

A guide to hormone therapy for trans people



Trans wellbeing and healthcare

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About this publication

This publication available in booklet form has been produced by a team that includes doctors and trans people to help you understand and answer some of your questions about hormone treatment for trans people.

This publication gives trans men (female to male individuals) and trans women (male to female individuals) straightforward information about the benefits of hormone therapy and the risks and side effects. Every individual is different, and guidance about hormone therapy should always be used flexibly in response to individual needs.

If you are thinking about starting hormone therapy, you may find it helpful to share the information in this booklet with a spouse or partner or other family members.

Embarking on a new life ...



A trans man and his bride.

What are hormones?

There are many different hormones produced in the body by a system of glands.¹ These release hormones directly into the bloodstream so that they are carried all round the body. Among these are the sex hormones: the male hormone, testosterone, produced by the testes; and the female hormone, oestrogen, produced by the ovaries.

Men also have a small amount of female hormone because some testosterone is converted into oestrogen. In both men and women, the adrenal glands, which sit on top of the kidneys, produce small quantities of testosterone. So all men and women naturally produce both testosterone and oestrogen.

What effects do naturally produced hormones have?

Broadly speaking, testosterone has masculinising effects, and oestrogen has feminising effects.

Along with genetic factors, sex hormones affect the development of the reproductive system, the brain and physical characteristics such as height and build, the way fat is distributed in your body and your muscle bulk.

Before birth, in boys, a strong form of testosterone prompts the development of the penis and testicles. Without this input of testosterone, girls develop the clitoris and labia, ovaries, uterus and vagina.²

- 1 This system is called the endocrine system, and the specialist doctor who deals with this field of medicine is the endocrinologist.
- 2 In rare cases, babies are born who look neither clearly male nor female. These conditions fall under the umbrella term intersex (recently renamed disorders of sex development, DSD).

At puberty, sex hormones prompt the development of what we call 'secondary' sex characteristics. In girls these include breasts, periods, a more rounded shape, underarm hair and an inverted triangle of pubic hair; in boys they include facial and body hair, a prominent Adam's apple, a deepening of the voice, an enlargement of the penis and testicles, erections, a diamond shape of pubic hair and increased height and muscle bulk.

Throughout life, sex hormones help to support the reproductive systems and general health and wellbeing.

As we get older, hormones naturally diminish.

What is the aim of hormone therapy for trans people?

The aim of hormone therapy is to make you feel more at ease with yourself, both physically and psychologically.

You may be experiencing discomfort because you are not happy with your male or female appearance; or maybe you are not comfortable in your gender role as a man or as a woman. Perhaps both these factors – your appearance and your gender role – are in conflict with your inner sense of being a man or a woman (your gender identity). You may have lived with this conflict for many years and be desperate to get some help.

If this is how you are feeling, hormone treatment (testosterone if you are a trans man, and oestrogen if you are a trans woman) may help to overcome your distress. This kind of treatment is sometimes referred to as 'cross-sex' hormone therapy.

In addition, to testosterone or oestrogen, hormone ‘blockers’ may be taken in the early stages of treatment to interrupt the hormone production of your own body, so that the prescribed hormones can be more effective.

Hormone therapy is usually the first treatment that trans people want to have and, for some, it may be the only treatment they need. Some people find that they get sufficient relief from taking hormones so that they do not need to change their gender role or have surgery.³

What physical effects will hormone treatment have on me?

If you are a trans woman, cross-sex hormones will be helpful in making your appearance more feminine; if you are a trans man they will make your appearance more masculine. However, whether you are a trans man or a trans woman, you will need to be realistic about the extent of the changes you can expect. Although hormones taken in adulthood can help to keep your bones healthy, they cannot alter your skeletal shape or your height.

Trans women

In trans women, oestrogen has subtle feminising effects:

- Fat may be distributed on the hips.
- The size of the penis and testicles may be slightly reduced.
- Some trans women find that erections and orgasm are harder to achieve.

3 The Harry Benjamin International Gender Dysphoria Association’s Standards of Care for Gender Identity Disorders, 6th version (2001); now renamed the World Professional Association for Transgender Health.

- Muscle bulk and power may be reduced.
- Breasts may feel tender and lumpy and may sometimes increase modestly in size.
- The growth of facial and body hair may become weaker. This is regarded by many trans women as helpful in supporting the hair removal process using electrolysis and/or laser treatment and other hair removal techniques.
- Male pattern baldness may be slowed or stopped, but is not necessarily reversed.

Trans men

In trans men, testosterone may cause the following effects:

- It promotes beard and body hair growth.
- Male pattern baldness may develop.
- The clitoris increases slightly in size.
- Libido may be heightened.
- Muscle bulk increases.
- The voice deepens, but not usually to the pitch of other men.
- Periods will stop, although there may be some breakthrough bleeding requiring adjustment of dosage.
- Some individuals develop acne.

The way you respond to hormone treatment will help you and your doctor decide if it is right for you. If the effects are unhelpful or even unpleasant, this could indicate that this treatment is not right for you. You can stop taking hormones at any time.

On the other hand, if you start to feel better, psychologically and physically, this is a good sign that continuing with hormone therapy will benefit you, and that your treatment is on the right track. You and your doctor will still need to be sure about this because further treatment will cause some or all of the physical changes mentioned above. Some of these begin to happen after a few months and may be irreversible, such as the deepening of the voice in trans men and breast growth in trans women. However, most changes are slow to develop.

In fact, trans people sometimes feel frustrated by the slow pace of change brought about by hormone treatment. Remember that, as with puberty, physical changes are spread over a few years, so high doses of hormones do not necessarily produce better or quicker results. For instance, the adult breast shape of **non**-trans women is only achieved after several years of exposure to oestrogen during puberty, and they have very different breast sizes. It is similar for trans women, some of whom will never develop anything more than very small breasts.

If you are a trans man, you may actually find that taking excessive testosterone is counterproductive, since the body's natural mechanisms may convert some of the testosterone to oestrogen.

Teenage trans people

If you are a teenage trans person, you may feel a strong sense of conflict between appearance and gender identity during puberty when your body is developing into an adult shape. Hormone blockers can help at this time by temporarily suppressing the more obvious changes to your body. This provides a breathing space for you to

decide how you want to live as an adult. Currently, you cannot have this treatment within the NHS until after the changes that happen in puberty are complete.^{4,5}

Will I always have to take hormones?

Yes, you will need to take hormones for the rest of your life if you want to maintain the feminising effects of oestrogen or the masculinising effects of testosterone. If, at any stage, you decide to have your testes (trans women) or your ovaries (trans men) removed by surgery:

- your dose of hormones will usually be reduced but it should still be enough to produce the effects that you need and to keep you well, and to protect you against osteoporosis (thinning of the bones) as you get older, and
- if you are still on hormone blockers, you will stop taking them altogether.

What are the risks of hormone treatment?

Ideally, medical treatment should be based on scientific evidence, but there is little research about the use of cross-sex hormones. Guidance is therefore provided, which may be used flexibly, taking account of your particular needs and keeping the risk to your health as low as possible.

- 4 For more information, see Department of Health (2007) *A guide for young trans people in the UK*.
- 5 Reed, B. (2006) *Early medical treatment of transsexual people*. Gender Identity Research and Education Society, www.gires.org.uk.

Hormone treatment for trans people at reasonable dosages is remarkably safe.⁶ The hormone products that you will be prescribed are very like the natural hormones produced by the body. Most people taking hormones do not experience any major problems.

However, all medication has potential side effects, and some people may have serious adverse reactions to it. You need to be aware of the possible risks, however remote, before deciding to start treatment.

The most serious risks when taking oestrogens are:

- thrombosis
 - deep vein thrombosis (DVT)
 - stroke
 - pulmonary embolism (block in a blood vessel in the lungs)
- altered liver function.

The most serious risk when taking testosterone is:

- polycythaemia (over-production of red blood cells).

The risk of developing complications from hormone treatment is relatively small and is less common if your general health is good. Thrombosis in trans women is more likely to occur within the first year of treatment, particularly if you are taking a hormone called ethinylestradiol. There are far fewer risks of thrombosis with oestradiol, which is the product most widely prescribed for trans women now.

6 Levy, A., Crown, A., Reid, R. (2003) Endocrine intervention for transsexuals. *Clinical Endocrinology*, 59: 409–418.

The way you take the hormones can also make a difference to how your body reacts. Those who may be more at risk, for example those over 40 years old, may be advised to use hormone patches so that the medication is absorbed through the skin. Compared with pills, gel or injections, hormone patches provide a more gradual release of hormones into the bloodstream, which the body is able to tolerate more easily.

Why do I need to be monitored?

Monitoring your health will help your doctor to ensure that your body is absorbing the medication. It can also help your doctor to identify any health problems early so that, if necessary, your hormone treatment can be adjusted and/or additional medication may be prescribed. It is very important that you give full details to your doctor of any history you and/or your family have of breast cancer or circulatory or liver disorders. This does not mean that you cannot have hormone therapy, but your doctor will be able to advise you on the available treatment options, and the follow-up monitoring, to suit your particular needs.

A healthy lifestyle is important. You should eat sensibly and take regular exercise. Drug taking, excessive alcohol consumption and obesity are all factors that can undermine your hormone treatment **and** heighten the risk of complications, which may affect your chances of having surgery.

Smoking, in particular, is a significantly greater risk to you than hormone treatment. In addition, if you are a trans woman and you are taking oestrogen, smoking reduces its feminising effects.

Your doctor should give you advice about how to address other health concerns and may give you information about support groups. See page 23 for details.

If you are on medication for other conditions, for instance anti-retroviral drugs for HIV, you need to tell your doctor. However, being HIV positive is **not** a reason for you to be refused hormone treatment.

Monitoring of your blood pressure, regular blood tests and, possibly, scans of your bones, breasts and pelvis may be undertaken, usually by your GP. It is important for you to understand that even with regular monitoring, you may still experience adverse side effects.

If, at any time, you experience chest pain or breathlessness, discomfort in the calf or unusually frequent and/or severe headaches, you should seek urgent medical help.

What does informed consent mean?

Before you start hormone treatment, the doctor who is prescribing hormones for you should discuss all aspects of the treatment with you. You should make a joint decision with the doctor about when to start taking hormones. You should consider the risks, and ask your doctor to explain anything you don't understand.

It is also your responsibility to tell your doctor about any health issues and any medication you are taking or other products you are using, particularly if these have changed since any earlier discussions.

Some doctors will ask you to sign a consent form to indicate that you understand the benefits and risks of hormone treatment. This is especially important if you have any health conditions that could be made worse by hormones. Also, if you develop health worries after you start treatment, you should have further discussions with your doctor to help you make an informed choice about whether to continue or not. In making your decision, you should balance the level of risk of taking hormones against the personal level of discomfort you may experience if you don't take them.

You might find it helpful to share the information in this booklet with your partner, family members or friends, and discuss with them the implications of this treatment (see also our NHS leaflet *Transgender experiences – Information and support*).

Will the treatment affect my sex life?

Testosterone raises libido, so if you are a trans man you may want to have sex more often and the experience may feel more intense. If you are a trans woman, the difficulty you may have in achieving erection and orgasm will make a difference to your sex life. Many trans

women say that through the transition period and beyond, they are not very interested in sex. If you are in a sexual relationship, you and your partner may want to talk over how these changes will affect your sex life. You may both wish to have some counselling.

Will I need to stop taking hormones before surgery?

Major surgery always involves a level of risk. When you are thinking about having surgery, you may wish to discuss with your own doctor the benefits of coming off hormones for a few weeks.

To minimise the risk of blood clots forming, it is recommended that trans women stop taking oestrogen for four to six weeks before any operation. There is no absolutely safe length of time, and surgeons and anaesthetists may have different views on how long to stop for. They will take into account your general health and whether or not you smoke or are overweight.

You may start your treatment again a couple of weeks after surgery as long as you are up and about, unless your surgeon advises you otherwise. During the time that you are not taking oestrogen in the lead-up to your operation, you may want to start (or continue) to take hormone-blocking medication to suppress testosterone, to discourage any facial hair from growing back.

Trans men are not always required to stop taking hormones before surgery. However, testosterone may make you more likely to bleed, so you will need to be guided by your surgeon and anaesthetist.

Both trans men and trans women may have blood tests before surgery to check their general health and to note any tendency to form clots or to bleed.

Will I still be able to have children?

Hormone treatment will make you infertile after a while. This is true for trans men and for trans women.

Since this effect is not immediate, taking hormones is not a foolproof method of contraception. If you wish to avoid pregnancy, you should use condoms. These will also protect you from sexually transmitted infections.

If you are a trans woman, it may be possible to restore your sperm production by stopping hormone therapy. It is not known how long it takes for treatment to make you infertile and it will vary from person to person. If you have your testes removed, you will be permanently infertile.

If you are a trans man, testosterone treatment appears to take much longer to make you permanently infertile, but again, it is not known how long. If you have your ovaries removed, you cannot get pregnant naturally; pregnancy is impossible once a hysterectomy is performed.

Make sure you talk to your doctor about the effect of hormone treatment on your ability to have children in the future. You should be provided with information about the possibility of storing sperm or eggs.⁷

These options should be available for trans men and trans women within the NHS, in the same way as for the non-trans population.

7 Hamilton, M. (2007) *Gamete Storage*. Royal College of Psychiatrists Standards of Care (draft), www.rcpsych.ac.uk/pdf/Standards%20of%20Care%20Draft%20v8%203b%20final.pdf

What if I take hormones bought over the internet?

You may be tempted to buy hormones from the internet, or in some way other than through a doctor. You may have already started to do so. This may be because treatment on the NHS seems to be taking a long time. Also, you may want to try the effects of hormones without anyone else knowing.

Taking hormones without a doctor's prescription, however understandable your reasons, is unwise and could put your health at risk.

What are the risks of taking hormones without a doctor's prescription?

The principal dangers involved when self-medicating are:

- the products may not be genuine and may therefore have no effect at all, so you may be wasting your money
- the products may be of poor quality and may even be harmful
- you may not have a thorough picture of the possible risks and side effects
- you may not have thought about the consequences of combining hormones with any other medication or herbal products that you might be taking
- you won't have had a health check to see if you have any other conditions that could be affected by hormone medication

- the dosage and the way in which you are taking the medication (pills rather than patches, for instance) may not be suitable for you.

If you have already started taking hormones in this way, you should see your GP and/or a gender specialist as soon as you can. The doctor should bring you into a properly prescribed regime as quickly as possible.

Summary of information about hormone medication

You are strongly advised to get a doctor's prescription for your hormones. If you do have a valid prescription from your doctor, the medication is readily available from any high street chemist. You may find it more convenient to buy your medication through one of the internet sites endorsed by the NHS, for example <http://prescriptions.pharmacy2u.co.uk/user/default.asp>.

Although the risks are low when you are taking prescribed hormones, as with all medication there can be some unwanted side effects. These will vary from person to person and will depend on the specific medication you are prescribed. Your doctor should make you aware of these.

Trans women

Feminising medication

Oestrogen

- Oestradiol-based formulations are naturally occurring oestrogen (17 β oestradiol). They include:
 - oestradiol patches (best for those over 40, smokers or those with circulatory problems; least risk)
 - oestradiol gel (applied to skin; also low risk)
 - oestradiol/oestradiol valerate (taken in pill form; some risk)
- conjugated equine oestrogen (from mares' urine; taken in pill form; more risk. Some people regard the method of collection from horses as unethical)
- ethinylestradiol (not recommended; taken in pill form; most risk of side effects)

Medication to reduce testosterone effects

This treatment will not be necessary in all cases. All these products are effective and each will be suitable for some service users.

- Cyproterone acetate is preferred by some service users because it is in pill form and is therefore easily administered. It works by blocking testosterone receptors, and it is effective against androgen (testosterone) produced by the adrenal glands, as well as that produced by the testes. Heavy alcohol use reduces its effectiveness.
- Spironolactone (taken in pill form) is a well-tolerated and effective anti-androgen.

- Goserelin or leuprorelin is administered by subcutaneous (under the skin) depot injection. It is preferred by some doctors because it is believed to have fewer side effects. It does not block testosterone produced by the adrenal glands, but this is not essential.
- Finasteride (taken in pill form) reduces the effect of male hormones and promotes a modest regrowth of hair on the head if the hair follicles have not been inactive for too long. It is not possible to reverse significant hair loss.

Progesterone is not usually prescribed for this condition. It increases the risk of thrombosis and other side effects. Although it can reduce the effect of testosterone if taken in high doses, it can also, paradoxically, inhibit the action of oestrogen and may therefore have **anti-feminising effects**, such as increasing libido and causing facial hair regrowth.

Trans men

Masculinising medication

Testosterone

Testosterone is usually administered by way of intramuscular or subcutaneous injection every two to three weeks. One of the testosterone products delivered in this way is licensed in the UK for use in trans people. Other methods of administering testosterone are now available, so service users have more choice. These methods include patches and gels (via the skin), and buccal (see below):

- testosterone esters (injected)
- testosterone enanthate (injected; for those with a peanut allergy)

- testosterone undecanoate (preferably injected; also available in tablet form)
- testosterone gels (applied to the skin daily)
- testosterone patches (applied to the skin daily)
- buccal testosterone (pill held in the mouth between the cheek and the gum until it dissolves and testosterone is absorbed through the mucous membrane).

Medication to lower oestrogen levels

This medication is not always regarded as necessary because testosterone alone can be very effective for many trans men. Both goserelin and leuprorelin may be administered by subcutaneous depot injection. These products do not block the testosterone produced by the adrenal glands and they are believed to have few side effects.

And life goes on ...



This trans woman and her wife are still happily married.

Support and information

The following national organisations will be able to offer help and support to you and your family. They may also be able to provide details of local support organisations:

a:gender

Tel: 020 7035 4253

Email: agender@homeoffice.gsi.gov.uk

Website: www.csag.org.uk

Support for staff in government departments and agencies who have changed – or who need to change – permanently their perceived gender, or who identify as being intersex.

Antidote Lesbian, Gay, Bisexual and Trans Services (Hungerford Drug Project)

Website: www.turning-point.co.uk

Email: grainne.walley@turning-point.co.uk

Website: www.thehungerford.org/antidote.asp

Beaumont Society

27 Old Gloucester Street, London WC1N 3XX

Tel: 01582 412220

Email: enquiries@beaumontsociety.org.uk

Website: www.beaumontsociety.org.uk

For those who feel the desire or compulsion to express the feminine side of their personality by dressing or living as women.

Beaumont Trust

27 Old Gloucester Street, London WC1N 3XX

Tel: 07000 287878 (Tuesday and Thursday
7–11pm)

Email: beaumonttrust@gmail.com

Website: www.beaumont-trust.org.uk

Assists those troubled by gender dysphoria, and those involved in their care.

Depend

BM Depend, 27 Old Gloucester Street, London WC1N 3XX

Email: info@depend.org.uk

Website: www.depend.org.uk

Free, confidential, non-judgemental advice, information and support for family members, partners, spouses and friends of transsexual people.

FTM Network

BM Network, 27 Old Gloucester Street, London WC1N 3XX

Tel: 0161 432 1915 (Wednesday 8–10.30pm)

Website: www.ftm.org.uk

Advice and support for female-to-male transsexual and transgender people, and for their families and professionals. 'Buddying' scheme, newsletter (*Boy's Own*) and an annual national meeting.

Gender Identity Research and Education Society

Melverley, The Warren, Ashtead, Surrey KT21 2SP

Tel: 01372 801554

Email: admin@gires.org.uk

Website: www.gires.org.uk

Promotes and communicates research, and provides information and education to those who can improve the lives of people affected by gender identity and intersex conditions.

Gender Trust

PO Box 3192, Brighton, Sussex BN1 3WR

Tel: 01273 234024 (office hours)

Helpline: 0845 231 0505 (10am–10pm Monday to Friday and 1pm–10pm Saturday and Sunday)

Email: info@gendertrust.org.uk

Website: www.gendertrust.org.uk

Advice and support for transsexual and transgender people, and for their partners, families, carers, and allied professionals and employers. Has a membership society and produces a magazine (*GT News*).

Gendys Network

BM GENDYS, 27 Old Gloucester Street, London WC1N 3XX

Email: gendys@gender.org.uk

Website: www.gender.org.uk/gendys

For all those who encounter gender problems personally or as family members, lovers or friends, and for those who provide care. Quarterly journal and biennial conferences.

Mermaids

BM Mermaids, 27 Old Gloucester Street, London WC1N 3XX

Tel: 07020 935066 (Monday to Saturday 3–7pm)

Email: mermaids@freeuk.com

Website: www.mermaids.freeuk.com

Support and information for children and teenagers who are trying to cope with gender identity issues, and for their families and carers. Please send an SAE for further information.

Press For Change

BM Network, 27 Old Gloucester Street, London WC1N 3XX

Tel (emergencies only): 0161 432 1915

Website: www.pfc.org.uk

Campaigns for civil rights for trans people. Provides legal help and advice, information and training for individuals. Newsletter and publications. Please send an SAE for further details.

THE SIBYLS

BM Sibyls, 27 Old Gloucester Street, London WC1N 3XX

Christian spirituality group for transgender people.

Women of the Beaumont Society

BM WOBS, 27 Old Gloucester Street, London WC1N 3XX

Tel: 01223 441246 or 01684 578281

Email: wobsmatters@aol.com

Website: www.gender.org.uk/wobsmatters

Operated by and for wives, partners, family and friends of those who cross-dress.

Department of Health

We are planning additional publications on transgender issues. For more information please visit our website at www.dh.gov.uk/en/Policyandguidance/Equalityandhumanrights/Sexualorientationandgenderidentity/index.htm.

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