Objectives: To provide advice on the management of cessation of smoking in pregnancy.

Outcomes: To improve outcomes of those women attempting to cease smoking in pregnancy.

Target audience: All health practitioners providing maternity care, and patients.

Evidence: Cochrane Library, Medline and PubMed were searched for systematic reviews, randomised controlled trials and cohort studies relating to smoking behaviour, smoking cessation and the effects of smoking on women’s health, pregnancy, fetal development and childhood health (The search included articles published up until 18 July 2014).

Values: The evidence was reviewed by the Women’s Health Committee (RANZCOG), and applied to local factors relating to Australia and New Zealand.

Background: This statement was first developed by Women’s Health Committee in October 2001 and was re-written in November 2014.

Funding: The development and review of this statement was funded by RANZCOG.
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1. **Patient summary**

Smoking during pregnancy is a common but preventable cause of complications for women and their children. Smoking is associated with preterm delivery, placental abruption, placenta praevia, low birth weight, fetal anomalies, stillbirth and sudden infant death syndrome (SIDS).

Management of women who smoke in pregnancy should involve screening all women for smoking status, advising them of the risks of smoking and the value of smoking cessation and offering them counselling and behavioural support where appropriate.

Pregnancy is a time when some women are highly motivated to quit smoking. Of the women who cease smoking during pregnancy, between 50-70% will resume in the year postpartum. Women who cease smoking during pregnancy should receive follow up support to promote smoking cessation. It is recommended that partners of pregnant women should also be identified and offered treatment for smoking cessation.

2. **Summary of recommendations**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Grade</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. People who smoke, or have recently ceased, should be identified at their first contact with a health care service, ideally in the preconception setting. Health care providers should enquire about smoking history and current smoking pattern and this information should be recorded so that it is available for the remainder of the pregnancy.</td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td>2. All women who currently smoke or have recently quit should be advised of the risks of smoking and the value of smoking cessation. Health care providers should assess the patient’s motivation and thoughts related to smoking cessation/reduction. They should advise patients to stop smoking and offer assistance with any smoking cessation attempts. Assistance can take the form of written information, referral to quit lines and/or referral to individual or group based smoking cessation programs.</td>
<td></td>
<td>1-3</td>
</tr>
<tr>
<td>3. There is currently insufficient evidence to support the use of NRT as a safe or effective intervention when used in pregnancy to aid smoking cessation. For women who continue to smoke heavily in pregnancy in spite of non-pharmacological interventions, the use of NRT may reduce the overall risk to the fetus, however, there is currently insufficient evidence to routinely recommend its use in pregnant women who continue to heavily smoke.</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>4. Of women who cease smoking during pregnancy, approximately 70% will resume smoking postpartum. Patients who receive a smoking cessation intervention should be followed up and assessed for ongoing abstinence during subsequent contacts.</td>
<td></td>
<td>4,5</td>
</tr>
<tr>
<td>5. Partners of pregnant women should be asked about smoking status at points of contact with health professionals as having a partner who smokes is a major influence on women who smoke during pregnancy and on relapse rates postpartum.</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
3. Introduction

Smoking during pregnancy is a common and preventable cause of complications for both the mother and fetus. On average, 13.2% of Australian women smoke during pregnancy. The percentage is often higher in certain groups, including women of lower socioeconomic status, younger women, Aboriginal and Torres Strait Islander women, women receiving publically funded maternity care and those with lower levels of social support. The rate of smoking among pregnant teenagers is reported as high as 35.8%, while 50% of all Aboriginal and Torres Strait Islander women report smoking during pregnancy.

Smoking and smoke exposure in pregnancy have several detrimental effects largely due to nicotine, carbon monoxide and tar inhalation. These constituents not only affect the mother but also have the ability to cross the placenta and affect the fetus. Smoking in pregnancy is associated with a number of obstetric and perinatal complications making it important that pregnant women are made aware of the potential risks and given a clear message regarding the importance of smoking cessation.

Pregnancy is a time when women are the most motivated to stop smoking, with a 3.8-fold increase in smoking cessation rate when compared to non-pregnant women. Of Australian women who reported they smoked in the first 20 weeks of pregnancy, 20.4% of them did not report smoking in the second 20 weeks. This reduction was roughly halved for Aboriginal and Torres Strait Islander women with only 10.6% of pregnant smokers reporting smoking cessation in the second 20 weeks of pregnancy.

Despite the higher rates of smoking cessation recorded during pregnancy, estimates are that 50% to 70% of these women return to smoking regularly within 6 to 12 months postpartum. It is important that smoking cessation interventions target not just women during pregnancy, but also focus on women in the post-partum period to prevent relapse.

4. Smoking and pregnancy

4.1 Obstetric complications of smoking
- Miscarriage
- Ectopic pregnancy
- Preterm labour and premature rupture of membranes – There is a two-fold increase in the risk of preterm birth with smoking, after adjustment for other factors.
- Placental abruption – Two-fold increase in the risk, after adjustment for other factors.
- Placenta praevia – Relative risk for placenta praevia is 1.36 after adjustment for other factors.
- Pre-eclampsia – Of pregnancies that are complicated by severe pre-eclampsia, smoking is associated with increased rates of perinatal mortality, placental abruption and small for gestational age infants.
- Thrombotic risk
- Anaesthetic risks and respiratory complications

4.2 Fetal complications of maternal smoking
- Low birth weight (less than 2500g at birth)
- Fetal anomalies
- Perinatal death

4.3 Child and adult complications of maternal smoking
- Sudden infant death syndrome
- Respiratory disease
Women and Smoking
C-Obs S3

5.

Management of smoking in pregnancy

Smoking cessation interventions in pregnancy reduce the proportion of women who continue to smoke in late pregnancy and have been shown to reduce both low birth weight and preterm birth. Such interventions should be employed and supported in all maternity care settings. Smoking cessation programs also help to improve the long term health and wellbeing of mothers and fathers by reducing the incidence of related health problems such as cancer and chronic disease.

5.1 Interventions

- **Screening** – People who smoke, or have recently ceased, should be identified at their first contact with a health care service, ideally in the preconception setting. Health care providers should enquire about smoking history and current smoking pattern and this information should be recorded so that it is available for the remainder of the pregnancy.

- **Counselling/Behavioral Support** – All women who currently smoke or have recently quit should be advised of the risks of smoking and the value of smoking cessation. Health care providers should assess the patient’s motivation and thoughts related to smoking cessation/reduction. They should advise patients to stop smoking and offer assistance with any smoking cessation attempts. Assistance can take the form of written information, referral to quit lines and/or referral to individual or group based smoking cessation programs.

- **Nicotine Replacement Therapy (NRT)** – There is currently insufficient evidence to support the use of NRT as a safe or effective intervention when used in pregnancy to aid smoking cessation. For women who continue to smoke heavily in pregnancy in spite of non-pharmacological interventions, the use of NRT may reduce the overall risk to the fetus, however, there is currently insufficient evidence to routinely recommend its use in pregnant women who continue to heavily smoke.

- **Follow-up postpartum** – Of women who cease smoking during pregnancy, approximately 70% will resume smoking postpartum. Patients who receive a smoking cessation intervention should be followed up and assessed for ongoing abstinence during subsequent contacts.

- **Incentive-based programs** – Encourage participation in smoking cessation programs and provide external motivation for quitting.

- **Partners** – Partners of pregnant women should be asked about smoking status at points of contact with health professionals as having a partner who smokes is a major influence on women who smoke during pregnancy and on relapse rates postpartum.

- **Health system policy** – The health system should promote an inclusive strategy to facilitate identification and treatment of tobacco dependence. Smoke-free legislation is associated with a statistically significant decrease in preterm birth rates, as well as reduction in babies being born small for gestational age.

- **Staff training** – Training health professionals to provide smoking cessation interventions has been shown to have a measurable effect on point prevalence of smoking and continuous abstinence.
6. Conclusion and recommendations

Pregnancy is a time when some women are highly motivated to quit smoking. Of the women who cease smoking during pregnancy, between 50-70% will resume in the year postpartum. Women who cease smoking during pregnancy should receive follow up support to promote smoking cessation.
7. References


32. National Health and Medical Research Council. NHMRC additional levels of evidence and grades for recommendations for developers of guidelines. Canberra 2009.

8. Patient information

A range of RANZCOG Patient Information Pamphlets can be ordered via:

https://www.ranzcog.edu.au/Womens-Health/Patient-Information-Guides/Patient-Information-Pamphlets
Appendices

Appendix A Women’s Health Committee Membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Position on Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate Professor Stephen Robson</td>
<td>Chair</td>
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<tr>
<td>Professor Susan Walker</td>
<td>Deputy Chair - Obstetrics</td>
</tr>
<tr>
<td>Dr Gino Pecoraro</td>
<td>Deputy Chair - Gynaecology</td>
</tr>
<tr>
<td>Professor Yee Leung</td>
<td>Member</td>
</tr>
<tr>
<td>Associate Professor Anuschirawan Yazdani</td>
<td>Member</td>
</tr>
<tr>
<td>Dr Simon Craig</td>
<td>Member</td>
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<tr>
<td>Associate Professor Paul Duggan</td>
<td>Member</td>
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<tr>
<td>Dr Vijay Roach</td>
<td>Member</td>
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<tr>
<td>Dr Stephen Lyons</td>
<td>Member</td>
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<tr>
<td>Dr Ian Page</td>
<td>Member</td>
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<tr>
<td>Dr Donald Clark</td>
<td>Member</td>
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<tr>
<td>Dr Amber Moore</td>
<td>Member</td>
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<tr>
<td>Dr Martin Ritossa</td>
<td>Member</td>
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<tr>
<td>Dr Benjamin Bopp</td>
<td>Member</td>
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<tr>
<td>Dr James Harvey</td>
<td>Member</td>
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<tr>
<td>Dr John Tait</td>
<td>Member</td>
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<tr>
<td>Dr Anthony Frumar</td>
<td>Member</td>
</tr>
<tr>
<td>Associate Professor Kirsten Black</td>
<td>Member</td>
</tr>
<tr>
<td>Dr Jacqueline Boyle</td>
<td>Chair of IWHC</td>
</tr>
<tr>
<td>Dr Louise Sterling</td>
<td>GPOAC representative</td>
</tr>
<tr>
<td>Ms Catherine Whitby</td>
<td>Council Consumer representative</td>
</tr>
<tr>
<td>Ms Susan Hughes</td>
<td>Consumer representative</td>
</tr>
<tr>
<td>Ms Sherryn Elworthy</td>
<td>Midwifery representative</td>
</tr>
<tr>
<td>Dr Scott White</td>
<td>Trainee representative</td>
</tr>
<tr>
<td>Dr Agnes Wilson</td>
<td>RANZCOG Guideline developer</td>
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</tbody>
</table>

Appendix B Overview of the development and review process for this statement

i. Steps in developing and updating this statement

This original statement was developed in October 2001 and the statement was re-written in October 2014. The Women’s Health Committee carried out the following steps in reviewing and re-writing this statement:

- Declarations of interest were sought from all members prior to reviewing this statement.
- Structured clinical questions were developed and agreed upon.
- An updated literature search to answer the clinical questions was undertaken.
- The existing consensus-based recommendations were reviewed and updated (where appropriate) based on the available body of evidence and clinical expertise in October 2014 by the Women’s Health Committee. At the October 2014 teleconference further minor changes were made to the statement and the statement was forwarded to Council for approval in November 2014. Recommendations were graded as set out below in Appendix B part iii)

ii. Declaration of interest process and management

Declaring interests is essential in order to prevent any potential conflict between the private interests of members, and their duties as part of the Women’s Health Committee.
A declaration of interest form specific to guidelines and statements was developed by RANZCOG and approved by the RANZCOG Board in September 2012. The Women’s Health Committee members were required to declare their relevant interests in writing on this form prior to participating in the review of this statement.

Members were required to update their information as soon as they become aware of any changes to their interests and there was also a standing agenda item at each meeting where declarations of interest were called for and recorded as part of the meeting minutes.

There were no significant real or perceived conflicts of interest that required management during the process of updating this statement.

### iii. Grading of recommendations

Each recommendation in this College statement is given an overall grade as per the table below, based on the National Health and Medical Research Council (NHMRC) Levels of Evidence and Grades of Recommendations for Developers of Guidelines. Where no robust evidence was available but there was sufficient consensus within the Women’s Health Committee, consensus-based recommendations were developed or existing ones updated and are identifiable as such. Consensus-based recommendations were agreed to by the entire committee. Good Practice Notes are highlighted throughout and provide practical guidance to facilitate implementation. These were also developed through consensus of the entire committee.

<table>
<thead>
<tr>
<th>Recommendation category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Body of evidence can be trusted to guide practice</td>
</tr>
<tr>
<td>B</td>
<td>Body of evidence can be trusted to guide practice in most situations</td>
</tr>
<tr>
<td>C</td>
<td>Body of evidence provides some support for recommendation(s) but care should be taken in its application</td>
</tr>
<tr>
<td>D</td>
<td>The body of evidence is weak and the recommendation must be applied with caution</td>
</tr>
<tr>
<td>Consensus-based</td>
<td>Recommendation based on clinical opinion and expertise as insufficient evidence available</td>
</tr>
<tr>
<td>Good Practice Note</td>
<td>Practical advice and information based on clinical opinion and expertise</td>
</tr>
</tbody>
</table>
Appendix C Full Disclaimer

This information is intended to provide general advice to practitioners, and should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient.

This information has been prepared having regard to general circumstances. It is the responsibility of each practitioner to have regard to the particular circumstances of each case. Clinical management should be responsive to the needs of the individual patient and the particular circumstances of each case.

This information has been prepared having regard to the information available at the time of its preparation, and each practitioner should have regard to relevant information, research or material which may have been published or become available subsequently.

Whilst the College endeavours to ensure that information is accurate and current at the time of preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become subsequently available.