



Managing the adnexae at the time of hysterectomy for benign gynaecological disease

This statement has been developed and reviewed by the Women's Health Committee and approved by the RANZCOG Board and Council.

A list of Women's Health Committee Members can be found in Appendix A.

Disclosure statements have been received from all members of this committee.

Disclaimer This information is intended to provide general advice to practitioners. This information 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 document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances.

First endorsed by RANZCOG: July 2009
Current: July 2017
Review due: July 2020

Background: This statement was first developed by Women's Health Committee in July 2009 and reviewed in July 2017.

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

Funding: The development and review of this statement was funded by RANZCOG.

The removal of healthy ovaries and fallopian tubes (bilateral salpingo-oophorectomy or BSO) at the time of hysterectomy for benign disease is commonly performed for the perceived benefit of preventing long-term morbidity and mortality related to retention of the ovaries. The commonest stated reason for prophylactic BSO at the time of hysterectomy, especially in postmenopausal women, is for the reduction in ovarian cancer risk.

Removal of the ovaries at the time of hysterectomy for benign disease

Removal of healthy ovaries does not add significantly to the operating time or immediate surgical complications of hysterectomy, but may have significant implications for short and long-term health. Lack of evidence from high quality randomised clinical trials limits the ability of surgeons and patients to make an informed decision about the relative merits of ovarian removal or conservation in those who are not at increased inherited risk of ovarian cancer.

The postmenopausal ovaries are physiologically active and continue to produce oestradiol (at low levels) and testosterone. The relative risks and benefits of oophorectomy at the time of hysterectomy can be difficult to estimate on an individualised basis. A recent modelling study in 2005 concluded that "women younger than 65 years of age clearly benefit from ovarian conservation, and at no age is there a clear benefit from prophylactic oophorectomy".¹

A subsequent observational study of nearly 30000 women enrolled in the Nurses' Health study, (median follow-up of 24 years), concluded that, "compared with ovarian conservation, bilateral oophorectomy at the time of hysterectomy for benign disease is associated with a decreased risk of breast and ovarian cancer but an increased risk of all-cause mortality, and fatal and nonfatal coronary heart disease." At no age was oophorectomy associated with increased survival, but equally, it was not associated with a *decreased* survival in women over the age of 55 at the time of hysterectomy and oophorectomy.²

A further prospective cohort study of over 24,000 women, with a shorter duration of follow-up (median 7.6 years), concluded that, whilst oophorectomy at the time of hysterectomy decreased the risk of ovarian cancer compared to hysterectomy alone, it was not associated with an increased risk of coronary heart disease, hip fracture or death.³

Clearly there is conflicting evidence and therefore the decision for oophorectomy must consider the individual consequences for each woman with regard to her baseline risk for developing breast and ovarian cancers, coronary artery disease, osteoporosis, non-compliance and/or poor clinical response to HRT. In postmenopausal women, there is no consensus about whether ovaries should be removed or retained and decisions should be made following patient consultation on an individualised basis.

It must be emphasised that those women who are at increased genetic risk of ovarian and fallopian tube cancer (for example, BRCA mutation carriers)^{4,5} risk reducing BSO continues to be the only demonstrated intervention to reduce ovarian cancer risk. If a salpingectomy has been recommended on the basis of cancer risk reduction, the entire fallopian tube should be removed including any tubal fimbriae adherent to the ovary.

Potential risks of oophorectomy at time of hysterectomy for benign disease

1. Increased mortality due to Coronary Heart Disease (CHD)⁶
2. Increased morbidity and mortality due to osteoporosis related fracture
3. Increased risk of cognitive dysfunction, including dementia
4. Increased risk of depressive and anxiety symptoms
5. In premenopausal women:
 -) More severe and prolonged vasomotor symptoms than those seen following natural menopause.
 -) Reduction in libido and sexual dysfunction.

With the exception of osteoporosis related fracture, it is unclear whether the incidence and severity of the above conditions are ameliorated by oestrogen replacement therapy.

Removal of the fallopian tubes at the time of hysterectomy for benign disease

There is growing evidence that high-grade serous tumours of the ovary and peritoneal surface epithelium (the most common histologic sub-type of epithelial ovarian cancer) may originate in the fallopian tubes.^{7,8}

There is no known benefit for retaining fallopian tubes in the post-reproductive period, or at the time of hysterectomy. Removal of the fallopian tubes does not appear to increase surgical complications, nor impact on ovarian function. However, as there is no population based data to quantify the risk-benefit profile, it is not yet clear whether this strategy will reduce the risk of ovarian cancer in the general population.

In the light of these data, RANZCOG now recommends consideration be given to bilateral salpingectomy at the time of hysterectomy for benign gynaecological disease and that the risks and benefits be discussed with the patient on a case-by-case basis.

Furthermore, consideration should be given to bilateral salpingectomy instead of tubal occlusive procedures for female sterilisation (see C-Gyn 22 Female Sterilisation by Filshie Clip Tubal Occlusion).

Recommendations

Recommendation 1	Grade
A discussion of the benefits and harms of concurrent removal of ovaries should take place before hysterectomy for benign gynaecological conditions.	Consensus-based recommendation
Recommendation 2	Grade
Consider the potential risks and benefits before performing BSO in women younger than 65 years of age.	Consensus-based recommendation

Recommendation 3	Grade
Women who are concerned about their personal risk of ovarian cancer may wish to proceed to BSO despite potential short and long term risks, but this should only occur after appropriate counselling.	Consensus-based recommendation
Recommendation 4	Grade
The factors that will influence the decision making are likely to be: <ul style="list-style-type: none"> J The woman's risk (real or perceived) of ovarian cancer. J Indications for hysterectomy and the planned surgical approach. J Personal risk factors for CHD, osteoporosis and depression. J Absolute and relative personal contraindications to oestrogen therapy. 	Consensus-based recommendation
Recommendation 5	Grade
Doctors should discuss the risks and benefits of bilateral salpingectomy with patients undergoing hysterectomy for benign disease.	Consensus-based recommendation 7,8

References

1. Parker WH, Broder MS, Liu Z et al. Ovarian conservation at the time of hysterectomy for benign disease. *Obstet Gynecol* 2005; 106: 219-226.
2. Parker WH, Broder MS, Chang E et al. Ovarian conservation at the time of hysterectomy and long-term health outcomes in the nurses' health study. *ObstetGynecol* 2009; 113: 1027-37.
3. Jacoby VL, Grady D, Wactawski-Wende J, Manson JE, Allison MA, Kuppermann M, Sarto GE, Robbins J, Phillips L, Martin LW, O'sullivan MJ, Jackson R, Rodabough RJ and Stefanick ML. Oophorectomy vs. ovarian conservation with hysterectomy: cardiovascular disease, hip fracture, and cancer in the Women's Health Initiative Observational Study. *Archives of Internal Medicine* 2011; 171: 760-8.
4. Greene MH, Mai PL, Schwartz PE. Does bilateral salpingectomy with ovarian retention warrant consideration as a temporary bridge to risk-reducing bilateral oophorectomy in BRCA1/2 mutation carriers? *Am J Obstet Gynecol* 2011; 204: 19.e1-6.
5. Anthony Howell, Jack Cuzick. Oestrogen and breast cancer: results from the WHI trial. *The Lancet Oncology* May 2012; Volume 13, Issue 5, Pages 437-438.
6. Hickey M, Ambekar M, Hammond I. [Should the ovaries be removed or retained at the time of hysterectomy for benign disease?](#) *Hum Reprod Update* 2010; 16 (2): 131-41.
7. Dietl J, Wischhusen J, Häusler SF. The post-reproductive Fallopian tube: better removed? *Hum Reprod* 2011; 26 (11): 2918-24. Epub 2011 Aug 16.

8. Salvador S, Gilks B, Köbel M, Huntsman D, Rosen B, Miller D. The fallopian tube: primary site of most pelvic high-grade serous carcinomas. *Int J Gynecol Cancer* 2009; 19 (1): 58-64.

Other suggested reading

ACOG Practice Bulletin No. 89: Elective and Risk-Reducing Salpingo-oophorectomy. *Obstetrics & Gynecology* 2008; 111 (1): 231.

Arnold LD and Colditz GA. Hysterectomy With Oophorectomy: Implications for Clinical Decision Making. *Arch Inter Med* 2011; 171 (8): 768-769.

Atsma F, Bartelink ML, Grobbee DE, van der Schouw YT. Postmenopausal status and early menopause as independent risk factors for cardiovascular disease: a meta-analysis. *Menopause* 2006; 13 (2): 265-279.

Lobo RA. Surgical menopause and cardiovascular risks. *Menopause* 2007; 562-566.

The Society of Gynecologic Oncology of Canada. Position statement regarding salpingectomy and ovarian cancer prevention. Sept 15, 2011. Accessed June 2012. Available at: <http://www.g-o.c.org/en/news/positionstatements/salpingectomystmt.aspx>

Tone AA et al. The role of the fallopian tube in ovarian cancer. *Clinical Advances in Hematology & Oncology* 2012; 10 (5).

Vearncombe KJ and Pachana NA. Is cognitive functioning detrimentally affected after early, induced menopause? *Menopause* 2009; 16: 188-198.

Links to other College statements

(C-Gyn 22) Female Sterilisation by Filshie Clip Tubal Occlusion
[https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical%20-%20Gynaecology/Filshie-Clip-Tubal-Occlusion-\(C-Gyn-22\)-Review-November-2014.pdf?ext=.pdf](https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical%20-%20Gynaecology/Filshie-Clip-Tubal-Occlusion-(C-Gyn-22)-Review-November-2014.pdf?ext=.pdf)

(C-Gen 15) Evidence-based Medicine, Obstetrics and Gynaecology
[https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical%20-%20General/Evidence-based-medicine.-Obstetrics-and-Gynaecology-\(C-Gen-15\)-Review-March-2016.pdf?ext=.pdf](https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical%20-%20General/Evidence-based-medicine.-Obstetrics-and-Gynaecology-(C-Gen-15)-Review-March-2016.pdf?ext=.pdf)

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

Name	Position on Committee
Professor Yee Leung	Chair
Dr Joseph Sgroi	Deputy Chair, Gynaecology
Associate Professor Lisa Hui	Member
Associate Professor Ian Pettigrew	EAC Representative
Dr Tal Jacobson	Member
Dr Ian Page	Member
Dr John Regan	Member
Dr Craig Skidmore	Member
Associate Professor Janet Vaughan	Member
Dr Bernadette White	Member
Dr Scott White	Member
Associate Professor Kirsten Black	Member
Dr Greg Fox	College Medical Officer
Dr Marilyn Clarke	Chair of the ATSI WHC
Dr Martin Byrne	GPOAC Representative
Ms Catherine Whitby	Community Representative
Ms Sherryn Elworthy	Midwifery Representative
Dr Amelia Ryan	Trainee Representative

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

i. Steps in developing and updating this statement

This statement was originally developed in July 2009 and was most recently reviewed in July 2014.

The Women's Health Committee carried out the following steps in reviewing 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.
-) At the July 2017 face-to-face committee meeting, the existing consensus-based recommendations were reviewed and updated (where appropriate) based on the available body of evidence and clinical expertise. 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.¹⁷ 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.

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

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.