

South Australian Perinatal Practice Guidelines

Preconception advice

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Introduction

- > The main goal of preconception care is to provide health promotion, screening, and interventions for women of reproductive age to reduce risk factors that might affect future pregnancies (CDC 2006)
- > All primary care providers serving women of reproductive age should play an active role in improving preconception health. They include:
 1. General practitioner / practice nurses
 2. Obstetrician / gynaecologist
 3. Midwife
 4. Obstetric physician
 5. Specialist practitioners (e.g. cardiac, neurological, endocrinological disorders)
 6. Allied health workers e.g. dietitians, diabetic educators, physiotherapists
- > All media, schools and community groups may provide information aimed at promoting healthy pregnancy
- > Life and career plans are best made with knowledge of the impact of increasing maternal age on future reproduction
- > The wide variability in pregnancy outcomes between women is due in part to factors that may be identified before conception. Some of these are amenable to change

Lifestyle

- > Weight and nutrition
- > Smoking, alcohol and other substance use
- > Exercise
- > Occupational and environmental wellbeing

Medical conditions

- > Treatment may be reviewed to minimise the impact on the pregnant woman and her baby
 - > Medication review to avoid teratogenesis
 - > Diabetes – glycaemic control and medication choice
 - > Heart disease – anticoagulants and other medications, maximise health
 - > Auto immune – medications and prophylaxis
 - > Epilepsy – seizure control and medication choice
 - > Thyroid
 - > Mental illness
 - > Inflammatory bowel disease
- > Pre-existing medical conditions have an impact on pregnancy outcome or are likely to be affected by the pregnancy. Good control of the condition will limit negative effects. The choice of medication may need to be adjusted to minimise impact on the baby

Genetic disorders

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- > Genetic disorders may require counselling by a medical geneticist to consider options for antenatal diagnosis. Parental genetic testing before pregnancy is advisable in some circumstances and sometimes this may take a considerable time to complete

Preconception education checklist

Four main categories:

1. Physical assessment
2. Risk screening
3. Infectious diseases and vaccinations
4. Counselling

1. Physical assessment

A thorough physical assessment is the starting point for preconceptual care and includes:

Weight, Height

Calculate body mass index (see [chapter 36 Women with a high body mass index](#) for more information)

Oral

Check for obvious dental/gum disease

Cardiac Exam

Blood Pressure
Pulse
Cardiac auscultation

Respiratory Exam

Auscultation

Breast Exam

Abdominal Examination

Palpation

Vaginal Examination

PAP only if due
Speculum / vaginal exam and swabs only if clinically indicated

Urinalysis

2. Risk screening

- > Both prospective parents should be involved in the identification of possible risk factors, since the health, lifestyle and genetic makeup of both partners have a bearing on the pregnancy outcome (HCN 2007)

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SA Maternal & Neonatal Clinical Network

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- > Preconceptual genetic counselling requires a thorough personal and family history, followed if necessary, by referral for genetic counselling. The aim is to extend the range of options available to individuals with an unfavourable genetic background and to give them more time to consider carrier screening and/or antenatal screening or the consequences of opting for (or against) pregnancy

Risk screening	Recommended education
Reproductive awareness	<ul style="list-style-type: none"> > Safe, effective birth control method > Ask woman if she plans to have children (or additional children) and how long she plans to wait before becoming pregnant; help her to develop a plan, based on values and resources, to achieve goals > Understand physiology of conception > Determining the time of conception (i.e. encourage woman to keep an accurate menstrual calendar) > Recommend moderate exercise > Avoid hyperthermia (core body temp > 38° C) e.g. hot bath (associated with increases in congenital anomalies)
Reproductive history	<ul style="list-style-type: none"> > Ask the woman about any previous pregnancy adverse outcomes (preterm birth, low birth weight, birth defects, fetal/infant death, maternal complications e.g. preeclampsia) > Assess ongoing bio-behavioural risk factors (e.g. underweight, obese, nutritional, psychosocial stress, family violence, depression). Provide ongoing care with the goal of preventing recurrence > Physical examination to uncover ongoing chronic infections e.g. periodontal or reproductive tract infections > Discuss recurrence risk, screen and treat any associated morbidities detected e.g. preeclampsia is associated with an increased risk of maternal cardiovascular disease in later life > Promote protective factors to reduce the risk of recurrent preterm birth e.g smoking cessation, healthy nutrition and family planning

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Environmental toxins and teratogens

- > Occupational exposures: lead, mercury, anaesthetic gases, pesticides, herbicides, vinyl, chloride, radiation
- > Home exposures: solvents, paint thinners, strippers, pesticides, pollutants in well water, toxins such as lead used in hobbies
- > Give information about medications that are known teratogens
- > Inform women of the "Medicines and Drug Information Centre" telephone: 81617222 (open 0900 hours to 1700 hours Mon – Fri)

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Nutrition, vitamins, minerals and weight management

- > Nutrition, including ideal caloric intake and weight gain
- > Assess risk of nutritional deficiencies (vegan, pica, milk intolerance, calcium or iron deficiency)
- > Vegan diet: may have deficiencies in amino acids, zinc, calcium, iron and vitamins D and B₁₂. Refer to nutritionist
- > Pica: cravings for dirt, clay or starch and may result in malnourishment and ingestion of toxins and infectious agents
- > Emphasise good sources of iron, calcium, B vitamins and iodine, low fat options
- > Avoid overuse of Vitamin A (limit to 3,000 IU per day). Avoid liver products (high in Vitamin A)
- > Dark skinned women with a non-Western background or women who have little exposure to sunlight should take Vitamin D supplementation (25 mcg Ostelin® daily or OsteVit-D® containing vitamin D₃ cholecalciferol 1000 units)
- > Limit caffeine intake (two cups of coffee or six glasses of soft drink each day)
- > Advise all women to take folic acid 500 micrograms per day while attempting pregnancy and during the first trimester for prevention of neural tube defects
- > Iodine deficiency is common in Australia. Encourage a varied diet - sources of iodine include sea salt, iodised salt and most bread. NHMRC recommends all women considering pregnancy take an iodine supplement of 150 micrograms each day

Nutrition, vitamins, minerals and weight management cont

- > If medical complication e.g. epilepsy or diabetes, advise folic acid 5 mg per day
- > Weight: screen for eating disorders, correct both obesity and underweight
- > Obesity increases the risks of hypertension, preeclampsia, diabetes and large for gestational age infant. Advice about healthy diet before conception
- > Underweight: Increased incidence of amenorrhoea, infertility, small for gestational age infant, preterm birth, and anaemia

Genetic disorders

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<ul style="list-style-type: none"> > Personal or family history of diagnosed genetic disorder, intellectual disability, unexplained stillbirth or birth defect > Couple are consanguineous > Advanced maternal age (≥ 35 years) 	<ul style="list-style-type: none"> > Assess whether the personal or family history increases the risk to offspring > Are there strategies to lower the risk (e.g. preconceptual folic acid) or clarify the risk (e.g. genetic testing)? > Does the couple need information about prenatal diagnostic tests or preimplantation genetic diagnosis? > Consider referral for genetic counselling > Provide information about screening and diagnostic tests for chromosome abnormalities
<p>Ethnic origin</p> <ul style="list-style-type: none"> > Black > Ashkenazi Jewish, French Canadian > Mediterranean, South East Asian, Indian, Middle Eastern <p>Any queries or concerns, discuss with South Australian Clinical Genetics Service on 8161 7375. More information available at URLs: http://www.geneticseducation.nhs.uk/ http://www.mcric.edu.au/GF/pages/GeneticsFile.asp</p>	<p>Carrier screening for:</p> <ul style="list-style-type: none"> > Sickle cell disease, consider β thalassemia > Tay Sachs disease > β thalassemia , α thalassemia
<p>Recently arrived migrant women:</p> <p>Full physical assessment, medical / obstetric history and clinical assessment of overall health including diet</p>	<p>Depending on the country of origin and ethnicity, enquire if:</p> <ul style="list-style-type: none"> > Female genital mutilation (FGM) has been performed > Ask about rubella ('German measles') vaccination status > Symptoms of infectious diseases known to be endemic in country of origin e.g. tuberculosis, STDs, HIV, hepatitis B,C and offer education and screening > Ask the woman about the presence of any scars and whether related to a surgical procedure <p>Refer to specific SA Perinatal Practice Guidelines for further information</p>
<p>Substance use, including alcohol</p>	<ul style="list-style-type: none"> > Screen for alcoholism and use of illicit drugs > Advise to reduce / abstain from alcohol, tobacco and other drugs before and during pregnancy > Assess nutrition, oral hygiene and immune status > Arrange treatment referrals as required

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Smoking	<ul style="list-style-type: none"> > Advise to reduce / stop smoking and explain link to low birth weight and preterm birth. > Offer 'stop smoking' interventions and supervision of smoking cessation e.g. Quit
Medical conditions and medications	<ul style="list-style-type: none"> > Maintain good control of any pre-existing medical conditions (e.g. diabetes, hypertension) > Diabetes: optimise control HbA1c < 6 > Hypertension: avoid ACE inhibitors, angiotensin II receptor antagonists, thiazide diuretics > Epilepsy: optimise control; folic acid 5 mg per day > Deep Venous Thrombosis: switch from coumadin(Warfarin) to heparin or low molecular weight heparin (Clexane). Offer testing for thrombophilia before pregnancy > Depression/anxiety: Tricyclic antidepressants and selective serotonin reuptake inhibitors are not associated with any teratogenic effects and may be used before conception. Avoid benzodiazepines (associated with cleft lip and palate, withdrawal syndrome in the newborn) > Refer to medical guidelines for further information
Oral health	<ul style="list-style-type: none"> > Encourage dental flossing > Identify and treat caries and periodontal disease (gum disease increases risk for preterm delivery)
Family planning	<ul style="list-style-type: none"> > The nine or twelve month well baby visit offers a good opportunity to discuss future family plans
Psychosocial concerns	<ul style="list-style-type: none"> > Violence: screen for feeling safe at home, abuse as child, child abuse, support reporting and know shelters > Psychosocial: screen for depression, access to basic necessities, money worries, knowledge of safety net programs, difficult life events, social support

3. Infectious diseases and vaccinations

Offer immunisation for at risk women such as: <ul style="list-style-type: none"> > Influenza > Rubella > Hepatitis B > Pertussis (Whooping cough) 	<ul style="list-style-type: none"> > (safe at any stage of pregnancy) > (at least one month before conception or postpartum) > Women at risk of sexually transmitted disease or blood exposure. (May be given during pregnancy) > Pre-pregnancy, encourage immunisation of partner and grandparents
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<ul style="list-style-type: none"> > Tuberculosis > Varicella zoster (chicken pox) 	<ul style="list-style-type: none"> > Mantoux skin test with purified protein derivative > (at least one month before conception or postpartum)
<p>Infectious disease screening for at risk women:</p> <ul style="list-style-type: none"> > Human immunodeficiency virus (HIV) > Toxoplasmosis, Cytomegalovirus (CMV), and Parvovirus B19 (fifth disease), Syphilis > Human papilloma virus (HPV) may be detected on Pap smear. Screening by PCR is only recommended for women undergoing treatment for high grade squamous intraepithelial lesions (HSIL). Link to NHMRC guideline Screening for the prevention of cervical cancer > Other sexually transmitted infections: Gonorrhoea, chlamydia, herpes genitalis 	<ul style="list-style-type: none"> > Treatments including zidovudine (Retrovir) significantly reduce the risk of transmission to the fetus from 25.5 % to 8.3 % > Serologic testing if exposure to any one of these organisms is suspected. All may cause congenital infections if mother becomes infected during pregnancy > See individual guidelines for further information (under Section 3: Infection in pregnancy) > Offer intramuscular Gardasil® vaccine to all sexually active women < 26 years regardless of previous history of HPV infection > As indicated

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4. Counselling

- > Common conditions requiring pre-pregnancy counselling and advice include:
 - > Epilepsy
 - > Diabetes
 - > Essential hypertension
 - > Cardiac disease
 - > Auto-immune disorders
 - > Obesity (BMI > 30)
 - > Mental illness (severe pre-existing or past history)
 - > Previous pregnancy complications
 - > Previous surgery
 - > Infertility
- > Women who are unable to achieve a pregnancy after one year of unprotected sexual relations or who are unable to carry a pregnancy to a live birth should be offered referral to a gynaecologist / obstetrician
- > In some cases (especially repeated spontaneous miscarriage, stillbirth, prolonged infertility) referral to a medical geneticist may also be appropriate
- > All recent arrival migrant women of child-bearing age should have pre-conception counselling and support, both opportunistic and planned
- > All couples should be offered information about infectious diseases that can be transmitted via food or pets including:
 - > Salmonella
 - > Campylobacter
 - > Listeria
 - > Toxoplasmosis
- > Care should be advised regarding the handling of food:
 - > Perishable, potentially contaminated foods should be refrigerated and consumed as soon as possible
 - > Eggs and meat must be cooked thoroughly (especially chicken)
 - > Milk should be pasteurised
- > Care should be advised when gardening and the handling of cat litter trays should be avoided if possible

References

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Useful reference

RANZCOG College statements. Available from URL: <http://www.ranzcog.edu.au/womens-health/statements-a-guidelines/college-statements.html?start=1>

- > C-Obs 3: Pre-pregnancy counselling and antenatal screening tests.
- > C-Obs 44: Pre-pregnancy and pregnancy related vaccinations

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Abbreviations

ACE	Angiotensin-converting enzyme
BMI	Body mass index
CDC	Centers for Disease Control
CEMACH	Confidential Enquiry into Maternal and Child Health
CMV	Cytomegalovirus
FGM	Female genital mutilation
HCN	Health Council of the Netherlands
HIV	Human immunodeficiency virus
HPV	Human papilloma virus
mg	Milligrams
PAP	Papanicolaou smear
SA	South Australia
STD's	Sexually transmitted diseases

Version control and change history

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