

### Testosterone Formulations

Generic	Brand	Strength	Route	Half Life	Dosing	Pearls
<b>Testosterone Cypionate<sup>1</sup></b> * Compounding available with various carrier oils and excipients.	Depo-Testosterone  Azmiro	200 mg/mL Or 100 mg/mL (less common)	IM/ SubQ	~8 days	Starting dose for most men <b>70-100 mg every 5-7 days.</b> Dose on an individual basis but frequency should be every 7 days <b>at the longest.</b>	<ul style="list-style-type: none"> <li>• Gold Standard for TRT.</li> <li>• Cheap and Easy to access.</li> <li>• Potential for high peaks and low troughs due to long half-life.</li> <li>• Microdosing over a shorter dosing interval can be useful strategy for patients who experience adverse effects but can increase injection burden.</li> <li>• Using compounded variations can be helpful for excipient and dose optimization for patients.</li> </ul>
<b>Testosterone Enanthate<sup>2</sup></b> * Compounding available with various carrier oils and excipients.	Delatestryl, Xyosted	200 mg/mL	IM/ SubQ	4.5-7 days IM* <small>References are unclear</small>	Dose on an individual basis but frequency should be <b>every 7 days at the longest.</b> Xyosted: Start 75 mg SubQ every 7 days- <small>Target nadir 350-650 ng/dL total T. Increase by 25 mg/week if &lt; 350 and decrease by 25 mg/week if trough &gt;= 650 ng/dL.</small>	<ul style="list-style-type: none"> <li>• Some insurance issues may arise with Xyosted if prescribed at a higher frequency than every 7 days.</li> <li>• Xyosted is available in auto injector form which might be comfortable for the patient but can be challenging to find the perfect dose.</li> </ul>

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<b>Testosterone Propionate</b> <sup>14</sup> * Compounding available with various carrier oils and excipients.	Commercially not Available in the USA.	100 mg/mL	IM	2-3 days per dosing regimen	25-50 mg 2-3 times every week or 50-100 mg every other day in male athletes.	All information obtained from Llewellyn's Anabolics 11th Edition which is not a typical medical text.
<b>Testosterone Undecanoate</b> <sup>3</sup>	Aveed  Nebido (abroad)	250 mg/mL	IM	~33-53 days (apparent half-life driven by depot absorption kinetics)	750 mg x 1 then 750 mg after 4 weeks (loading) then 750 mg every 10 weeks. <sup>5</sup> In Europe/Abroad: 1 gm IM Q3Months.	<ul style="list-style-type: none"> <li>Administered in office by a healthcare professional.</li> <li>Patients should be observed for 30 mins after administration.</li> </ul>
<b>Testosterone Esters</b> <sup>5</sup>	Sustanon 250  *Not available in the USA	250 mg/mL	IM	Variable due to variety of esters	Pkg insert: Every 3 weeks Should be injected every 7 days <sup>14</sup>	<ul style="list-style-type: none"> <li>Formulated in Peanut oil (ALLERGIES)</li> <li>Contains 30 mg/mL propionate, 60 mg/mL phenyl propionate, 60 mg/mL isocaproate, 100 mg/mL decanoate</li> </ul>
<b>Testosterone</b> <sup>4</sup>	Testopel	75 mg/pellet	SubQ	Variable	150 mg-450 mg every 3-6 months <sup>6</sup>	<ul style="list-style-type: none"> <li>Pellets extrude from the skin.</li> <li>Very difficult to adjust dose.</li> <li>2 pellets for each 25 mg testosterone propionate required weekly<sup>4</sup></li> </ul>

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<b>Testosterone Gel<sup>6</sup></b> *Compounding Available *Scrotal gel also available through compounding with a disproportionately elevated DHT levels due to high 5-alpha-reductase activity in the scrotum <sup>17</sup>	Androgel/ Vogelxo/Testim	1% Androgel: 25 mg/2.5 gram or 50 mg/5 gram Vogelxo: 50 mg/5 gram or 12.5 mg/pump Testim: 50 mg/5 gram	Topical	Reaches steady state by day 2 or 3	50 mg QAM to <b>shoulders and upper arms or abdomen</b> starting and increase to 75 mg or 100 mg based on response	<ul style="list-style-type: none"> <li>• Good option for fear of needles.</li> <li>• Allow area to dry before dressing</li> <li>• Flammable</li> <li>• Avoid swimming or showering by at least 5 hours.</li> <li>• Avoid contact with others, especially women or children.</li> </ul>
<b>Testosterone Pump<sup>6</sup></b> *Compounding Available	Androgel	1.62% 20.25 mg/pump 20.25 mg/1.25 gram or 40.5 mg/2.5 g	Topical		40.5 mg QAM <b>shoulders and upper arms or abdomen</b> . Dose adjustments are made in 20.25 mg increments w/ the pump	<ul style="list-style-type: none"> <li>• Allow area to dry before dressing</li> <li>• Flammable</li> <li>• Avoid swimming or showering by at least 5 hours.</li> <li>• Avoid contact with others, especially women or children.</li> </ul>
<b>Testosterone Gel<sup>7</sup></b> *Compounding Available	Fortesta	2% 10 mg/0.5 gram	Topical		40 mg QAM to the <b>thighs</b> . Dose adjustments are made in 10 mg increments w/ the pump.	<ul style="list-style-type: none"> <li>• Allow area to dry before dressing</li> <li>• Flammable</li> <li>• Avoid swimming or showering by at least 2 hours.</li> <li>• Avoid contact with others, especially women or children.</li> </ul>
<b>Testosterone Topical Solution<sup>8</sup></b> *Compounding Available	Axiron	30 mg/1.5 mL	Topical	Reaches steady state within 14 days.	60 mg QAM to the <b>axilla</b> using the applicator. Dose adjustments are made in 30 mg increments w/ the pump	<ul style="list-style-type: none"> <li>• Flammable</li> <li>• Avoid swimming or showering by at least 2 hours.</li> <li>• Apply deodorant BEFORE applying Axiron.</li> </ul>

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<b>Testosterone Transdermal Solution<sup>9</sup></b> *Historically available as a scrotal patch. No longer on the market.	Androderm	2 mg/day or 4 mg/day	Transdermal	70 minutes	4 mg Androderm system applied to <b>the back, upper arms, abdomen or thighs</b> QPM. Dose adjustments are made in 2 mg/day increments using the 2 mg patches.	<ul style="list-style-type: none"> <li>• Avoid swimming or showering by at least 2 hours.</li> <li>• Itching is the most common adverse event.</li> <li>• To discard, fold the patch in half and discard in household trash.</li> </ul>
<b>Testosterone Nasal Gel<sup>10</sup></b>	Natesto	5.5 mg/0.122 gram	Intranasal	-	2 actuations (11 mg) TID	<ul style="list-style-type: none"> <li>• TID dosing along with a Cmax of 1044 ng/dL (40 mins after administration) and a Cmin of 215 ng/dL</li> <li>• Weak evidence of preserving fertility<sup>15,16</sup></li> <li>• Discontinue temporarily with severe rhinitis.</li> </ul>
<b>Testosterone Undecanoate Oral Capsule<sup>11,12,13</sup></b>	Jatenzo/ Kyzatrex/ Tlando	Jatenzo: 158, 198 and 237 mg capsules. Kyzatrex: 100, 150, and 200 mg capsules. Tlando: 112.5 mg capsule	PO	2 hours	Jatenzo: 158-396 mg BID with food Kyzatrex: 100-400 mg BID with food Tlando: 225 mg BID with food	<ul style="list-style-type: none"> <li>• Different formulations are not interchangeable.</li> <li>• No Hepatotoxicity noted.</li> <li>• PO is the easiest route of administration for adherence.</li> <li>• See package inserts for recommended dosing and titrations.</li> </ul>

## References:

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