How to Stop Testosterone Safely and Possibly Reset Your Hormonal Axis

From the book: **Testosterone: A Man's Guide (click here)**

Some men need to stop using testosterone or other androgens because side effects are a problem (e.g., low sperm count interferes with their goal to have children). Most physicians advise the patient to just stop testosterone without thinking about the possible consequences of the hypogonadal state after treatment cessation. Will the patient be worse off than when he started?

HPGA Normalization Protocol After Androgen Treatment

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Objective

To develop an approach to cycle androgens that would result in significant changes in body composition and accelerate the normalization of the hypothalamic pituitary gonadal axis (HPGA) after cessation of androgens.

Methods

An uncontrolled study of 19 HIV-negative eugonadal men, ages 23 - 57 years, administered testosterone cypionate and nandrolone decanoate for 12 weeks, and then were treated simultaneously with a combined regimen of human chorionic gonadotropin (hCG) (2500 IU/QODx16d), clomiphene citrate (50 mg PO BID x 30d) and tamoxifen (20 mg PO QD x 45d), to restore the HPGA.

Results

Mean FFM by DEXA increased from 64.1 to 69.8 kg (p<.001); percent body fat decreased from 23.6 to 20.9 (p<.01); strength increased significantly from 357.4 lb to 406.4 lb (p=.02). No significant changes in serum chemistries and liver function tests were found. HDL-C decreased from a mean value of 44.3 to 38.0 (p=.02). Mean values for luteinizing hormone (LH) and total testosterone (T) were 4.5 and 460, respectively prior to androgen treatment. At the conclusion of the 12-week treatment with androgens the mean LH <0.7 (p<.001) and total testosterone was 1568 (p<.001). The mean values after treatment with the combined regimen were LH=6.2 and testosterone=458.

Discussion

The use of androgens has been reported to improve lean body mass, strength, sexual function, and mood accompanied by side effects caused by continuous uninterrupted use of these compounds (polycythemia, testicular atrophy, hypertension, liver dysfunction [oral androgens] and alopecia.) Androgen-induced HPGA suppression causes a severe hypogonadal state in most patients that often require an extensive period of considerable duration for normalization. This prevents most if not all individuals from cycling off these medications due to the adverse impact of this state on their previously gained LBM and quality of life. The protocol of hCG-clomiphene-tamoxifen was successful in restoring the HPGA within 45 days after androgen cessation. Further controlled studies are needed to determine if these results can be duplicated in HIV-positive subjects.

Patient General Characteristics

	Mean	SD	Range
Age (yrs)	36.4	9.6	23-57
Height (cm)	179.3	10.3	152.4-198.1
Weight (kg)	87.7	9.8	71.7-106.6
BMI (kg/m2)	27.5	4.7	22.3-42.8

Mean Hormone Levels During Program

	Initial		Day 30		Day 90		Final		Change		P
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
T	459.5	224.4	1568.0*	551.6	1262.9*	551.6	457.9	206.7	-1.6	17.7	NS
LH	4.5	1.9	<0.7*	-	<0.7*	-	6.2	5.5	1.7	3.6	NS

* P<.001 to initial value.

Serum Chemistry

	Initial		Final		Change		P
	Mean	SD	Mean	SD	Mean	SD	
BUN	20.1	5.5	20.7	6.2	0.6	0.7	NS
ALKP	75.8	15.4	65.6	20.1	10.2	4.8	.005
ALT	37.1	23.9	42.3	35.9	5.2	12.0	NS
AST	32.8	14.4	38.9	25.7	6.1	11.4	NS
Chol,Total	191.2	45.5	185.3	39.5	5.9	6.0	NS
HDL-C	44.3	14.1	38.0	11.2	6.3	2.9	.02
LDL-C	114.7	38.1	112.0	39.1	1.8	1.1	NS
TG	165.8	119.6	169.5	98.9	3.6	20.7	NS

Mean Body Composition & Strength

	Initial		Final		Change		P
	Mean	SD	Mean	SD	Mean	SD	
Fat (%)	23.6	7.2	20.9	4.8	2.8	2.4	.02
Weight (kg)	87.7	9.8	91.5	9.2	3.8	0.6	.001
Fat Free Mass (kg)	64.1	7.3	69.8	7.7	5.7	0.3	.001
Fat (kg)	23.4	7.0	21.6	5.0	1.9	1.9	NS
Σ Strength Tests (3)	357.4	125.6	406.4	151.4	49.0	25.9	.05

Testosterone replacement therapy and anabolic steroids can lead to HPTA (Hypothalamic-Pituitary-Testicular Axis- shown in the figure below) dysfunction. Supplemental testosterone can inhibit the release of the body's own testosterone production through negative feedback inhibition on LH levels. This feedback inhibition also results in suppression of FSH levels, leading to suppression of sperm production (spermatogenesis).

Not all studies show a shutdown of the HPTA in patients after testosterone cessation. In a study previously mentioned in the Moodiness section, Dr. Rabkin compiled data for 42 patients who were treated with testosterone for 12 weeks and then randomized (double blind) to receive placebo injections for six weeks. At week 13 (one week after their first placebo injection and three weeks since the last active injection), mean testosterone level was 286 ng/dL. At week 15 (after 2 placebo injections), mean testosterone level was 301, and after week 17 (after three placebo injections), mean serum level was 324 ng/dL. None of these values was statistically different from the mean baseline testosterone level of 308 ng/dL. These data suggest that for men who were already hypogonadal there was no further decline in the body's production of testosterone once testosterone therapy was discontinued after 12 weeks of use. It is not known if longer-term testosterone use would have the same results.

When high-dose testosterone use (as in bodybuilding) is discontinued, the HPTA dysfunction that occurs when it is stopped may be a lot more pronounced. Stopping treatment may cause the patient to suffer all the symptoms

of hypogonadism for weeks or months. Many lose a lot of the muscle mass they gained through their cycle of anabolics plus testosterone. In some cases a specific medical protocol is required for HPTA normalization. If you go to bodybuilding sites, you will see Clomid and HCG mentioned a lot for this purpose.

There are no controlled data from studies using any protocols to accelerate the normalization of normal testosterone production in men who have used either supplemented physiologic (normal) or supraphysiologic (above normal) doses of testosterone for long periods.

For men who had normal testosterone before starting testosterone or anabolic steroids (athletes, bodybuilders or certain people with wasting syndrome) and who want or need to stop those compounds, some physicians have attempted to jump-start testicular testosterone production using a combination of products that have different effects on the HPTA and estrogen receptors. One such physician is Dr. Michael Scally from Houston (read the interview with him: Click here) who presented a poster at the Lipodystrophy and Adverse Reactions in HIV conference in San Diego in 2002 that reported the use of a protocol to normalize testosterone production in HIV-positive patients after prolonged anabolic steroid and testosterone use for their wasting syndrome.

The protocol consisted of the use of HCG, clomiphene citrate, and tamoxifen (read about each of these products in their respective sections). Treatment takes place at two discrete intervals. The first treatment interval is to initiate the restoration of gonadal function. The second interval is to restore the hormonal pathways among the hypothalamus, the pituitary and the gonads. The medications are initiated simultaneously after cessation of androgens when it is expected that the body would try to start to slowly make its testosterone. If the testosterone ester (cypionate, enanthate, undecanoate, Sustanon) that the patient used is known (the most common one in the United States is depo testosterone or testosterone cypionate), its half-life in the body can be estimated so that the date to begin the medical protocol can be predicted with some accuracy to assess a time when no pharmaceutical testosterone remains in the body.

The protocol for HPTA normalization contains (edited on Dec 2017):

First 15 days:

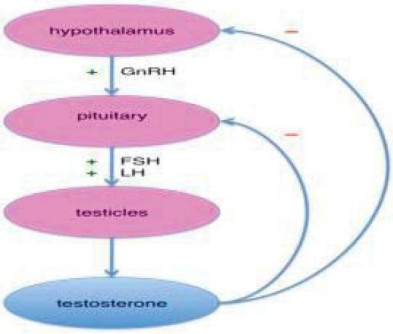
HCG 1,000-2,000 IU (subcutaneous) every 3 days;
Clomiphene citrate 25-50 mg orally once a day; and
Tamoxifen 20 mg orally once a day.

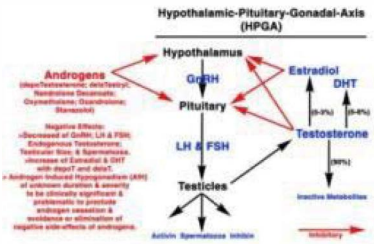
A satisfactory testosterone level on day 15, typically 350 ng/mL or greater, is followed by the oral medications (no HCG) for an additional 15 days (25 mg per day clomiphene would be sufficient).

This protocol has not been tested in many patients but has shown good results in restoring HPTA in a month. I know that this sounds like a long time but without treatment the body's restoration process would take about the same length of time that somebody was using androgens. In some, HPGA function and testosterone production never returns to normal. Hopefully we will see data on approaches like this one used in patients who need to stop testosterone or anabolics after long-term use. However, no such studies are listed in clinicaltrials.gov.

Most doctors will refuse to prescribe the protocol above since they are not familiar with it. But remember that this protocol will likely not help most men who had low testosterone before starting TRT anyway. It is more likely to be helpful to those who used testosterone and anabolics for muscle building purposes and who were not hypogonadal before starting their muscle building cycles.

These are two diagrams that show how our hypothalamic-pituitary-Testicular Axis interconnects and how regulation of testosterone production happens via a feedback loop that takes into consideration the amount of testosterone and estradiol that we have in our blood.





This is an abstract of a report of a few patients who used Dr Michael Scally's HPTA protocol. We presented this at a conference.