



## POLYCYSTIC OVARY SYNDROME (PCOS)

Polycystic ovary syndrome (PCOS) is the name given to the condition in which women with polycystic ovaries have an associated hormonal imbalance within the ovaries. PCOS also describes the appearance of the ovaries when they are seen on an ultrasound (cyst-like). PCOS is the most common reproductive endocrine disorder in women of reproductive age, affecting approximately 5% of women.

Normally the ovaries produce estrogen, progesterone and testosterone. In PCOS, estrogen is usually produced in normal amounts, testosterone (androgens) is produced in excessive amounts and progesterone, which is released after ovulation (the release of the egg from the follicle), may be produced irregularly or not at all. It is still unclear what causes PCOS. While PCOS is not curable, there are several approaches to achieving hormonal balance.

### SIGNS AND SYMPTOMS OF PCOS

Women who have PCOS may have irregular or no menstrual cycle, infertility due to lack of ovulation, hirsutism (excessive hair), acne and weight gain (disproportionate to kilojoules intake). Women with PCOS are noted to have a higher than normal miscarriage rate if they become pregnant. 75% of women with repeated miscarriages are reported to have PCOS. Women who have a Body Mass Index (BMI) >29 will take longer to conceive (normal BMI ranges from 20-25). Other related symptoms may include mood swings, breast pain, abdominal pain, aching joints, dizziness and chronic fatigue-like symptoms.

A lack of ovulation in women with PCOS results in continuous exposure of the uterine lining to estrogen. This may cause excessive thickening of the endometrial lining of the uterus

and result in heavy, irregular bleeding. The incidence of uterine cancer may be increased due to years of continuous stimulation of the endometrium by estrogen unopposed to progesterone.

Women with PCOS may be at increased risk for developing the metabolic syndrome which is characterised by abdominal obesity, cholesterol abnormalities, hypertension and insulin resistance that impairs blood sugar regulation. Women with PCOS have an increased risk for developing non-insulin dependent (Type 2) diabetes and possibly heart disease.

### DIAGNOSIS

Diagnosis is made by a careful medical history and examination, ultrasound of the ovaries (noted to contain many cysts) and measuring hormone levels including:

- Testosterone (usually elevated).
- Sex hormone binding globulin (SHBG), free androgen index (FAI) and dehydroepiandrosterone sulfate (DHEAS), to see if increased androgens are primarily from the ovaries or adrenal gland.
- FSH (normal or low) and LH (usually 2-3 times elevated to that of FSH levels).
- Diabetes and insulin resistance testing.
- Cholesterol.
- Prolactin (to rule out pituitary associated causes).
- Thyroid function test: low levels of thyroid hormones can lead to symptoms that mimic PCOS.
- Raised homocysteine levels: an independent cardiovascular risk factor has been noted in women with PCOS.

If the ultrasound and the blood tests are normal it does not mean the woman does not have PCOS.

### Treatment

Treatment depends on the presenting problem you are concerned with. If infertility is not your immediate concern,

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the oral contraceptive pill (OCP) can be prescribed to reduce acne and hirsutism and maintain regular menstrual periods.

Obesity is common in women with PCOS. Diet and exercise that results in weight loss has been shown to improve the frequency of ovulation, improving fertility and lowering the risk of associated problems common to PCOS, such as diabetes. Women who have a BMI >29 who are not ovulating will increase their chances of conception if they lose weight. Several studies have demonstrated a weight loss between 6 to 10 kilos to be associated with a return of spontaneous ovulation in 90% of women, and subsequent increased pregnancy rates. Overweight women are also noted to have a higher miscarriage rate. Another study reported a weight loss of 10 kilos reduced the miscarriage rate from 75% to 18% in women with PCOS.

If you would like further guidance regarding your diet, an appointment to see a qualified dietician at City Fertility Centre can be arranged for you. Please contact the IVF Nurse Co-ordinators for more information on this service.

Prophylactic B-Group vitamins have been noted to reduce homocysteine levels, implicated in cardiovascular disease in women with PCOS.

If fertility is your main goal, treatment with medication, such as metformin, can increase the body's sensitivity to insulin, leading to regular ovulation. Ovulation may also be induced with clomiphene citrate (clomid or serophene), an orally administered fertility drug. Ovulation can be induced in up to 80% of women using clomiphene with subsequent pregnancy rates comparable to the general population (approximately 20-25% of healthy fertile couples become pregnant each month they try). Clomiphene is usually only prescribed by your IVF Doctor for up to 6 menstrual cycles. If the woman does not become pregnant, injectable fertility drugs, administered at low doses (FSH) may be used to induce ovulation. The aim of these drugs is to produce only one mature egg, similar to a natural menstrual cycle.

FSH injections however are associated with a greater chance of multiple pregnancy and side effects.

Sometimes IVF is offered to women with PCOS who want to conceive when other treatments have failed.

Ovarian drilling or diathermy has been used to treat women with PCOS, and is a minimally invasive operation performed through a laparoscope. The ovaries are "drilled" or cauterised. This procedure has been shown to induce ovulation in some women with PCOS. Ovarian drilling or diathermy may be used to induce ovulation, as an alternative to IVF, in women who may not have responded to oral or injectable fertility drugs.

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**CITY FERTILITY CENTRE**  
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**BRISBANE CITY**

Brisbane Private Hospital  
Level 8 259 Wickham Tce  
Brisbane Qld  
Ph: 1800 123 483

**BRISBANE SOUTHSIDE**

Unit 15 Level 1 309 Mains Rd  
Sunnybank Qld  
Ph: 1800 483 483

**MELBOURNE**

G Floor 493 St Kilda Rd  
Melbourne Vic  
Ph: 1300 781 483

**BUNDOORA**

Northpark Private Hospital  
Suite 4 Cnr Plenty & Greenhills  
Roads Bundoora Vic  
Ph: 1300 781 483

**ROBINA**

G Floor "Eastside Building"  
2/232 Robina Town Centre Dr  
Robina Qld  
Ph: 1300 859 116

**TUGUN**

John Flynn Medical Centre  
G Floor 42 Inland Drive  
Ph: 1300 859 116

[www.cityfertility.com.au](http://www.cityfertility.com.au)