



Maternal active and passive smoking: Effects on fetal health

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Biological plausibility

- Over 4000 chemicals in tobacco smoke
- Many can cross the placental barrier
- It is expected that there would be direct toxic effects on the development of the fetus
- Eg, nicotine restricts blood flow to the fetus

Characteristics

The following women are much more likely to smoke throughout pregnancy:

Young (≤ 20 years)

45%

vs

Older (≥ 35 years)

5%

Routine/manual work

29%

vs

Professional/managerial

7%

- A fifth of non-smoking pregnant women lived with a partner who smoked during pregnancy (2001)

Mothers who smoke during pregnancy

- There are many published studies; the report focuses on the larger ones

Adverse effect	Number of studies	Total number of pregnancies considered
Fertility	12	50,200
Miscarriage	7	86,600
Perinatal mortality	23	657,300
Low birth weight	22	347,500
Premature birth	20	65,900
Congenital birth defects	31	8.75 million
Cleft lip/palate	25	7.78 million

Mothers who smoke during pregnancy

- Each year in the UK smoking causes around:
 - 5000 miscarriages
 - 300 perinatal deaths
 - 2200 premature births
 - 19,000 with low birth weight
- Likely to cause some birth defects:
 - Heart (15-50% increase in risk)
 - Missing/deformed limbs or digits (30-50% increase in risk)
 - Face: cleft lip/palate (35% increase in risk)
- Much of the risk is probably avoided by quitting before or very early in pregnancy

Non-smoking mothers exposed to passive smoke during pregnancy

- General consistency with conclusions from active smoking (as expected)
- The lower exposure makes it more difficult to reliably detect specific effects
- Clear evidence on low birthweight and premature births
- Some direct evidence on birth defects (eg of the face)

Conclusions

- Many women, especially young ones from poorer backgrounds, still smoke during pregnancy
- Maternal active and passive smoking are an **avoidable** cause of potentially serious effects on the fetus
- Miscarriage and low birthweight are generally well known
- Birth defects, which often have serious physical and psychological consequences, are less well acknowledged
- Firmer health education campaigns are needed