bcdiabetes.ca
Patient Care + Research + Clinical Trials

Dr. Tom Elliott MBBS, FRCPC
Medical Director

400 - 210 W Broadway
Vancouver, BC
V5Y 3W2 Canada

phone: 604.683.3734
fax: 604.628.3821
email: info@bcdiabetes.ca

Polycystic Ovary Syndrome (PCOS) & Associated Hirsutism

Polycystic Ovary Syndrome (PCOS)

PCOS is a common condition (>5% of the female population) but is poorly understood. It is associated with overweight, unwanted male-type body hair, irregular periods (& infertility due to lack of ovulation) and a tendency to diabetes. There is no single blood test or ultrasound/CT scan that is used to diagnose it. The cause is not known though increased production of male hormone (testosterone) by the ovaries and increased secretion of LH by the pituitary gland are seen. In addition there is a tendency for insulin-resistance (one of the causes of diabetes) which leads to increased testosterone production by the ovaries.

Weight loss

Many women who have PCOS and who have unwanted male-type hair (hirsutism) are overweight. Overweight may well be a significant contributing factor. The reason for this is that female hormone (estrogen) is converted to male hormone (testosterone) in fat tissue. Increased concentration of male hormone is associated with male-pattern hair growth as well as male-type hair loss (from the temporal/frontal regions of the scalp. Weight loss reduces the amount of male hormone and thereby reduces the hair growth/loss problem.

Recommended weight loss strategies include fewer calories in (diet) and more calories out (exercise) as well as intermittent fasting and medication (see below)..

Medication

semaglutide (for weight loss)

Semaglutide is a highly effective weight loss medication in the GLP-1 RA class given either by weekly injection or daily oral tablet, cost is $7/day on average. Ten percent of individuals cannot take it because of nausea and vomiting. It is not covered by BC Pharmacare. It is covered by most third party insurance plans though sometimes only if the individual also has Type 2 diabetes.

Spironolactone (for unwanted hair)

This medication, developed to treat a hormonal type of high blood pressure, was found to cause decreased sexual function and breast growth in men due to a reduction in the production of

male hormone (testosterone), and inhibition of the action of the powerful skin-acting hormone, dihydrotestosterone.

Spironolactone in doses of 100-200 mg/day over 12 to 48 months results in loss of coarse male hair on the face, breasts, abdomen and thighs. It not only decreases body hair but will also increase head hair. Spironolactone has been used in high doses to treat hypertension for 12 years with few side effects. In fact, we take advantage of a "side effect" (decreased production of testosterone) when we use Spironolactone for treatment of hirsutism. For the first few days following therapy it may cause extra urination.

Spironolactone is relatively inexpensive at $0.33 – 0.55 per 100 mg/tablet.

Spironolactone may cause heavy irregular menstrual flow. Heavy irregular periods can usually be prevented by using one of the two possible therapies in conjunction with Spironolactone:

- Provera, a synthetic progesterone, or Prometrium (natural progesterone), for 14 days each month (see below); or
- An oral contraceptive pill. (The pill prevents ovulation and since not ovulating was part of the reason for hair development, this option should be avoided in favour of Provera.)

Medroxyprogesterone (for normalization of periods & fertility)

Medroxyprogesterone (Provera) is a synthetic progesterone which can be taken in pill form. Progesterone is the other main female hormone added to estrogen after ovulation (egg release) in the middle of the menstrual cycle. Decreases in levels of estrogen and progesterone cause the period to start. Progesterone, a natural anti-male hormone, blocks the conversion of testosterone to dihydrotestosterone. Dihydrotestosterone is a powerful hormone which converts a hair follicle making fine hairs into one making course hair.

Provera has few side effects in doses of 10 mg/day. It should be started on the 10th day of your menstrual cycle (the day your period begins is counted as day 1). Continue to take it for 14 days. You will usually start your next period 1-5 days after the last Provera tablets are taken.

Additional notes

If spotting occurs while still taking Provera, continue to take Provera until the 14 days are completed. You may want to take an extra pill a day for two days to stop the spotting.

If you do not have a period after finishing the Provera, start the tablets again, one month later, ie. If you started Provera on Jan. 12th and have not had a period by Feb 16th, start another 14 days of Provera (if you are sure you are not pregnant).

If early (midcycle) spotting occurs (days 10-16), take 2 tablets of Provera immediately and continue with 2 tablets a day for 14 days. Carry tablets with you in case midcycle bleeding occurs. The Provera should stop the spotting and a regular period should come at the end of the 14 days of Provera.

Micronized progesterone (for normalization of periods & fertility)

Micronized progesterone ("Prometrium") comes in a 100 mg capsule – it is the natural form of progesterone, identical to that which the body makes after ovulation (making an egg). Its actions are identical to those of medroxyprogesterone. It has one side-effect, somnolence which can be minimized by taking it at bedtime. Many women welcome this side-effect – I recommend you think of it as a natural sedative. I would suggest starting it at one capsule for the first and second nights and then increasing to two capsules and once comfortable with the sleep-inducing effect push the dose to 300 mg, the full dose of micronized progesterone is 3 capsules (300 mg) at bed – it is taken like medroxyprogesterone for 14 days per month starting on day ten. See the paragraph above "additional notes" for advice on what to do with the dose if spotting occurs.

Metformin (for normalization of periods)

Metformin, a drug used for people with Type 2 diabetes, improves the action of insulin, and thereby reduces insulin levels, particularly in people who do not have diabetes. High insulin levels are associated with increased production of testosterone (male hormone) from the ovary. For this reason metformin may be particularly helpful in women with male-pattern hair problems. Metformin comes in 500 mg tablets and is taken at the beginning of the meal. It may upset your stomach a little at first, but this often improves with time. The starting dose is ½ a tablet with breakfast and dinner. After a few days, increase the dose to 1 tablet with breakfast and dinner. Depending on age and kidney function, if your sugar is still too high, the dose may be further doubled to 2 tablets with breakfast and 2 tablets with dinner.

Removing unwanted hair (in partnership with hormone therapies)

Hair can be removed by many methods, but keep in mind that the best one for a friend may not be the best for you. The method(s) circled below are especially recommended for your needs.

1. Shaving will not coarsen, darken or increase the growth rate of you hair. The papilla, which determines hair structure, remains unaffected by anything done to the hair shaft above the skin. Consequently, feel free to shave as often as stubble begins to appear. Minimize nicks and cuts by wetting the hair with hot water for a full minute and a half, using a shave cream and shaving in broad strokes in the direction the hair lies.

2. Plucking is best accomplished by gripping the base of the hair with a pair of strong tweezers and pulling rapidly. Plucking will not harm breasts or moles.

3. Waxing is a method of plucking hairs in masse by applying a cool thin layer of melted wax to the skin, allowing it to cool and stripping it off. The embedded hairs are plucked out cleanly below the surface. Home waxing kits are obtainable at most drug stores and some beauty salons do waxing. The trick in using wax is to strip it off rapidly against the direction of hair growth. If the wax is pulled off too slowly, the hair will stretch and snap back like a rubber bank off just above the skin level. Also be sure to heat the wax in a double boiler to prevent overheating and consequent irritation to the skin.

4. Bleaching can be accomplished by using a commercial bleach or a home preparation. This consists of using one ounce 5% hydrogen peroxide (20 volume of peroxide), 20 drops of household ammonia or ammonia water, and a few soap chips to form an easily applicable paste. Before bleaching brush on and rub off some nail polish remover to de-grease the hair. It is unlikely that you skin is sensitive to bleach preparations, but it is a good idea to apply a small amount of bleach to a test area the first time. If irritation occurs within 30 minutes, reduce the amount of ammonia to 10 drops and reduce the period of application. Make sure to apply bleach immediately after mixing it since it becomes inactive in a short time. Apply it quickly with a cotton tipped swab and leave it on for 30 minutes. If the hairs are not sufficiently bleached with one application, repeat the procedure after one day. Plan to carry out bleaching approximately every 2 to 3 weeks.

5. Chemical depilation is a satisfactory method of hair removal, but you may need to try a few different brands before you find one suitable for you. Since some products are highly concentrated, in order to be effective on arms and legs, never use a depilatory on your face unless the package directions specify such use. Always test an unfamiliar depilatory on a small patch of skin before application to minimize the possibility of skin irritation. Never apply a depilatory over an area of broken skin. Always follow package directions meticulously, particularly as to the length of time the product is to be left on the skin. If irritation does occur, it will usually last only a day or two and may be relieved by cold water compresses. If irritation persists, call your doctor.

6. Laser treatment is generally not recommended unless the area concerned is small. It is expensive. There remains some concern about the potential long-term effects of laser therapy on the underlying skin.

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