

MAGNUS PHARMACEUTICALS

# Test C

Testosterone cypionate 250mg/ml U.S.P. (10ml VIAL)

**Read all of this leaflet carefully before you start taking this medicine because it contains important information for you.**

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist or nurse.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet.

## About

Testosterone cypionate is a slow-acting injectable ester of the primary male androgen testosterone. Testosterone is also the principle anabolic hormone in men, and is the basis of comparison by which all other anabolic/androgenic steroids are judged. As with all testosterone injectables, testosterone cypionate is highly favored by athletes for its ability to promote strong increases in muscle mass and strength. It is interesting to note that while a large number of other steroidal compounds have been made available since testosterone injectables, they are still considered to be the dominant bulking agents among bodybuilders. There is little argument that these are among the most powerful mass drugs available, testosterone cypionate included.

## Side Effects (Estrogenic)

Testosterone is readily aromatized in the body to estradiol (estrogen). The aromatase (estrogen synthetase) enzyme is responsible for this metabolism of testosterone. Elevated estrogen levels can cause side effects such as increased water retention, body fat gain, and gynecomastia. Testosterone is considered a moderately estrogenic steroid. An anti-estrogen such as clomiphene citrate or tamoxifen citrate may be necessary to prevent estrogenic side effects. One may alternately use an aromatase inhibitor like Arimidex (anastrozole), which effects. One may alternately use an aromatase inhibitor like Arimidex (anastrozole), which more efficiently controls estrogen by preventing its synthesis. Aromatase inhibitors can be quite expensive in comparison to anti-estrogens, however, and may also have negative effects on blood lipids.

Estrogenic side effects will occur in a dose-dependant manner, with higher doses (above normal therapeutic levels) of testosterone cypionate more likely to require the concurrent use of an anti-estrogen or aromatase inhibitor. Since water retention and loss of muscle definition are common with higher doses of testosterone cypionate, this drug is usually considered a poor choice for dieting or cutting phases of training. Its moderate estrogenicity makes it more ideal for bulking phases, where the added water retention will support raw strength and muscle size, and help foster a stronger anabolic environment.

## Side Effects (Androgenic)

Testosterone is the primary male androgen, responsible for maintaining secondary male sexual characteristics. Elevated levels of testosterone are likely to produce androgenic side effects including oily skin, acne, and body/facial hair growth. Men with a genetic predisposition for hair loss (androgenetic alopecia) may notice accelerated male pattern balding. Those concerned about hair loss may find a more comfortable option in nandrolone decanoate, which is a comparably less androgenic steroid. Women are warned of the potential virilizing effects of anabolic/androgenic steroids, especially with a strong androgen such as testosterone. These may include deepening of the voice, menstrual irregularities, changes in skin texture, facial hair growth, and clitoral enlargement.

In androgen-responsive target tissues such as the skin, scalp, and prostate, the high relative androgenicity of testosterone is dependant on its reduction to dihydrotestosterone (DHT). The 5-alpha reductase enzyme is responsible for this metabolism of testosterone. The concurrent use of a 5-alpha reductase inhibitor such as finasteride or dutasteride will interfere with site-specific potentiation of testosterone action, lowering the tendency of testosterone drugs to produce androgenic side effects. It is important to remember that anabolic and androgenic effects are both mediated via the cytosolic androgen receptor. Complete separation of testosterone's anabolic and androgenic properties is not possible, even with total 5-alpha reductase inhibition.

## Side Effects (Hepatotoxicity)

Testosterone does not have hepatotoxic effects; liver toxicity is unlikely. One study examined the potential for hepatotoxicity with high doses of testosterone by administering 400 mg of the hormone per day (2,800 mg per week) to a group of male subjects. The steroid was taken orally so that higher peak concentrations would be reached in hepatic tissues compared to intramuscular injections. The hormone was given daily for 20 days, and produced no significant changes in liver enzyme values including serum albumin, bilirubin, alanine-amino-transferase, and alkaline phosphates.

## Side Effects (Cardiovascular)

Anabolic/androgenic steroids can have deleterious effects on serum cholesterol. This includes a tendency to reduce HDL (good) cholesterol values and increase LDL (bad) cholesterol values, which may shift the HDL to LDL balance in a direction that favors greater risk of arteriosclerosis. The relative impact of an anabolic/androgenic steroid on serum lipids is dependant on the dose, route of administration (oral vs. injectable), type of steroid (aromatizable or non-aromatizable), and level of resistance to hepatic metabolism. Anabolic/androgenic steroids may also adversely affect blood pressure and triglycerides, reduce endothelial relaxation, and support left ventricular hypertrophy, all potentially increasing the risk of cardiovascular disease and myocardial infarction.

Testosterone tends to have a much less dramatic impact on cardiovascular risk factors than synthetic steroids. This is due in part to its openness to metabolism by the liver, which allows it to have less effect on the hepatic management of cholesterol. The aromatization of testosterone to estradiol also helps to mitigate the negative effects of androgens on serum lipids. In one study, 280 mg per week of testosterone ester (enanthate) had a slight but not statistically significant effect on HDL cholesterol after 12 weeks, but when taken with an aromatase inhibitor a strong (25%) decrease was seen. Studies using 300 mg of testosterone ester (enanthate) per week for 20 weeks without an aromatase inhibitor demonstrated only a 13% decrease in HDL cholesterol, while at 600 mg the reduction reached 21%. The negative impact of aromatase inhibition should be taken into consideration before such drug is added to testosterone therapy.

Due to the positive influence of estrogen on serum lipids, tamoxifen citrate or clomiphene citrate are preferred to aromatase inhibitors for those concerned with cardiovascular health, as they offer a partial estrogenic effect in the liver. This allows them to potentially improve lipid profiles and offset some of the negative effects of androgens. With doses of 600 mg or less per week, the impact on lipid profile tends to be noticeable but not dramatic, making an anti-estrogen (for cardioprotective purposes) perhaps unnecessary. Doses of 600 mg or less per week have also failed to produce statistically significant changes in LDL/VLDL cholesterol, triglycerides, apolipoprotein B/C-III, C-reactive protein, and insulin sensitivity, all indicating a relatively weak impact on cardiovascular risk factors. When used in moderate doses, injectable testosterone esters are usually considered to be the safest of all anabolic/androgenic steroids.

To help reduce cardiovascular strain it is advised to maintain an active cardiovascular exercise program and minimize the intake of saturated fats, cholesterol, and simple carbohydrates at all times during active AAS administration. Supplementing with fish oils (4 grams per day) and a natural cholesterol/antioxidant formula such as Lipid Stabil or a product with comparable ingredients is also recommended.

## Side Effects (Testosterone Suppression)

All anabolic/androgenic steroids when taken in doses sufficient to promote muscle gain are expected to suppress endogenous testosterone production. Testosterone is the primary male androgen, and offers strong negative feedback on endogenous testosterone production. Testosterone-based drugs will, likewise, have a strong effect on the hypothalamic regulation of natural steroid hormones. Without the intervention of testosterone-stimulating substances, testosterone levels should return to normal within 1-4 months of drug secession. Note that prolonged hypogonadotropic hypogonadism can develop secondary to steroid abuse, necessitating medical intervention.

As with all anabolic/androgenic steroids, it is unlikely that one will retain every pound of new bodyweight after a cycle is concluded. This is especially true when withdrawing from a strong (aromatizing) androgen like testosterone cypionate, as much of the new weight gain is likely to be in the form of water retention, quickly eliminated after drug discontinuance. An imbalance of anabolic and catabolic hormones during the post-cycle recovery period may further create an environment that is unfavorable for the retention of muscle tissue. Proper ancillary drug therapy is usually recommended to help restore hormonal balance more quickly, ultimately helping the user retain more muscle tissue.

Another way to lessen the post-cycle “crash” is to first replace testosterone cypionate with a milder anabolic such as nandrolone decanoate or methenolone enanthate. The new steroid would be administered alone for one to two more months, at a dosage of 200-400 mg per week. In this “stepping down” procedure the user is attempting to eliminate the watery bulk of a testosterone-based drug while simultaneously preserving the solid muscularity underneath. This practice can prove to be effective, even if mainly for psychological reasons (some may view it as simply dividing the crash into water and hormonal stages). Testosterone-stimulating drugs are still typically used at the conclusion of therapy, as endogenous testosterone production will not rebound during the administration of nandrolone decanoate or methenolone enanthate.

## Administration (Men)

To treat androgen insufficiency, the prescribing guidelines for testosterone cypionate call for a dosage of 50-400 mg every two to four weeks. Although active in the body for a longer time, testosterone cypionate is usually injected on a weekly basis for physique- or performance-enhancing purposes. The usual dosage is in the range of 200-600 mg per week, taken in cycles 6 to 12 weeks in length. This level is sufficient for most users to notice exceptional gains in muscle size and strength.

Testosterone is usually incorporated into bulking phases of training, when added water retention will be of little consequence, the user more concerned with raw mass than definition. Some do incorporate the drug into cutting cycles as well, but typically in lower doses (100- 200 mg per week) and/or when accompanied by an aromatase inhibitor to keep estrogen levels under control. Testosterone cypionate is a very effective anabolic drug, and is often used alone with great benefit. Some, however, find a need to stack it with other anabolic/androgenic steroids for a stronger effect, in which case an additional 200-400 mg per week of boldenone undecylenate, methenolone enanthate, or nandrolone decanoate should provide substantial results with no significant hepatotoxicity. Testosterone is ultimately very versatile, and can be combined with many other anabolic/androgenic steroids to tailor the desired effect.

While large doses are generally not advised, some bodybuilders have been known to use excessively high dosages of this drug (1,000 mg per week or more). This was much more common before the 1990's, when cypionate vials were usually very cheap and easy to find. A “more is better” attitude is easy to justify when paying only \$20 for a 10cc vial (today the typical price for a single injection). At dosages of 800-1000 mg per week or more, water retention will likely account for more of the additional weight gain than new muscle tissue. The practice of “megadosing” is inefficient (not to mention potentially dangerous), especially when we take into account the typical high cost of steroids today.

## **Administration (Women)**

Testosterone cypionate is rarely used with women in clinical medicine. When applied, it is most often used as a secondary medication during inoperable breast cancer, when other therapies have failed to produce a desirable effect and suppression of ovarian function is necessary. Testosterone cypionate is not recommended for women for physique- or performance-enhancing purposes due to its strong androgenic nature, tendency to produce virilizing side effects, and slow-acting characteristics (making blood levels difficult to control).