

COMPOUNDING IDEAS FOR MEN'S HEALTH

BRYAN ZIEGLER, PHARM.D, MBA
MOSS COMPOUNDING PHARMACY



TOPICS FOR DISCUSSION

- Low Testosterone – Treatment options beyond Testosterone
- Testosterone Replacement



LOW TESTOSTERONE

Symptoms:

Specific Symptoms	Less Specific Symptoms
Difficulty establishing and/or maintain full erections	Increased fatigue/more tired than usual
Reduced sex drive/spontaneous early morning erections	Less enjoyment in personal interests/hobbies
Height loss/Increased joint and/or muscle pains	Decreased mental sharpness/poor concentration
Loss of axillary/pubescent hair, reduced need to shave	Changes in usual sleep pattern
Small (<5ml) or shrinking testes	Decreased muscle mass/muscle strength
Infertility/low to zero sperm count	Increased body fat/waist size
Breast discomfort/gynecomastia	Diminished physical or work performance
Hot flushes, sweats	Mild anemia

Typically Lab levels of Total Testosterone <300-400 ng/dL (serum) +/- symptoms



LOW TESTOSTERONE – TREATMENT PLANS

- Lifestyle modification
 - Reduce sedentary lifestyle, central adiposity, excessive alcohol, & smoking
 - Initiate healthy diet plan and aerobic/weight based exercise
- Reduce Estrogen
 - Aromatase Inhibitors – Anastrozole and Letrozole, also Chrysin potentially
- Increase Testicular output of Testosterone
 - HCG – mimics effects of LH and FSH
 - Clomiphene – acts as a SERM, which increases GNRH levels, which increase FSH and LH secretion
- Supplement Testosterone



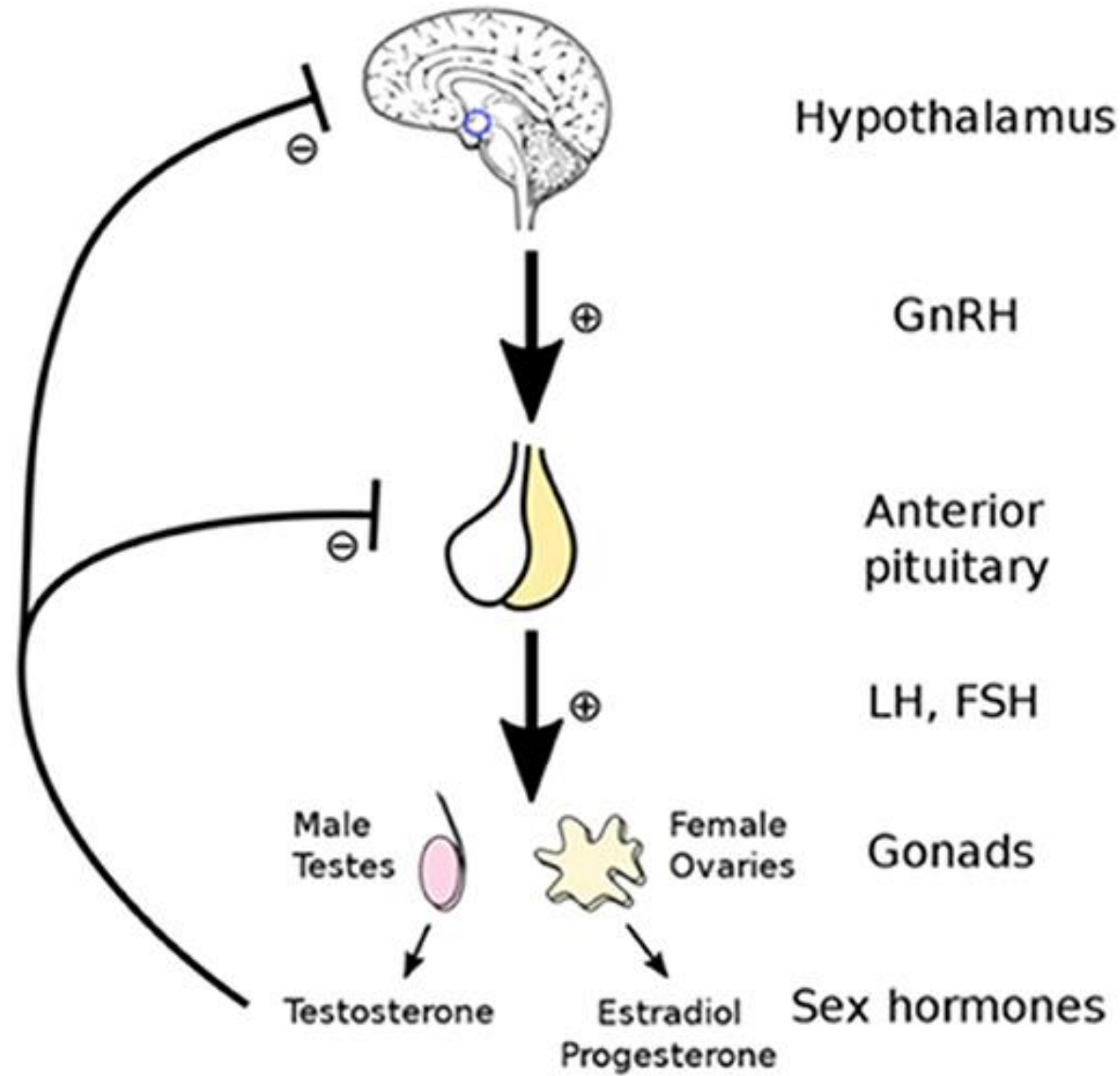
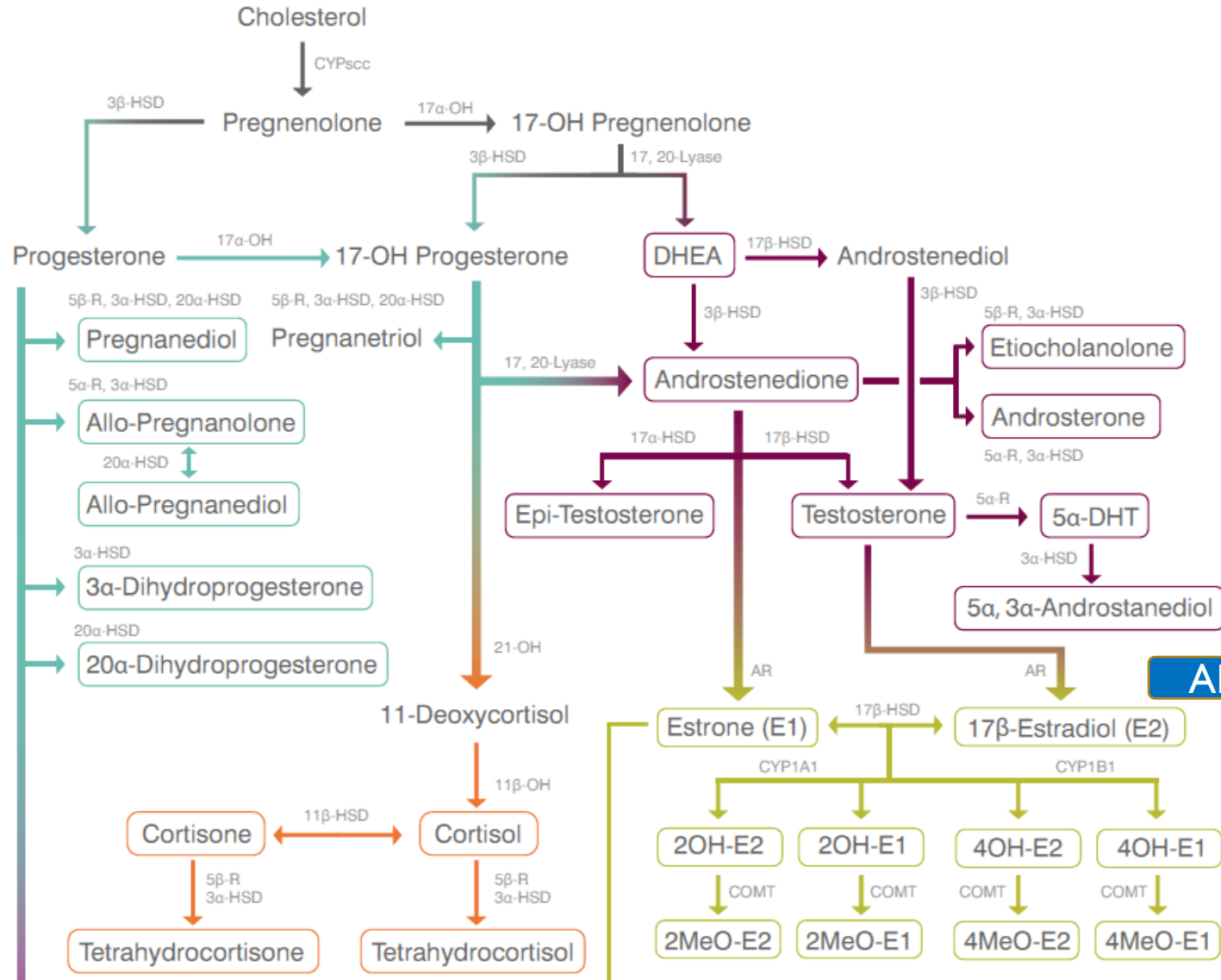


Image Reference: <https://www.frontiersin.org/articles/10.3389/fendo.2020.00011/full>

The Steroid Hormone Cascade

Boxed metabolites are reported by ZRT.

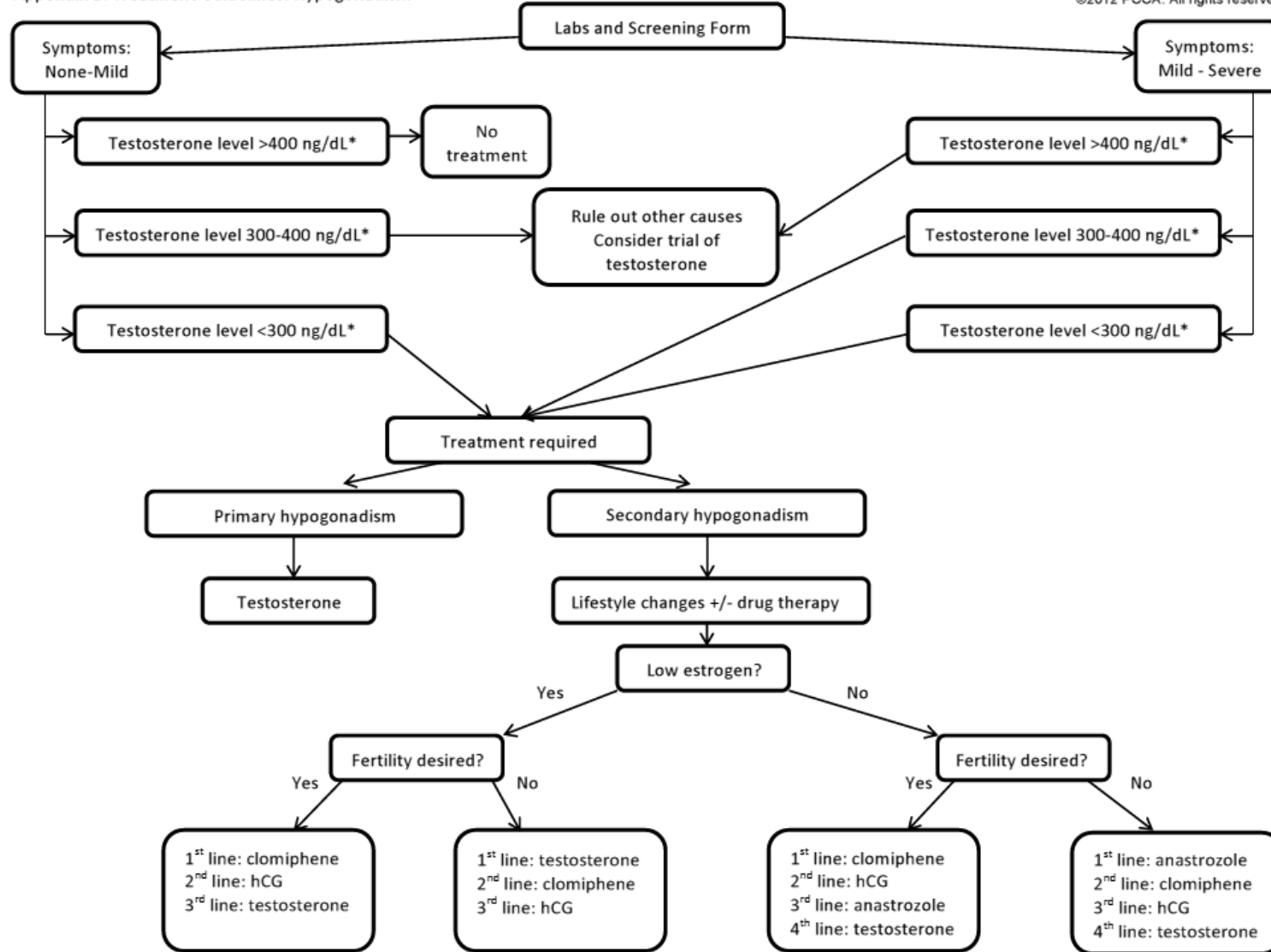


AR = aromatase



Appendix B. Treatment Guidelines: Hypogonadism

©2012 PCCA. All rights reserved.



*Total serum T levels were used in this diagram for more universal application and understanding, despite free T levels being more representative of the amount of active T available



TREATMENTS BEYOND TESTOSTERONE



Appendix C.

Drug	Dosage Form	Dose Range	Notes
Anastrozole	Capsules	0.1 mg daily – 0.5 mg every other day	
	Sublingual	0.1 mg daily	
Letrozole	Tablets	2.5 mg 3x/week – 2.5 mg daily	
hCG	IM injection or SQ injection	500 Units – 1500 Units 3 times per week	
Clomiphene	Tablets or Capsules	25 mg every other day	
		50 mg daily	
		50 mg twice daily	

Reference: PCCA Treatment Options for Andropause.



TESTOSTERONE THERAPY



TESTOSTERONE REPLACEMENT

- Topical – Numerous commercial options (all alcohol based)
 - Compound options
- Injectable – IM – recommend shorter intervals and lower doses (75mg-100mg Qweek)
- Buccal/Sublingual – have to dose TID-QID – rapid absorption and rapid metabolism. (10-25mg /dose)
 - Compounded option



TESTOSTERONE IN ATREVIS HYDROGEL

- Compounded option
- Hydro-based gel
- Concentrated to a Gram volume per dose
- Strengths can be customized – most common:
 - 20mg/gm
 - 40mg/gm
 - 50mg/gm
 - 75mg/gm
 - 100mg/gm
- SIG: Apply 1gm to shoulder QAM, rub in well.



TESTOSTERONE IN ATREVIS HYDROGEL

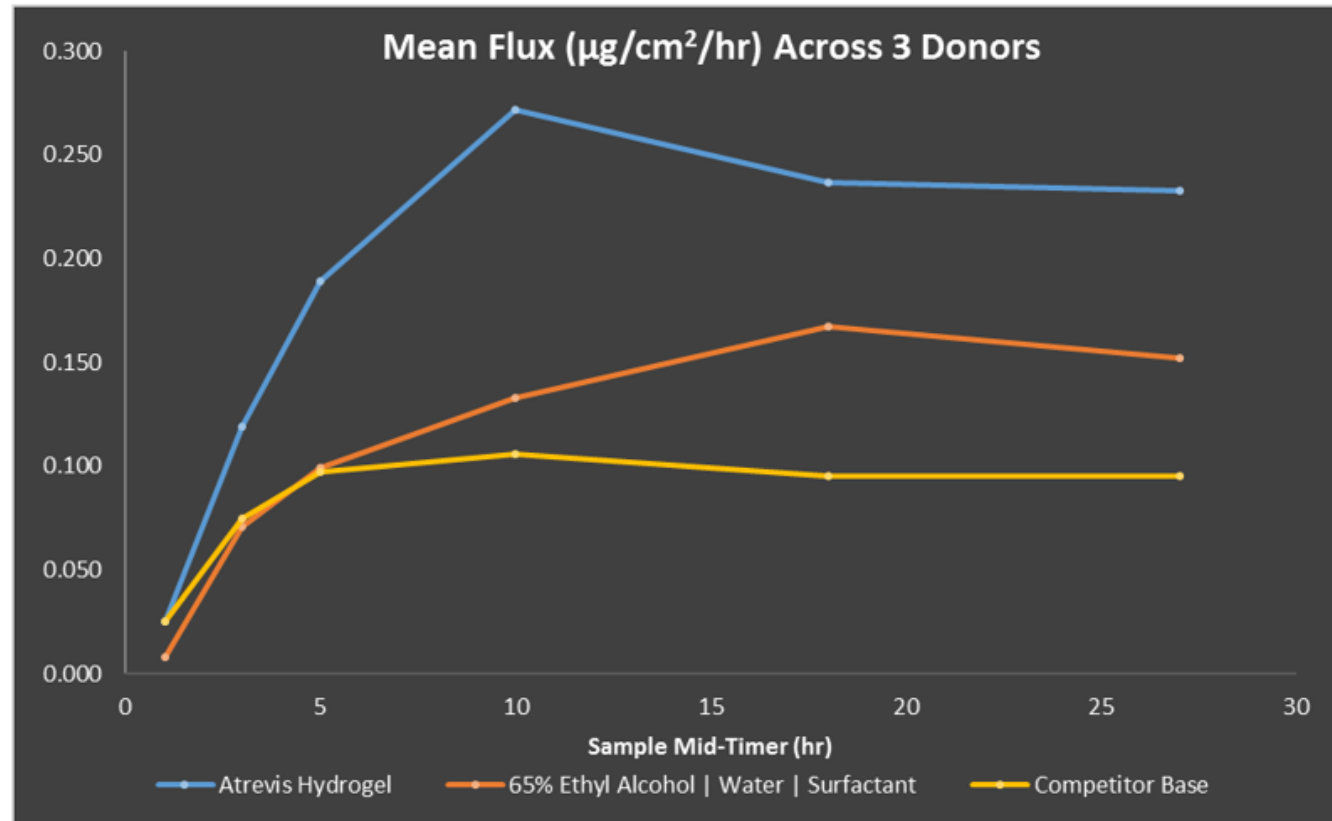
Name	SIG	Quantity	Notes
Testosterone 20mg/gm in Atrevis Topical Gel	Apply 1gm (20mg) topically QD.	30gm	Hydrogel is typically applied to upper arm/shoulder. Price = \$60 per 30gm
Testosterone 50mg/gm in Atrevis Topical Gel	Apply 1gm (50mg) topically QD.	30gm	Hydrogel is typically applied to upper arm/shoulder. Price = \$70 per 30gm
Testosterone 100mg/gm in Atrevis Topical Gel	Apply 1gm (100mg) topically QD.	30gm	Hydrogel is typically applied to upper arm/shoulder. Price = \$120 per 30gm

Benefits of Testosterone in Atrevis Hydrogel include:

- **Superior testosterone delivery** – Independent testing showed Atrevis hydrogel delivered **1.62 times** as much testosterone through the skin as hydro-alcohol preps.
- **Alcohol-free preparation** – reduces the risk of evaporation and maintaining chemical stability while not drying the skin.
- **Quick absorption** – absorbs quickly, leaving a smooth texture without a greasy residue.
- **Non-comedogenic**



TESTOSTERONE ATREVIS HYDROGEL



Mean Flux ($\mu\text{g}/\text{cm}^2/\text{hr}$) Results: Percutaneous Absorption of Testosterone through ex Vivo Human Torso Skin over 30 Hours from a Single Application (Mean, $n = 3$ Donors)

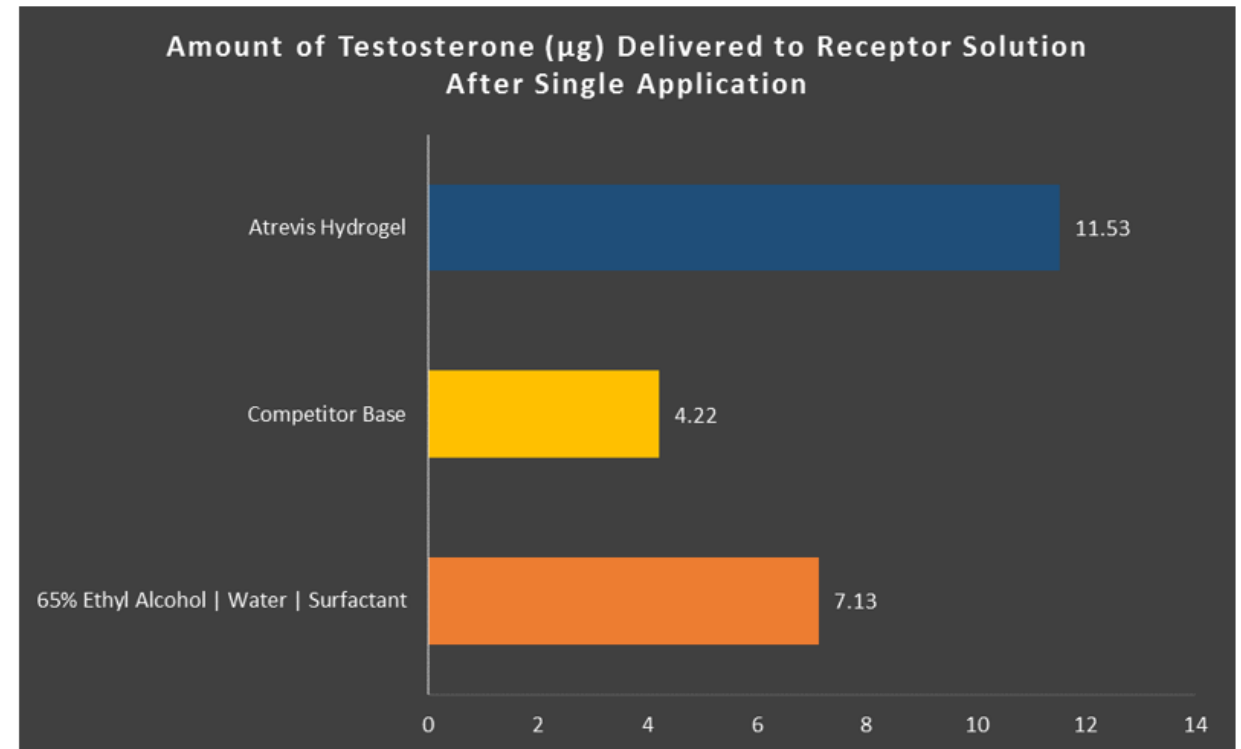
Source: pccarx.com



TESTOSTERONE ATREVIS HYDROGEL

In vitro testing showed that Atrevis delivered:

- **2.73 times as much testosterone** through the skin as a competitor base
- **1.62 times as much testosterone** as a hydro-alcoholic surfactant solution



Amount of Testosterone (μg) Delivered into and through ex Vivo Human Skin from a Single Application

Source: pccarx.com

UPCOMING EVENTS

Join us the 4th Tuesday of every month
for new presentations

COMPOUNDING FOR DERMATOLOGY - FOCUS ON ECZEMA/PSORIASIS

TUESDAY, DECEMBER 28 @ 6:30 – 7 PM



Sick of the itch?

Ask us about personalized medications
to help with the symptoms of psoriasis.



COMPOUNDING IDEAS FOR MEN'S HEALTH

FOR DETAILS - VISIT THE PRESCRIBER LEARNING CENTER @

www.mosscompounding.com



QUESTIONS?

Bryan Ziegler, PharmD, MBA

843.665.0289

bziegler@mosscompounding.com





MOSS

**COMPOUNDING
PHARMACY**