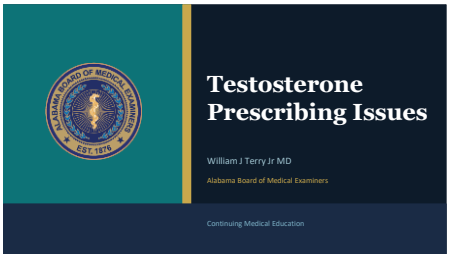
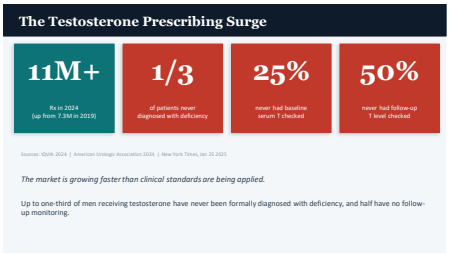
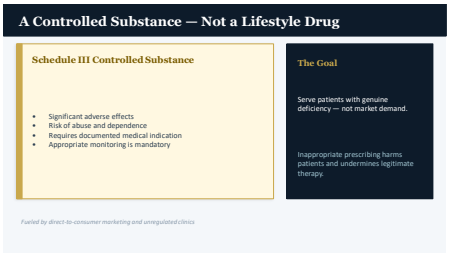

Testosterone Prescribing Issues
William J Terry Jr MD
Alabama Board of Medical Examiners
Continuing Medical Education

1

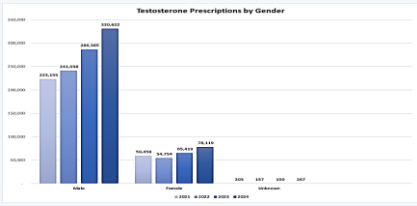

The Testosterone Prescribing Surge
11M+
Rx in 2024
(up from 7.3M in 2019)
1/3
of patients never diagnosed with deficiency
25%
never had baseline serum T checked
50%
never had follow-up T level checked
Sources: IQVIA 2024 | American Urologic Association 2024 | New York Times, Jan 25 2025
The market is growing faster than clinical standards are being applied.
Up to one-third of men receiving testosterone have never been formally diagnosed with deficiency, and half have no follow-up monitoring.

2


A Controlled Substance — Not a Lifestyle Drug
Schedule III Controlled Substance
Significant adverse effects
Risk of abuse and dependence
Requires documented medical indication
Appropriate monitoring is mandatory
The Goal
Serve patients with genuine deficiency — not market demand.
Inappropriate prescribing harms patients and undermines legitimate therapy.
Fueled by direct-to-consumer marketing and unregulated clinics

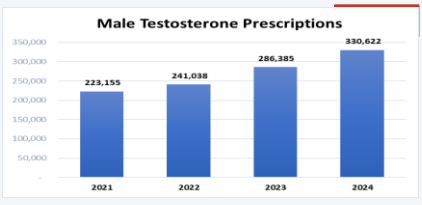
3

Alabama Data: Scenario — Who Is Being Prescribed?



4

Alabama: Male Testosterone Prescriptions — 48% Rise Since 2021



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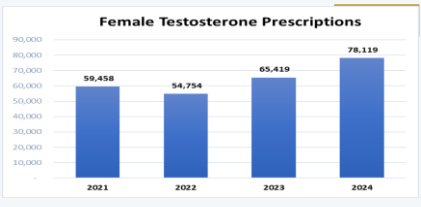
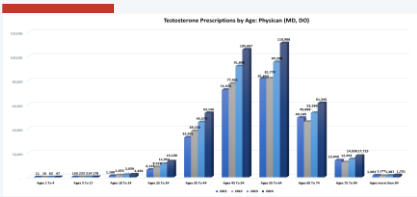
Alabama: Female Testosterone Prescriptions — 31% Rise Since 2021



6

Prescriptions by Age: Physicians (MD/DO) — Notable Surge in Ages 25–34



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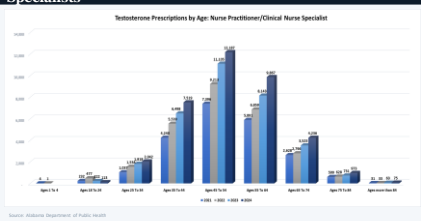
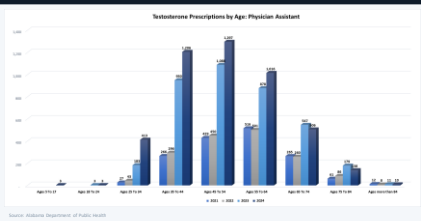
Prescriptions by Age: Nurse Practitioners / Clinical Nurse Specialists



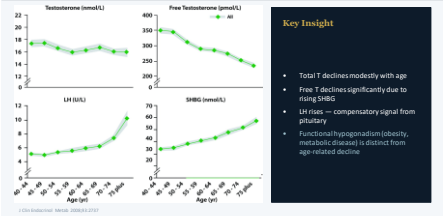
8

Prescriptions by Age: Physician Assistants



9

The Biology: Testosterone Declines with Age

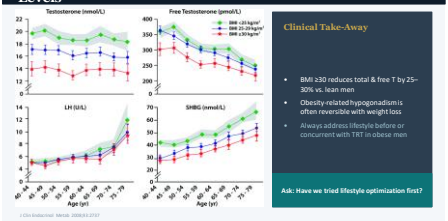


Key Insight

- Total T declines modestly with age
- Free T declines significantly due to rising SHBG
- LH rises — compensatory signal from pituitary
- Functional hypogonadism (obesity, metabolic disease) is distinct from age-related decline

10

Obesity Compounds the Effect: Age, BMI & Hormone Levels



Clinical Take-Away

- BMI ≥30 reduces total & free T by 25–30% vs. lean men
- Obesity-related hypogonadism is often reversible with weight loss
- Always address lifestyle before or concurrent with TRT in obese men

Ask: Have we tried lifestyle optimization first?

11

Who Is a Candidate for Androgen Supplementation?

1 Confirmed Biochemical Deficiency

Total testosterone < 300 ng/dL on two fasting early-morning samples

2 Valid Symptoms Present

Fatigue, decreased libido, ED, muscle loss, mood change, osteopenia

3 Adequate Evaluation Completed

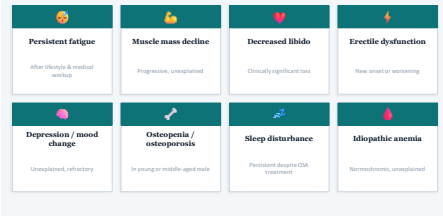
History, physical exam, confirmatory labs including LH, PSA, CBC, prolactin

4 No Contraindications

Fertility not desired; no active prostate/breast cancer; no uncontrolled OSA or erythrocytosis

12

Valid Symptoms Warranting Evaluation



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Pre-Treatment Evaluation

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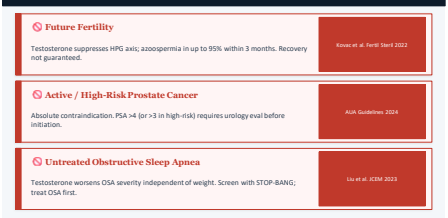
Contraindications to TRT — Part 1



15

Contraindications to TRT — Part 2

Polycythemia / Erythrocytosis

Pre-existing hematocrit >50%. TRT causes erythrocytosis in up to 44% of patients; rising Hct linked to MACE.

Kohn et al. J Urol 2024

Hepatic Dysfunction

Active liver disease or Child-Pugh B/C. Oral 17α-alkylated androgens: absolute contraindication (hepatotoxicity).

Bond et al. Front Endocrinol 2022

Recent Major CV / Thromboembolic Event

MI, stroke, DVT, PE within 6 months. Long-term TRT associated with 55% increased MACE risk in real-world data.

Connelly et al. J Endocr Soc 2025

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Counseling Patients: Key Risks to Disclose

Testicular atrophy & impaired fertility

Up to 95% azoospermia within 3 months

Erythrocytosis

Hct >50% in 44% of patients; independently raises MACE risk

Cardiovascular & thrombotic events

Small but real increase; 55% MACE risk signal at 8+ years

Cardiac arrhythmia

Small increased risk with supraphysiologic levels

Estrogen elevation / gynecomastia

Via aromatization; mood effects possible

Prostate growth / LUTS

Monitor PSA; avoid in active prostate cancer

Informed consent must be documented. Kohn et al. J Urol 2024; Bond et al. Endocr Connect 2024

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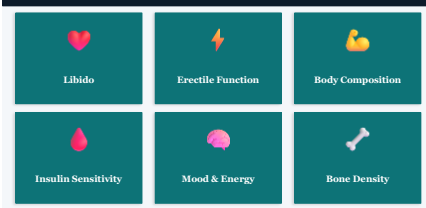
Counseling Patients: Potential Benefits of TRT



Benefits are most reliable when testosterone is genuinely deficient (<300 ng/dL) and symptoms are present.

18

Additional Counseling: Lifestyle First

Before initiating TRT, optimize:

- Weight management — obesity is the single largest modifiable driver of functional hypogonadism
- Sleep quality — untreated OSA independently suppresses testosterone
- Stress reduction — cortisol antagonizes HPG axis
- Alcohol — heavy use reduces testosterone significantly
- General medical evaluation — rule out systemic illness, medications (opioids, glucocorticoids)

Often overlooked

These variables will often help normalize testosterone levels without needing replacement therapy.

Optimizing lifestyle variables is not optional counseling — it is standard of care.

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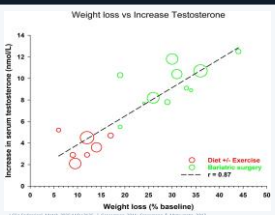
Weight Loss Significantly Raises Testosterone



r = 0.87

Strong correlation between % weight lost and testosterone rise — across both diet/exercise and bariatric surgery.

Bariatric surgery can normalize testosterone in the majority of obese hypogonadal men without TRT.

20

From Guinea Pig Extracts to Modern TRT: A Brief History

1889	Charles Brown-Séquard injects himself with guinea pig testicular extract — reports restored energy and virility (largely placebo, but pioneered the concept)
1935	Testosterone first isolated and chemically synthesized by Butenandt, Ruzicka, and colleagues — Nobel Prize awarded 1939
1940s–60s	Oral methyltestosterone developed — high hepatotoxicity limits use; injectable esters (enanthate, cypionate) become preferred
1990s–2000s	Transdermal gels introduced; testosterone market expands dramatically via direct-to-consumer marketing (Low T clinics)
Today	Schedule III controlled substance; evolving evidence base; tighter prescribing standards required

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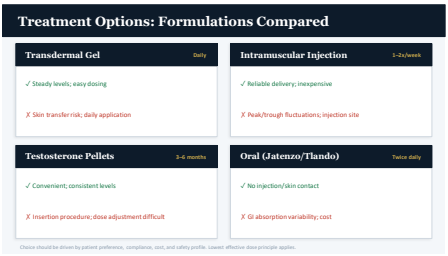
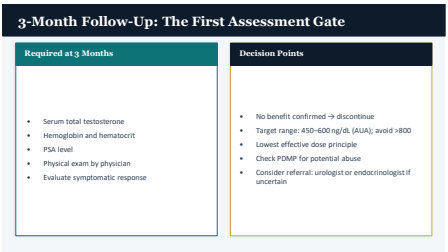

Treatment Options: Formulations Compared
Transdermal Gel
Daily
✓ Steady levels; easy dosing
✗ Skin transfer risk; daily application
Intramuscular Injection
1–2x/week
✓ Reliable delivery; inexpensive
✗ Peak/trough fluctuations; injection site
Testosterone Pellets
3–6 months
✓ Convenient; consistent levels
✗ Insertion procedure; dose adjustment difficult
Oral (Jatenzo/Tlando)
Twice daily
✓ No injection/skin contact
✗ GI absorption variability; cost
Choice should be driven by patient preference, compliance, cost, and safety profile. Lowest effective dose principle applies.

22


3-Month Follow-Up: The First Assessment Gate
Required at 3 Months
Serum total testosterone
Hemoglobin and hematocrit
PSA level
Physical exam by physician
Evaluate symptomatic response
Decision Points
No benefit confirmed → discontinue
Target range: 450–600 ng/dL (AUA); avoid >800
Lowest effective dose principle
Check PDMP for potential abuse
Consider referral: urologist or endocrinologist if uncertain

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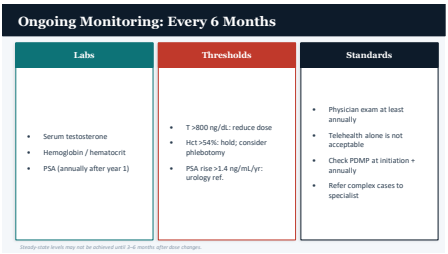
Ongoing Monitoring: Every 6 Months
Labs
Serum testosterone
Hemoglobin / hematocrit
PSA (annually after year 1)
Thresholds
T >800 ng/dL: reduce dose
Hct >54%: hold; consider phlebotomy
PSA rise >1.4 ng/mL/yr: urology ref.
Standards
Physician exam at least annually
Telehealth alone is not acceptable
Check PDMP at initiation + annually
Refer complex cases to specialist
Steady-state levels may not be achieved until 3–6 months after dose changes.

24

Conclusions: Male TRT

TRT is a valuable tool in hypogonadism — but also one easily abused. Rigorous evaluation, documented indication, and systematic monitoring are mandatory.

1. Rising T is a Schedule III controlled substance — prescribe with clinical discipline
2. Confirmed biochemical deficiency + symptoms = prerequisite; two fasting AM levels required
3. Screen ALL contraindications before initiating (fertility, prostate, OSA, erythrocytosis, liver, recent CV event)
4. New long-term data show 55% increased MACE risk over 8+ years — informed consent matters
5. Monitor at 3 months, then every 6 months; never exceed 800 ng/dL; telehealth alone is inadequate

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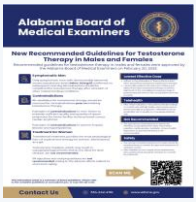
Testosterone in Women

HSDD, Menopause, and Off-Label Use

26

The Cultural Moment: Media Normalizing Testosterone for Women



NY Times, Oct 22, 2025

Media coverage and online communities are driving demand that may outpace clinical evidence.

No FDA-approved testosterone formulation for women exists in the US. All use is off-label.

Our role: separate evidence-based benefit (HSDD) from unproven claims (mood, cognition, energy).

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Hormonal Changes at Menopause

Hormone	Premenopause	Postmenopause
Estradiol	40–400 pg/mL	10–20 pg/mL
Estrone	30–200 pg/mL	30–70 pg/mL
Testosterone	**20–80 pg/mL**	**15–70 pg/mL — MODEST change**
Androstenedione	60–300 ng/dL	30–150 ng/dL

Key insight: Testosterone declines modestly at menopause — estrogen falls by >80%. The 'deficiency' driving HSDD may be relative or context-dependent, not simply absolute low T.

Speroff. Clinical Endocrinology and Infertility. 9th Ed

28

Hypoactive Sexual Desire Disorder (HSDD)

DEFINED: Persistent absence of sexual desire or fantasies causing personal distress or relationship difficulty for ≥6 months — not explained by another condition or relationship problem.

Neurobiological	Pharmacological	Psychological	Cultural/Social
Neuroendocrine imbalance, dopamine/serotonin dysregulation, hypogonadism	SSRIs/SNRIs, antipsychotics, opioids, hormonal contraceptives	Depression, anxiety, trauma, self-esteem, relationship distress	Religious or cultural norms around sexuality; partner dynamics

Impact: Significant effects on mood, self-esteem, relationships, and quality of life.

29

HSDD Diagnosis and Evaluation

Validated Screening Tool

- Decreased Sexual Desire Screener (DSDS)
- 5-question validated instrument
- Distinguishes generalized acquired HSDD from other sexual dysfunction

Parish N. Post Reprod Health 2022;28(3):158

Free testosterone may explain non-response in women with elevated SHBG — consider if symptoms persist on therapy.

Lab Evaluation

- Total serum testosterone — mid-to-high normal premenopausal range may not need supplementation
- Sex Hormone Binding Globulin (SHBG) — elevated SHBG reduces bioavailability; less likely to benefit from testosterone therapy
- Free testosterone — especially if SHBG elevated or poor response to therapy

30

HSDD: Monitoring Testosterone Therapy in Women

Target: Upper-normal premenopausal testosterone level (~70 ng/dL). Monitor every 6 weeks initially, then every 6 months.

Watch for	Reassure / Continue	Dose-related risks
• Acne • Clitoromegaly (often irreversible) • Voice deepening (irreversible) • Hirsutism / hair loss • Supraphysiologic levels	• Symptomatic improvement documented • T at or below target range • No virilization signs • Libido improving at 3–6 months	• Pellets carry highest virilization risk • Not endorsed by any major society for women • Compounded gels preferred at 1/10 male dose • Adjust down if T exceeds target range

Global Consensus Position Statement 2019, reaffirmed 2024 | Davis et al. J Clin Endocrinol Metab 2024

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When Testosterone Therapy Is NOT Recommended in Women

The evidence supports testosterone ONLY for HSDD in postmenopausal women. Other uses lack RCT evidence.

- ✗ Infertility treatment
- ✗ Depression or general wellbeing
- ✗ Sexual dysfunction other than HSDD
- ✗ Cognitive performance or delay of cognitive decline
- ✗ Cardiovascular, metabolic, or bone health
- ✗ Low androgens due to hypopituitarism, adrenal insufficiency, surgical menopause, or pharmacologic glucocorticoid use

Global Consensus 2024 | Islam et al. Cochrane Database Syst Rev 2023

32

Contraindications in Women — Part 1

🚫 Pregnancy / Fertility

Testosterone is teratogenic. Absolute contraindication if pregnant or attempting conception. Effective contraception required during therapy.

Global Consensus 2019; reaffirmed 2024

⚠️ Androgen-Sensitive Cancer (Breast, Endometrial, Ovarian)

Insufficient long-term safety data. 2023 Cochrane Review found no significant increase in breast cancer at physiologic doses, but caution required pending longer RCT data.

Islam et al. Cochrane 2023

🩸 Polycythemia / Erythrocytosis

Less common at physiologic female doses, but baseline hematocrit >48% warrants risk-benefit discussion before initiating.

ASA/Endocrine Society 2024

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Contraindications in Women — Part 2

⚠ Hepatic Dysfunction

Active liver disease; oral androgenic formulations contraindicated. Transdermal preparations carry minimal hepatic risk but use cautiously.

Bond et al. Front Endocrinol 2022

😴 Obstructive Sleep Apnea

Testosterone may worsen OSA in women. Screen prior to initiation; treat OSA before or concurrently.

Liu et al. JCEM 2023

🚫 Supraphysiologic Dosing — Pellets

Acne, clitoromegaly, voice deepening, and hirsutism are dose-dependent and potentially IRREVERSIBLE. Testosterone pellets are NOT endorsed by any major professional society for women.

Dunsmoor-Su. Ob Gyn 2021

34

Treatment Options for Women: Off-Label Transdermal

No FDA-approved formulation for women in the US. Use male-formulation gels at approximately 1/10 the male dose.

Compounded Transdermal Gel — Preferred

Custom-compounded at 1/10 male dose. Most widely used. Monitor serum T every 6 weeks until stable.

Male-Formulation Gel (off-label) — Acceptable

Available commercially. Requires careful dose management. Document off-label use and monitoring.

Testosterone Pellets — NOT RECOMMENDED

FDA warning re: adverse event under-reporting (BioTE case). Risk of irreversible virilization. No major society endorsement.

Oral / Injectable — Not used

Not appropriate for women at physiologic doses. No safety or efficacy data in this context.

Dunsmoor-Su. R. Ob Gyn 2021 | Global Consensus 2024

35

Custom Compounded Bioidentical Hormones: Safety Concerns

ACOG Guidance: Do not prescribe routinely when FDA-approved alternatives exist.

No FDA Oversight

Lacks required clinical trial data on safety and efficacy

Variable Dosing

Active ingredient concentration can be highly variable within a labeled dose

No Adverse Event Reporting

Hinders definitive safety evaluation; harms may go undetected

Informed Consent Required

Patients must be counseled on lack of FDA approval and associated risks

Committee on Clinical Consensus-Gynecology. Compounded Bioidentical Menopausal Hormone Therapy. Ob Gyn 2021;142:1366

36

Testosterone Pellets: A Warning

FDA Warning: BioTE Medical (Irving, TX) failed to report >4,200 adverse events including endometrial cancers.

No Society Endorsement

The Global Consensus Statement on testosterone use in women explicitly states pellets DO NOT represent appropriate care.

Irreversible Virilization

Mustache, voice deepening, clitoromegaly — some patients discover these effects are permanent.

Dose Cannot Be Adjusted

Once implanted, pellets cannot be removed. Supraphysiologic levels persist until they dissolve. No ability to titrate down.

Regulatory & Liability Risk

Prescribers face significant liability. Adverse events underreported by manufacturers.

Dumonceau K. Ob Gyn 2021;138:809

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Duration and Monitoring: Women on Testosterone Therapy

Before 1st dose	6 weeks	3–6 months	Every 6 months
• Baseline T, SHBG, free T • Hematocrit, LFTs • Symptom score (DSDS) • Contraindications excluded	• Serum testosterone • Check for virilization signs • Symptom response?	• T, SHBG, free T • Assess symptom benefit • Adjust dose if T out of range • Evaluate for virilization	• Repeat T monitoring • Ongoing symptom scoring • Annual mammography • Reassess indication

Global Consensus 2019/2024 | Islam et al. Cochrane 2023

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Safety Data Summary: Men and Women

Breast Cancer (Women)	CV Risk (Men): Long-Term	Erythrocytosis (Men)
2023 Cochrane (35 RCTs, n=4,835): No significant increase at physiologic doses. Long-term data (>2 years) limited. Annual mammography recommended.	NHS Glasgow cohort (n=440, mean 8.3 yr follow-up): 55% increased MACE risk after full adjustment (HR 1.55; 95% CI 1.19–2.01). TRAVERSE trial (33 months): no short-term increase. Signal diverges over time.	Check CBC at 3 months, then every 6 months. Hct >54%: hold testosterone; consider phlebotomy. Rising hematocrit independently predicts MACE.
Islam et al. Cochrane 2023	Connelly et al. J Endocr Soc 2025	Kohn et al. J Urol 2024; Bond et al. 2024; AUA 2024

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Safety Data: Prostate and Liver

Prostate Safety

- Large meta-analyses: TRT does not increase prostate cancer risk in men without pre-existing disease
- Monitor PSA at 3 months, 12 months, then annually
- PSA rise >1.4 ng/mL above baseline in any 12-month period → urology referral

Morgentaler et al. NEJM 2023

Liver Function

- Obtain baseline LFTs before initiation
- Oral 17α-alkylated androgens (methyltestosterone): risk of peliosis hepatis, cholestasis, hepatocellular carcinoma — AVOID
- Injectable and transdermal formulations: minimal hepatic risk at therapeutic doses

Bond et al. Front Endocrinol 2022

40

Androgen Abuse in Clinical Practice: A Growing Challenge

6.4%	1.6%	>20%
Global lifetime prevalence in men	Global lifetime prevalence in women	Gym-goers in Netherlands used androgens (2023)

Intermittent Cycling

8–16 week supraphysiologic cycles with 'off' periods

Self-Initiated TRT

150–300 mg/wk vs. appropriate 75–100 mg/wk; no documented deficiency

Blast-and-Cruise

Cycles followed by lower-dose maintenance — prolonged HPG suppression

Clinical Alert:

Suppressed gonadotropins in a healthy young man who has completed puberty strongly suggest exogenous androgen exposure. Total testosterone can appear normal or low — do NOT rely on T level alone to exclude abuse.

Smit DL, et al. J Clin Endocrinol Metab 2024;110:e292

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Managing Androgen Abuse: Harm Reduction Framework

Willing to Discontinue

- Structured monitoring + supportive care preferred
- Most men recover spontaneously — no routine PCT
- Wait ≥12 months before diagnosing persistent hypogonadism
- hCG, clomiphene, AIs for fertility remain experimental

Unwilling to Stop (Harm Reduction)

- Nonjudgmental approach — maintain therapeutic relationship
- Recommend short cycles at lowest effective dose
- Avoid oral alkylated androgens (liver/lipid toxicity)
- Avoid blast-and-cruise; discourage PIEDs (clenbuterol, insulin, GH)
- Treat hypertension and dyslipidemia proactively

Fertility Considerations

- TRT contraindicated in men wishing to father children
- Azoospermia persisting >12 months: watchful waiting
- Spontaneous recovery can occur beyond 1 year
- Open dialogue toward eventual cessation

Smit DL et al. JCEM 2024 — Dual Management Framework

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Connelly et al. 2025 — Key Findings

Retrospective cohort • NHS Greater Glasgow & Clyde • Men ≥ 51 years

HR 1.55

95% CI: 1.19 – 2.01
Adjusted for age, ethnicity, SES, comorbidities

12.7% vs 8.6%

MACE rate in T-exposed vs unexposed
440 exposed | 136,051 unexposed

Study Design: Retrospective cohort, 5-year exposure window (2012–2016), 6-year follow-up (2017–2022)
MACE Composite: Acute MI, unstable angina, stroke, heart failure, or CV death
Formulation Signal: Transdermal HR 1.67 (CI 1.13–2.48) vs Injectable HR 1.43 (CI 0.99–2.06, not significant)
Serum T Levels: NOT reported — exposure defined by prescription records only

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⚖ Head-to-Head Comparison

Feature	Connelly et al. 2025	TRAVERSE Trial 2023
Design	Retrospective cohort	Randomized controlled trial
Population	440 T-exposed, 136K unexposed Men ≥ 51 yrs	5,246 randomized Men 45–80 yrs
T Formulation	Transdermal + injectable (prescription data only)	1.62% testosterone gel (AndroGel)
Avg Serum T	Not reported	~350–400 ng/dL (on treatment)
Follow-Up	6 years (2017–2022)	Median ~3.2 years
Primary MACE Outcome	HR 1.55 (CI 1.19–2.01) Significant ↑ risk	HR 0.96 (CI 0.78–1.17) No significant ↑ risk
Key Limitation	Observational, no BMI data, confounding by indication	Shorter follow-up, single formulation only

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Conflicting Signals

TRAVERSE (RCT) showed no increased CV risk short-term. Connelly (observational) suggests risk may emerge with longer exposure. Neither is definitive alone.

Data Gaps Persist

Connelly had no serum T levels, BMI, or dose tracking. Confounding by indication is a major concern — sicker men are more likely to receive T. Long-term RCT data beyond 5 yrs is still needed.

Practice Implications

Continue individualized risk-benefit discussions with patients. Monitor CV risk factors closely on long-term TRT. FDA removed the MACE boxed warning in 2025 but added a BP warning.

Connelly PJ et al. J Endocr Soc. 2025;9(11):bvaf156 • Lincoff AM et al. N Engl J Med. 2023;389:107

45


Conclusions
1
Rapidly Rising Prescriptions Demand Rigor
11M+ Rx in 2024. Up to 1/3 of patients were never formally diagnosed. Rigorous evaluation, confirmed biochemical deficiency, and documented indication are required before initiation.
2
Male TRT: Contraindications Must Be Systematically Screened
Fertility desire, active prostate cancer, uncontrolled OSA, pre-existing erythrocytosis, hepatic dysfunction, and recent major CV events are all contraindications.
3
Long-Term CV Risk Is Real
NHS Scotland cohort shows 55% increased MACE risk at 8+ years. TRAVERSE's short-term reassurance does not eliminate long-term concern. Informed consent matters.

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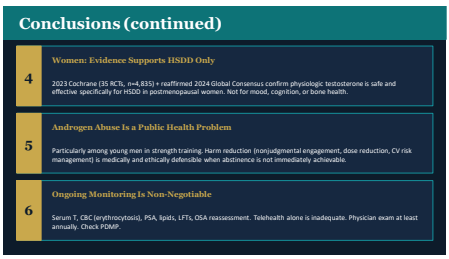
Conclusions (continued)
4
Women: Evidence Supports HSDD Only
2023 Cochrane (35 RCTs, n=4,835) + reaffirmed 2024 Global Consensus confirm physiologic testosterone is safe and effective specifically for HSDD in postmenopausal women. Not for mood, cognition, or bone health.
5
Androgen Abuse Is a Public Health Problem
Particularly among young men in strength training. Harm reduction (nonjudgmental engagement, dose reduction, CV risk management) is medically and ethically defensible when abstinence is not immediately achievable.
6
Ongoing Monitoring Is Non-Negotiable
Serum T, CBC (erythrocytosis), PSA, lipids, LFTs, OSA reassessment. Telehealth alone is inadequate. Physician exam at least annually. Check PDMP.

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Case Studies
Applying the principles — two clinical scenarios

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Case Study 1: The Motivated 34-Year-Old

PRESENTATION

- 34-year-old male presents requesting testosterone therapy
- Complaints: fatigue, reduced motivation at the gym, slightly reduced libido
- BMI 31, works long hours, sleeps 5–6 hours per night, drinks 3–4 drinks/night
- Total T: 285 ng/dL (single morning lab, non-fasting)
- LH: 5.2 IU/L (normal); FSH normal; PSA 0.6; Hct 44%; no OSA diagnosis

Discussion

- Single non-fasting lab is insufficient — two fasting AM levels required
- Functional hypogonadism likely: obesity, sleep deprivation, alcohol use, stress
- Optimize lifestyle first: weight loss, sleep hygiene, alcohol reduction
- OSA screen indicated (STOP-BANG): untreated OSA suppresses T independently
- Defer TRT; reassess in 3–6 months after lifestyle changes

Take-home: Obesity + alcohol + sleep debt = functional hypogonadism. Screen lifestyle before prescribing. Single non-fasting T is not sufficient evidence.

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Case Study 2: The Long-Term TRT Patient with Rising Hematocrit

PRESENTATION

- 58-year-old male on testosterone cypionate 200 mg/week IM for 6 years
- Current total T: 920 ng/dL; no symptoms of excess
- Hematocrit: 57% (up from 52% at last visit 6 months ago)
- Ferritin: 380 ng/mL; transferrin saturation: 48%
- Hypertension, BMI 29, smoker; no prior CV events; PSA 1.1 stable

Discussion

- **Hct 57%: HOLD testosterone immediately**
- T 920 ng/dL is excessive (target <800); dose was too high — likely driving erythrocytosis
- Transferrin saturation 48% + ferritin 380: rule out hereditary hemochromatosis — order HFE genotype (C282Y/H63D)
- Consider therapeutic phlebotomy 450 mL; check ferritin before and after each bleed
- Informed consent discussion on 55% MACE risk signal at 8+ years (Connelly 2025)

Take-home: Erythrocytosis demands immediate action. Rising Hct + elevated transferrin saturation = rule out hemochromatosis. Supraphysiologic T must be corrected.

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Case Study 3: "I Want Testosterone — But Also Want Kids"

PRESENTATION

- 29-year-old male referred for fatigue, low libido, difficulty concentrating
- Two fasting AM total T: 218 and 231 ng/dL. LH: 2.1 IU/L (low). FSH: 1.8 IU/L (low)
- Diagnosis: secondary (hypogonadotropic) hypogonadism confirmed
- Married 6 months; actively trying to conceive with his wife
- Prolactin normal; MRI pituitary unremarkable; BMI 24, no medications

Discussion

- TRT absolutely contraindicated — azoospermia develops in up to 93% within 3 months; recovery not guaranteed
- Correct pivot: clomiphene citrate 25–50 mg/day (SERM): stimulates endogenous LH/FSH, raises T, and preserves spermatogenesis
- Semen analysis at baseline and 3 months; target T 400–600 ng/dL; if E2 >60 pg/mL add anastrozole 0.5 mg
- Counsel on off-label clomiphene use, limited long-term male data, and visual symptom monitoring
- Revisit TRT only after fertility goals are complete and clomiphene is discontinued

Take-home: Fertility desire + absolute contraindication to TRT. Secondary hypogonadism + fertility goal = clomiphene/SERM first, not testosterone.

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Case Study 4: The Wellness Clinic and the Pellets

PRESENTATION

- 52-year-old postmenopausal woman presents after 14 months of testosterone pellets at a 'hormone optimization' spa
- Original complaint: low energy and reduced libido — no DSDS or structured HSDD evaluation performed
- New facial hair (chin/upper lip), voice deepening, clitoral enlargement
- Serum total T: 285 ng/dL — markedly supraphysiologic for women (target ≤70 ng/dL)
- No baseline T drawn before treatment; zero follow-up labs at the spa

Discussion

- Pellets cannot be removed — supraphysiologic T persists until dissolution; virilization continues meanwhile
- Voice deepening and clitoromegaly may be permanent — counsel honestly and compassionately
- Global Consensus 2024 explicitly states pellets do not represent appropriate care; no major society endorses them for women
- No baseline labs + no HSDD diagnosis + no monitoring = unacceptable standard of care
- Once T normalizes and HSDD is confirmed: compounded transdermal gel at ~1/10 male dose with serial monitoring is appropriate

Take-home: Testosterone pellets in women carry unacceptable, potentially irreversible virilization risk. No society endorses them. HSDD diagnosis and monitoring are mandatory before any therapy.

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Case Study 5: The Gym-Goer with a "Normal" Testosterone Level

PRESENTATION

- 26-year-old competitive bodybuilder: fatigue, low libido, depressed mood — 3 months after stopping "a cycle"
- Total T: 310 ng/dL (borderline). LH: 0.4 IU/L. FSH: 0.3 IU/L — profoundly suppressed
- Hematocrit 51%; HDL 28 mg/dL (severely low); LFTs mildly elevated
- Admits to 16-week testosterone enanthate 400 mg/week + oral stanozolol
- Insists he needs TRT because "my levels are low" — will continue cycling regardless

Discussion

- Suppressed LH/FSH in a young post-pubertal male = exogenous androgen exposure until proven otherwise — do NOT initiate TRT
- Diagnosis: PFAAH (Prolonged Post-Androgen Abuse Hypogonadism) — most recover spontaneously but may take >12 months
- Oral alkylated androgens (stanozolol): serious hepatic + severe lipid toxicity — HDL 28 and elevated LFTs confirm exposure
- Patient refuses abstinence → nonjudgmental harm reduction: shortest cycles, eliminate oral androgens, avoid blast-and-cruise, treat dyslipidemia and HTN, monitor CBC/lipids/LFTs/echo
- TRT only after ≥12 months abstinence with confirmed persistent biochemical + symptomatic hypogonadism

Take-home: Suppressed LH in a young man = androgen abuse until proven otherwise. T level alone is unreliable. Harm reduction is medically defensible when abstinence is refused.

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