

# Atrevis™ Hydrogel

Patented Technology

An advanced hydrogel base for use in topical testosterone preparations.

PCCA # 30-4986



## The next-generation base for testosterone delivery.

It has long been assumed that testosterone absorbs well topically from a variety of bases. However, many patients and physicians often report problems with achieving desired testosterone levels in male patients. There are many variables that can affect these levels in men, and PCCA developed a new base that has proven results for testosterone delivery.

**Atrevis Hydrogel** is an advanced topical base designed specifically to deliver testosterone through the skin in male patients.

### ADVANCED TECHNOLOGY

Atrevis uses a novel delivery system to drive testosterone through the skin, which includes its hydrogel polymer network along with three unique, naturally derived skin-permeation enhancers. This proprietary delivery system was developed specifically to drive testosterone through the skin.

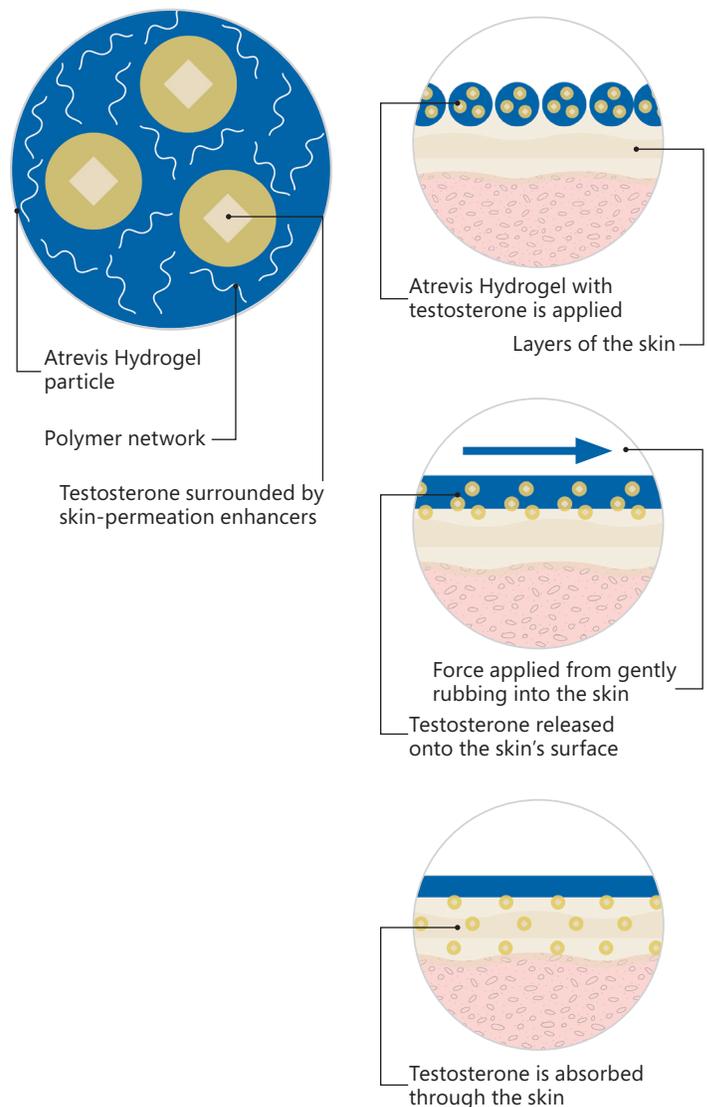
### ADVANCED THINKING

As a next-generation base, Atrevis Hydrogel is formulated without alcohol. Even though it is common in testosterone preparations, alcohol can dry the skin and cause irritation in some patients. It can also evaporate from a preparation, which may result in grittiness at higher API concentrations and may affect chemical potency over time.

## HOW IT WORKS

The skin-permeation enhancers improve the solubility and dispersibility of testosterone, helping it to transverse the skin when it is delivered.

The physical properties of the hydrogel allow its polymer network to quickly and easily release the testosterone as it is gently rubbed into the skin.



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## THE PROOF

The results of independent testing show that Atrevis Hydrogel significantly outperformed both a reference base (hydro-alcoholic surfactant solution) and a competitor base.

The results show that:

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

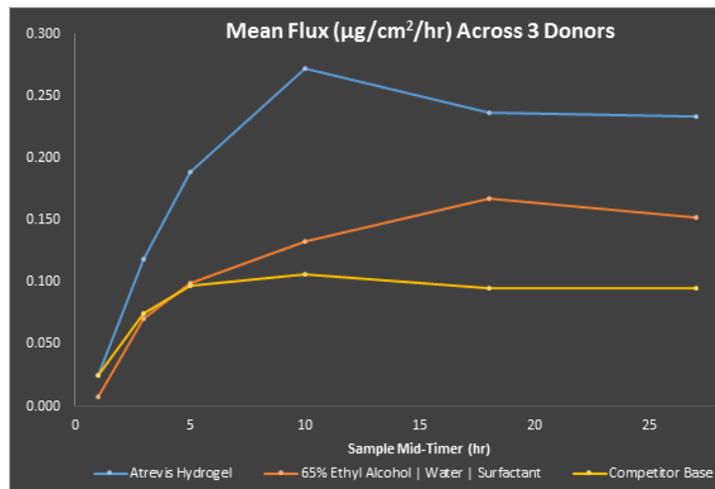


Figure 1: Mean Flux (µg/cm²/hr) Results: Percutaneous Absorption of Testosterone Through ex Vivo Human Torso Skin Over 30 Hours From a Single Application (Mean, n = 3 Donors)

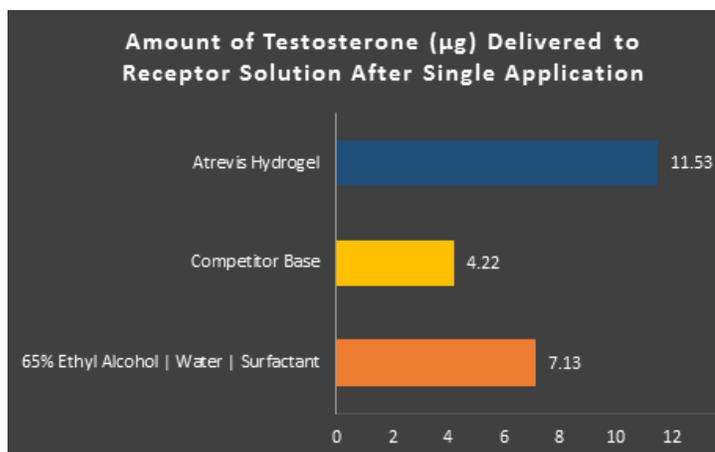


Figure 2: Amount of Testosterone (µg) Delivered Into and Through ex Vivo Human Skin From a Single Application

## BENEFITS

- **Superior testosterone delivery:** Independent testing shows that Atrevis Hydrogel delivers more testosterone through the skin than both a hydro-alcoholic surfactant solution and a competitor base
- **Alcohol-free:** Atrevis is formulated without alcohol, reducing the risk of evaporation and maintaining chemical stability while not drying the skin
- **Quick absorption:** It absorbs quickly when rubbed into the skin, leaving a smooth texture without a greasy residue
- **Non-comedogenic**

## RELATED SPECIALTIES

- Family medicine
- Internal medicine
- Urology
- Cardiology
- Integrative medicine
- Endocrinology

## FORMULATED WITHOUT

- Alcohol
- Parabens
- Mineral oil

## ALSO AVAILABLE

### PCCA VersaBase® Cream

- An ideal compounding base for **female hormone replacement therapy**, including topical and vaginal preparations
- An elegant, yet durable, topical cream that simulates the natural moisturizing barrier of the skin through its emulsion system
- Rubs in quickly, leaving a soft and silky feel

PCCA #30-3641

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## FORMULATION EXAMPLE

Testosterone 0.5% to 20% Topical Gel (Atrevis Hydrogel)  
(FormulaPlus™ BUD Bracketed Study)

For more example formulas, please ask your local compounding pharmacist.

## FREQUENTLY ASKED QUESTIONS

### Can Atrevis Hydrogel be used for women's hormone preparations?

We do not recommend using Atrevis Hydrogel for women's topical or vaginal hormone preparations. It was developed specifically to deliver androgenic hormones in the higher concentrations and doses required for male HRT, and designed according to market research on preferred topical delivery-system characteristics for male patients.

### Can Atrevis Hydrogel be used with APIs other than testosterone?

Yes. However, Atrevis was designed specifically to deliver androgenic hormones and APIs that complement these hormones for male patients.

### Can clomiphene citrate be added to formulas that use Atrevis?

No. Clomiphene citrate is incompatible with Atrevis.

## PLEASE NOTE

*Always make sure you have checked the PCCA Formula Database and are following the most up-to-date version of a formula, as changes are continuously made to existing formulations to provide the highest quality. The formulas and/or statements listed are provided for educational purposes only. They are compounding ideas that have commonly been requested by physicians, and have not been evaluated by the Food and Drug Administration. Formulas and/or material listed are not to be interpreted as a promise, guarantee or claim of therapeutic efficacy or safety. The information contained herein is not intended to replace or substitute for conventional medical care, or encourage its abandonment. Every patient is unique, and formulas should be adjusted to meet their individual needs.*

## FREQUENTLY ASKED QUESTIONS (continued)

### Why was a hydro-alcoholic solution used for comparison in testing?

A hydro-alcoholic solution would be expected to have high delivery because of its ability to dissolve testosterone and disrupt the stratum corneum of the skin, so we considered it a good preparation with which to compare Atrevis Hydrogel. Alcohol is also commonly used in many commercial and compounded testosterone preparations.

### Why does the label on the Atrevis Hydrogel container instruct to "mix well prior to use"?

Since this base is a hydrogel system and not a typical emulsion, some water droplets can appear on the top of the base. This does not mean it is separating or breaking. However, we recommend following the label instructions and mixing the base well before compounding with it.

Our formulations also have the following pre-procedure note:

**Note:** When using PCCA Atrevis™ Hydrogel Base, it is recommended to follow labeling instructions on the container to mix the base thoroughly before use in the formulation.

The final compounded preparation will not require any additional mixing as separation does not occur after an API is added."