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Consent for Testosterone Replacement in Men

Testosterone is a hormone secreted by the testes, ovaries and adrenal glands. Low testosterone is typically caused by failure of the hypothalamus in the brain to properly stimulate the testicles, not from primary testicular failure.

Signs and symptoms of low testosterone in men: Low sex drive (libido), erectile dysfunction (diminished erection, ejaculation, orgasm), fatigue, reduced lean muscle mass and strength/endurance, reduced bone mineral density, irritability, depression, loss of body hair, obesity, low energy, poor memory. Low testosterone level is frequently seen in men with aging, obesity, metabolic syndrome (high blood pressure, insulin resistance, diabetes, high cholesterol, belly fat) and in those that take certain medications such as opioid pain medications and antidepressant medications.

Benefits of testosterone replacement therapy: Increases muscle mass, strength, endurance and exercise tolerance, all of which improve quality of life. Improves libido, erectile function and sexual performance. Reduces fat (both visceral and subcutaneous) and improves cholesterol/lipid parameters after 6-12 months. Improves lean muscle mass, bone density, skin tone. Protects against cardiovascular disease, hypertension and arthritis. Improves cognition and enhances memory. Testosterone therapy lowers insulin resistance and can help reverse diabetes.

Potential side effects of testosterone replacement:

- **Testicular atrophy** – if you take testosterone supplements, your testicles do not have to work as hard to produce it. Therefore, they can shrink (just like your biceps may shrink if you never use them).
- **Infertility** - can occur secondary to decreased sperm production. Therefore, do not take testosterone if you plan to have children.
- **Erythrocytosis** - your hemoglobin and hematocrit may increase to above average levels. This is one reason why testosterone is banned in professional sports as this can improve athletic performance. It is not unsafe. However, a physician who sees the elevated levels, may be alarmed and mistake this for polycythemia vera which is a serious medical disorder. One can simply donate blood to lower the hemoglobin and hematocrit levels.
- **Transference to others** - with topical application of testosterone, you need to wash your hands carefully as you can transfer the testosterone from your hands to women and children.
- **Blood clots, heart attacks, strokes** - this is based on old studies, but it is still listed as a potential side effect.
- Prostate enlargement - if you have low testosterone, your prostate may be smaller than average. If you take testosterone, it usually increases the prostate size to a normal size.
- Body hair growth is common especially at higher doses.
- Increased libido. Make sure your spouse and/or significant other is okay with this.
- Aggression can occur at high doses
- Acne and fluid retention can occur
- Sleep apnea is very rare

Contraindications to testosterone replacement:

- **Active prostate cancer.** A cured prostate cancer patient who has a PSA less than 1 can take testosterone replacement.
- **Women who are breast-feeding or might become pregnant** - do not transfer topical testosterone from your hands to them.
- **Men with fertility issues or those who may want to have children in the future.**
- **Use with caution in men with coronary artery disease, stroke, blood clots.** This is based on old studies.
- **Use with caution in men less than 40 years old.**

Testosterone laboratory workup - Typical blood draws include the following: **Testosterone total and free, DHEA-S** (a precursor to testosterone and other hormones) and a **Complete Blood Count** (to evaluate for erythrocytosis). Thyroid and prostate levels may be obtained. LH and prolactin levels may be obtained if there is a risk for a pituitary tumor. Fasting insulin and fasting glucose levels will be obtained if there is risk for insulin resistance. Blood work will be obtained periodically to track your progress.

Common types of testosterone delivery:

- **Injections: 200 mg/mL of depot testosterone cypionate. Typically, 0.5-1.0 mL's injected weekly** into the upper outer buttock muscle. Can also give twice weekly or injected subcutaneously 2-7 days/week. Pros: Very convenient and inexpensive. Cons: There is a roller coaster affect - it takes a day or two to take effect and returns to baseline within a week. This can be alleviated by injecting twice weekly with lower doses.
- **Testosterone in VersaBase cream: 10-20% (100 mg to 200 mg/g). Apply 0.5-1.0 g to the scrotum twice daily.** Pros: The best way to obtain high stable testosterone levels. Cons: Inconvenient in that you must wash hands afterwards and apply it twice daily. It is more expensive than injections.
- **Commercial topical testosterone (e.g., AndroGel): This is only 1% gel (10 mg/g),** which will only increase the testosterone levels slightly. Pros: Conveniently applied to the axilla, arms, stomach or thighs once daily. Cons: can be very expensive and is less effective.
- **Pellets:** Can replace pellets into the upper outer buttock every 3 months: Pros: convenient. Cons: minor surgical procedure, expensive.
- **Testosterone undecanoate injection:** Injected into the buttocks every 10 weeks in the physician office. Can be very expensive.
- **Human Chorionic Gonadotropin:** daily injections can usually double testosterone levels and maintain fertility, but is very expensive.
- **Clomiphene:** 25-50 mg oral pill can raise testosterone levels and maintain fertility.
- **DHEA:** an over the counter pill that slightly raises testosterone levels .

I have read and reviewed with my provider the above testosterone replacement therapy information. I give my informed consent to proceed with testosterone replacement therapy.

Patient: _____

Date: _____

Provider: _____

Date: _____