# PCOS: An updated overview for health professionals

**Dr Sonia Davison:** Hello, I'm Dr Sonia Davison. I'm an endocrinologist, and clinical fellow at Jean Hailes for Women's Health. I have a special interest in polycystic ovary syndrome and I'm delighted to bring you this presentation on the latest in polycystic ovary syndrome. The context of this is there are some new evidence-based guidelines, and an Australian team has looked through all of the evidence and all of the studies with regard to polycystic ovary syndrome, which I'm now going to call 'PCOS' throughout the presentation. And this presentation is trying to take into account all of those new findings, which really, there's a few subtle changes for you to be aware of in terms of what we know about PCOS. And you may view these PCOS guidelines very easily via the Jean Hailes website, and you may also look freely at those guidelines. They are, there's quite a lot of information there, but there's some nice summaries as well.

So what is PCOS? When we get down to it, PCOS is an endocrine condition and we think that it affects eight to 13% of women of reproductive age. But some studies have suggested even up to 21% of women may be affected. It's very interesting because some women may actually present after their reproductive age, so around menopause, still with the common symptoms that affect women with PCOS, just not the period issues. 70% of women are thought to remain undiagnosed, and whereas women may have an understanding, or you might think that there's really fundamentally a problem with testosterone, which there is, we think that insulin resistance underlies this syndrome. So in terms of pathogenesis, we think that there are abnormal amounts of insulin, even if you can't measure that, or it's not working effectively, and that alters the ovarian function and that leads to a difference in production of testosterone.

So what does PCOS affect? Many areas, really, but the women will typically be coming to a health practitioner in their teenage years, often with a parent, or in their twenties, or possibly in their thirties when they're trying to conceive. So reproductive issues are really the thing that people come along with. So irregular or absent menstrual cycles. Hirsutism, so excess hair growth that may be facial, that may be body, and they may be seeking answers for that, so they get to medical care. But fertility is a real issue with women with PCOS as well. Pregnancy complications too. But the metabolic things are things we should be thinking about as health practitioners. So insulin resistance, metabolic syndrome, obesity, pre-diabetes, tendency to type two diabetes, and looking at cardiovascular risk factors is very important in these women, where you wouldn't be thinking of this in reproductive age necessarily. But also psychological, so anxiety, depression, and body image, and women with PCOS do have an increased tendency of eating disorders as well.

So the criteria for diagnosing PCOS are very challenging, and the whole syndrome is sort of misnamed, a number of experts think. There are three different criteria for diagnosing PCOS, but mostly we are looking at the Rotterdam criteria. So this was a selection of experts who got together in Rotterdam and said, these are the criteria that you need to have PCOS. So it's two out of three of the following. So oligo or anovulation, clinical and/or biochemical signs of hyperandrogenism, or polycystic ovaries. You do not need all of those, just two out of the three. So what this means in clinical terms, missed or irregular periods, I'm going to go through that. Higher levels of androgens, either in the blood, or the clinical evidence of that, and I'll go through that with you as well. And many small cysts or follicles in the ovaries, above the number that you would've expected for that lady of her reproductive age.

Irregular menstrual cycles. These are quite normal when the pituitary and the hypothalamus and the ovaries are getting it together when they're first starting to learn what reproductive function is all about. So irregular cycles are normal the first year after menarche, and some periods just switch off for some months. One to three years after menarche, abnormal or irregular cycles are less than 21 days or more than 45 days. And this is a difference with the evidence-based guidelines. But after three years, after menarche, less than 21 days or more than 35 days, so there is a difference there. Or less than eight cycles per year or more than a 90-day cycle within that year without any other cause.

Ovulatory dysfunction may occur with regular cycles, so they may not be ovulating, and that's the difficulty, that someone might come along and say, 'I have regular cycles,' and they have symptoms or features of PCOS otherwise, and you might think, oh, that's quite complicated and I can't work that out. But you can, some women can have regular cycles and not even have polycystic ovaries on an ultrasound but still have this syndrome, because of the two out of three criteria. Here are some pictures which look at typical features of clinical hyperandrogenism. In adults, it tends to be acne, alopecia, so scalp hair thinning and hirsutism, which is excess hair growth in areas that you wouldn't expect it, or a ramping up of the normal hair growth. Adolescents would tend to have severe acne and excess hair growth, and you see from these pictures, there is facial hirsutism there. I have had some adolescents with scalp hair thinning, and that's devastating for adolescents as well.

Biochemical hyperandrogenism, on the other hand. We focus on testosterone, but there's a number of hormones here and the precursor hormones, DHEAS and androstenedione can also be elevated, but again, you can have normal levels of these hormones, but the symptoms might fit the criteria for a diagnosis of PCOS in that woman if she has irregular cycles or other features of PCOS. So testosterone, when we measure this, it's very important to use a lab that does a sensitive assay for women, because testosterone is difficult to measure in women. So a measurement of total testosterone is important with a sensitive assay, and a measurement of sex hormone binding globulin, SHBG, is also important because that tends to be low in this syndrome and that means more testosterone is freely available, because it's not bound to that binding protein. Because typically in a normal woman, only two to 3% of testosterone will be free or active and available. And some labs will do a free androgen index. These levels are not reliable if the woman is on hormonal contraception, because that will actually squash testosterone levels or reduce them. Very high levels may indicate that there is an androgen secreting tumour, so you should be aware of that if they're way out of range for a normal woman.

In terms of what is abnormal for women, I've looked at this and I looked through all of the literature, and I found this quite sweet paper in 2013 that actually categorised the exact levels. And it will depend on the lab that you're using to a degree, but a testosterone level in a woman of between 5.2 and 6.9, consider an ovarian tumour. So this is whereby you'd really want to look at the ovaries with a good gynaecological ultrasound and make sure that there's no tumour there at those levels. And considering that women of reproductive age, a woman of 20 years will have a level up to 2.5 nanomoles per litre of total testosterone, and that's the upper range of normal for a 20-year-old, and levels decline with age after that time. A DHEAS level more than 20, consider an adrenal tumour. So again, look for this, do some investigations, but also refer on if you're worried about this. Between 10.5, or the limit of the assay, and 20, consider congenital adrenal hyperplasia, which can look very much like PCOS, but there is a genetic link there and it's important to know about that in the family and look at others.

So again, look, screen more rigorously, but refer on if you are worried, or repeat the test, is important, because all tests can be accurate every time. The ultrasound, so this is where the evidence-based guidelines have changed a little. They do not recommend doing an ultrasound within the eight years from menarche, which is tricky because many of us have to done ultrasounds, and have seen women of that age having polycystic ovaries. And again, I think it comes down to the fact that the hypothalamus and the pituitary and the ovaries are still getting their hormonal messages together, and therefore the number of follicles may be higher in those levels. Because remember, you're born with, well in gestation there are millions of follicles, by the time you're born, there's about 400,000, and those follicles just really die out very rapidly as we're alive. Transvaginal ultrasound is recommended, but if they're not sexually active and if they're not comfortable with that, absolutely do a transabdominal ultrasound and try and do it at a good women's ultrasound facility so you can see accurately, they'll be better at doing it there.

So a follicle number of more than 25, or an ovarian volume of more than 10 mls, is indicative that there's an abnormality there, but not within the eight years. The only exclusion there, so I do worry if a lady is very virilised, a teenager is virilised, and she has things that you think would, oh, this looks quite wrong, or this is out of the context of normal PCOS, then I would recommend doing an ultrasound because you don't want to miss things like that potential ovarian or adrenal tumour. So that's the context that I have a little bit of concern with the evidence-based guidelines, that some women, even in their teenage years, will have an abnormality there that can't be missed. But you base it on the clinical scenario and you refer off if you are not sure.

We do also need to exclude secondary causes, and the limit of how far you go is difficult for some practitioners. I do a lot of this, and many of you don't do a lot of this. This is what this education session's about. When you're looking at irregular menses, thyroid disease is important, very easy to screen for a TSH. Hyperprolactinaemia, and you can have a slightly higher level of prolactin level in this syndrome. Premature menopause is important to exclude if the scenario sounds like it or if they're getting symptoms, flushes, sweats, et cetera. But Cushing's syndrome, a morning cortisol is a difficult, it's not a really good screen for Cushing's. You might need to do a 24-hour urine collection if you really do think that they look slightly like they might have Cushing syndrome. When you're looking at excess androgen levels, non-classical adrenal hyperplasia is more common in those ethnic groups. Ashkenazi Jews, Hispanics and Italians. Androgen secreting tumours, they usually have a rapid progression of symptoms, and virilisation, so male-like features. Cushing's syndrome, we've talked about. Other medications can do this, for example, valproate, that they might've been on for a long time. So just consider the whole clinical scenario or context for an individual woman.

As I said, there are ethnic variations here, so some Caucasians have very mild or not many symptoms at all, but definitely do fit with the syndrome. Higher BMI in some groups of Caucasians, especially North America and unfortunately Australia. More severe hirsutism in those of Middle Eastern or Hispanic or Mediterranean women, and there might be some debate as to whether they have polycystic ovary syndrome. But again, go back to the two out of three criteria because some Mediterranean women and those type of women do have an excess hair growth. And you look at mum, you ask about mum as well, and often they will come with mum if they're in their teenage years. Increased central adiposity, insulin resistance, diabetes and metabolic risks, in Southeast Asians and indigenous Australians. Lower BMI and milder hirsutism in East Asians, and higher BMI and metabolic features in Africans. So just look at the woman in front of you. Just consider what her ethnic or her family history might've been with regard to how she's presenting.

The pathogenesis is tricky. I always like to see mum, so it's very nice to see mum sitting in with the girl when she presents, but some of them don't need to have mum there, obviously. Genetic tendency is very important in this, and we think that there's a very strong genetic tendency, but there's a very big impact of lifestyle, environment and obesity. So we think that in those with a genetic tendency, this commonly presents when women leave school, for example, at school, they're walking, they don't have a license usually, they might be doing PE at school, and then when those sort of activities stop, for example, when they cease year 12, this is when this syndrome can become apparent, when they put on weight. So a gain of weight can sort of kickstart this syndrome.

And we think the primary thing is a change in insulin. Too much insulin usually that's not working very efficiently, can therefore affect the ovaries, which then changes their function, and that leads to a predisposition to higher androgen secretion as well. That leads to the symptoms, and they're only going to come to you if they have their symptoms, and that leads to risk for diabetes and heart disease, and can lead to fertility challenges. But the important thing is that you need to think, this is someone of reproductive age who should be happy and healthy and just getting on with life, and that's difficult enough, but their emotional wellbeing may be affected. So don't just look at the symptoms and what they're presenting with, but also be very aware that emotional wellbeing can be an extremely affected area in these women, and self-esteem, body image, depression and anxiety, and as I mentioned before, eating disorders, is of a higher prevalence in this group.

This is what women will come to you with. They won't necessarily come because they like you, they might like you, but they might be coming to you with their symptoms. Acne is one thing, so just whenever you're seeing a lady with acne, just consider this syndrome in the back of your mind. Weight gain and difficulties losing weight. Extra facial and body hair. And it might not be all of these, it might be one particular one of these. Polycystic ovary syndrome is extremely variable in its presentation. Scalp hair thinning, and you do need to ask about that specifically. Irregular periods or periods that might have changed, or a great big gap between periods, that's the other thing. Fertility problems, so some will only present to you having gone through a life of this, but then having troubles conceiving, and that's where your mind needs to get working and thinking, oh, well this might be a problem here. Emotional challenges, we've talked about, anxiety and depression, it's very important for you to keep on the radar with that. And body image challenges, which may lead to low self-esteem because again, we're sort of labelling women of reproductive age with a chronic disease, effectively, and that can be devastating and can have a long-lasting impact. And when they don't think that they're like their peers, that's also a big issue here.

In terms of disease risk. It'd be lovely to follow a cohort of these women from when they present in their teenage years or twenties onto later age. We don't have much data with regard to that, but we know that women with PCOS have an increased incidence of gestational diabetes, impaired glucose tolerance and type two diabetes and overweight and obesity. Therefore, they're going to have, naturally, cardiovascular disease risk increase, and also obstructive sleep apnoea, which you need to think about too. Endometrial cancer is a risk if they haven't bled for a long time, and they're not ovulating, the womb lining can thicken up, and there have been cases of endometrial cancer. So that's where again, even though we're told not to do an ultrasound, sometimes really you need to think beyond those guidelines and think, I am worried that there might be endometrial hyperplasia or thickness because she hasn't ovulated or hasn't bled for a long time, therefore I think it's appropriate to do an ultrasound in that regard.

Fertility, again, is a big concern. Some women will come to me saying they have been told that they have PCOS and they have infertility. I think most women will be able to conceive but may need assistance, and it's very important that you don't mention to them at the start that you are infertile, say, 'Fertility may be an issue, don't leave this until you're mid to late thirties, if you're in a relationship and it's otherwise a good time for you to conceive, but do seek help early because you may need fertility assistance.' And again, depression and anxiety, we've just talked about.

The management issues and the areas for you are diverse, and that's tricky because you're seeing someone who's generally meant to be healthy and well, at a youngish age. But again, we need to consider all of these. Lifestyle is very important. So nutrition, activity and weight management, which is very tricky because often these women are in a stage of life that they don't have a lot of financial resources, and they're sort of growing up, still, in a way, if they're in their teenage years or early twenties. The hirsutism, acne and alopecia does need management too. The menstrual cycle regulation, if that's an issue, fertility needs to be looked at if that's their primary goal. Metabolic syndrome, insulin resistance, sleep apnoea, and it's always appearing at the end here, but for some it's the most important thing, their mental and emotional health as well.

So lots of us can help with this syndrome. It's not just one person, and unfortunately I've seen this a lot, but some practitioners might've diagnosed or labelled a person as having PCOS, and others might say, clearly this is not PCOS. So that's where a lot of confusion, and you are sort of in the middle there as a health practitioner, which is primarily caring for these ladies that sometimes things go a little bit astray, the messages are mixed. So I think a team approach is very useful. General practitioners or nurse practitioners as well, in the area that the woman is in, that's the most practical thing. Dieticians important. Psychologists and endocrinologists may be important. Gynaecologists as well. And an exercise physiologist is very useful too. This is not an exclusive list, but I think these are the people who can make a real difference to the life of women with PCOS, but it will really depend on resources and time. When you're meant to be at university or working or whatever, getting to all of these people is very difficult for women with PCOS at times.

In terms of looking at lifestyle, this is very important, very difficult to get the messages out and to make a change. So that's where your enthusiasm and your energy and your ability to direct them somewhere else is very important. Healthy eating is very important, and again, I think a dietician is very useful for giving advice there. Regular physical activity, and I would love women with PCOS to be doing 30 minutes of brisk activity most days, but I know that's very difficult In practical terms. Weight management if weight is an issue for women with PCOS, and reduction is a key goal if there is weight excess. Behavioural strategies are really useful, and some of us are very good at this and some of us are terrible at this, but knowing your limits and referring off is very important. So goal setting, problem solving, assertiveness training, reinforcing changes and relapse prevention, and just reinforcement, reinforcement, reinforcement, and sending the women off to someone else who will affect a change. Because most women want to be healthy. Most women don't want to be overweight for example, but it's hard in a busy life to actually affect changes that will make a difference to something that's very important, and to hopefully do it through the rest of their life, is the other important thing.

In terms of healthy eating, we do want to focus either on weight loss or prevention of weight gain, and reducing risk of other things like type two diabetes and cardiovascular disease. I love women to be grazing, really. Small and frequent meals every three to four hours throughout the day, and not eating on a sort of a dinner plate size, but using a bread and butter plate, for example, would be a useful scenario. That's easy to do. Don't do big size, is the effective thing, to maintain healthy blood glucose and insulin levels. Moderate serves of protein, high fibre, and low GI carbohydrate. Moderate serves of protein, high fibre and low GI carbohydrates where possible. Avoiding carbohydrates will help with weight loss, and you just need to do that in a healthy way. Plenty of vegetables, healthy oils, so olive oil, seeds and nuts. No-one will be perfect, but just trying to be healthy at every meal and trying to change behaviours is very important. And avoiding processed, easy foods, they're all the easy ones, that are high in fructose is also very important.

Physical activity is really important. Difficult to get people moving. We're all busy, there's lots of remote controls for this, that and the other. We're all tied to a device, we have to work at home and whatever. For adults, I want women to be doing 30 minutes a day of moderately intense activity, or 150 minutes a week. So that's about, I've done this, about 22 minutes a day, I think. 75 minutes per week of vigorous activity, or two muscle strengthening activities on two non-consecutive days per week. It's very difficult to get women to do this, but again, reinforce this, try and give them strategies to do this, and just send off again to someone who will help them affect that change, if you can't do that. For adolescents, 60 minutes per day of moderate intense activity, including muscle and bone strengthening, doing that three times per week. It can be done in 10-minute bouts, so about 1000 steps, to get 30 minutes on most days. It's just reinforcing 'get moving, try and keep moving, try and do something that's vigorous and makes you sweat and puff'. That's what I try and get women to do.

Weight management. So weigh and measure women regularly. They may not want to do it, and so don't be too tough with them, but do it every now and then if you can. Avoiding weight gain is an important objective, and you'll be so disappointed when they come back and weigh more, but you just need to keep your enthusiasm going, and try and effect a change that will help them. Encourage behaviour, a change, by prioritising a healthy lifestyle, getting the family support. So when mum comes along and when mum looks a little overweight, I try and get them to do it as a team effort, and to not make it someone, just an individual problem, but a family challenge in a way, which I think is a really good idea. Lifestyle and exercise planning. Setting of small, achievable goals.

And refer if appropriate, dietician with expertise, an exercise physiologist is brilliant for exercise, and a psychologist to keep them on track and keep them motivated. The key message here though is only a five to 10% loss of weight will assist in symptom control and fertility. So if you're 100 kilos, that's five to 10 kilos, but I'd love to see a higher amount of weight if you are 100 kilos and it's not appropriate for your height. So I think you'd have to be very tall to have 100 kilos to be normal. Hirsutism. So this is one of the key things that women will come to you with. There's lots of different ways to treat hirsutism, and there's a whole beauty industry out there which will help. Cosmetic treatments are very useful. Waxing, the depilatory creams are useful. Shaving, threading, all very useful. It just depends on what the woman can do and she's happy with and she can access.

Electrolysis can be quite useful as well, and laser hair removal is brilliant if you have access to good services that know what they're doing, and I would recommend that. And I would certainly recommend laser hair removal as a good and effective method, but again, it costs money. So that's the issue here. Vaniqa is expensive, but I think can be quite useful for some women. It's a twice daily application, and some women benefit, some others just find it expensive and messy and can't be bothered with it. The Pill is very useful for hirsutism. Any of the Pills will be useful, but sometimes we target, or we try and block testosterone with anti-androgens, such as spironolactone, but we don't want to do that in someone who is trying to achieve a pregnancy because that can adversely affect the growing foetus.

In terms of acne, this is your normal common garden acne management. So topical treatment, oral treatment, GPs are very good at this. If you're not very good at it, again, refer off to a dermatologist. The Pill will be useful, and if one Pill wasn't useful, there will be another Pill that should be useful. So sometimes it's a matter of trying different Pills. And again, we've mentioned spironolactone, but don't be looking at spironolactone treatment if fertility is a key goal, or if they're of reproductive age and may conceive and if it would be devastating for that woman to therefore need a termination of pregnancy. So really be careful about fail-safe contraception if they're on spironolactone. Irregular bleeding. So weight loss of five to 10% will help restore ovulation in some women, and will help with regulation of cycles, and that should secondarily improve bleeding. The oral contraceptive pill is brilliant for managing bleeding, but again may be associated with its own bleeding issues.

It will give endometrial protection, so prevent against endometrial hyperplasia. It will give contraception, if required, positive effect on hirsutism and acne. The only real negative here is it will go a little bit against the insulin resistance, because the higher doses of hormones in the Pills do adversely affect that, in theory at least. So we are aiming for a low-dose Pill, 20 to 30 microgram ethinylestradiol Pill, but there's also Zoely, which is the lowest dose pill, and that may be a good option for women with PCOS. Metformin certainly improves ovulation and can improve cycles. The progestogens, if they can't have those other treatments or don't want to, Mirena or NuvaRing would be a good option too, but intermittent progestogen of any type, just to induce a bleed two to three monthly so that they avoid endometrial hyperplasia.

Insulin resistance. So you know about insulin, the pancreas makes this, and it allows the glucose to enter the cell to be used as energy. So insulin resistance occurs when the body doesn't respond normally to insulin, and even though a fasting level of insulin may be normal in women with PCOS, they may, on an oral glucose tolerance test, have higher levels of insulin, and they may have clinical insulin resistance. So this can occur in lean and overweight people, but is worse with overweight and obesity. We think that insulin resistance is one of the main factors affecting the ovaries, changing their hormonal production, changing their structure and function, and leading to the reasons why the woman is presenting to you with PCOS. Metabolic syndrome. So what we need to be worried about in someone with PCOS. Blood pressure, and that's easy to measure. You might not think of it in a teenager or a 20-year-old or a 30 or whatever. High blood sugar, we need to be looking at that. Increased waist circumference, so abdominal obesity can be a problem. High triglyceride levels, and low HDL. These all lead to an increased risk of heart disease, stroke and diabetes, at least in theory, because we know these metabolic markers can lead to those risks.

This is just looking at the schedule that we think happens. We think there's too much insulin, or not very efficient or effective insulin, that leads to the ovarian production of hormones and the ovarian function changing. So they're not ovulating typically, they might ovulate every now and then. Testosterone levels tend to be out of range that is normal for a reproductive age woman. The weight tends to increase, especially around the abdomen. That can lead to hunger and that can lead to problems with insulin. So it's a vicious cycle and we need to try and intervene here at some point that will make an effective change and increase health.

Metformin, therefore, there's a lot of interest in metformin for other reasons, but a lot of interest in this syndrome. It increases the sensitivity of the body to insulin in the liver, skeletal muscle fat and the ovaries. It may assist in regulating ovulation and menstrual cycles and may help with fertility. So if you have someone who is looking at fertility issues, and you are intending to refer to a fertility expert, it's very easy to use metformin prior to them seeing that fertility expert. So in addition to lifestyle management, it may assist in weight loss, and some people do better than others. It helps prevent progression to diabetes, and there's a greater benefit in high metabolic risk groups. The side effects of metformin tend to be mild, but can be dreadful in some women. Diarrhoea, nausea, and maybe short-term dose related. I say always take it with food, and if you don't do well on standard metformin to try and use the extended release preparations, and go for very low dose first, give them a schedule to gradually build it up, and most women will therefore tolerate it.

The key messages with fertility are, PCOS limits fertility but can be treated. So please don't label them with infertility, because I have had women coming to me and said, '20 years ago or 10 years ago, someone told me I was infertile and I never pursued having a pregnancy and now I regret it.' The infertility risk increases for women over 35 years because fertility starts to decline from age 36, unfortunately. I do advise early family initiation less than 35 years if it's possible. You don't always have Mr Right, you don't always have the financial circumstances, but just to be mindful of this, or to see a fertility specialist and try and look at things like egg freezing, et cetera, would be very useful I think if the finances allow it. BMI over 30 limits fertility. So if a woman wants to achieve a pregnancy, this is a really good time to try and intervene, try and get some healthy behaviours happening, because they are very motivated, as a group, and they will want to do whatever it takes to achieve the pregnancy. Also, other areas where you can sort of motivate, 21st birthdays, they're very good, engagements or weddings. So that's where I try and really get my enthusiasm going, try and get them a goal so that they can lose weight for that goal. There is an increased risk of gestational diabetes, preterm birth, preeclampsia, miscarriage, stillbirth and ectopic pregnancy in this syndrome. So just to be aware of those things as well.

So letrozole or clomiphene are first-line pharmacological therapies, and the new evidence-based guidelines suggest that Letrozole is the way to go. Clomiphene is very useful, it's been used for years, and some fertility specialists will do that as a priority first. In primary care, metformin is very useful, and you can start that before a fertility specialist referral, and I would advise you to look at that. Referral to a fertility specialist if they're not able to conceive after six months of trying would be advised, and that is in the new guidelines. Emotional and mental wellbeing, we've talked about this already, but women with PCOS have higher levels of anxiety and depression. This can adversely impact quality of life. It can lead to depressive and anxiety symptoms, body image and self-esteem issues, disordered eating and eating disorder and psychosexual issues. So it's really important for you to be mindful of those things, and to think beyond the square, and it's very hard when you have a 10 or 12 or 15 minute appointment and to try and get through all of these.

So it's important to be aware of these things when you're looking at someone of reproductive age with PCOS. There is a screening tool there, and you can offer them appropriate support, care and referral. Consider their life stage, their culture, and their preferred language as well. And there'll always be someone out there to help them, it's just a matter of finding them, and finding the resources as well. There is a lovely health professional tool, and I'll tell you, having laboured and sweated over this, that we've spent many hours trying to finesse this and have this tool that's really useful for you, and useful for you in the management of someone with PCOS, if you don't do this a lot. It's a foldout tool that can go easily in the desk drawer, but it's easily available on our website and online, and I think it's a really handy tool if you're not doing a lot of this, but also if you are doing some of this, to just see how things have changed and to give you some guidance as to what we're saying currently about PCOS, especially with these new evidence-based guidelines.

In addition to this research tool, there are some other excellent webinars out there. I've reviewed some of these recently, so we're trying to keep content up to date and relevant, and you can get a lot of different resource tools on our website as well, if you hunt down. If you can't find it, please contact our Jean Hailes staff and they will definitely point you in the right direction. You can do an active learning module, you can look at the webinars as well, and there is specific information for health professionals as well. There are consumer resources. And by the time a woman has got to you, she's either looked at everything, or she might've looked at bits and pieces, or she might've looked at a whole lot of rubbish. As you know on the internet there are some questionable sources of information. But these are some really good sources of information on our website, and there is a booklet available that they can look at it online, but there is also, they can have a paper copy of this booklet.

You can get access to a paper copy of this booklet if you wish to, and the woman can, she can just ring our main line and that will be organised. There's also, for the indigenous women, there is also a particular booklet that may suit their circumstances as well, and that's been looked at with the Aboriginal community, and that's quite useful too if you are in a particular area that has a higher proportion of indigenous women. This is the evidence-based guidelines again. I don't think that you need to read these guidelines. A summary is adequate, but do you know what? We've gone through this in the presentation today. You are now up to date with what the evidence-based guidelines do say about the management of women with PCOS, and you can gain access to these easily through our website.

Thank you very much for sitting through this. It's been a delight and a pleasure to be able to speak to you today. I'm passionate about the care of women with PCOS, and I hope that you are a little bit more passionate about it too. Remember, if you're not though, and you don't do a lot of this, find one of your colleagues, refer off, because some of us have a lot of energy and enthusiasm and knowledge about this syndrome and we really think that we can make a difference for women with PCOS. Thank you.

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Information about the podcast

This podcast series has been made possible by the NSW Government's Menopause Awareness Campaign. For help talking about menopause, download the [Perimenopause and Menopause Symptom Checklist](https://www.jeanhailes.org.au/resources/perimenopause-and-menopause-symptom-checklist) and take it with you to your next medical appointment. For more information visit: <https://www.nsw.gov.au/women-nsw/toolkits-and-resources/perimenopause-and-menopause-toolkit>

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