What is hormone therapy?

- Hormone therapy is a type of gender-affirming medical care that some transgender, non-binary and gender expansive people use to affirm their gender identity and bring about physical and emotional changes.

How is it used?

- Some people take estrogen and a blocker regularly over a lifetime, others may choose to take them for a shorter period of time or intermittently.
- The type of delivery method, dose, and time on hormones is an individual decision and varies based on each person’s goals and how their body responds.
- Delivery method and dose may be changed over time, in consultation with your doctor. Taking higher doses of estrogen than prescribed does not increase its benefit to you and may increase the risk of serious side effects.

Should I start hormone therapy?

- The decision to start hormone therapy is an individual choice. For some people estrogen can be affirming and support their gender identity and expression. Some people feel that estrogen is not needed to express their gender identity at all.
- It is important for your providers to review both the potential benefits and risks of hormone therapy with you to help you know what changes to expect, address your concerns, and answer any questions you may have. Reading through this packet will help you familiarize yourself with what you can expect.
- Hormone therapy is not needed to change your legal gender marker nor is it required to request surgeries at Kaiser.
I’m interested in starting hormone therapy, what’s next?

• Before your provider prescribes a blocker and estrogen, they will review the possible changes you can expect as well as the possible side effects and risks.

• Your provider will ask you about all other prescription medications, drugs, and substances you currently take. Letting your provider know about anything you use or take helps them take care of you safely. It is important to let your provider know if you take any prescription medications, diet supplements and herbs, alcohol, nicotine (smoking/vaping), recreational/street drugs, other hormones.

How is hormone therapy administered and what are my options?

Typically, people are prescribed a blocker in combination with Estrogen.

Blockers are sometimes referred to as testosterone blockers, anti-androgens, androgen blockers or hormone blockers – they all mean the same thing.

The most commonly prescribed blockers are:
• spironolactone administered in daily pill form
• Lupron administered in injection form every 1-3 months
• In youth, blockers are more commonly administered via implant in the form called Vantis/Histrelin.

Estrogen can be administered in the following ways:

Pill
• Small pill dissolved under the tongue 1-2 times a day.

Intramuscular injection
• Delivered via a needle into a large muscle group, usually in the thigh or buttocks areas
• Recommended dose is typically every 1-2 weeks
• Can be self-administered at home or at Kaiser
**Patches**

- Adhesive patch placed on any part of the body with little hair, usually the stomach, thigh, buttocks. Some people find the adhesive irritating to the skin
- Physical changes may occur more slowly than injection methods
- Self-administered at home daily
- Patch is replaced once or twice a week

**What can I expect when taking Estrogen and a blocker?**

- Estrogen and blockers may help affirm gender identity for people who are transgender or non-binary through physical and emotional changes.

- No one can predict how fast or how much change will happen for each individual. One person’s experience may be very different from another’s

- It may take at least a few months after beginning Estrogen and a blocker for a person to notice any changes.

- It can take from 2-5 years for all physical changes to take place at the highest dose prescribed.

- Some changes from Estrogen are permanent, even if you stop taking it, and other changes are not. It is important to consider this and discuss these effects thoroughly with your doctor before beginning hormone therapy.

**What do blockers do?**

- They reduce the body’s production of testosterone (see table on next page).
**What does Estrogen do?**

- Signals the body to develop certain secondary sex characteristics (see table on next page).

**Why are Estrogen and a blocker usually prescribed together?**

- Estrogen and blockers are most effective when taken together. Blockers lower testosterone levels. This allows the estrogen to cause more changes.
**Estrogen and blockers cause the following physical effects:**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Expected Onset</th>
<th>Expected Maximum Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body fat redistribution</td>
<td>3-6 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Decreased muscle mass / strength</td>
<td>3-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Softening of skin / decreased oiliness</td>
<td>3-6 months</td>
<td>Unknown</td>
</tr>
<tr>
<td>Decreased 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>Absent erections</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>Infertility</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>Breast growth</td>
<td>3-6 months</td>
<td>2-3 years</td>
</tr>
<tr>
<td>Decreased testicle size</td>
<td>3-6 months</td>
<td>2-3 years</td>
</tr>
<tr>
<td>Decreased sperm production</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td>Thinning and slowed growth of facial and body hair</td>
<td>6-12 months</td>
<td>&gt;3 years</td>
</tr>
<tr>
<td>Decrease in male pattern baldness</td>
<td>No regrowth, loss stops 1-3 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Mood changes</td>
<td>1-3 months</td>
<td>Variable</td>
</tr>
</tbody>
</table>
Permanent changes from Estrogen + blockers include:

- Breast growth is permanent, although there may be some reduction in size after estrogen is discontinued
- Decreased sperm production may be permanent
- Fertility changes may be permanent

Physical changes that may go away if Estrogen and blockers are discontinued include:

- Decreased muscle mass/strength
- Skin softening
- Decreased/absent erections
- Facial and body hair changes

What doesn’t change from Estrogen + blockers?

- If Estrogen is started after puberty is completed bone structure will not be affected by it
- Estrogen does not affect existing facial hair
- Estrogen does not affect the voice

Reproductive Considerations:

- Having less testosterone in your body will affect your fertility in different ways. You may – or may not – be able to produce sperm mature enough to create a pregnancy. It is possible these changes will be permanent.

- If you’re having sex that could result in a pregnancy, continue using birth control if pregnancy is not desired.

- You might consider collecting and freezing sperm if you’re interested in having genetically related children in the future. The best time to store sperm is before you begin taking hormones.

- Estrogen can reduce one’s sex drive.

- Estrogen reduces the volume of ejaculate over time.

- Estrogen can impact erections making it difficult or impossible to have penetrative sex. Medications and devices may be available to assist with erection if desired.
Medical considerations related to estrogen and blockers:

- For most people Estrogen and blockers can be used safely when taken under the supervision of a medical provider.
- Medical providers are careful about prescribing estrogen to anyone who uses nicotine products because both nicotine and estrogen can increase risk of blood clots.
- Estrogen should also be used with caution by anyone who has a strong family history of breast cancer, a family history of other cancers that grow more quickly when estrogen is present, heart disease or heart valve problems (this includes a tendency for blood to clot easily), severe migraines or seizures.
- Each blocker option has different associated risks and considerations. Together with your doctor you will determine which blocker is right for you. If you are experiencing negative side effects associated with a blocker, consult with your doctor about alternatives.

Health Maintenance and Screening Exams:

- Regular blood tests
- Mammograms may be medically indicated with breast development.

Please talk to us or your primary care doctor if you have any questions or concerns about receiving these screenings.

Other things to consider when starting Estrogen and a blocker:

- Estrogen and blockers can expand people’s sense of their own gender identity as well as expand their sexual orientation and attraction.
- For people who experience dysphoria, Estrogen and blockers can decrease dysphoria in some aspects of their lives and increase dysphoria in other aspects.
Safety:

- Keep all medications in a safe location away from others, especially children. Don’t share needles and dispose of needles safely after use.
- Always take this medication as prescribed. If you have any concerns, wish to adjust your dose, change your delivery method, or stop estrogen, please talk to your doctor. And please remember to follow through with all regular blood work and physical exams.

Special reproduction information for teens and their parents:

- If Estrogen is started before puberty has progressed to the point that sperm has matured, it is possible that one may not be able to produce mature sperm again, even after discontinuing estrogen.
- Even when estrogen is started after the completion of puberty, it may permanently impact the function of the cells needed for sperm production. Both the quantity and quality of sperm may be affected.

A note about Progesterone:

- Progesterone is not commonly prescribed when initially starting hormones, but is sometimes used in combination with Estrogen and blockers.
- There is no conclusive data about the effects of Progesterone as part of gender affirming hormone care.
- If you are interested in taking Progesterone, discuss risks and benefits with your doctor.