gender non-conforming/transgender health

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basics | vocabulary

Sex/gender assigned at birth
Sexual orientation
Gender identity
Gender expression
Gender transition
Cis-gender
Transgender
Gender dysphoria/variance
Gender non-conforming
Prevalence: very few studies/census data
National studies estimate .6-.8%
New Mexico BRFSS- 1% adults and 2-4% children

Etiology
several theories, no evidence

Diagnosis persistence
Average age of gender identity as TG/GNC 8 years old
institutional discrimination
“injustice at every turn”

2011-6450 transgender and gender non-conforming
EVERY institution [family, job, education, housing]

Healthcare
  + 20% were refused care
  + 50% have had to teach their doctors
  + HIV 4X rate of general population
  + 28% postponed care for fear of discrimination
  + 41% ATTEMPTED suicide (1.6% gen pop)

barriers to treatment
barriers to treatment

i might make a mistake
hormone therapy itself
being on hormones might affect other health issues
trauma history/need for resources
affirming health care

pronouns

it’s SO easy

UCSF Transgender “Center of Excellence”

South East Heights vs. Truman
## Feminizing Hormone Therapy

<table>
<thead>
<tr>
<th>Formulations</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>Cost (4 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spironolactone</td>
<td>50 - 100 mg OD</td>
<td>200 mg BID</td>
<td>$16.56&lt;sup&gt;a&lt;/sup&gt; - $40.58&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Cyproterone</td>
<td>12.5 - 25 mg OD</td>
<td>50 mg OD</td>
<td>$32.98&lt;sup&gt;c&lt;/sup&gt; - $101.92&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Conjugated Estrogen*</td>
<td>0.625 mg OD</td>
<td>1.25 mg OD</td>
<td>$20.01&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>Estradiol (oral)&lt;sup&gt;*&lt;/sup&gt;</td>
<td>1 - 2 mg OD</td>
<td>4 mg OD</td>
<td>$18.53 - $40.14&lt;sup&gt;f&lt;/sup&gt; (Covered by OUB with EAP request)</td>
</tr>
<tr>
<td>Estradiol Patch (transdermal)&lt;sup&gt;**&lt;/sup&gt;</td>
<td>0.1 mg OD / apply path 2x/week</td>
<td>0.2 mg OD / apply path 2x/week</td>
<td>$39.97 - $69.95&lt;sup&gt;g&lt;/sup&gt;</td>
</tr>
<tr>
<td>Estradiol valerate** injectable (IM)</td>
<td>10 mg q 2/52</td>
<td>10 mg q 1/52</td>
<td>$14.20 - $28.40</td>
</tr>
</tbody>
</table>
# Feminizing Hormone Therapy

## Effects and Expected Time Course of a Regimen Consisting of an Anti-Androgen and Estrogen

The degree and rate of physical effects is dependent on the dose and route of administration, as well as client-specific factors such as age, genetics, body habitus and lifestyle. Hormone treatment results in both reversible and irreversible feminization.

<table>
<thead>
<tr>
<th>Physical Effects</th>
<th>Reversibility</th>
<th>Onset</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening of skin/decreased oiliness</td>
<td>Reversible</td>
<td>3 - 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body fat redistribution</td>
<td>Reversible/Variable</td>
<td>3 - 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased muscle mass/strength&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Reversible</td>
<td>3 - 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinned/slowed growth of body/facial hair&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Reversible</td>
<td>6 - 12</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Male Pattern Baldness&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Reversible</td>
<td>1 - 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast growth</td>
<td>Irreversible</td>
<td>3 - 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased testicular volume</td>
<td>Variable</td>
<td>3 - 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased libido</td>
<td>Variable</td>
<td>1 - 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased spontaneous erections</td>
<td>Variable</td>
<td>1 - 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased sperm production</td>
<td>Variable</td>
<td>variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erectile Dysfunction</td>
<td>Variable</td>
<td>variable</td>
<td></td>
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</tr>
</tbody>
</table>

*<sup>a</sup> Estimates represent published and unpublished clinical observations<br>
*<sup>b</sup> Significantly dependent on amount of exercise<br>
*<sup>c</sup> Complete removal of male facial and body hair requires electrolysis, laser treatment, or both<br>
*<sup>d</sup> No regrowth, loss stops

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**Expected Onset** | **Expected Maximum Effect**

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masculinizing hormone therapy

<table>
<thead>
<tr>
<th>Formulations</th>
<th>Starting Dose</th>
<th>Maximum Dose</th>
<th>Cost Per Unit</th>
<th>Approx. Cost* (4 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testosterone enantate (IM)</td>
<td>50mg q week or 100mg q 2 weeks</td>
<td>100mg q week or 100mg q 2 weeks</td>
<td>$69.03 per vial (each vial contains 200mg/2ml x 5ml = 1000mg)</td>
<td>$13.81 - $27.60, Generally approved by ODB with EAP request</td>
</tr>
<tr>
<td>Testosterone cypionate (IM)</td>
<td>50mg q week or 100mg q 2 weeks</td>
<td>100mg q week or 100mg q 2 weeks</td>
<td>$43.31 per vial (each vial contains 100mg/ml x 10ml = 1000mg)</td>
<td>$8.66 - $17.32, Generally approved by ODB with EAP request</td>
</tr>
<tr>
<td>Testosterone Patch (transdermal)</td>
<td>2.5 - 5 mg OD</td>
<td>5 - 10 mg OD</td>
<td>$159.27 / 60 x 2.5mg patches $159.27 / 30 x 5mg patches</td>
<td>$74.33 - $297.30</td>
</tr>
<tr>
<td>Testosterone Gel (transdermal)</td>
<td>2.5 - 5g OD (2-4 pumps, equivalent to 25-50 mg testosterone)</td>
<td>5 - 10g OD (4-8 pumps, equivalent to 50-100 mg testosterone)</td>
<td>$85.00 / 30 x 2.5g patches $147.25 / 10 x 5g packets $167.55 / 2 pump bottle / Only gel in packets (not in pump form) covered by ODB</td>
<td>Sachs 80.17 - 234.04, Bottles $78.79 - 113.76</td>
</tr>
<tr>
<td>Testosterone Gel (transdermal, axillary)</td>
<td>1.5 - 3g OD (1-2 pumps, equivalent to 30-60 mg testosterone)</td>
<td>3 - 4.5ml OD (2-3 pumps, equivalent to 60-90 mg testosterone)</td>
<td>$166.89 / pump bottle / Only gel in packets (not in pump form) covered by ODB</td>
<td>$77.88 - $233.65, Adren not covered by ODB</td>
</tr>
</tbody>
</table>
masculinizing hormone therapy

### Effects and Expected Time Course of a Regimen Consisting of Testosterone

The degree and rate of physical effects is dependent on the dose and route of administration, as well as client-specific factors such as age, genetics, body habitus and lifestyle.

Hormone treatment results in both reversible and irreversible masculinization.

<table>
<thead>
<tr>
<th>Physical Effect</th>
<th>Reversibility</th>
<th>Onset</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin oiliness/acne</td>
<td>Reversible</td>
<td>1-6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body fat redistribution</td>
<td>Reversible/Variable</td>
<td>3-6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased muscle mass/strength</td>
<td>Reversible</td>
<td>6-12 months</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facial/body hair growth</td>
<td>Irreversible</td>
<td>3-6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scalp hair loss</td>
<td>Irreversible</td>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cessation of menses</td>
<td>Reversible</td>
<td>2-6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clitoral enlargement</td>
<td>Irreversible</td>
<td>3-6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal atrophy</td>
<td>Reversible</td>
<td>3-6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deepened voice</td>
<td>Irreversible</td>
<td>3-12 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infertility</td>
<td>Irreversible</td>
<td>Variable</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

a) Estimates represent published and unpublished clinical observations
b) Significantly dependent on amount of exercise

d) Expected Onset

e) Expected Maximum Effect
RESOURCES
1. Endocrine society guidelines 2017
2. UCSF Transgender Center of Excellence
3. WPATH Standards of Care
4. Rainbow health hormone guides
5. memcclain@salud.unm.edu

LINKS
5. Contact me any time!
HIV Pre-Exposure Prophylaxis (PrEP)

ED FANCOVIC, M.D.
DIVISION OF GENERAL INTERNAL MEDICINE
DEPARTMENT OF MEDICINE
**HIV PrEP: Effectiveness**

**Cochrane review 2012**

Tenofovir + Emtricitabine compared to placebo for preventing HIV in high-risk individuals

**Patient or population:** High-risk HIV-uninfected individuals (including serodiscordant couples, men who have sex with men and sex workers)

**Settings:** High, middle and low income settings

**Intervention:** Oral Tenofovir + Emtricitabine

**Comparison:** placebo

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Illustrative comparative risks* (95% CI)</th>
<th>Relative effect (95% CI)</th>
<th>No of Participant(s) (studies)</th>
<th>Quality of the evidence (GRADE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV infection</td>
<td>Placebo 39 per 1000 (11 to 33)</td>
<td>RR 0.49 (0.28 to 0.85)</td>
<td>8813 (4 studies)</td>
<td>Moderate 1</td>
</tr>
<tr>
<td></td>
<td>TDF+ FTC 19 per 1000 (11 to 33)</td>
<td>RR 1 (0.83 to 1.19)</td>
<td>6862 (3)</td>
<td>Moderate 1</td>
</tr>
<tr>
<td>Serious adverse events</td>
<td>Study population</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### HIV PrEP: Efficacy

**iPrex study 2010: 2499 MSM**

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>FTC–TDF</th>
<th>Placebo</th>
<th>FTC–TDF</th>
<th>Placebo</th>
<th>Hazard Ratio (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention-to-treat</td>
<td>1251</td>
<td>1248</td>
<td>38</td>
<td>72</td>
<td>0.53 (0.36–0.78)</td>
<td>0.001</td>
</tr>
<tr>
<td>Modified intention-to-treat</td>
<td>1251</td>
<td>1248</td>
<td>36</td>
<td>64</td>
<td>0.56 (0.37–0.85)</td>
<td>0.005</td>
</tr>
<tr>
<td>As treated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>&lt;50% Pill use</td>
<td>NA</td>
<td>NA</td>
<td>13</td>
<td>17</td>
<td>0.68 (0.33–1.41)</td>
<td></td>
</tr>
<tr>
<td>≥50% Pill use</td>
<td>NA</td>
<td>NA</td>
<td>23</td>
<td>47</td>
<td>0.50 (0.30–0.82)</td>
<td></td>
</tr>
<tr>
<td><strong>Pill use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td>&lt;90% Pill use</td>
<td>NA</td>
<td>NA</td>
<td>28</td>
<td>34</td>
<td>0.79 (0.48–1.31)</td>
<td></td>
</tr>
<tr>
<td>≥90% Pill use</td>
<td>NA</td>
<td>NA</td>
<td>8</td>
<td>30</td>
<td>0.27 (0.12–0.59)</td>
<td></td>
</tr>
</tbody>
</table>

HIV PrEP: Efficacy

“In the FTC–TDF group, among subjects with a detectable study-drug level, as compared with those without a detectable level, the odds of HIV infection were lower by a factor of 12.9 (95% CI, 1.7 to 99.3; P<0.001), corresponding to a relative reduction in HIV risk of 92% (95% CI, 40 to 99; P<0.001). After adjustment for reported unprotected receptive anal intercourse, the relative risk reduction was 95% (95% CI, 70 to 99; P<0.001).”

Most frequently quoted by advocates and media

However, this was a nested case-control analysis involving only 77 participants
Who should consider PrEP?

Men (and transgender women) who have sex with men, unless in mutually monogamous relationship

HIV-discordant couples

Injection drug users

Sex workers

Anyone with multiple sex partners/inconsistent condom use

Anyone with high-risk sex partners (#1-5 above)

Residents of high-prevalence areas
What patients should know

Need to take every day: NOT a night-of or morning-after pill
Intended to be used with condoms, not instead of them
Need to get lab work every 3 months while taking meds
Dearth of data regarding use during pregnancy and breastfeeding (appears safe thus far)
What clinicians should know

Baseline labs: HIV ab, creatinine, HBS ag, HBS ab, HB core ab (IgG/total), pregnancy test

If hepatitis B screening is negative/nonimmune, vaccinate

Every 3 months: HIV ab, pregnancy test

After 3 months, then every 6 months: creatinine

Every 6 months: bacterial STI testing (include all relevant sites: pharyngeal, rectal, urine). Consider hepatitis C and syphilis testing also.
When NOT to prescribe PrEP

If HIV screen returns positive
If baseline renal function is abnormal
If HBS ag is +: consult GI or ID first
If HB core ab is +: consult GI or ID first
Potential toxicities of tenofovir disoproxil fumarate (TDF)

Minor/self-limited: rash (subsides with diphenhydramine), nausea, insomnia

Renal toxicity: increased creatinine, proteinuria/Fanconi syndrome

Osteoporosis
Insurance/payment aspects

TDF/FTC fixed-dose combination (Truvada®) has a formal FDA indication for PrEP

Cost: ~$1200/month

Is covered by all insurances; a few require prior authorization

Copayments may be high

Manufacturer does have copayment assistance programs

DOH/Ryan White programs may help low-income NM residents
Future developments

Intermittent use vs. continuous use
TDF vs. TAF
Other agents, including depot injectables
Resources


(search “CDC HIV PrEP”)