

# Preconception counselling optimising reproductive health and wellbeing

The preconception counselling consultation is one of the best opportunities to initiate effective preventative medicine.

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Preconception or pre-pregnancy counselling is a process in which a healthcare professional assesses the physical, emotional, psychological and social health of a female patient of reproductive age and imparts education and guidance so to optimise reproductive health and wellbeing. It forms the basis of a preconception care program, the organised and comprehensive health care that identifies and reduces a woman's health risks before conception through risk assessment, health promotion and intervention. Preconception care programs may be designed to include the male partner by providing counselling and educational information in preparation for fatherhood, such as genetic counselling and testing and financial and family planning.

Preconception counselling is applicable to, and should be available for, women during all phases of their reproductive period of life. From the early teenage years to the menopausal years, there are

many opportunities to assist and educate women with their reproductive choices, general health and wellbeing.<sup>1,2</sup> This article gives a general outline of the timing and content of such counselling opportunities and some more specific example-based guidelines for patient management. Given the restrictions on time in general practice today, to find a moment to discuss with a patient even some of the topics mentioned here will be of great benefit to the patient's future health and wellbeing.

## Target population

Who would benefit from preconception counselling? Each woman has individual needs and wants regarding reproductive health, depending on the life stage she is at and her medical history. Patient types who would benefit from advice include the following:

- adolescents, whether they are sexually active or not

## IN SUMMARY

- Preconception counselling forms the basis of a preconception care program and is one of the most potent opportunities to practise preventative medicine.
- Topics that may be covered in preconception counselling are conception, contraception, sexually transmitted infections, cervical screening, dietary advice (preconception folate, iron and vitamin C supplementation), weight optimisation, smoking cessation, and alcohol use and risk behaviour modifications.
- Lifestyle modifications should involve both the woman and her partner; if they do not, success is likely to be limited or at least only short term.
- Some patients will ask directly about preconception care but usually the GP will have to broach the subject during consultations for other reasons.
- Patients with certain medical diseases or personal or family histories implying specific disease risks and/or inheritable genetic disorders should be prepared for pregnancy well before it occurs, with a plan of action formulated using a multidisciplinary approach.

## Table 1. Preconception counselling consultation

Topics that should be considered include:

- Presenting complaint
- History:
  - medical and surgical history
  - family history, including inheritable diseases
  - gynaecological history, including menstrual cycle, contraception and STIs
  - obstetric history, including specific outcome
  - medications history, including prescribed, holistic and over-the-counter drug usage (e.g. vitamin supplementation)
  - social history, including cigarette smoking, alcohol intake and illicit drugs use
- Physical examination:
  - general physical examination, including breast, abdomen and pelvic examination if indicated
  - cervical screening, if due
- General advice:
  - folic acid supplementation
  - iron and vitamin C supplementation, if appropriate
  - weight optimisation
  - smoking cessation
  - alcohol restriction and other risk behaviour modification
- Testing:
  - full blood count
  - blood group
  - antibody screen, including rubella, syphilis, hepatitis B, hepatitis C and HIV; consider also herpes zoster and parvovirus B19
  - midstream urine microscopy, culture and sensitivity
  - cervical screening
  - breast check

- sexually active women of all ages
- premarital women
- married women
- professional women
- multiparous women
- perimenopausal women
- women with specific disease states, such as



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epilepsy, diabetes and other endocrine disorders, hypertension, cardiac disease or renal disease, or cancer survivors

- women with histories of genetic disorders, such as cystic fibrosis or Huntington's disease.

Age is not a barrier for discussions on optimising reproductive health and wellbeing. The prevention of an unplanned pregnancy in an adolescent and discussion of the risks of delaying pregnancy in an older career-orientated woman are both beneficial.

### Consultation content

What topics may be covered in preconception counselling consultations? General and case specific, educational and investigational topics may all be discussed (Table 1). Women who want to become pregnant and those who do not can both benefit from education on the physiology of their individual menstrual cycle. A solid grounding on this topic assists women with timing conception, and also with choosing an appropriate type of contraception. Sexual health topics such as sexually transmitted infections (STIs) and cervical screening schedules should also be discussed in this context. Family Planning Australia ([www.fpa.net.au](http://www.fpa.net.au)) and the Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG; [www.ranzcog.edu.au](http://www.ranzcog.edu.au)) are good sources of further

Figure 1. Neonate with severe form of spina bifida. The pregnancy was diagnosed late and there was no preconception folate supplementation. The mother had no known risk factors.



Figure 2. Infant with bilateral cataracts after intrauterine rubella infection.

information on these and similar topics.

Lifestyle counselling, including dietary advice, is appropriate for all patients. This should include discussion of preconception folate supplementation to assist with risk reduction of spina bifida (Figure 1).<sup>3</sup> (For women with no specific risk factors, the recommended dose is 0.4 mg oral folate daily, beginning three months before con-

ception is planned.<sup>4</sup> A daily dose of 0.5 mg is suggested by the RANZCOG;<sup>5</sup> this is the dose contained in over-the counter formulations [Blackmores For Women Folic Acid, Megafol, Nature's Own Folic Acid].) General dietary advice includes the use of iron supplements and vitamin C supplements to improve iron stores if the current diet is lacking. It is also appropriate

to discuss weight optimisation in women who are overweight or underweight (that is, at either end of the BMI spectrum), to assist in ovulation. Other health benefits also result from weight optimisation, such as risk reduction for gestational diabetes and fetal macrosomia in women with high BMIs, and risk reduction for fetal growth restriction in women with low BMIs.<sup>6</sup> This is also an opportunity to discuss smoking cessation (see QUIT at [www.quit.org.au](http://www.quit.org.au)), and alcohol use and risk behaviour modifications (see Narcotics Anonymous at [www.na.org.au](http://www.na.org.au)).

The emphasis at this point of the counselling process is one of team participation. The lifestyle modifications should involve both the woman and her partner; if they do not, success is likely to be limited or at least only short term.

### Grasp the opportunity

When is the best time for a consultation to include discussion of pregnancy and related issues? When the patient is not pregnant! Research in the 1990s indicated that at least half of women who become pregnant had not planned the event.<sup>7</sup> By the time a woman discovers she is pregnant, a formidable amount of conception–maternal interaction has occurred, and embryo development has progressed (organogenesis begins around day 17 postconception).<sup>3,7</sup> Many intervention strategies aimed at optimising maternal and fetal wellbeing thus miss the opportunity to have an effect. Therefore, it is best to time education and counselling before the event.

What forms of presentation lend themselves to opportunities to instigate counselling? Sometimes patients will ask directly about preconception care but usually the GP will have to broach the subject during consultations for other reasons, including:<sup>3</sup>

- a pregnancy crisis, such as an ectopic pregnancy or miscarriage
- a contraception and/or cervical screening consultation

### Table 2. Conditions requiring specific advice pre-pregnancy

- Hypertension (any cause)
- Cardiac disease, both structural and functional<sup>8</sup>
- Renal disease (any cause)
- Autoimmune diseases, e.g. systemic lupus erythematosus, antiphospholipid or related syndromes<sup>10</sup>
- Endocrine diseases, e.g. diabetes, thyroid disease<sup>11</sup>
- Neurological disorders or impairments, e.g. epilepsy, spina bifida, paraplegia and quadriplegia<sup>12</sup>
- Blood disorders, e.g. thalassaemia, anaemia
- Family history of genetic or inheritable disorders, e.g. cystic fibrosis, cleft lip and palate, Marfan syndrome<sup>13–15</sup>
- All psychiatric disorders, including eating disorders
- Previous pregnancy complications involving fetal compromise, e.g. structural abnormalities, growth restriction, preterm delivery, stillbirth or neonatal death
- Rhesus disease or any condition with a bloodborne antibody demonstrated
- Infectious diseases such as HIV, hepatitis C, genital herpes
- Infertility related conditions, e.g. recurrent miscarriage, endometriosis, polycystic ovarian disease

- a negative pregnancy test consultation
- immunisation of a child
- postpregnancy check up
- a 'physical' examination
- any consultation with an adolescent.

The adolescent who presents for contraception advice, for a pregnancy test that is negative (a negative pregnancy test consultation) or with menorrhagia/dysmenorrhoea provides an obvious opportunity for counselling, and one that should not be missed. A relationship of trust with both the adolescent and the parent(s) and good judgement on timing and content of discussions is also a necessary ingredient in this endeavour. In most cases the patient is physically well, and may or may not be sexually active. This gives the healthcare professional the opportunity to discuss topics such as sexual health (contraception, STIs, cervical screening), social and support networks, and expectations of parenthood. Imparting knowledge such as the physiology of the menstrual cycle may assist in debunking myths passed between peers.

The negative pregnancy test consultation for a woman of any age is in itself an opportunity to assist in planning pregnancy health, be the test result the desired outcome or not.<sup>8</sup> For those in which a negative test was the desired outcome, general health, sexual health and contraception advice are appropriate content for this stressful encounter. For those patients disappointed with the negative result, this consultation gives the opportunity to offer support, discuss the optimising of pregnancy attempts, reinforce generic topics such as preconception folate supplementation and cessation of smoking, and discuss any specific case-related needs (see later under 'Disease-specific consultation').

### Preventative medicine

The preconception consultation is one of the most potent opportunities to practise preventative medicine. Rubella, while relatively benign in the nonpregnant person

## Preconception counselling: resource providers

### Obstetricians

- general
- maternal fetal medicine subspecialist
- infertility subspecialist

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists website ([www.ranzcog.edu.au](http://www.ranzcog.edu.au)) has a 'locate an obstetrician/gynaecologist' facility.

### Obstetric physicians

#### General physicians

The Royal Australasian College of Physicians website ([www.racp.edu.au](http://www.racp.edu.au)) has links to various online resources.

### Geneticists and genetic counsellors

The Centre for Genetics Education website ([www.genetics.com.au](http://www.genetics.com.au)) has information for health professionals and patients and a 'find a genetic service' facility (genetic counselling, prenatal diagnosis, predictive testing, carrier testing, cytogenetic testing).

### Psychiatrists and psychologists

The Royal College of Australian and New Zealand Psychiatrists website ([www.ranzcp.org](http://www.ranzcp.org)) has a GP-psychiatry liaison section providing access to the RANZCP Private Psychiatrists Referral Directory. The Australian Psychological Society website ([www.psychology.org.au](http://www.psychology.org.au)) has a 'find a psychologist' facility.

### Dietitians

The Dietitians Association of Australia website ([www.daa.asn.au](http://www.daa.asn.au)) has information for health professionals and patients and a 'find an accredited practising dietitian' facility.

### Family Planning Australia

The Sexual Health and Family Planning Australia website ([www.fpa.net.au](http://www.fpa.net.au)) has links to the State and Territory family planning organisations and includes information and resources links.

in most cases, can have devastating effects (deafness, blindness, microcephaly, cardiac lesions and severe developmental delay) on the unborn fetus of a nonimmune mother (Figure 2). The accidental exposure of a pregnant woman to a child or adult with the rubella virus and then the waiting for assessment of infection can be excruciatingly painful, let alone the consequences of positive transmission to the fetus. Therefore, pre-pregnancy assessment of rubella immunity, and the administration of rubella vaccine (Meruvax II) to those women that are nonimmune or of equivocal status, is extremely beneficial for all parties.

Knowledge of a woman's immune status for other viral infections, such as herpes

zoster or parvovirus, can also help in cases of accidental exposure. RANZCOG guidelines now include assessment for hepatitis C and HIV as part of the antenatal screen work up as the vertical transmission of these viruses to the fetus can be minimised by specific protocols.<sup>9</sup> Although currently there is no cure for these infections, including these tests in a pre-pregnancy work up can only assist in planning for the future.

Within Australia's multicultural society there are significant populations of women of Middle Eastern, Mediterranean, Asian or South East Asian origin who carry  $\alpha$ - and  $\beta$ -thalassaemia haemoglobin subtypes. Inheritance by the fetus of trait combinations where both partners are carriers

will produce the severe and sometimes fatal forms of these haemoglobinopathies in the offspring. Although these conditions may be tested for using cytogenetic techniques on chorionic villus sampling specimens, the optimal timing for testing is before pregnancy. Parental carriage assessment many months ahead of pregnancy allows time for accurate and complete testing, the results of which can be of great assistance in the management of potentially complex pregnancies.

### Disease-specific consultation

Patients with certain medical diseases or personal or family histories implying specific disease risks and/or inheritable genetic disorders require counselling with specific content and direction before becoming pregnant.<sup>6,10</sup> Table 2 lists some conditions that benefit from specialist input before the patient becomes pregnant.<sup>11-17</sup> These patients must be prepared well before pregnancy occurs, with a plan of action formulated using a multidisciplinary approach. Local and tertiary resources include specialist obstetricians (perinatal or infertility specialists), geneticists and genetic counsellors, specialist physicians, psychiatrists and psychologists (see the box listing resources on page 29).

A classic example of a woman who would benefit from specialist advice before becoming pregnant would be a patient with epilepsy who is taking anticonvulsant medication. Such a woman would need preconception folate supplementation at the higher dose (5 mg folic acid [Megafol] versus 0.5 mg) to decrease the risk of spina bifida. Other women who also require the higher folate dose include those who have spina bifida themselves or have had a child with spina bifida, those with pre-existing diabetes and those with specific thrombophilias, such as homocystinuria. Another example of a disease-specific consultation would be a woman with type 1 diabetes: proactive optimisation of blood sugar control would directly decrease the risk of several fetal structural anomalies as well as

provide many long term health benefits for the woman herself.

### Pregnancy crises

One question every woman and her partner have to face when a pregnancy occurs is how they would react to having a fetus that is structurally or genetically abnormal. Each person has his or her own individual emotional, moral and social responses to this possibility. It is not within the boundaries of this article to discuss the many facets of the national and international abortion debate. However, GPs can guide patients to professionals who are trained in counselling on topics such as prenatal diagnosis and genetic counselling and in the types of testing available (each Australian State and Territory government health department has genetic counselling departments). Again, this is a topic that is better discussed before a pregnancy occurs, rather than it being confronted as a sudden crisis.

### Conclusion

Preconception counselling involves the active process of optimising the health and wellbeing of a woman who is possibly about to enter one of the most fulfilling chapters of her life. The preconception counselling consultation is one of the best opportunities to initiate effective preventative medicine.

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