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Information About Hormonal Treatment for Transmen[©]

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(Charing Cross)

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Introduction

As part of treatment of gender dysphoria we will be prescribing you hormonal treatment (testosterone). The aim of this treatment is to allow your body to develop the physical appearances of a male by using testosterone. Because the dose of testosterone confuses the control of the ovaries at the same time you will decrease the production of your female hormone oestradiol. The hormonal treatment is very effective, you can expect the changes in your body to be noticeable but it will be necessary undergo cosmetic procedures (e.g. mastectomy (removal of the breasts) for complete masculinisation.

Although a very safe treatment there are some side effects with the testosterone (male hormone) that you should be aware of and these will be explained. The good news is that transgendered people treated with testosterone have the same life expectancy as the general population telling us that this is a very safe treatment even if it is taken over many years.

The changes in the body produced by hormone treatment are somewhat reversible if you stop treatment but some physical changes are permanent such as hair loss from the head and increased facial beard and so it is important to be sure that hormone treatment is the right option for you before it is started.

At the West London Mental Health NHS Trust (Charing Cross) clinic you will be seen and assessed by 2 psychiatrists or a psychiatrist and a psychologist before hormonal treatment is recommended to make sure that hormonal treatment is the best way to manage your gender identity disorder. We also ask that you change gender role before hormonal therapy is started in all but the most exceptional of cases, so that in cases where a person chooses to remain in their female role there are no permanent changes in their body that may need an operation to correct and they have not been exposed to the side effects of hormone treatment.

Initiation of Hormone Therapy

The way that we organise hormone treatment is based on internationally agreed guidelines. This is known as Triadic Therapy, which consists of three critical elements; Real Life Experience; Hormonal Therapy of the Desired Gender and finally Genital Reconstruction Surgery. We follow this strategy to protect you. As you advance through a sequence of treatment that has progressively more irreversible effects on your body with more and more significant physical alterations should you choose to revert to your birth gender.

Our Standard Regimen

Masculinisation of a transman is achieved by the administration of testosterone. This is given in the form of Sustenon injections 2-4 weekly. At this dose testosterone suppresses ovarian function even in preoperative patients. Menstruation (periods) normally stop within 1 or 2 injections of testosterone but the process of masculinisation is slow and takes between 2 and 4 years to complete properly.

Doses of 250mg 2-4 weekly are usually adequate to suppress menstruation and the aim of therapy is to achieve testosterone levels in the high normal male range (25-30nmol/l) 1 week after the injection and to have a trough level at the bottom of the normal male range (8-12nmol/l) on the day the injection is due before the injection is administered. Ongoing monitoring should be performed following 3 injections. The peak value is adjusted by changing the dose given with each injection and the trough level is controlled by changing the length of time between the injections.

Transmen															
Initial Visit	<table border="0"> <tr> <td>LH</td> <td>Weight</td> </tr> <tr> <td>FSH</td> <td>Blood Pressure</td> </tr> <tr> <td>Testosterone</td> <td>Lipid profile</td> </tr> <tr> <td>Oestradiol</td> <td>Glucose</td> </tr> <tr> <td>SHBG</td> <td></td> </tr> <tr> <td>Prolactin</td> <td></td> </tr> <tr> <td>Dihydrotestosterone</td> <td></td> </tr> </table>	LH	Weight	FSH	Blood Pressure	Testosterone	Lipid profile	Oestradiol	Glucose	SHBG		Prolactin		Dihydrotestosterone	
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Alternative Preparations

Topical gels

Non injectable preparations are monitored by plasma testosterone level. The level should be measured at least 4 hours after the administration and the aim is to get the plasma testosterone level into the normal male range (10-28nmol/l).

Oral testosterone undecanoate cannot be monitored using blood testosterone levels as it is converted directly to a different form of testosterone called dihydrotestosterone. Blood testosterone levels are undetectable if measured. Treatment is monitored by measuring plasma

dihydrotestosterone levels 4 hours after a dose, which should be in the normal male range of 1-3nmol/l.

Beneficial Effects of Testosterone

Stopping of Periods

Transmen often state that having periods are the most distressing part of not being treated. It is usual for your periods to stop within 2-3 injections of Sustenon as the function of your ovaries is suppressed by the high levels testosterone.

The use of oral testosterone supplements results in lower testosterone levels than with injectable testosterone. These may not stop the periods without the addition of a progestin such as medroxyprogesterone acetate 10mg t.d.s. or norethisterone 15-25mg/day.

However these are not normally used at West London Mental Health NHS Trust (Charing Cross).

Facial Effects

Testosterone treatment results in the development of facial hair growth in the beard area and a coarsening of the facial features resulting in a masculine facial appearance. You will find there is an increase in your body hair and a change of the sexual hair to a masculine pattern with hair growth on the face, chest abdomen lower back and inner thighs. If male pattern baldness is a characteristic of the male members of your family you may find that you experience a loss of head hair in a male pattern.

Body Changes

Testosterone therapy results in an increase in lean body mass and upper body strength at the same time there is a decrease in body fat resulting in a more masculine body shape with increased muscle definition and a decrease in hip to waist ratio. You will notice an increase in your upper body strength. There is an increase in body hair development with increased hair on

chest legs, sacrum (bottom of the back) and abdomen with the pubic hair taking a convex upper border.

Genital Changes

You will notice an increase in the size of your clitoris it may reach 4-5 cm in length however this growth is never of a degree that will allow penetrative intercourse.

Mood

You can expect to feel that you have more energy and an increased sex drive (libido). Some people also have an increase in their levels of aggression, especially just after their injection is given. Psychologically patients feel more masculine and generally more settled in their new gender role once testosterone therapy has started.

Voice Changes

Testosterone promotes growth in the voice box and vocal cords which results in the voice deepening. The changes in voice can take up to 3 years to complete.

Side Effects

Thickening of the blood (Polycythaemia)

Testosterone increases the production of red blood cells. This can thicken the blood and there is an increased risk of stroke in people where this occurs. The risk is very small and to prevent this, the levels of haemoglobin in your blood will be monitored.

If it occurs usually all that is necessary is to decrease the dose you are having or alternatively using a type of testosterone that is not injected, such as a gel or tablet as the increase in blood thickness appears to be less common with these types of testosterone.

Liver Problems

There have been reports of severe problem with the liver seen in people using testosterone for body building. These anabolic steroids are no longer used in routine testosterone replacement and so liver trouble associated with testosterone use is now rare. Monitoring of the liver function by a blood test in patients on testosterone replacement is recommended.

Cholesterol Problems

There is a large difference in the plasma lipid parameters (fat and cholesterol) between males and females. Males have higher total cholesterol, LDL cholesterol and triglyceride with lower plasma HDL cholesterol. The use of testosterone in transmen is associated with a deterioration of lipid parameters such that they would be more likely to give cholesterol build up in the blood vessel that could lead to heart problems. However these changes in lipid profile do not appear to increase heart attacks or stroke and indeed the heart attack rate is about half that expected.

Gynaecological Issues

Testosterone can be converted (aromatised) to the oestrogen *oestradiol* in fat cells in the body. Oestrogen causes the lining of the womb to thicken but normally has its effects reversed every month by progesterone and following this a period occurs. If the lining of the womb gets too thick there is a chance it could become a problem. The risk of this thickening happening is about 15% in transmen after 2 years of treatment. Monitoring of the endometrial thickness by ultrasound scanning 2 yearly is recommended. We also normally recommend hysterectomy after 2 years of treatment to prevent any risk of problems in the womb occurring.

Summary

Hormonal treatment is essential in the treatment of transsexual people. It can produce permanent changes in the way your body looks and so it should only be given when your psychiatrist or psychologist feels it is the best treatment for you. Rushing into hormone treatment does not improve the result of masculinisation and in deed can make the treatment less effective.

Hormone treatment is safe but there are side effects, especially the risk of thickening of the blood increased cholesterol and liver test abnormalities and these must be minimised by stopping smoking and maintaining a normal body weight.

In transmen testosterone is given as an injection 2-4 weekly and results in masculinisation over 2-4 years. Male sexual characteristics such as beard growth, deepened voice and increased musculature are pronounced. Clitoral growth does occur but is not usually adequate for penetration during sexual activity. Menstruation usually stops rapidly following testosterone administration as the doses used effectively suppress ovarian function. The aim of treatment is to get the testosterone levels into the normal male range.

The major side effect of testosterone treatment are thickening of the blood and thickening of the womb lining due to the conversion of testosterone to oestradiol. Thickening of the blood can be treated with dose reduction or changing the type of testosterone used. Thickening of the womb lining can be screened for with serial ultrasound scanning but it is usually recommended that the patient undergo hysterectomy after 2 years of testosterone treatment to prevent this happening. Other more minor side effects of treatment include increased blood fat levels and minor changes in liver function tests.

Hormone treatment in people with gender dysphoria does not alter their life span confirming that these treatments are safe as well as effective. They also do not increase the incidence of any conditions that one might predict would be more common in hormonally treated patients such as breast cancer.