

Table of content

	Page #
Timeline	3
problem	4
Background research	5
What is cigarette made of	6
What is vaping	7
History of cigarette	8
History of vaping	9
Brands of cigarette	10
Brands of e-cigarette	11
Why is smoking dangerous	12
Why is vaping dangerous	13
How does smoking affect the body and the mind	14
How does smoking affect the body and the mind	15
How does smoking affect the brain	16
How does smoking affect the heart and lungs	17
How to smoking affect the heart and lungs	18
Let's compare cigarettes and vaping similarities	19
Let's compare cigarettes and vaping's differences	20
thesis	21
Research	22
Research	23

Scientific principles	24
concepts	25
Conclusion	26
Conclusion	27
What's next	28
Special thanks	29
reference	30

Timeline

Thought about topic	December 05
Got my topic	December 15
Teacher explained the science fair	December 18-21
Changed my topic and started on the project	December 22
Finished project	January 6

Problem

Has vaping helped more people stop smoking or do we now have another addiction to deal with?

Background Research

To compare smoking and vaping, we need to take a closer look at how they are similar and how they are different.

What is cigarette Made of

A cigarette has basic components like tobacco, chemical additives, a filter and a paper wrapping

Cigarettes are made of about 600 ingredients and when burned, they release more than 7000 chemicals

Some of the chemicals that are found in cigarettes are carbon monoxide (fumes released from cars), arsenic (poison used to kill rats), lead (used to make batteries), tar (used to pave roads), etc.

When you smoke you inhale and exhale these chemicals

You can light the cigarette using matches or a light

What is vaping made of

The basic components of a vaping device are the battery, atomizer, and e-liquid or e-juice.

A vape device contains e-juice. This is the liquid in the device.

It may contain nicotine, different flavorings and other chemicals.

Most devices use a battery to heat the liquid

The liquid turns into vapor (aerosol) and the user inhales and exhales the chemical

History of cigarette

Smoking tobacco has been around for a very long time

The first recorded smoking of tobacco was by the Spanish explorers back in the 16th century

Cigarettes became popular in the 19th century, that is when machines to make cigarettes were invented

Before machines, people used roll tobacco in paper or use pipes

Cigarette smoking became very fashionable and popular among youth

History of vaping

Vaping is a lot “younger”
than smoking

A chinese pharmacist created an
e-cigarette because he wanted to stop
smoking

He wanted to create something like a
cigarette so smokers could still experience
smoking

He wanted to create something cleaner and
safer than smoking

The problem is this created a whole new

group of smokers that weren't smoking
before

Brands of cigarette

Canadian Classic

Du Maurier

Export A

John Player

Pall Mall

Many many more!

Brands of e- cigarette

Juul

Allo

Samsung

Sony

Juice Head

Many many more!

Why is smoking dangerous

Cigarette smoke contains lots of harmful chemicals.

These chemicals react negatively in our bodies.

As days pass the poison from cigarettes can cause illness to the body.

Smoking can cause cancer, heart disease and stroke

Smoking can increase your chances of having other disorders like type 2 diabetes.

Smoking is very addictive.

Why is vaping dangerous

Vaping is not that old so we do not know all of the risks.

There hasn't been enough testing done yet.

E-cigarettes carry nicotine to the lungs just like cigarettes.

Some of the chemicals may be okay to digest but not okay to inhale.

There are thousands of chemicals used in flavoring.

Vaping is very addictive.

How does smoking affect the body
and the mind

We need more
studies for vaping.

Inhaling chemicals will expose you
to disorders.

When the liquid heats up, some of
the metal may be mixed with the
liquid. Metals are toxic and can

cause disease.

Vaping is expensive.

It is very hard to stop vaping because it is so addictive.

It controls your thoughts, feelings and behaviors.

How does smoking affect the body and the mind

Smoking leads to many disorders and injures literally every organ in the body.

Smoking will cause chronic obstructive pulmonary disease, also known as COPD. Smoking also increases a risk for tuberculosis. Second hand smoke can cause kids to suffer from asthma and lung disease.

Smoking makes you age quicker.

Smoking stains your teeth.

Smoking makes your hair thin.

Smoking affects your sense of smell.

Smoking is very expensive.

It is very hard to stop smoking because it is so addictive.

It controls your thoughts, feelings and behaviors.

How does smoking affect the brain

When someone smokes, the nicotine in the smoke goes to the brain. The cells in our brains start to send messages to the body. These messages can make a person feel at ease. However, When that feeling starts to wear off. Then that person feels like he needs to smoke again. This is called a craving and makes smoking addictive

How does smoking affect the heart and the lungs

Nicotine from the smoke reaches the brain and triggers something called adrenaline. Adrenaline makes your heart beat more and more. Smoking also releases a poisonous gas called carbon monoxide into your blood. This causes there to be less

oxygen than normal flowing through the blood towards your heart.

How does smoking affect the heart and the lungs

As there is no more oxygen in the blood, the heart starts to beat faster to create more oxygen to pump around the body. This will cause the heart to work more than it normally does (sometimes up to 30% harder) The more a person smokes, the more fatty

deposits build up in their blood vessels. This can cause to a heart attack

Let's compare Cigarettes and Vaping! Similarities

Both are addictive and can cause future health problems.

- Both contain nicotine.
- Both are cigarettes and e-cigarettes are used

- for smoking.
- When they were first introduced, both targeted younger people as their consumers.
 - When they were first introduced, they spent a lot of money on packaging so that people would buy them.
 - When they were first launched, no one mentioned possible health concerns.

Let's compare

Cigarettes and Vaping!

Differences

Cigarette packaging now has pictures of ill people and they list diseases like cancer.

- E-cigarettes warn about addiction from nicotine use but they do not have anything about the chemicals maybe causing lung damage.
- Cigarettes contain tar. E-cigarettes do not contain tar.
- Cigarettes contain more harmful chemicals but we do not know about the heated chemicals from the liquid.
- Many studies have been done on cigarette smokers compared to smokers that vape.

- E-cigarettes can be used multiple times. The pod can last about three to five days. It depends on the user.
- A cigarette can give you about 10 puffs. It depends on the user.

Thesis

Vaping was introduced to help individuals stop smoking. However, e-cigarettes have given smokers and non-smokers a new addictive tool to engage in a bad habit.

Research

Canadian Community Health Survey 2017

- 16.2% of Canadian aged 12 and older smoke daily or occasionally.

Canadian Community Health Survey 2018

- 15.8% of Canadian aged 12 and older smoke daily or occasionally.

Canadian Community Health Survey 2019

- 14.8% of Canadian aged 12 and older smoke daily or occasionally.

Studies in Ontario and Quebec in 2019,

youth aged 15 to 19 years were significantly more likely to vape

Smoking may have decreased however, vaping has increased among youth.

Research

2019 Canadian Health Survey on Children and Youth

Vaping rates in 15 to 17 years old were four times higher than 12 to 14 years old.

66% of youth between 12 to 17 years who smoke cigarettes and vape reported trying vaping products before smoking.

89% of young adults between 15 to 19 used e-liquid containing nicotine in the past 30 days.

Older cigarette smokers may be using vaping products to slow down smoking but young adults have started a new habit of smoking using vaping products.

Scientific Principles

Theory of Addiction

Addiction is a learned behaviour because the positive feeling from a behaviour such as smoking or vaping makes it more likely that a person will repeat the behaviour in the future.

3 Principles of Marketing

- Product - Cigarettes/E-Cigarettes

- Promoting the product - Advertising
- People who you want to use the product

Concepts

Vaping - Stop Smoking Method

- Studies have shown that in older smokers vaping may help reduce the amount they smoke. Vaping also contains nicotine so it may reduce the amount of smoking but not

completely.

Vaping Leads to Smoking

- Youth are vaping at a young age. Studies have shown a decrease in smoking in youth but an increasing in vaping. It is too early to tell if vaping will lead to smoking in youth.

Conclusion

In conclusion, after conducting my research, I believe my thesis is correct. Vaping was introduced as a stop smoking solution. It may help smokers reduce not stop their smoking but vaping has created a whole new group of

smokers. Vaping is very popular among youth. There is a lot that we do not know about vaping. Both cigarettes and e-cigarettes contain nicotine, so the addictive behaviour of smoking is present in both users. Cigarettes have been around for a very long time and many studies have been done about smoking. Vaping is new and there are many studies that need to be done to understand vaping like we do cigarette smoking.

Conclusion

There are many dangers with vaping similar to smoking. Chemicals in the e-liquid can break down when they are heated and vaporized. There may be less toxins in e-cigarettes but they still exist. Vaping causes irritation to the lungs similar to smoking. E-cigarettes may explode causing burning. These are usually caused by the batteries. We still don't know what second hand vaping causes. Stricter laws need to be made for

e-cigarettes. It took many years to have them made for cigarettes. If they are not made, we are going to see an increase in youth vapours. This will be one more unhealthy addiction to deal with for society.

What's Next?

I would like to try to interview youth vapors and I would like to ask them what attracted them to vaping. I would like to see how much they vape and if they are able to stop if they want to. I would also like to interview adult smokers and I would like to ask them if they had tried to use vaping to stop smoking. If vaping really works as a stop smoking method, why do pharmacies still sell nicotine products to help people stop smoking.

Special Thanks

I would like to thank my teacher for always encouraging me to do my best. I would like to thank my parents for always supporting me in everything that I do.

References

Clipart

<https://www150.statcan.gc.ca/n1/en/type/data?text=smoking>

<https://www.lung.org/quit-smoking/e-cigarettes-vaping/whats-in-an-e-cigarette#:~:text=It's%20not%20just%20harmless%20water,contain%20trace%20amounts%20of%20nicotine.>

<https://www.fda.gov/tobacco-products/products-ingredients-components/cigarette-s#:~:text=The%20basic%20components%20of%20most,when%20they%20inhal e%20cigarette%20smoke.>

https://www.cdc.gov/tobacco/basic_information/health_effects/index.htm#:~:text=Smoking%20causes%20cancer%2C%20heart%20disease,immune%20system%2C%20including%20rheumatoid%20arthritis.

<https://www.sciencedirect.com/book/9780123983367/principles-of-addiction>

Quitting smoking and vaping - Charles Elliot

How to stop smoking - Matthew Aldrich

Quit before you know it - Sandra Rutter