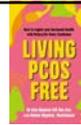


Living PCOS Free



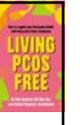
Dr Nitu Bajekal
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Women's Health Expert
Lifestyle Medicine Physician
Founder, Women for Women's Health

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Lifestyle Matters in ALL Women's Health?



- Polycystic Ovary Syndrome
- Endometriosis
- Fibroids
- Painful Periods
- Heavy Periods
- Pre-Menstrual Syndrome
- Chronic Pelvic Pain
- Fertility Issues
- Pregnancy
- Gestational Diabetes
- Pre – eclampsia
- Menopause
- Cancers of cervix, womb, ovary
- Breast cancer
- Depression
- Obesity
- Acne
- Thrush
- Osteoporosis
- Vulval conditions: Eczema, LS
- Autoimmune conditions

Kudesia R et al. Dietary Approaches to Women's Sexual and Reproductive Health. American Journal of Lifestyle Medicine. May 2021.
doi:10.1177/15598276211007113

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Living PCOS Free



Understanding PCOS



Lifestyle Considerations



Plant Based Nutrition



Medications Supplements



Soya Facts: Myth Busting

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What is PCOS?

Polycystic Ovary Syndrome

- PCOS is the most common endocrine disorder worldwide affecting women of reproductive age
- PCOS presents with a wide range of reproductive, metabolic, and psychological symptoms
- Onset around puberty (adolescent PCOS) with repercussions beyond menopause
- Complex poorly understood disorder affecting ovarian function
- Hormonal imbalance common in PCOS but not a true gynaecological condition
- PCOS appears to be a highly inheritable disorder with multiple genes involved
- Similar to Type 2 diabetes with metabolic and environmental factors interacting to influence genetic factors
- UK study of >175000 men shows PCOS not linked to ovaries as men can develop PCOS characteristics too

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How common is PCOS?



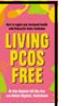
- PCOS affects at least 1 in 10 (8-13%, 2.2-26%) women of reproductive age and those assigned female at birth (AFAB)
- Up to 75% remain undiagnosed
- Ethnic variations
- High incidence in subgroups; excess weight, subfertility
- Commonest cause of subfertility, esp anovulatory subfertility

<https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Polycystic-Ovarian-Syndrome/>
<https://www.endocrine.org/news-and-advocacy/newsroom/featured-science-from-endo-2021/genetic-evidence-suggests-men-can-develop-pcos-like-condition>

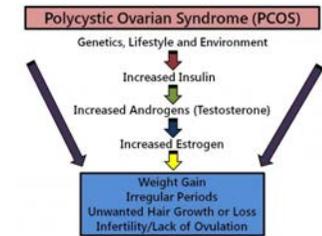
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Possible drivers of PCOS



- Insulin resistance is the driver in 50%-70% of cases
- Insulin stimulates the ovaries to produce excess androgens
- Genetics
- Weight trigger: >50% are medically obese, many more overweight
- Unclear relation PCOS and excess weight
- 1/3 rd of lean PCOS have increased intra-abdominal fat



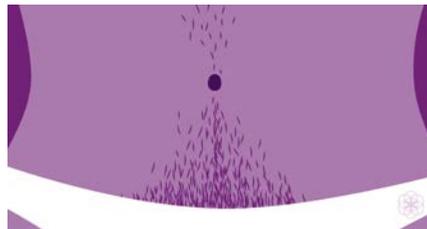
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Well-Known Symptoms of PCOS



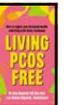
- Infrequent periods or missed periods are the most common sign of PCOS (oligomenorrhoea/amenorrhoea).
- Excess facial/body hair (hirsutism)
- Acne (often adult and/or cystic)
- Scalp hair loss (alopecia)
- Unwanted weight gain
- Insulin resistance
- Fertility problems



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Less well-known symptoms of PCOS



- Eating disorders, especially binge eating disorders without purging, unlike bulimia.
- Excessive daytime sleepiness
- Breathing problems (sleep apnoea, snoring)
- Acanthosis nigricans (darkened skin: behind the neck, underarms, groin)
- Psychological issues such as depression and anxiety
- Pregnancy complications: miscarriage, gestational diabetes



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PCOS Metabolic Consequences



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Increased Risk (PCOS with obesity)

- Metabolic syndrome
- Type 2 diabetes
- Gestational Diabetes: Prevalence doubled
- Endometrial cancer (<35 years)
- Sleep Apnoea

Cardiovascular risk: More studies needed
Serum concentrations of CVD risk markers

- Abnormal lipid profile
- Raised triglycerides
- Raised LDL

• Waterworth Dm et al. Lancet. 1997;349(9057):986
• Roos N, et al. BMI 2011;343:d6309
• Barry JA et al. Hum Reprod Update. 2014 Sep; 20(5): 748-758
• Toulis KA et al. Hum Reprod Update, Volume 17, Issue 6, 2011, 741-760



Diagnosing PCOS Medical definition of PCOS (Rotterdam Criteria)

2 of 3 of the following criteria must be met

1. Oligo - and/or anovulation
 2. Hyperandrogenism (clinical &/lab)
 3. Polycystic ovaries on pelvic ultrasound scan
- ✓ Adolescent PCOS needs evidence of 1 and 2
 - ✓ PCOS is a diagnosis of exclusion
 - ✓ Classification of PCOS not recommended except research
 - ✓ PCOS Misnomer – No true cysts, immature follicles don't cause pain
 - ✓ PCOS vs PCOD
 - ✓ Testosterone is not a 'male' hormone



ASRM/ESHRE PCOS Consensus Workshop 2003 Rotterdam
Hum Reprod. 2004 Jan;19(1):41-7.
<https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Polycystic-Ovary-Syndrome>

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All six pillars of lifestyle are key

Lifestyle management (weight loss and behaviour changes) recommended as 1st line of treatment to prevent, manage and treat PCOS and its long-term effects (higher risk of Type 2 diabetes, gestational diabetes, endometrial cancer, cardiovascular disease)



• <https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Polycystic-Ovary-Syndrome>, RCOG and NICE guidelines
• Waterworth Dm et al. Lancet. 1997;349(9057):986
• Roos N, et al. BMI 2011;343:d6309
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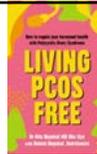


Eating plants for PCOS, Periods, Menopause (fibre-rich foods)

- ✓ Reduces insulin resistance
- ✓ Sustained weight loss without usually needing calorie counting
- ✓ Lowers inflammatory markers (C-reactive protein, homocysteine)
- ✓ Reduces oxidative stress and improves immunity
- ✓ Reduces circulating androgens, ↑ sex hormone binding globulin (SHBG)
- ✓ Improves lipid profile
- ✓ Gut dysbiosis can be addressed by targeting the gut microbiome

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Eat predominantly whole plant foods

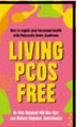


- ✓ **Whole fruits:** the sugar in fruit is bound to fibre
- ✓ **Vegetables:** especially nutrient-rich dark leafy greens
- ✓ **Legumes:** rich in fibre and protein
- ✓ **Whole or minimally processed grains** (e.g. quinoa, red rice, pinhead oats)
- ✓ **Aim for two portions of minimally processed soya foods**
 - ✓ (one portion is 80 g of tofu or a cup of soya milk, edamame beans)
- ✓ **Starchy foods** such as sweet potatoes, boiled potatoes with skin
- ✓ **Nuts and seeds:** especially omega-3 rich walnuts, ground flax, chia seeds)
- ✓ **Water:** beverage of choice
- ✓ **Avoid SOS: salt, oil, sugar: use as flavourings**

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A word on Soya



Soya is a complete plant protein, with all nine essential amino acids, similar to egg white

- ✓ fibre
- ✓ vitamins
- ✓ minerals
- ✓ high in PUFAs
- ✓ low in sat fat
- ✓ Isoflavones (healthy plant oestrogens)

Isoflavones mimic oestrogen in some tissues and blocking its effect in others (SERM effect)

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Soya isoflavones on tissues



- Reduces menopausal hot flushes
- Promotes bone strength, also pro-oestrogenic effect
- **Breast: Anti-oestrogenic effect (SERM)**
- As little as one portion of soya per day intake in childhood can reduce future risk of breast cancer
- Reduction in colon, lung, prostate, ovarian cancer
- PCOS markers, weight loss benefits
- Soya products had no adverse effects on men
- Soya does not hinder reproduction
- Increased intake of soya resulted in a 26 % reduction in prostate cancer risk (analysis of 14 studies)

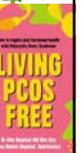
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Focus on colour



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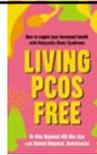
What foods should we avoid?

Foods with NO or ↓ FIBRE

- Sweetened beverages
- Fruit Juices
- Oils (trans fats & sat fats)
- Refined Grains
- Junk food
- Ultra Processed foods
- Animal derived foods



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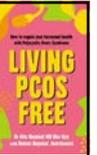


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AGEs and PCOS: Advanced Glycation End products

- Glycotoxins or AGEs accelerate aging process, heart disease, PCOS
- Cross link proteins, oxidative stress, insulin resistance, cell damage
- Stop smoking (glycotoxins in cigarette smoke)
- CUT OUT ANIMAL FOODS: high AGEs
- X ultra processed foods, breakfast cereals and fried foods
- Avoid trans fats, sugar-sweetened beverages and fruit juices
- Eat Low AGE foods (legumes, wholegrains, fruits, veg, herbs, spices, brown rice, mushrooms)
- Choose raw foods (30 times less AGEs than roasted nuts/ nut butters)
- Change from high heat dry cooking methods to low heat, higher humidity (stewing, steaming, and boiling)

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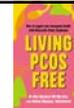


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Lifestyle Advice in PCOS

- Physical activity: Aerobic exercise and resistance training to improve insulin sensitivity and hormonal balance (Aim for 300 min/ week (natural light))
- Sleep: Ensure regular sleep routine with 7-9 hours of restorative sleep
- Stress reduction: Identify stress triggers and try meditation, mindfulness, community work, psychotherapy or yoga to lower cortisol levels
- Avoid risky substances such as tobacco, drugs and alcohol (↑ AGEs)
- Positive social connections: Prioritise time with your support network

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Role of supplements in PCOS

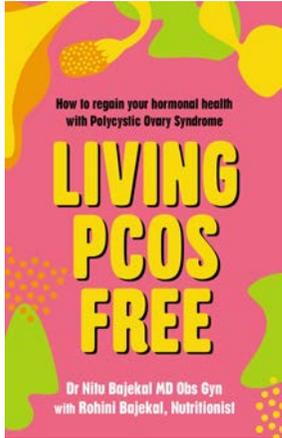
- Vitamin D: may improve reproductive function and insulin sensitivity (Thomson et al 2013)
- Inositol (Ip6): in whole grain, legumes and nuts. In clinical trials, inositol has been shown to improve insulin action, improve ovulatory function
- Omega-3 fatty acid: improves insulin resistance, lowers LDL (meta-analysis by Yang et al, 2018)
- Marjoram tea: improved insulin sensitivity and reduced levels of adrenal androgens (RCT pilot study)
- Chromium: significantly improved ovulation and reduced hirsutism (Jamilian et al 2016)
- Pre-Pregnancy supplements – Folate 400 mcg – some may need higher dose

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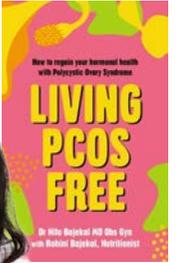
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