

Nicotine exposure

Maternal smoking & risk of ADHD in children

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Objectives

1

Discuss the main mechanism of action of nicotine.

2

Outline the effect of nicotine on the fetus.

3

What is ADHD.

4

How does maternal smoking increase the risk of ADHD in children.



Goals



**Understanding
nicotine
effects**



**Eradicating
nicotine
exposure**



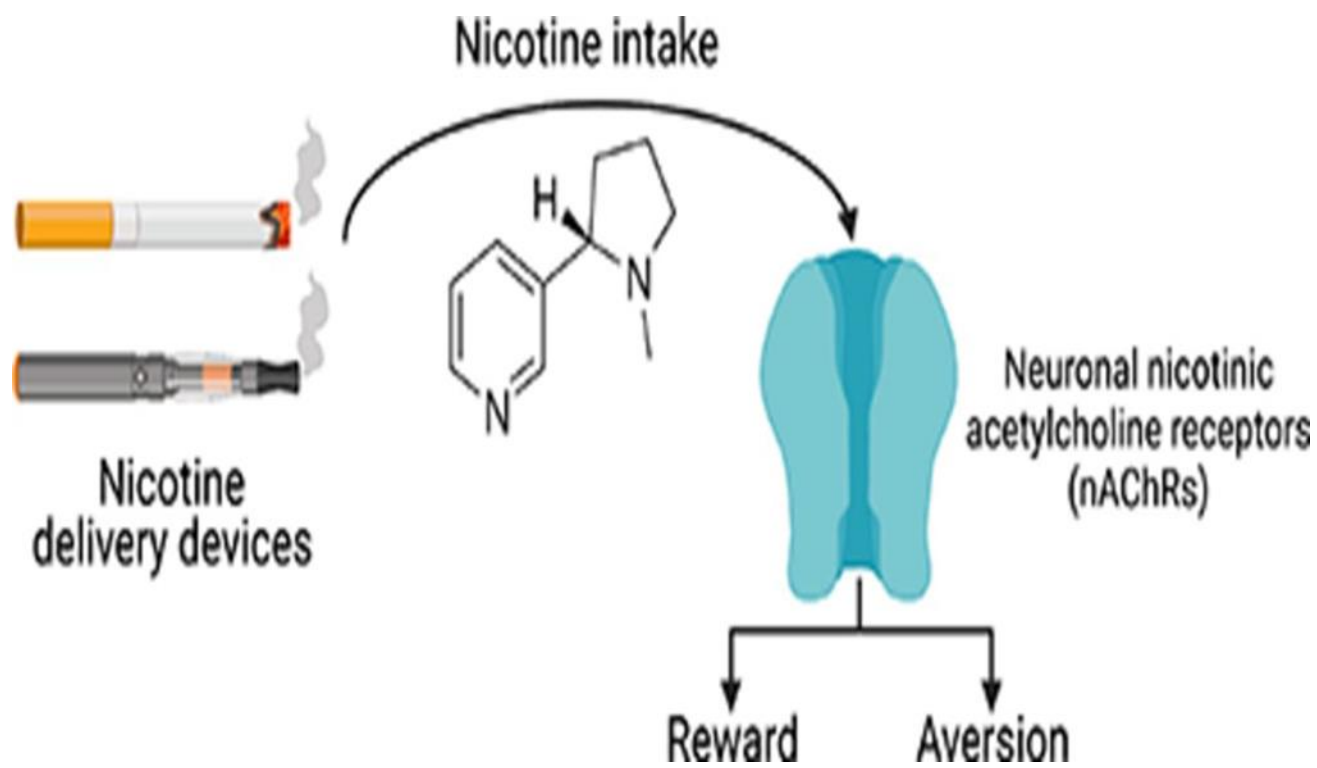
**No illnesses
for fetuses**



**Healthy
pregnancy**

Mechanism of nicotine action

- Nicotine is a plant alkaloid, found in the tobacco plant, and addictive central nervous system (CNS).⁽¹⁾
- Nicotine mainly shows its action through specific **nicotinic acetylcholine receptors** located in brain.⁽²⁾




Effect of nicotine on fetus



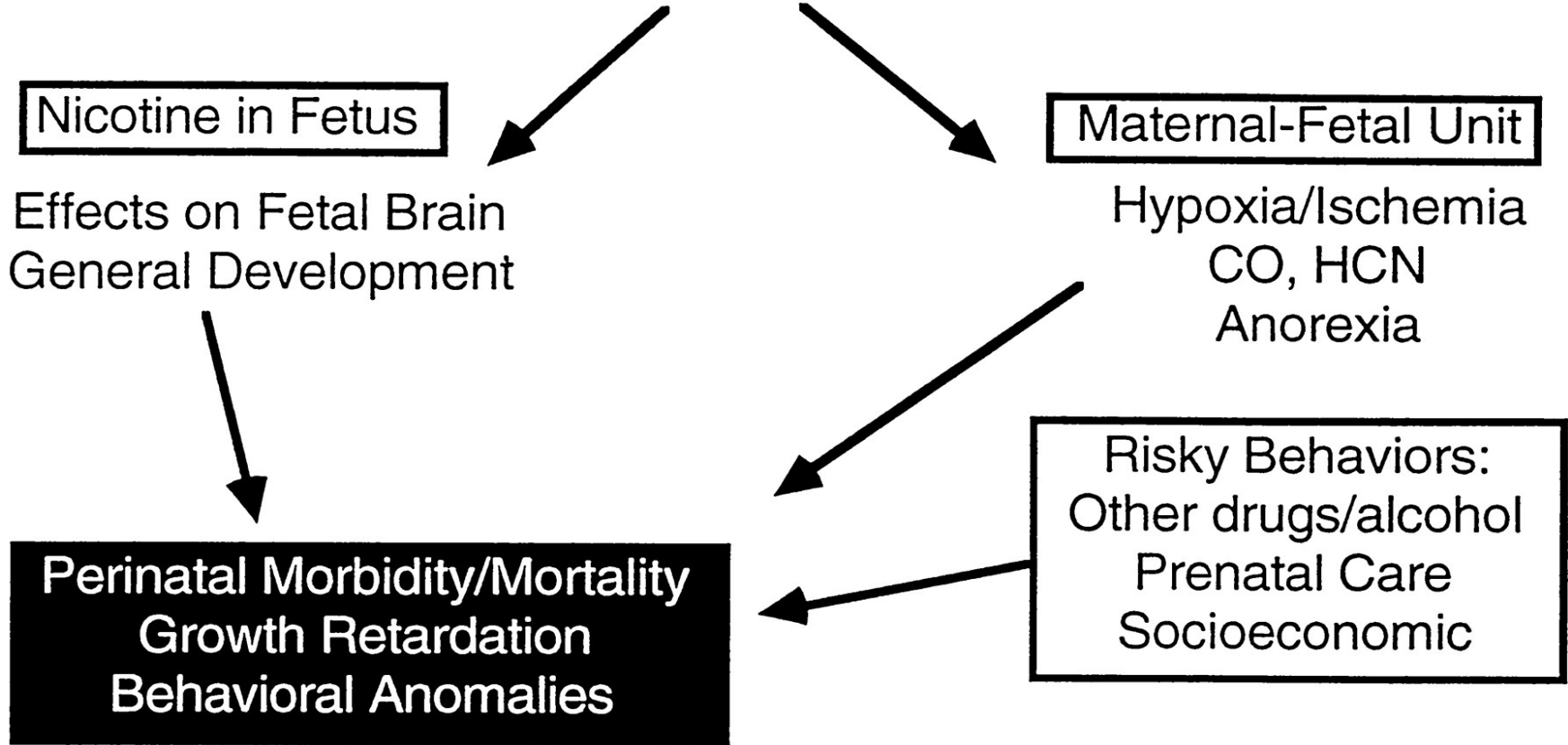


Effect of nicotine on fetus

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- Nicotine concentrates in fetal blood, amniotic fluid, and breastmilk.⁽³⁾
 - Nicotine **increases maternal blood pressure and heart rate, with a concomitant reduction in uterine blood flow.**⁽³⁾



Maternal Cigarette Smoking



What is ADHD



What is ADHD

- (ADHD) is **Attention-deficit/hyperactivity disorder**.⁽⁴⁾
- Is one of the most common mental disorders affecting children.⁽⁴⁾
- Is often first identified in school-aged children when it leads to disruption in the classroom or problems with schoolwork.⁽⁴⁾

Avoids, dislikes, or is reluctant to engage in tasks that require a sustained mental effort (such as school work or homework)

Difficulty in keeping concentration and paying attention in tasks or play activities

Fails to give close attention to details or make careless mistakes

Often does not seem to listen when spoken to directly

Easily distracted by things going on around them

Struggles to follow through with instructions

“Loses” things e.g. toys, school books, pencils

Difficulty in organising tasks and activities

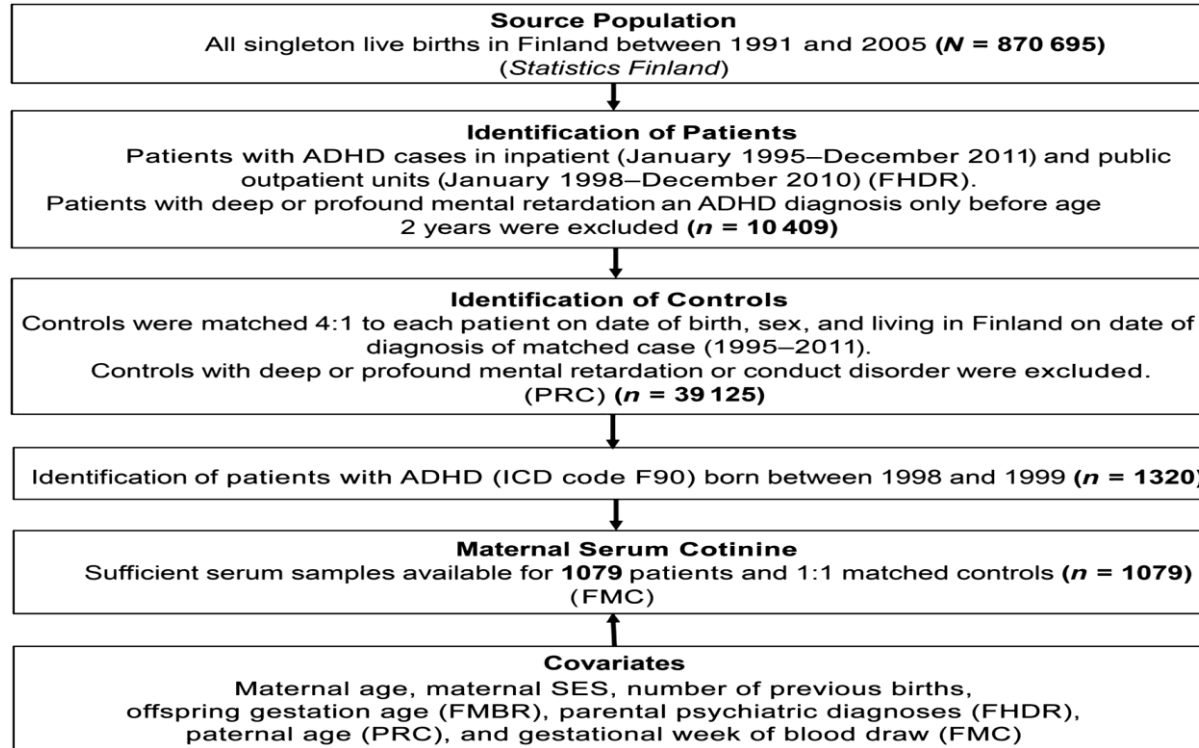
Forgetful in daily activities



Inattention




From: Prenatal Cotinine Levels and ADHD Among Offspring





Conclusions



“The higher the nicotine levels were in the mother’s blood during pregnancy, the greater was the child’s risk of developing (ADHD) later in life”



References

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- (3). Lambers DS, Clark KE. The maternal and fetal physiologic effects of nicotine. *Semin Perinatol*. 1996;20(2):115-126. doi:10.1016/s0146-0005(96)80079-6.
- (4). <https://www.psychiatry.org/patients-families/adhd/what-is-adhd>. Published 2022. Accessed May 17, 2022.
- (5). Sourander A, Sucksdorff M, Chudal R et al. Prenatal Cotinine Levels and ADHD Among Offspring. *Pediatrics*. 2019;143(3). doi:10.1542/peds.2018-3144



Thank you!

Does any one have a Question ?