What is testosterone 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 testosterone regularly over a lifetime, others may choose to take testosterone 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 testosterone than prescribed does not increase its benefit to you and may increase the risk of serious side effects (including conversion of excess testosterone into estrogen).

Do I need to take testosterone?

- The decision to take testosterone is an individual choice. For some people testosterone can be affirming and support their gender identity and expression. Some people feel that testosterone 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.
- Hormone therapy is not needed to change your legal gender marker nor is it required to request surgeries at Kaiser.
I’m interested in taking testosterone, what’s next?

- Before your provider prescribes testosterone, 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 testosterone administered and what are my options?

Testosterone can be administered in the following ways:

**Subcutaneous injection**
- Delivered via a small needle into the fat under the skin of the stomach
- Recommended dose is typically weekly
- Can be self-administered at home or at Kaiser

**Intramuscular injection**
- Delivered via a slightly larger 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

**Gel**
- Applied directly to the skin
- Usually applied daily
- Physical changes may occur more slowly than injection methods
- Self-administered at home

**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

**NOTE:** Kaiser does not prescribe testosterone via pill form due to risk of side effects.

**What does testosterone do?**

- Testosterone 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 experiences may be very different from another’s.

- It may take at least a month after beginning testosterone for a person to notice any changes, though some people may experience changes more quickly.

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

- Some changes from testosterone 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 testosterone.

- In addition to the physical changes mentioned below, some people taking testosterone may also notice an increase in energy, a heightened libido and other emotional changes. It is a good idea to develop a plan for ongoing communication with your providers about how you are feeling and create a plan for support that may include others who have shared experiences with transition.
**Testosterone can cause the following physical effects:**

The amount of change and how long it takes is different for each person. It may take a few months or longer before you notice changes.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Expected Onset</th>
<th>Expected Maximum Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin oiliness / acne</td>
<td>1–6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Facial / body hair growth</td>
<td>3–6 months</td>
<td>3-5 years</td>
</tr>
<tr>
<td>Scalp hair loss</td>
<td>&gt;12 months</td>
<td>Variable</td>
</tr>
<tr>
<td>Increased muscle mass / strength</td>
<td>6–12 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Body fat redistribution (less curvy shape)</td>
<td>3–6 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Menstrual periods stop</td>
<td>2–6 months</td>
<td>n/a</td>
</tr>
<tr>
<td>Clitoral enlargement</td>
<td>3–6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Vaginal dryness / thinning</td>
<td>3–6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Deepened voice (does not happen to everyone)</td>
<td>3–12 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Increased sex drive</td>
<td>1–3 months</td>
<td>variable</td>
</tr>
<tr>
<td>Increased energy</td>
<td>1 month</td>
<td>variable</td>
</tr>
</tbody>
</table>
Permanent changes from testosterone include:

- Facial hair growth
- Hair loss at the temple or crown and possible complete hair loss (baldness)
- Thicker and possibly more hair on your arms, hands, back, chest, legs and feet
- Enlargement of the clitoris
- Voice deepening
  - Not every person’s voice will deepen after taking testosterone. Speech therapy is available at Kaiser for people who are interested in working on gender-related voice training.

Physical changes that may decrease or go away if testosterone is discontinued include:

- Acne
- Menses - periods may resume
- Body fat redistribution
- Muscle mass and strength
- Changes in sex drive (usually higher on testosterone)
- Vaginal dryness

What doesn’t change from testosterone?

- Chest size and shape. Although testosterone may cause chest tissue to shrink a little, there is typically not significant change. If chest tissue change is what you are seeking please speak with your provider about other options.

Reproductive Considerations:

- Testosterone can stop or suppress ovulation; decreases egg release
- Testosterone thins the uterine lining and may impede implantation of pregnancy
- Pregnancy is still possible while taking testosterone
- Taking testosterone while pregnant is not advised
• Stopping testosterone typically restarts ovulation (egg release)
  o Ovulation often resumes between 2-3 months off testosterone
• There is no data that indicates harm to egg or fetus with long term use of testosterone as long as testosterone is discontinued just before and throughout pregnancy.

**Medical considerations related to testosterone:**

• For most people testosterone can be used safely when taken under the supervision of a medical provider.

• Some health conditions are more commonly seen in cisgender men and may also be more common for people who take testosterone. These health conditions include: increases in cholesterol, higher blood pressure, increased fat around the heart and other organs, increased red blood cells, heart disease, liver damage, and headaches.

• Due to family history or individual health concerns (such as severe acne, heart disease, certain types of cancer, high cholesterol, liver disease, or certain blood clotting disorders), some people may have higher risks to consider. It is important to discuss and be fully aware of risks and benefits before starting testosterone.

• Protect your health by exercising regularly, maintain a healthy weight for your frame, work with your care team on reducing stress, and reducing/eliminating nicotine use.

**Health Maintenance and Screening Exams:**

• If you have not had a hysterectomy, you will need pap smears to screen for cervical cancer
• After top surgery, depending on family history, mammograms may still be medically indicated.
• There is no indication that testosterone increases risks of uterine or ovarian cancer.
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 testosterone:**

- Taking testosterone can expand people’s sense of their own gender identity as well as expand their sexual orientation and attraction.

- For people who experience dysphoria, testosterone 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 testosterone, 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:**

- People with ovaries are born with all the eggs they will ever have.

- People who start on a puberty blocker and/or testosterone prior to menstruation and later on choose to utilize their eggs for reproductive purposes, would need to discontinue the blocker or testosterone and allow the estrogen driven puberty to progress to the point of menstruation in order for their eggs to be mature.

- There is no evidence that initiating blockers or testosterone will impact long term reproductive options.