington Tracking Network (WTN). (n.d.). <u>https://fortress.wa.gov/doh/wtn/WTNPortal/home/#!q0=8898</u>

Traffic air pollution is one of the big reasons why people develop an illness. And our communities in Washington will continue to endure the struggles and pain these illnesses cause. This carries substantial weight since some cancer cases are irreversible and can cause permanent damage to people 65 and older. As you can see in this chart, people in 2020 didn't have as many lung and bronchus cancer cases because nobody was traveling using automobiles to get around because of COVID-19. This shows that the less traffic and planes there are to pollute the air, the fewer people develop these cancers. So that is why people need to be informed of what traffic air pollution can entail and what dangers could be imposed on them.



Estimated illness rates Due to Traffic-related Air

In this graph it shows illness rates due to traffic-related air pollution in different parts of Washington. As you can tell, Seattle has the highest incidence rate because of how many vehicles are there. All of those vehicles toxicate the air and are the reason for all those illnesses it shows on the graph. Which is a big concern for Washington

https://deohs.washington.edu/edge/duwamish-valley EPI--5100, D.-C.-C. D. (n.d.). Respiratory illness dashboard. Washington State Department of Health

Duwamish Valley. Duwamish Valley | Interdisciplinary Center for Exposures, Diseases, Genomics and Environment. (n.d.).

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Documents: Puget sound clean air agency, WA. Documents | Puget Sound Clean Air Agency, WA. (n.d.). https://www.pscleanair.gov/300/Document

BACKGROUND

In this chart from the Washington Department of Ecology, it explains what pollutants are in the air in Washington state, and as you can see, diesel particles are the dominant pollutant in the air. This gives us a reason to focus on traffic pollutants and how they affect us, because a vast amount of people in Washington could be contracting diseases linked to air pollution without even knowing it.

> Particle pollution in Washington's air. Particle pollution - Washington State Department of Ecology. (n.d.-a). https://ecology.wa.gov/air-climate/air-quality/air-quality-targets/air-quality-standards/part icle-pollution

DATA ANALYSIS

RESULTS

These images show how many people have traffic-air illnesses in Washington and which area has the most nitrogen dioxide pollution. When you take the information from both of those graphs, it becomes apparent that the places with the worst air quality have the highest illness cases, and my hypothesis is, as traffic-related air pollution worsens, the health of Washington residents will suffer. So from this information, my hypothesis has been proven right. But to go more in detail, you can see how the Seattle area on the map has a big reddish-brown dot on it, which means the nitrogen dioxide pollution is very poor. And when you look at the bar graph, it shows Seattle as having the highest estimated illness rate. Connecting these two shows that traffic air really does have a big impact on Washington citizens and needs to be taken seriously. Because, like I said in my hypothesis, the worse traffic air gets, the worse your health will be.

Washington Air Pollutants





In this graph it shows NO₂ pollution in different places around the U.S., and what we're focusing on is Washington, and you can see that there is a dot around the Seattle area; that dot's color means the NO₂ pollution there is bad. With this information we can make out that there is a big problem with traffic air pollution there.

Pollution from freight traffic disproportionately impacts communities of color across 52 U.S. cities. AGU Newsroom. (n.d.-a). press-release/pollution-from-freight-traffic-disproportionately-impacts-communities-of-color-across-52-u-s-cities/#:~:text=WASHIN TON%E2%80%94In%20urban%20areas%20across,racial%20segregation%20in%20a%20commun

POSSIBLE SOLUTIONS

There are numerous solutions for traffic air pollution, but the most effective solutions could be investing in electrified public transit systems all over Washington. This could allow larger groups of people to go places without doing as much damage to the air. And even though this would be a very expensive project, the good this transit would do makes it worth it. Another great solution would be building green infrastructure near heavy roadways. This would help filter our most polluted areas, making it a better quality of air to be in. And finally, the most simple and accessible solution for all kinds of people is to walk or ride a bike. You don't have to do this all the time but when your going to the store or the park, walking or riding a bike can really impact the air around you in a much better way than driving your car

HEALTH DISPARITIES

Major health disparities related to traffic pollution are socioeconomic status, race, and location. This is due to the areas lower-income individuals reside in, which are primarily by major roadways and trucking routes. It has also been proven that across the U.S., lower-income communities of color are exposed to about 28% more nitrogen dioxide pollution than predominantly white and higher-income neighborhoods. Washington can be included in this statistic because urban areas like South Seattle have been shown to also experience more nitrogen-dioxide pollution than white, higher-income neighborhoods.

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Reflection:

In the beginning of this project I tried to find two issues that could be connected to each other. Once I found my topic, I began to research more deeply and formed my poster. One challenge for me, though, was finding an effective data visualization that would pertain to my topic. But using the Washington Tracking Network really helped. It also gave me a great thinking process about my issue and really shaped the way I made my poster. Mrs.Gamache was also very helpful to me because she did a really good job at making sure I understood everything correctly. Overall, this project helped me gain lots of good skills like time management and consistency.