Effects of Smoking vs. Nicotine Replacement Therapy During Pregnancy on Childhood Health Outcomes: An Integrative Literature Review

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Effects of Smoking vs. NRT During Pregnancy

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PATIENT CARE ISSUE

- Cost for neonatal complications estimated >$350 million annually (NC DHHS, 2013).
- Approximately 10.6% of women smoke while they are pregnant (NC DHHS, 2013).
- Smoking during pregnancy can lead to premature, low birth-weight infants, or stillbirth.
- Carbon monoxide and nicotine cross the placenta and interfere with fetal oxygen supply (NIH National Institute on Drug Abuse, 2014).
- Complications due to maternal smoking include Sudden Infant Death Syndrome, growth retardation, poor lung development, obesity, and respiratory infections (CDC, 2011).

EVIDENCE-BASED PRACTICE QUESTION

Question: In pregnant women, does the use of Nicotine Replacement Therapy compared to smoking during pregnancy reduce the risk of future childhood health concerns?

P- Pregnant women
I- Nicotine Replacement Therapy (NRT)
C- Smoking
O- Reduce the risk of future childhood health concerns (respiratory complications, obesity)

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

Inclusion Criteria: Articles published between 2008 and 2014, articles that focused on the fetal and future concerns of NRT use and smoking use during pregnancy

Exclusion Criteria: Non-human test population, year of publication prior to 2008, small sample size

SYNTHESIS OF EVIDENCE

- Smoking leads to increased chance of preterm birth & low birth weight (LBW) (CDC, 2011).
- Childhood obesity is linked to smoking during pregnancy (Behl, 2013; Bekkers, 2011; Ino, 2010, Weng, 2012).
- NRT delivers nicotine without carcinogens (Oncken, 2008; Brose, 2013).
- NRT showed positive safety outcomes but low adherence (Coleman, 2010).
- Infants born to NRT users had 2x the risk of having LBW (Gaither, 2008).
- Infants born to smokers had 1.31x the risk of LBW (Gaither, 2008).
- Combination NRT increases cessation but exposes fetuses to higher nicotine levels (Brose, 2013).
- Smoking cessation should be targeted at one year prior to pregnancy (Wang, 2012).

RESULTS

<table>
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<tr>
<th>Database</th>
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<th>Level Of Evidence</th>
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LIMITATIONS

- Limited studies of primary evidence within the past 5 years
- Limited studies analyzing direct effects of NRT on the fetus.
- Few studies examining longevity effects of NRT on the off springs.

REFERENCES


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