

Inhalation of e-cigarettes and ingestion of e-liquid

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Highlights

- Electronic cigarettes and fluid (e-cigarettes, e-fluid) are hazardous materials that, when inhaled or ingested, pose significant health risks to children.
- Participants reported over 200 cases presenting to a paediatric clinic or an emergency department for injuries and/or symptoms related to e-cigarette exposure.

Background

E-cigarettes are a type of electronic nicotine delivery system that, when activated, vaporize and deliver inhalable liquid. This chemical mixture often contains nicotine, propylene glycol, flavourings, and other substances. These materials, when inhaled and/or ingested, pose significant health risks, particularly to children. With the rise in popularity of these devices and access to these materials, there are many unanswered questions about their impact on children. It is reported that exposure to, and unintentional overdose from, these materials are increasing in Canada.

Results

A one-page survey was sent to paediatricians and paediatric subspecialists through the CPSP. Participants were asked about the number, and injuries/symptoms of children who had presented with e-cigarette exposure (inhalation and ingestion cases) in the previous 12 months. In addition, information was collected on the patient's age, sex, setting of treatment sought, e-cigarette use, and access.

A total of 519 surveys were completed and returned, identifying 220 cases. Symptoms related to inhalation were present in 135 cases (43 unintentional, 92 intentional) and symptoms related to ingestion were present in 85 cases (35 unintentional, 50 intentional).

For inhalation cases, most were male, ages 15 to 19 years, who sought treatment for nausea/vomiting, cough, throat irritation, or acute nicotine toxicity in an outpatient clinic or office. Most inhalation cases reported e-cigarette use two to three days per week and e-cigarette purchases were made from a mall kiosk/store.

For ingestion cases, most were male, ages 1 to 4 years presenting to an emergency department with nausea/vomiting, cough, or respiratory irritation. Younger ingestion cases accessed e-liquid at home; older cases reported e-cigarettes and e-liquid were purchased in a mall kiosk/store. The most common e-liquid flavours reported consumed were fruit, candy, and tobacco.

Conclusion

- E-cigarettes, recently introduced into the Canadian market, are hazardous to children.
- Results of this study highlight the serious injuries presented from exposure to e-cigarette and e-liquid. Parents should be educated on ways to prevent exposure to children.
- Further investigation into ways to reduce the risks that e-cigarettes pose to children is needed to minimize injury.

References

Available upon request from the CPSP office

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