SYMPTOM

Virilization

Virilization is the development of body changes caused by unusually strong androgen effects.

WHAT IT FEELS LIKE
New deeper voice, coarse hair, acne, or body changes

WHERE IT IS FELT
Hair, skin, voice, genitals, muscles, and menstrual cycle

MOST COMMON CAUSES
PCOS, androgen exposure, inherited adrenal conditions

WHEN IT IS URGENT
Sudden severe pelvic pain, fainting, or rapid changes during pregnancy

USUALLY LASTS
Depends on the cause and how quickly treatment starts

SEE A DOCTOR IF
Changes are new, progressing, or affecting periods

Overview

Virilization means developing a group of physical changes caused by strong effects from androgens. Androgens, including testosterone, are hormones present in everyone. Higher levels or increased sensitivity to them can produce changes usually associated with male puberty.

The term is most often used when these changes occur in a girl or woman. It may also describe unexpectedly early androgen-related changes in a child.

Virilization is more than unwanted facial or body hair alone. Coarse hair growth without other changes is called hirsutism . Virilization may also include a deeper voice, increased muscle, scalp hair loss, genital enlargement, or periods becoming irregular or stopping.

These changes have several possible causes. Some develop gradually because of a hormone condition or medication. Rapid or marked virilization needs prompt assessment because it can occasionally be linked to an ovary or adrenal gland producing excess hormones.

What it may feel or look like

Changes can appear together or develop at different times. You may notice:

In children, signs may include pubic or underarm hair, acne, rapid growth, genital enlargement, or a deeper voice earlier than expected. Early hormone effects can speed up growth at first but may also affect final adult height.

Not every person has all these features. Facial hair and acne are common and do not necessarily mean virilization. The speed and combination of changes provide important clues.

- New coarse, dark hair on the face, chest, abdomen, back, or inner thighs
- A voice becoming lower or deeper
- Increased acne or oily skin
- Thinning scalp hair, especially near the temples or crown
- Increased muscle size or a change in body shape
- Enlargement of the clitoris
- Irregular periods or periods stopping
- Changes in sexual desire

Common causes

Polycystic ovary syndrome , or PCOS, is a common cause of increased androgen effects. It may cause unwanted hair, acne, scalp hair thinning, and irregular periods. Pronounced changes such as a deepening voice or clitoral enlargement are not typical and should be assessed separately rather than assumed to be PCOS.

Androgens can also come from medicines or supplements. Examples include prescribed testosterone, anabolic steroids, and supplements containing DHEA. Testosterone gel can sometimes transfer through skin contact from someone using it. Occupational exposure may also be relevant.

Less common causes include:

Rarely, an androgen-producing growth in an ovary or adrenal gland causes virilization. These growths are not always cancerous. They are more concerning when changes are marked or progress over weeks to months.

- Congenital adrenal hyperplasia , an inherited condition affecting hormone production
- Ovarian hyperthecosis , in which ovarian cells make excess androgens
- Cushing syndrome, caused by prolonged excess cortisol

- Hormone changes related to pregnancy
- Certain medicines that have androgen-like effects

When to seek medical care

Book a medical appointment if virilizing changes are new, worsening, or affecting your periods. A child with signs of early androgen effects should also be assessed. Gradual hair growth or acne without other symptoms is usually suitable for a routine appointment.

Seek prompt medical assessment, ideally within days, if your voice is deepening, the clitoris is enlarging, muscle changes are pronounced, or several features are progressing quickly. Rapid changes require investigation even if you otherwise feel well.

Contact your maternity care team promptly if rapid virilization develops during pregnancy.

Seek urgent or emergency care for sudden severe pelvic or abdominal pain, especially with vomiting, fainting, weakness, or heavy bleeding. These symptoms can indicate an acute pelvic or abdominal problem rather than virilization itself.

How the cause is found

Your clinician will ask when the changes began and how quickly they developed. They may ask about periods, pregnancy, fertility, weight changes, headaches, medicines, supplements, and possible contact with another person's testosterone treatment. Family history and childhood development can also be relevant.

An examination may look at hair growth, acne, scalp hair, muscle changes, blood pressure, and other hormone-related features. You can ask what the examination involves before it begins and request a chaperone.

Blood tests may measure testosterone and hormones produced mainly by the adrenal glands. Depending on your symptoms, tests may also check for pregnancy or conditions affecting the adrenal, thyroid, or pituitary glands.

If hormone levels or rapid changes suggest a source in an ovary or adrenal gland, imaging may be needed. This can include a pelvic ultrasound or a CT or MRI scan. Not everyone needs imaging.

Treatment and self-care

Treatment depends on the cause, your symptoms, and whether pregnancy is possible or planned.

If a medicine, supplement, or transferred testosterone is involved, reducing exposure may help. Do not stop prescribed hormone treatment without speaking with the prescriber. Someone using testosterone gel may need to cover the application area and follow product instructions to prevent skin contact with others.

Hormonal treatment may reduce acne, unwanted hair, and menstrual problems in some conditions. Medicines that block androgen effects are sometimes used, but they require medical supervision and careful pregnancy planning because some can harm a developing fetus.

A hormone-producing ovarian or adrenal growth may require specialist treatment, often including surgery. Inherited adrenal conditions and other hormone disorders have their own treatments.

Hair removal methods such as shaving, waxing, threading, laser treatment, or electrolysis can address unwanted hair but do not treat its cause. Shaving does not make hair grow back thicker. Support is also available if appearance, relationships, or gender-related feelings are causing distress.

What to expect

The outlook depends on what is causing the changes and how long they have been present. Acne, periods, and new hair growth may improve when androgen levels or effects are controlled. Existing coarse hair usually needs separate cosmetic treatment and improves slowly because hair grows in cycles.

Some changes can be difficult to reverse. A deepened voice, clitoral enlargement, and established scalp hair loss may persist even after treatment. Finding the cause early may limit further change.

Follow-up may include repeat symptom reviews and hormone tests. Seek another review if changes continue despite treatment or begin progressing more quickly.

Common questions

Is virilization the same as hirsutism?

No. Hirsutism means coarse hair growth in an androgen-sensitive pattern. Virilization includes

broader changes, such as a deeper voice, increased muscle, clitoral enlargement, or major menstrual changes.

Does facial hair mean I have a serious condition?

Usually not by itself. Facial hair can be related to family traits, age, menopause, PCOS, or medicines. Rapid hair growth together with other virilizing changes deserves prompt assessment.

Can virilization affect fertility?

Some causes interfere with ovulation, which is the release of an egg from an ovary. This can make pregnancy harder, but fertility may improve when the underlying cause is treated.

Will the changes go away?

Some may improve, while others can be permanent. The result depends on the specific change, its cause, and how long it has been present.

Sources

- Martin KA, Anderson RR, Chang RJ, and colleagues. "Evaluation and Treatment of Hirsutism in Premenopausal Women: An Endocrine Society Clinical Practice Guideline." Journal of Clinical Endocrinology & Metabolism . 2018;103(4):1233-1257
- American College of Obstetricians and Gynecologists. "Screening and Management of the Hyperandrogenic Adolescent." Committee Opinion No. 789. Obstetrics & Gynecology . 2019;134:e106-e114
- Sharma A, Welt CK. "Practical Approach to Hyperandrogenism in Women." Medical Clinics of North America . 2021;105(6):1099-1116
- National Library of Medicine. "Virilization." MedlinePlus Medical Encyclopedia
- Merck Manual Professional Edition. "Virilization." Section on endocrine and metabolic disorders