

Cohort Study

Purpose of study: The purpose of this study was to see if there was any correlation between those who have smoked or vaped E-cigarettes over a small period of time and their likelihood of being diagnosed with some type of respiratory illness.

Design: Quantitative Study- The researchers split the study into three sections: those who exclusively use E-cigarettes (E-Group), those who are dual users of both traditional cigarettes and E-cigarettes (T/E- Group), and those who solely use regular cigarettes. To perform the study, the researchers measure various respiratory virals to determine the results.

Sample: The sample included over 3000 individuals who have been diagnosed with an acute respiratory issue who also use either E-cigarettes, traditional cigarettes, or both. Each group was split into groups of 60 volunteers based on which product they were smoking.

Results: The results showed that E-cigarettes and vaping affect the respiratory system just after five minutes of ingesting the vapor. To compare to traditional cigarettes, those who vape experienced an increase in immediate respiratory side effects than those who smoked cigarettes. The results also announced that E-cigarette smokers and dual users have a higher baseline level of carbon monoxide which is not known to be associated with E-cigarettes due to the combustion free process; furthermore, the individuals who vape E-cigarettes are being exposed to chemicals such as propylene glycol, glycerin, nicotine, and several more depending on the flavor of the E-liquid.

Strength of Study

Level of Study: Level III

Quality of Study: Medium

Clinical Significance

These studies are clinically significant because their findings support that the use of e-cigarettes do have negative respiratory effects even after only 5 minutes of ingestion. This information can be used for education to help spread awareness of the dangers of vaping and prevent further respiratory damage. In addition, the information can help sway the minds of individuals determining if they should switch from cigarettes to E-cigarettes to help with the cessation of smoking.

Vaping Versus Cigarettes

PICOT Question

In those who smoke, how does vaping compared with cigarette smoking, influence respiratory complications over 6 months?

Why is this a problem?

- Increased number of individuals who vape, smoke cigarettes, or both
- Vaping is a new phenomenon who's side effects are just now being determined
- Vaping was once considered 'healthier' than smoking
- The side effects of vaping are manifesting sooner and more dangerous than smoking cigarettes

References

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Systematic Review/Meta Analysis

Purpose of study: The goal of this study was to show the impact of smoking on respiratory diseases to provide content for the public and policymakers.

Design: Systematic reviews and meta-analysis of longitudinal studies were used from electronic databases, gray literature, and experts. Random effect meta-analysis were used to pool the findings.

Sample: 216 articles were used in total. Among adult smokers, 34 articles were used describing the increased risk of lung cancer, 22 articles were used discussing COPD, and 8 studies were used describing asthma. The remainder of the studies were used to describe lung function and active vs. passive smoking.

Results: The primary outcome of this study was that there is evidence of an increased risk of development of respiratory diseases in adults caused by active and passive tobacco smoking. The results across all of the studies concluded that being an adult smoker increased the risk of developing lung cancer by 41%. They also all agreed that COPD is 4 times more likely to happen to someone who is an active smoker. The studies all agreed that lung cancer, COPD, asthma, sleep apnea, and TB were all more likely in people who were active smoker. A person who is around an active smoker all the time (passive smoking) is more likely to develop COPD, lung cancer, TB, asthma, and sleep apnea according to all of the studies.

Strength of the Study

Level of Study: Level II

Quality of Study: Medium

Clinical Significance

The clinical significance of these studies indicated that being an adult smoker puts that person at risk for lung cancer, TB, asthma, and COPD. Smoking cigarettes can lead to lifelong medical concerns that most users are not aware of. People who begin smoking can now be notified of their greater chance of developing the diseases and there is factual information to back it up. Cigarette users now have the power to determine the outcome of their own health.

By: Allyson, Micah, Lindsey