Polycystic Ovary Syndrome (PCOS)

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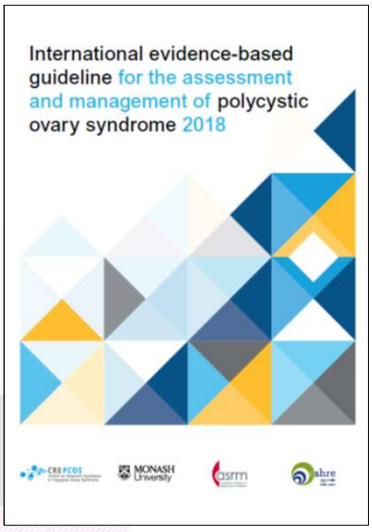
2018 PCOS Guidelines



To view search PCOS guidelines from the Jean Hailes website

What is PCOS?

- An endocrine (hormonal) problem in women, affecting 8-13% women of reproductive age
- 70% women remain undiagnosed
- Testosterone and insulin

What does PCOS affect?

- **Reproductive**: irregular menstrual cycles, hirsutism, infertility, pregnancy complications
- **Metabolic**: insulin resistance, metabolic syndrome, obesity, prediabetes, type 2 diabetes, CVD risk factors
- **Psychological**: anxiety, depression, body image

Diagnosis: two out of three

Rotterdam diagnostic criteria:

Requires two of:

1. Oligo- or anovulation
2. Clinical and/or biochemical signs of hyperandrogenism
3. Polycystic ovaries

1. Missed or irregular periods
2. High levels of androgens – (e.g. higher blood levels of testosterone than expected in a woman)
3. Many small cysts (follicles) in the ovaries

Irregular menstrual cycles

Normal in first year after puberty

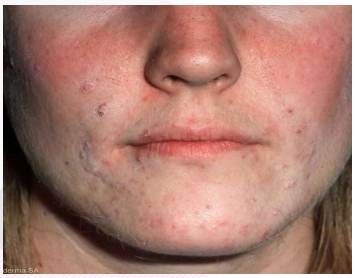
1-3 post menarche	<21 or > 45 days
>3 years	<21 or > 35 days
	< 8cycles per year or >90 day cycle

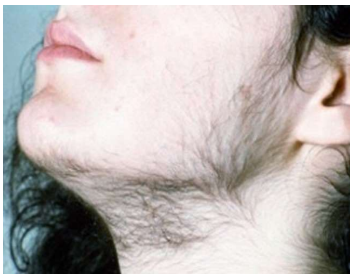
Ovulatory dysfunction may occur with regular cycles

Clinical hyperandrogenism

Adults : acne, alopecia and hirsutism

Adolescents: severe acne and hirsutism





Biochemical hyperandrogenism

↑ Total testosterone
↓ SHBG
↑ Calculated free testosterone / free androgen index

Not reliable if on hormonal contraception

Very high levels may indicate an androgen secreting tumour

Androgens – levels

- Testosterone – **5.2-6.9** nmol/L

⇨ Consider **ovarian tumour**

- DHEAS - **>20**µmol/L

⇨ Consider **adrenal tumour**

- **10.5-20** µmol/L

⇨ Consider **congenital adrenal hyperplasia**

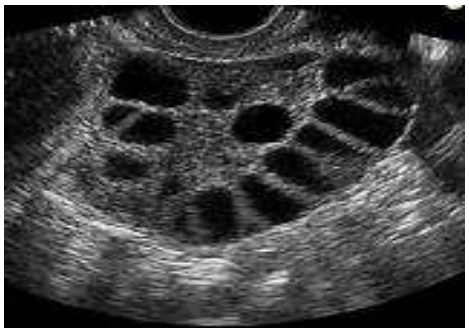
Thomas J et al Exp Rev Dermatol 2013

Ultrasound

Not relevant if less than 8 years since first period

Transvaginal ultrasound

Follicle number ≥ 25 or an ovarian volume >10ml



Exclude secondary causes

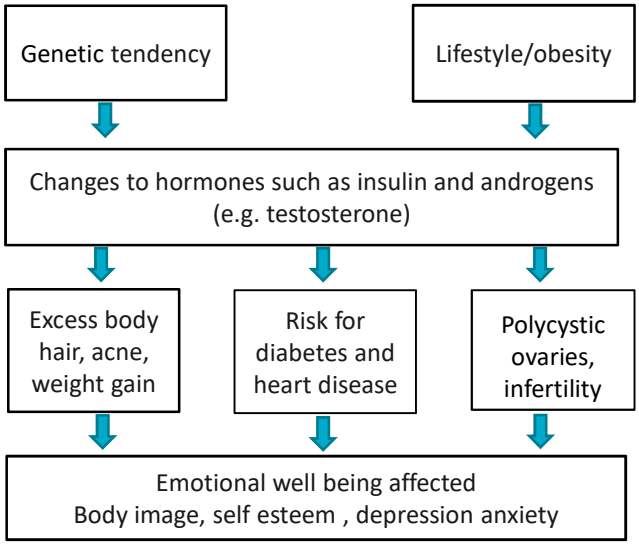
- Of irregular menses: thyroid disease, hyperprolactinaemia, premature menopause, Cushing's
- Of hyperandrogenism:
  - non-classical adrenal hyperplasia more common in Ashkenazi Jews, Hispanics, Italians;
  - androgen secreting tumours – rapid progression/virilization
  - cushing's syndrome
  - medication: valproate

Ethnic variations

- Milder phenotypes in Caucasians
- Higher BMI in Caucasians, esp North America and Australia
- More severe hirsutism in Middle Eastern, Hispanic and Mediterranean women
- Increased central adiposity, insulin resistance, diabetes, and metabolic risks in South east Asians and indigenous Australians
- Lower BMI and milder hirsutism in East Asians
- Higher BMI and metabolic features in Africans

PCOS Translation and Education Resources
https://www.monash.edu/medicine/sphpm/mchri/pcos/resources

Pathogenesis of PCOS



Presenting symptoms

- Acne
- Weight gain & trouble losing weight
- Extra facial and body hair
- Thinning scalp hair
- Irregular periods
- Fertility problems
- Emotional challenges such as anxiety and depression
- Body image challenges which may lead to low self esteem

Disease risk

- Gestational diabetes, impaired glucose tolerance and type 2 diabetes and obesity
- Cardiovascular disease risk
- Obstructive Sleep apnoea
- Endometrial cancer
- Infertility
- Depression and anxiety

PCOS management areas

- Lifestyle – nutrition, physical activity, weight management
- Clinical hyperandrogenism (e.g. hirsutism, acne, alopecia)
- Menstrual cycle regulation
- Fertility
- Metabolic Syndrome
- Insulin resistance
- Sleep apnoea
- Mental and emotional health

General practitioner
Nurse
Dietitian
Psychologist
Endocrinologist
Gynaecologist
Exercise physiologist

Lifestyle – primary management

1. Healthy eating
2. Regular physical activity
3. Weight management +/- reduction

Use of behavioural strategies:
e.g. goal setting, problem solving, assertiveness training, reinforcing changes and relapse prevention

Lifestyle – primary management

1. Healthy eating

- Focus on
  - weight loss or prevention of weight gain
  - reducing risk of type 2 diabetes and cardiovascular disease
- Eat small meals regularly (3-4 hours) throughout the day to maintain healthy blood glucose levels
  - moderate serve of protein, high fibre, low GI carbohydrate, plenty of vegetables, healthy oils (olive oil, seeds & nuts)
  - avoiding processed foods that are high in fructose

Lifestyle – primary management

2. Physical activity

Adults:

- 30min/day of moderate-intensity activity or 150min/week
- 75min/week of vigorous-intensity
- 2 muscle-strengthening activities on 2 non-consecutive days per week

Adolescents:

- 60min/day of moderate-intensity activity incl. muscle/bone strengthening

  3 times per week

Can be done in 10min bouts (approx. 1000 steps) to get 30min on most days

Lifestyle – primary management

3. Weight management

- Weigh and measure women regularly; avoiding weight gain is an important objective
- Encourage behaviour change – prioritisation of healthy lifestyle, family support, lifestyle and exercise planning, setting of small achievable goals
- Refer if appropriate:
  - dietitian
  - exercise physiologist
  - psychologist

Key message: 5-10% weight loss will assist symptom control

Management of hirsutism

- Cosmetic treatments such as waxing, depilatory creams, shaving, threading
- Electrolysis
- Laser hair removal is recommended as a safe method to reduce excess hair growth
- Eflornithine cream (Vaniqa) – prescription only
- Oral combined contraceptive pill
- Anti androgens – e.g. spironolactone (contraindicated in pregnancy)

Management of acne

- Standard dermatological acne treatment i.e. dual therapy (topical and oral)
- Oral contraceptive pill
- Anti-androgens – e.g. spironolactone (contraindicated in pregnancy)

Management of irregular bleeding

- Weight loss 5-10%
- Oral contraceptive pill
  - regular bleeding cycle and endometrial protection
  - contraception
  - positive effect on hirsutism and acne
  - 20-30 mcg E pill
- Metformin
  - improves ovulation and cycles
- Progestins
  - in Mirena, Nuvaring
  - intermittent progestogen to induce bleed 2-3/12ly

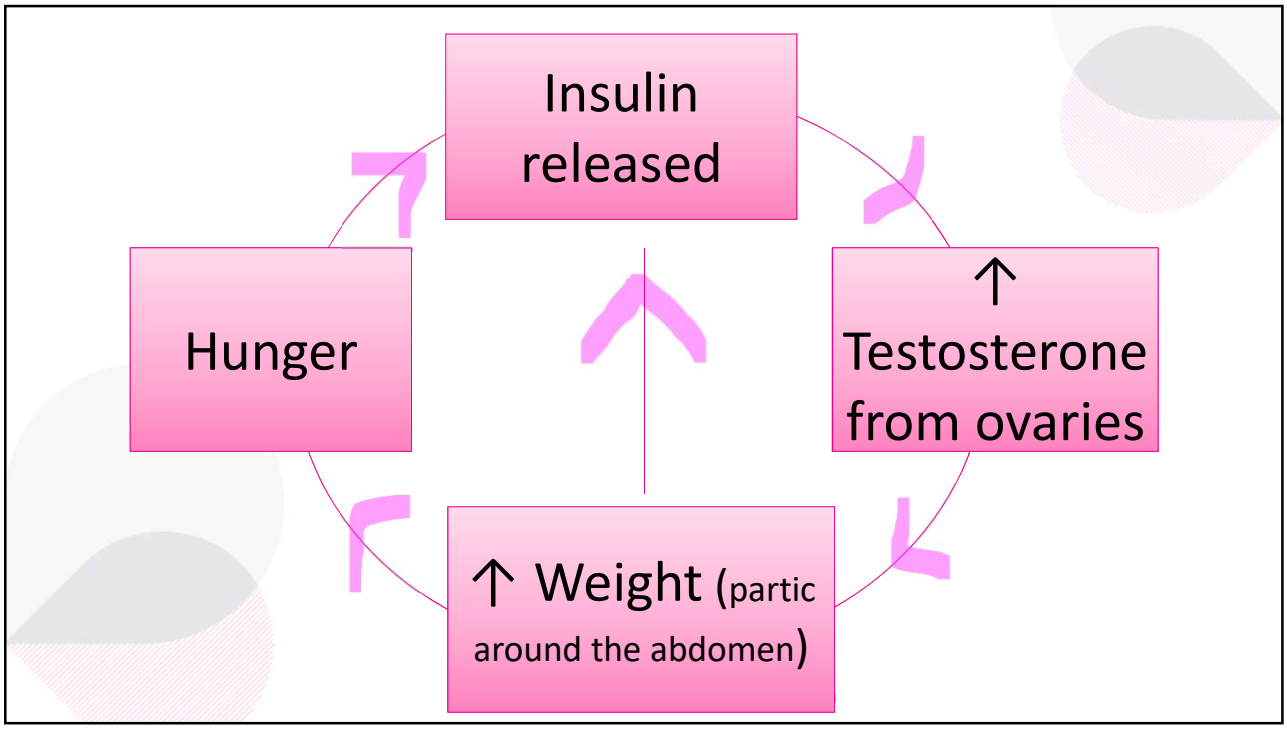
Insulin resistance

- Insulin is the hormone made by the pancreas that helps glucose enter the cell to be used as energy.
- Insulin resistance occurs when the body doesn't respond to normally to insulin. Insulin levels rise to control glucose levels
- Insulin resistance occurs in lean and overweight people but is worse with obesity
- Currently this is thought to be one of the main factors causing the hormonal problems in PCOS

Metabolic Syndrome

- Increased blood pressure
- High blood sugar
- Increased waist circumference (abdominal obesity)
- High triglyceride levels
- Low HDL

Increases risk of heart disease, stroke and diabetes.



Metformin

- Increases the sensitivity of the body to insulin in liver, skeletal muscle, fat and the ovaries
- May assist in regulate ovulation (release of eggs) and menstrual cycles, and may help fertility
- In addition to lifestyle management, may assist in weight loss
- Helps prevent progression to diabetes
- Greater benefit in high metabolic risk groups
- Side-effects are mild – diarrhoea, nausea - short term dose related

Fertility- key messages

- PCOS limits fertility, but can be treated
- Infertility risk increases for women over 35 years
- Advise early family initiation (<35 years) where practicable
- BMI >30 limits fertility
- Prevent weight gain and aim for weight loss if needed
- Increased risk of gestational diabetes, preterm birth, pre-eclampsia, miscarriage, still birth and ectopic pregnancy

Fertility treatment

- Letrozole or clomiphene are 1st line pharmacological therapies for infertility, but in primary care metformin can be started before fertility specialist referral.
- Referral to fertility specialist if unable to conceive after 6 months

Mental and emotional wellbeing

- Research shows women with PCOS have higher levels of anxiety and depression
- Adverse impact of PCOS on
  - quality of life
  - depressive and anxiety symptoms
  - body image and self esteem issues
  - disordered eating
  - psychosexual issues
- Consider screening tool PCOSQ and offer appropriate support, care and referral
- Consider life stage, culture and preferred language

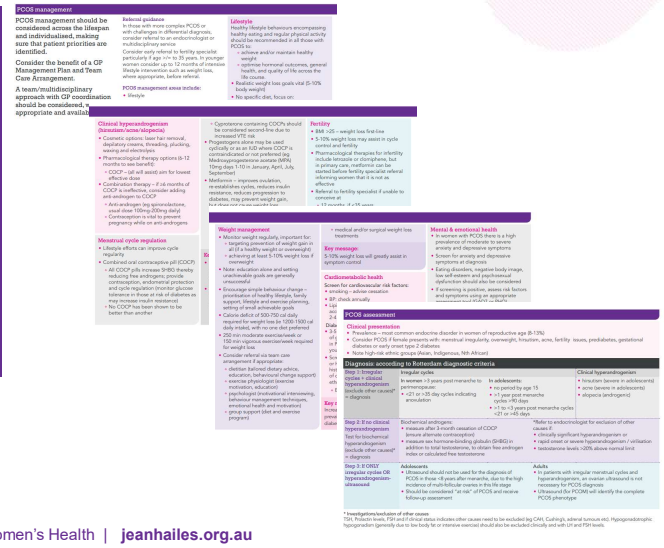
Health professional PCOS tool

Jean Hailes

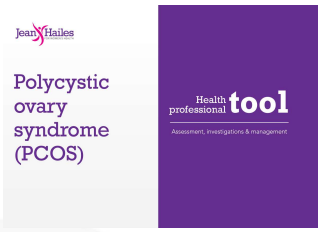
Polycystic ovary syndrome (PCOS)

Health professional **tool**

Assessment, investigations & management



Health professional resources



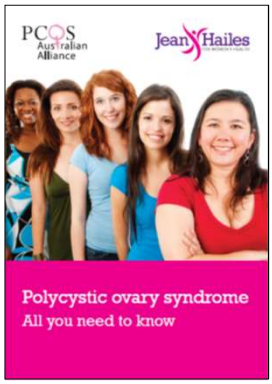
- Resource tools

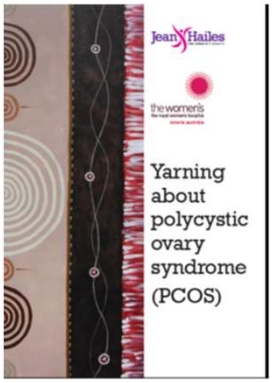
  https://jeanhailes.org.au/health-professionals/tools

- Health professional learning activities
  - Active learning modules
  - Webinars

  https://jeanhailes.org.au/health-professionals

Consumer resources





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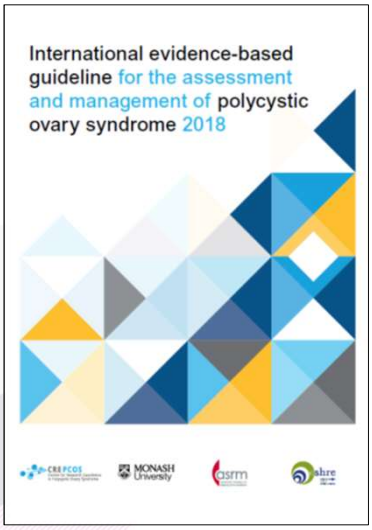

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