Health Risks of Nicotine for Youth

Nicotine is a chemical commonly found in cigarettes, e-cigarettes, and other tobacco products. **Nicotine is highly addictive and can be toxic.**

**No amount of nicotine is safe for youth.**

Nicotine can harm brain development as teens grow.

Animal research has found that even in small doses, nicotine exposure in adolescence causes long-lasting changes in brain development, which could have negative implications in human adolescents for learning, memory, attention, behavior problems, and future addiction.1,2,3,4,5

**Nicotine is harmful to the health of unborn children.**

Evidence shows that fetal exposure to nicotine can have negative long-term effects, including sudden infant death syndrome (SIDS), impaired fetal brain and lung development, hearing problems, effects on behaviors and obesity, and deficits in attention and cognition.6 Studies also indicate that fetal nicotine exposure is associated with nicotine dependence in adolescence.6,7,8

**Nicotine can be toxic, even deadly, in high doses.**

Eating, drinking, or otherwise absorbing large amounts of nicotine can lead to nicotine poisoning, especially in children.6 Symptoms of poisoning include nausea, vomiting, seizures, and respiratory depressions.6,9,10 In high enough doses nicotine can be deadly.

**For poison emergencies or questions call the Minnesota Poison Control System at 1-800-222-1222.** Service is available 24/7, free of charge, and is confidential.
E-cigarettes expose Minnesota teens to the dangers of nicotine.

Among 11th grade students, e-cigarette use is now more than double conventional cigarette use. Nearly all e-cigarettes contain nicotine.11

Learn more about e-cigarettes at www.health.mn.gov/ecigarettes.

Learn more at www.health.mn.gov/nicotine.

1 Counotte et al., "Long-Lasting Cognitive Deficits Resulting from Adolescent Nicotine Exposure in Rats."
2 Abreu-Villaca et al., "Short-Term Adolescent Nicotine Exposure Has Immediate and Persistent Effects on Cholinergic Systems: Critical Periods, Patterns of Exposure, Dose Thresholds."
4 Slotkin, "Nicotine and the Adolescent Brain: Insights from an Animal Model."
5 Gould and Leach, "Cellular, Molecular, and Genetic Substrates Underlying the Impact of Nicotine on Learning."
9 Benowitz et al., “Prolonged Absorption with Development of Tolerance to Toxic Effects after Cutaneous Exposure to Nicotine.”
10 Okamoto et al., “Tolerance to the Convulsions Induced by Daily Nicotine Treatment in Rats.”