



# Bibliography

## E-cigarette Ingredients

### Chemical structures

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Grana R, Benowitz N, Glantz SA. E-cigarettes: A scientific review. *Circulation*. 2014;129:1972-86.

### Cinnamaldehyde and 2-methoxycinnamaldehyde have been identified in cherry-flavored e-liquids; are cytotoxic and associated with respiratory irritation

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### Diacetyl and acetyl propionyl have been identified in dairy, alcohol, and fruit-flavored e-liquids; are associated with lung disease and changes to central nervous system

Allen JG, Flanigan SS, LeBlanc M, Vallarino J, MacNaughton P, Stewart JH, Christiani DC. Flavoring Chemicals in E-Cigarettes: Diacetyl, 2,3-Pentanedione, and Acetoin in a Sample of 51 Products, Including Fruit-, Candy-, and Cocktail-Flavored E-Cigarettes. *Environ Health Perspect*. 2016 Jun;124(6):733-9.

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### Benzaldehyde has been identified in aerosols of cherry-flavored e-liquids; is associated with respiratory irritation

Kosmider L, Sobczak A, Prokopowicz A, Kurek J, Zaciera M, Knysak J, et al. Cherry-flavoured electronic cigarettes expose users to the inhalation irritant, benzaldehyde. *Thorax* 2016 71: 376-7.



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**Toxins and carcinogens, including acetaldehyde, acrolein, formaldehyde, toluene, p,m-xylene, and butraldehyde, and heavy metals, including cadmium, chromium, lead, and nickel, have been identified in e-liquids, aerosols, and secondhand vapor**

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**Health effects of formaldehyde**

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**Health effects of chromium**

Agency for Toxic Substances and Disease Registry. Toxicological profile for chromium. Atlanta, GA: U.S. Department of Health and Human Services; 2012.



## Health effects of lead

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## Health effects of nickel

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## Nicotine content in e-liquids is inconsistently labeled; has been identified in e-liquids, aerosols, and secondhand vapor

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Salt Lake County Health Department. Analysis of nicotine content in e-liquid samples [fact sheet]. December 2014.

## Teens are particularly susceptible to nicotine addiction

US Department of Health and Human Services. Preventing tobacco use among youth and young adults: A report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health; 2012.

## Normalization

### Health effects of tobacco use and tobacco marketing

US Department of Health and Human Services. The health consequences of smoking—50 years of progress: A report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health; 2014.

### Smoking prevalence

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## **E-cigarette use may renormalize smoking**

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## **Seeing e-cigarette use may trigger cigarette cravings**

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## **E-cigarette ads mirror traditional tobacco ads**

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## **Youth Use**

### **E-cigarette use among middle- and high-school students**

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