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Title

The importance of permanent cessation for pregnant smokers

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Statement of competing interest

No financial or other relevant links to companies with an interest in the topic of this article.

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Smoking, Tobacco, Postpartum Period, Smoking Cessation, Pregnancy

Concise statement

Pregnancy is an important opportunity to help most young women to stop smoking before their health is irreversibly compromised. Feasible effective interventions are needed that foster permanent cessation. Many interventions ignore relapse that occurs after birth. This important review will support development of effective postnatal interventions to prevent relapse.

Commentary

Jones et al [1] draw together evidence of relapse to smoking after a mother gives birth. This commentary underlines why pregnancy is a vital opportunity to help women to stop smoking and why only permanent cessation, and therefore relapse prevention after birth, will achieve the full potential to prevent diseases caused by smoking.

In 1951, Sir Richard Doll and colleagues enrolled over 30,000 male doctors in a long term cohort study of the effects of cigarette smoke on mortality [2]. The final 50 year follow-up reported in 2004 examined the effects of smoking cessation at various ages on years of life lost. Lifelong smokers lost 10 years compared with non-smokers. Those who quit: by age 30 regained all 10 potential years of life lost, by age 40 they regained 9 years and by age 50 - 5 years. It seems likely that a cohort of women would follow a similar pattern. Therefore if women give up smoking during pregnancy, which is almost always before age 40, they are likely to regain nearly all the years they would lose if they remained lifelong smokers. This makes pregnancy a timely opportunity to prevent long term disease and death caused by smoking cigarettes.

Disease prevention requires engagement of the at risk population in preventative strategies [3]. Eighty percent of all women have at least one baby [4], most have 2 and some more. This provides an opportunity, over time, for health services to provide effective smoking cessation interventions to nearly all women who smoke with two cessation attempts possible for most. So pregnancy is an opportunity to help most women to quit smoking before their health is irreversibly compromised.

There is much political rhetoric about health inequalities between rich and poor particularly in relation to childhood poverty with the rich living 9 to 20 years longer than the poor [5]. Poorer manual workers (more than 30% smoked in 2012 in the UK) are much more likely to smoke cigarettes than the managerial or professional affluent classes (less than 15% smoked) [6]. Many children are pushed into poverty because one or both parents smoke which uses a significant proportion of the household income.[7] An effective smoking cessation intervention during and after pregnancy that resulted in permanent cessation would immediately increase household income for the poorest and may reduce health inequalities by half [8].

Smoking cessation during pregnancy offers improved long term health not just to the women themselves but also to their unborn baby sitting in a womb bathed by cigarette toxins. Health improvements include greater survival in the early stages of pregnancy – less early miscarriage [9], a reduced chance of being born dead as a stillbirth [10], and longer term survival e.g. a reduction in Sudden Unexpected Death in Infancy [11]. Future benefits will include a reduced likelihood (perhaps 50% reduction) of offspring starting to smoke if their mother is a non-smoker [12]. This will eventually stop the cycle of inheritance of a smoking habit from generation to generation.

An intervention that produces permanent cessation is required. To have permanent cessation there first of all needs to be smoking cessation during pregnancy. Most trials have examined cessation to the end of pregnancy [13]. There are a number of reasons for this pragmatic ‘end of pregnancy’ outcome which are often related to trial design rather than public health improvement. However, future research must include additional postnatal intervention to prevent relapse because a large proportion of the long term benefits will only be seen for women and their children if cessation is permanent [14]. If postnatal relapse is high particularly if higher in the intervention group, then the intervention may not be cost-effective [14].

Jones et al [1] have clarified the present evidence regarding postnatal relapse to smoking. Future research must improve the quit rate by the end of pregnancy [15] but must also improve long term cessation. Future trials must have a postnatal component as most relapse has happened by 6 months after birth after which time cessation is likely to be long lasting [1]. Permanent cessation will provide the maximum return for investment on effective smoking cessation interventions during pregnancy [14].

688 words

References

1. Jones M, Lewis S, Parrott S, Wormall S, Coleman T. Restarting smoking in the postpartum period after receiving a smoking cessation intervention: A systematic review. *Addiction*
2. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ* 2004; 328: 1519-33.
3. Aveyard P, Markham WA, Almond J, Lancashire E, Cheng KK. The risk of smoking in relation to engagement with a school-based smoking intervention. *Social Science & Medicine* 2003; 56(4): 869-82.
4. Portanti M, Whitworth S. A comparison of the characteristics of childless women and mothers in the ONS longitudinal study. Office for National Statistics (UK), London (2009)

5. Frijters P; Hatton TJ; Martin RM; Shields MA. Childhood economic conditions and length of life: Evidence from the UK Boyd Orr cohort, 1937–2005. *Journal of Health Economics* 2010; 29(1): 39-47.
6. Lifestyle statistics team. Statistics on Smoking. England 2014. Health and Social Care Information Centre. www.hscic.gov.uk/catalogue/PUB14988/smok-eng-2014-rep.pdf
7. Belvin C, Britton J, Holmes J, Langley T. Parental smoking and child poverty in the UK: an analysis of national survey data. *BMC Public Health* 2015; 15: 507. doi: 10.1186/s12889-015-1797-z.
8. Jha P, Peto R, Zatonski W, Boreham J, Jarvis MJ, Lopez AD. Social inequalities in male mortality, and in male mortality from smoking: indirect estimation from national death rates in England and Wales, Poland, and North America. *Lancet* 2006; 368: 367–70
9. Jurkovic D, Overton C, Bender-Atik R. Diagnosis and management of first trimester miscarriage. *BMJ* 2013; 346: f3676.
10. Flenady V, Koopmans L, Middleton P, Frøen JF, Smith GC, Gibbons K, et al. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis. *Lancet* 2011; 377: 1331-40.
11. Dietz PM, England LJ, Shapiro-Mendoza CK, Tong VT, Farr SL, Callaghan WM. Infant morbidity and mortality attributable to prenatal smoking in the U.S. *American Journal of Preventive Medicine* 2010; 39: 45-52.
12. Vuolo M, Staff J. Parent and Child Cigarette Use: A Longitudinal, Multigenerational Study. *Pediatrics* 2013; 132: 1-10.
13. Chamberlain C, O'Mara-Eves A, Oliver S, Caird JR, Perlen SM, Eades SJ, et al. Psychosocial interventions for supporting women to stop smoking in pregnancy. *Cochrane Database of Systematic Reviews* 2013, Issue 10. Art. No.: CD001055. DOI: 10.1002/14651858.CD001055.pub4
14. Boyd KA, Briggs AH, Bauld L, Sinclair L, Tappin D. Are financial incentives cost-effective to support smoking cessation during pregnancy? *Addiction* 2015, doi: [10.1111/add.13160](https://doi.org/10.1111/add.13160).
15. Tappin D, Bauld L, Purves D, Boyd K, Sinclair L, MacAskill S et al. Financial incentives for smoking cessation in pregnancy: randomised controlled trial *BMJ* 2015; 350 :h134