**INFORMATION ABOUT TREATMENT WITH ESTRADIOL**

**(For the purpose of making a declaration of consent to treatment)**

**What is Estradiol?**

Estradiol is a hormone medication which can help to feminise (develop a more female body type) and also help to reduce some male aspects of your body. This is a medicine that you will need to take regularly for changes to your body to take place. Most people take this medicine for the long term and some take it for the rest of their lives. Before taking the medicine, there are several things you need to know. These are the possible advantages, disadvantages, risks, and warning signs, as is the case with any medicine that you take. We have listed them here for you. It’s important that you understand all of this information before you start taking the medicine so that you can make a decision about whether or not this is the right medicine for you. We are happy to answer any questions you have.

**How is estradiol taken?**

Estradiol can be taken in different ways:

* A tablet (oral preparation)
* A gel or patch applied to the skin (transdermal application)
* Estradiol is **not** available in this service as an injection or implant

**Who is at higher risk of health problems if they take estradiol?**

Estradiol should not be used by anyone who has ever had an estrogen-dependent cancer (ie. a cancer that grows more quickly when estrogens are present), of which the commonest type is breast cancer.

**Estradiol should be used with caution and only after a full discussion of risks by anyone who:**

* Has had blood clots in the veins (deep vein thrombosis) which could have or did travel to the lungs (pulmonary embolism) or other parts of their body
* Has a blood clotting disorder
* has had a stroke or TIA (transient ischaemic attack or sometimes called a mini stroke)
* has a strong family history of breast cancer or other estrogen-dependent cancer
* has diabetes
* has heart disease or cardiovascular risk factors such as high cholesterol or high blood pressure
* has hepatitis or other liver disease
* has migraines or seizures
* is obese (body mass index, BMI greater than 30)
* uses nicotine, especially in the form of cigarettes
* has a family history or a diagnosis of porphyria
* has been found to have high triglyceride levels (one of the fats in the blood)

People who have these risk factors are often able to take estradiol but they may need to take other steps to manage the risks. This might be lifestyle changes such as stopping smoking or losing weight.

**What estradiol does to your body**

* I know that estradiol may be prescribed to help me appear less masculine and/or more feminine

The effects of estradiol vary from person to person and any effects cannot be guaranteed. The table below shows a rough idea of timescales. The **best** effects of estradiol on your body might happen if you **increase the amount of estradiol in your body slowly over time**.

|  |  |  |
| --- | --- | --- |
| **Effect of Estradiol** | **Expected start of effect** | **Expected end of changes** |
| Stop losing more hair from your head (scalp hair that has already been lost will **not** grow back) | 1-3 months | 1-2 years |
| Lower libido (less interest in sex) | 1-3 months | 1-2 years |
| Fewer erections when not involved in sexual activity | 1-3 months | 3-6 months |
| Reduced level of haemoglobin (oxygen carrying pigment in red blood cells) | 2-4 months | 2-4 months |
| Difficulty in achieving an erection for use in sexual activity | Variable | Variable |
| Softer skin and less oiliness of your skin | 3-6 months | 1-2 years |
| Less muscle bulk and less strength | 3-6 months | 1-2 years |
| Body fat moves generally from tummy to hips and thighs | 3- 6 months | 2-3 years |
| Breast growth | 3-6 months | 2-3 years |
| Smaller testicles | 3-6 months | 2-3 years |
| Fewer sperm are produced – affects fertility | Variable | Variable |
| Less hair on body and face | 6-12 months | Over 3 years |

**How permanent are the effects of estradiol?**

**Breast and nipple growth is usually permanent** even if you stop taking estradiol. Although most other physical changes of estradiol are reversible they may not fully reverse on stopping estradiol.

The long term effects of estradiol on fertility are not fully understood. It might be that you are **infertile** and your testicles might not be able to produce sperm or cause pregnancy even if you stop taking estradiol.

If you decide you are unhappy with the effects of estradiol and no longer wish to take it, the NHS is unlikely to provide treatment to reverse changes that have already occurred.

It is important to recognise that for some people their current gender identity is not permanent. It may be that your gender identity changes in the future and you might not be happy with the permanent changes to your body caused by taking estradiol.

**The permanent effect of estradiol on breasts**

* I know it can take **several months or longer** for the effects to become noticeable. I know that no one can predict how fast, or how much, change will happen.
* I know that if I am taking estradiol I will probably experience noticeable **breast growth**
* I know that it can take **a few years** for breasts to get to their full size.
* I know I should be **“breast aware”**, that is, be aware of what my breasts look and feel like as they start growing, check them regularly and attend breast screening as appropriate. If I continue to take estradiol after the age of 70 I should continue to attend **breast screening**. If I notice unusual changes in my breasts I should seek advice from my GP.
* I know that I might get a milky discharge from my nipples (called **galactorrhoea**). If I do, I know I should seek advice from my GP or gender clinic.
* I know that there is some evidence that taking estradiol **increases the risk of breast cancer**. I know that the evidence to date is that the risk of breast cancer for trans people taking estradiol is much lower than in the general cis-gender population.

**The effect of estradiol on fertility**

I know that my body will make less testosterone when I take estradiol. This may affect my sex life in different ways and my fertility.

* I know that **we do not know** whether the changes to **fertility are reversible or permanent**.
* I know my **sperm may not develop normally**. This will make me less fertile. I also know I might never produce normal sperm again. The start of these changes is variable; no-one should start taking estradiol if they plan to store sperm
* Taking estradiol is **not a form of contraception**. I know that I might get someone pregnant if we have vaginal intercourse or other intimate sexual contact and we do not use contraception.
* **The options for storing sperm, to preserve my fertility, have been explained to me**.
* Estradiol does not protect me from **HIV**, or **sexually transmitted infections** and I should **practice safe sex** as usual.
* I know that my **sex drive may be lower** and I may have **less reliable and softer erections.**
* I know that the effect of estradiol on my body can also include my **testicles and penis becoming smaller** and changes to the ejaculate that my body produces.

**The reversible effects of estradiol on the body**

I know that the following changes can happen and I know that these changes are not usually permanent and are likely to gradually go away if I stop taking estradiol.

* I know my **face and body hair will become finer**, less noticeable and will grow more slowly. I know that it won’t stop completely, even if I take my treatment for years, and that almost all women have body hair.
* I know I will probably have **less fat on my abdomen** and more on my buttocks, hips and thighs.
* I know that if I have **head hair loss it may slow down**, but may not stop completely. It is also very unlikely that hair that has been lost will grow back.
* I know I may **lose muscle** and strength in my body.
* I know that my **skin may become softer** and less oily.

**What estradiol can’t change**

I know that some parts of my **body** may not change by using this treatment.

* I know the **pitch of my voice will not rise**, and my speech patterns will not alter. I can be referred for voice and communication therapy if I wish.
* I know that my ‘**Adam’s apple’ will not shrink**. There is no NHS funded treatment available to change this.
* Estradiol treatment may not make me entirely happy with how my body looks.

I know that some parts of my **life** will not change by using this treatment.

* Although taking estradiol can reduce feelings of gender dysphoria for some people, it will not directly improve mental health problems such as depression if they are unrelated to gender dysphoria.

If you are experiencing difficulties with these areas you may wish to speak to your GP, clinician or Lead Professional at the Gender Clinic about them.

**Risks of estradiol**

I know that the side-effects and safety of my treatment are not completely known. **There may be long-terms risks that are not yet known.**

I know that I **must not take more estradiol than prescribed or add other hormones from other sources** (such as the internet or friends), or share my hormones with anyone else. I know it increases some health risks. I know that taking more than I am prescribed won’t make changes happen more quickly or more effectively.

I know that for some people their current gender identity is not permanent. It may be that my gender identity changes in the future and I might not be happy with the permanent changes to my body caused by taking estradiol.

**Risk of blood clots**

* I know that taking estradiol increases the risk of blood clots that can result in:
	+ **DVT** (deep vein thrombosis) and ongoing problems with veins in my legs
	+ Blood clot in the lungs (**pulmonary embolism**, PE), which may cause permanent lung damage or death
	+ **Stroke** which may cause permanent brain damage or death
	+ **Heart attack**
* I know that the risk of blood clots is worse if I **smoke** or use nicotine. I know that the risk will reduce if I stop smoking. If you would like help with stopping smoking, please ask your GP or practice nurse as soon as possible about the services that are available in your area.
* I know that the risk of blood clots is worse if I am **overweight or obese** (BMI 25 or above). Being overweight also increases my risk for diabetes and heart disease.

**Risk of cardiovascular disease**

* I know that if I have **high blood pressure** and I take estradiol my overall combined risk of heart disease can be higher. However, blood pressure can be controlled by taking regular medication, exercise and changes to diet.

**Other risks**

* I know that taking estradiol can be associated with some **weight gain**. I know that if it goes up, I can work with my GP to try to control it with diet and lifestyle changes.
* I know that taking estradiol tablets can be associated with a risk of developing **gallstones**. I know I should talk with my clinician and GP if I get severe, recurrent, or long lasting pain in my abdomen, particularly after eating fatty food.
* I know that estradiol can cause **nausea and vomiting**. I know I should talk with my clinician and GP if I have long-lasting nausea or vomiting.
* I know that estradiol can cause or worsen **headaches or migraines**. I know I should talk with my clinician and GP if I have headaches or migraines often or if the pain is unusually severe, or if I develop unusual symptoms, such as weakness or tingling in other parts of my body. This is particularly important because worsening migraine can be a risk factor for stroke.
* I know that rarely, treatment may cause me to produce more of a hormone called **prolactin**, and this may need to be investigated further. One of the signs of this happening is a milky discharge from my nipples. It is not yet known if taking estradiol increases the risk of **prolactinoma** (non-cancerous tumour of the pituitary gland). I know they are not life-threatening, and can be controlled by drug therapy.

**Risk of cancer**

* It is not certain the extent to which estradiol treatment increases the risk of **breast cancer** but I know that the risk of breast cancer is increased if I have a family history. All people should examine their breasts regularly for changes or early signs of breast cancer. It is important to check with my GP that I am enrolled in the national **breast screening programme**. If I continue to take estradiol after the age of 70 I should continue to attend breast screening.
* I know that there is still a risk that I could develop **prostate cancer** even when taking estradiol. I understand that the current screening blood test for prostate cancer (PSA) may not be reliable if I am taking estradiol. I know that if I experience any urinary symptoms I will need to remind my GP that I have still have a prostate even if I have had gender reassignment surgery.

I know that the risks associated with estradiol may be more likely if:

* I **smoke**
* I am **overweight**
* I have a personal or family history of **blood clots**
* I have **high blood pressure**
* I have a strong family history of **breast cancer** (more than one person with breast cancer, from amongst my siblings or parents)

Although there is no evidence based age cut off for the use of estradiol, I know that increasing age can work alongside other risk factors to put me at higher risk of complications from the use of estradiol.

**Prevention of Medical Complications**

* I know that I must use my treatment at the time and at the **dose recommended by my doctor**, and I should tell my clinician or GP if I have any problems, side-effects or am unhappy with the treatment. I know that if I do not take my medication regularly, there may be health consequences such as osteoporosis (weakened bones).
* I know that the dose and type of medication that’s prescribed for me may not be the same as someone else’s and I must not share medication with others.
* I know I need periodic **blood pressure checks, weight** measurements (to calculate body mass index, BMI), and **blood tests** to be checked every 3 to 6 months in the first year of treatment or until stable, then at least every 12 months thereafter for as long as I am taking estradiol, to monitor the effectiveness of my treatment and check for any unwanted effects.
* I know my treatment can **interact with other drugs and medicine**, including alcohol, diet supplements, herbal treatments, other hormones and street drugs. This kind of interaction can cause complications that can occasionally be life-threatening. I know that I need to be honest with my clinician about whatever else I take. I also know that information that I share about using other substances will not necessarily result in my care being withdrawn.
* I know that my risk of medical problems can increase if I have **other medical conditions** and take estradiol. I agree to discuss with my clinician if I know of any medical conditions and to tell them if I am given a new diagnosis.
* I know that I may have to stop taking estradiol **six weeks before some surgical or dental procedures** (I know that I should tell any surgeon that plans to operate on me that I take estradiol) or when I may be immobile for a prolonged period of time. This will lower the risk of getting blood clots. I know I can start taking it again when my doctor says it is safe.
* I know that using most of these drugs to promote feminising body changes is an **off-licence use** that is not approved by the UK medicines regulatory authority for this purpose. I know that the medicine and dose that is recommended for me is based on currently available research evidence, clinical guidelines, and the judgment and experience of my clinician.
* I know that I can **choose to stop** taking estradiol at any time. I know that if I decide to do that, I should do it with the help of my clinician or GP. This will help me make sure there are no negative reactions. I also know my clinician may suggest that I reduce the dose, change the type of treatment or stop taking it at all if certain conditions develop. Such action is rare but may happen if the side effects are severe, the risks of treatment cannot be managed in other ways or there are potentially dangerous health consequences of continuing treatment at that time.

**More information**

I know that I can obtain clarification or more information about any aspect of my treatment from the gender clinic.

**Statements:**

* **I have read and understood this information and have no other questions about my treatment**
* I need help with losing weight
* I need help with stopping smoking
* I need help with alcohol or substance use
* I need advice about sexual health
* I need more information about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**I confirm that I have had the treatment fully explained to me and have had the opportunity to ask questions.** My attention has been drawn to the potential **side effects**, and I understand that if I experience any of these side effects I must seek advice.

**I have agreed that I will only take hormone treatment as prescribed by or recommended by the Gender Identity Service, and that I will avoid using any other hormone treatments.**

I know that for some people their gender identity may change over time. It may be that my gender identity changes in the future and I am not satisfied with the **irreversible changes to my body caused by estradiol**. I am willing to consent to taking hormones under these circumstances.

I understand that I can **withdraw** from this treatment at any time. If I do so I will inform my clinician and GP.

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**For staff to complete**

I am satisfied that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ understands the nature of the proposed treatment and has a full appreciation of the consequences of both the treatment in terms of benefits and possible side-effects and also the possible consequences of not undergoing this treatment. They have retained the information contained within this form and are able to communicate their decision to me today.

**Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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*Leeds GID: Written by hormone prescribers 06/2020*