### EFFECTS OF FEMINIZING HORMONE THERAPY (ESTROGEN)

**Effects in RED are permanent changes.**

<table>
<thead>
<tr>
<th>Effect</th>
<th>First noticeable:</th>
<th>Maximum effect:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breast enlargement</strong></td>
<td>3-6 months</td>
<td>2-3 years</td>
</tr>
<tr>
<td>Softening of skin, less oily skin</td>
<td>3-6 months</td>
<td>Unknown</td>
</tr>
<tr>
<td>Slower, thinner growth of facial and body hair</td>
<td>6-12 months</td>
<td>3 years or more</td>
</tr>
<tr>
<td>Decrease in male pattern baldness</td>
<td>Hair loss stops in 1-3 months but hair does not grow back</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Decreased muscle mass / strength</td>
<td>3-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Body fat redistribution (more fat on buttocks, hips, thighs, face)</td>
<td>3-6 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Decreased libido (sex drive)</td>
<td>1-3 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Decreased spontaneous erections</td>
<td>1-3 months</td>
<td>3-6 months</td>
</tr>
<tr>
<td><strong>Decreased volume (shrinking) of the testes</strong></td>
<td>3-6 months</td>
<td>2-3 years</td>
</tr>
<tr>
<td><strong>Decreased sperm production/Infertility</strong></td>
<td>Variable</td>
<td>Variable</td>
</tr>
</tbody>
</table>

### What are the emotional and intellectual effects of estrogen?

People are very different so their emotional and intellectual changes vary widely. People taking estrogen have reported:

- feeling more emotional and more in touch with their feelings
- crying more easily
- mood swings
- depression or sadness
- thinking differently, having different ways of looking at things
- feeling “more like myself” when taking a hormone that aligns with gender identity; feeling more comfortable in one’s body

### What estrogen does not do:

- change a person’s bone structure
- change a person’s height
- stop the growth of facial hair or eliminate a beard
- cause male pattern balding on the scalp to grow back
• raise the pitch of the voice to a higher level
• provide reliable birth control
• protect against sexually transmitted infections

What are the risks of taking estrogen? The major risks are:
• blood clots — can result in stroke or even death
• gallbladder disease
• liver disease
• weight gain
• high cholesterol which causes heart disease
• high blood pressure
EFFECTS OF MASCULINIZING HORMONE THERAPY (TESTOSTERONE)

Effects in RED are permanent changes.

<table>
<thead>
<tr>
<th>Effect</th>
<th>First noticeable:</th>
<th>Maximum effect:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facial and body hair growth</strong></td>
<td>3-6 months</td>
<td>3-5 years</td>
</tr>
<tr>
<td><strong>Scalp hair loss (male pattern balding)</strong></td>
<td>After 12 months or more</td>
<td>Variable</td>
</tr>
<tr>
<td>Oily skin / acne</td>
<td>1-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td><strong>Deeper voice</strong></td>
<td>3-12 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Body fat redistribution (more on the abdomen, less on the buttocks, hips, thighs)</td>
<td>3-6 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Increased muscle mass / strength</td>
<td>6-12 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td><strong>Clitoris enlarges</strong></td>
<td>3-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Menstrual periods stop</td>
<td>2-6 months</td>
<td></td>
</tr>
<tr>
<td><strong>Infertility</strong></td>
<td>Variable</td>
<td>Variable</td>
</tr>
</tbody>
</table>

**What are the emotional and intellectual effects of testosterone?**

People are very different so their emotional and intellectual changes vary widely. People taking testosterone have reported:

- feeling less emotional and not crying as easily
- feeling more angry, irritable, or aggressive
- thinking differently, having different ways of looking at things
- mood swings, especially feeling “down” right before the next injection
- feeling “more like myself” when taking a hormone that aligns with gender identity; feeling more comfortable in one’s body

**What testosterone does not do:**

- change a person’s bone structure
- change a person’s height
- reduce the size or cause shrinkage of the breasts
- provide reliable birth control
- protect against sexually transmitted infections

**What are the risks of taking testosterone? The major risks are:**

- high red blood cell counts which can cause blood clots
- liver disease
- high cholesterol which causes heart disease
- weight gain
Each person’s body is different! The changes that an individual will experience — and whether the changes will be pronounced or subtle — will depend on many factors including:

- age when a person starts hormone therapy: younger people tend to have more noticeable changes than those who start hormones at an older age
- body type and characteristics before starting hormones: people who do not appear highly masculine or highly feminine (sometimes called “androgynous” appearance) tend to have more noticeable changes than those who have a very recognizable gender expression
- family characteristics: for example, the family tendency to go bald or to have a heavy beard can influence the changes in a person’s hair pattern

Body changes are variable and somewhat unpredictable. It is not possible to tailor a hormone regimen to produce some changes and not others, or to minimize some changes and maximize others.

FAQs

Who is a candidate for cross-sex hormone therapy?

In order to receive cross-sex hormone therapy through our clinic, a person must:

1. Have a persistent, serious desire to modify their body by taking hormones that align with their gender identity rather than their sex assigned at birth
2. Be able to understand hormone therapy including risks and be able to give consent for treatment
3. Be able to take medications correctly and be willing to follow up as recommended
4. Be 19 years of age or older
5. Have any medical or mental health conditions reasonably well controlled

Do you require a letter from a therapist in order to start hormone therapy?

For adults (age 19 or older in Nebraska), a letter from a therapist is not required of every patient. If a patient has a therapist, a letter from that person is very helpful and much appreciated since it helps us assess the patient’s readiness for hormone therapy.

Prospective patients who do not have a therapist will have a gender assessment by our providers. If we are concerned about a person’s readiness for hormone therapy, we will recommend establishing a relationship with a therapist before hormones can be prescribed.
We encourage all of our patients to consider participating in therapy during the gender transition process. Transitioning is a stressful experience as a person negotiates relationships with family members, significant others, and coworkers and learns to live in the world as their affirmed gender. Support during this process is important for everyone and a therapist who specializes in gender is highly recommended. We can recommend qualified therapists.

**Will you provide all of my health care needs?**

Dr. Amoura and Anita Jaynes, APRN (nurse practitioner) are specialists in providing hormone therapy. We can provide some other services, but you should also have your own Primary Care Provider (PCP). A PCP is usually a Family Medicine or Internal Medicine physician, nurse practitioner, or physician assistant. If you do not have your own PCP, we can recommend providers who are competent in the care of transgender patients.

**What is the follow-up after starting hormone therapy?**

In general, most patients have a clinic visit every 3 months during the first year of treatment. At this clinic visit, we check their vital signs, talk with them about the changes they are experiencing and any concerns, and draw some blood to check their hormone levels. Based on the patients’ response to their treatment and their levels, we make adjustments in their medications.

After the first year, most patients are seen every 6 months for the same evaluation. In the third year and beyond, most patients are seen on an annual basis.

*These are general guidelines. An individual patient’s follow-up would be tailored to the needs of that person.*

**How long does a person continue hormone therapy?**

The decision to continue or discontinue hormones is entirely up to the individual. The physical transition process, during which hormones alter the physical characteristics of the body, can take up to five years. After that, many people choose to continue taking hormones in order to maintain the changes that have already occurred. The goal of hormone therapy is to keep the hormones within the normal, physiologic ranges. Around age 50-60 years, hormone levels naturally decline in healthy people and some individuals might discontinue them then or reduce them to a very low dose.

If a person has surgery to remove the testes (orchiectomy), the body would no longer produce testosterone. A testosterone blocker would no longer be needed but estrogen would still be needed to maintain feminine characteristics.

If a person has surgery to remove the ovaries (oophorectomy), the body would no longer produce estrogen. However, testosterone would still be needed to maintain masculine characteristics.
What is the cost of hormone therapy?

The medications themselves are surprisingly affordable for most people and may or may not be covered by insurance. As of March 2017, a typical regimen of feminizing hormones (oral estradiol plus spironolactone) could be purchased for around $50.00 per month. A typical regimen of masculinizing hormone (testosterone plus supplies for injection) would cost about $30.00 per month.

Office visits and lab work are the major costs associated with hormone therapy and may or may not be covered by insurance. Financial assistance through Nebraska Medicine is available for patients who do not have insurance coverage and who qualify based on income. For information on insurance coverage or financial assistance, call a Nebraska Medicine financial counselor at 402-559-XXXX.

Do you offer gender-affirming surgery?

Gender-affirming surgery, also called sex reassignment surgery (SRS), refers to a number of different procedures to reconstruct the genitals, chest, or face to affirm the person’s gender identity. Our clinic does not offer surgery. We can provide information on qualified surgeons and assist you in the process of seeking surgery. We can also provide follow-up after surgery and communicate with the surgeon in the event of complications.