

BENEFITS BEYOND THE HEADLINES



WHAT THE T TRIALS AND TRAVERSE ACTUALLY MEASURED.

THE SAFETY DEBATE WAS NEVER THE WHOLE STORY.

For anyone who has only heard the safety debate, here is what two of the largest testosterone trials ever run found about bone, sexual function, anemia, mood, and metabolic health.



TESTOSTERONE INTELLIGENCE · THE PAPERS
VOLUME 14 · TESTOSTERONE: BENEFITS BEYOND THE HEADLINES

THE PAPERS · BY REBELLION HEALTH

WHAT A PAPER IS

IN MEDICINE

A paper is the evidence: peer-reviewed, rigorous, the record of what is actually known.

IN A REVOLUTION

The papers are how the truth travels, passed hand to hand, faster than the gatekeepers can stop it.

AT REBELLION HEALTH

A Paper is both. Clinical evidence, put plainly in your hands, so you are impossible to mislead.

Because medicine moves, a Paper is never finished. When the science changes, we change the Paper, revised, re-dated, reissued, and we tell you what changed. Keeping these current is our responsibility, not yours. It is how the movement stays true.

THE LIVING PAPERS · REBELLION HEALTH

TESTOSTERONE INTELLIGENCE · THE PAPERS

BENEFITS BEYOND THE HEADLINES

What the T Trials and TRAVERSE Actually Measured

The Testosterone Trials and TRAVERSE were not built only to test cardiovascular and prostate safety. Both included dedicated substudies measuring what testosterone therapy actually does for the body. This Paper walks through those results directly, including one genuinely counterintuitive finding worth reading in full.

The amount of testosterone required to maintain lean mass, fat mass, strength, and sexual function varied widely in men.

FINKELSTEIN ET AL., NEJM, 2013

PART ONE

SEXUAL FUNCTION: THE MOST CONSISTENT SIGNAL

In the original 2016 Testosterone Trials, testosterone significantly improved 10 of 12 measured aspects of sexual activity compared with placebo, with larger hormone increases tracking larger improvements, though no clear threshold level predicted who would respond best.

A separate substudy nested within TRAVERSE, run nearly a decade later in a different, much larger trial population, tested whether these benefits hold up beyond the original 12-month window. Run twice, a decade apart, in different populations, the conclusion holds: sexual function improvement is one of the most consistent, well-replicated benefits of testosterone therapy in deficient men.

PART TWO

BONE HEALTH: A GENUINELY TWO-SIDED RESULT

In the original T Trials, one year of testosterone treatment produced significantly greater increases in spine trabecular bone density (7.5% versus 0.8% for placebo) and estimated bone strength (10.8% versus 2.4%) than placebo.

Read This One Carefully

- Despite that improved density, the much larger TRAVERSE fracture substudy found the opposite direction for actual clinical fractures: 3.50% of the testosterone group had a fracture over 3.19 years of follow-up, versus 2.46% of placebo, hazard ratio 1.43
- Better bone density and strength estimates did not translate into fewer real fractures in this population. This is a genuinely counterintuitive, unresolved finding, and any honest account of testosterone and bone health has to carry both results side by side

PART THREE

ANEMIA, MOOD, AND METABOLIC HEALTH

Correcting anemia is one of the clearer, more mechanistically understood benefits. In a TRAVERSE substudy of 5,204 men, a significantly greater proportion of testosterone-treated men had existing anemia corrected, and men without anemia at baseline developed it less often than those on placebo.

On mood, the original T Trials found no significant benefit for vitality or fatigue, but men on testosterone did report slightly better mood and lower depressive symptom severity than placebo. A dedicated TRAVERSE substudy examined this more rigorously, in men with a formally diagnosed late-life depressive disorder as well as the broader trial population, to see whether that modest signal holds up under closer scrutiny.

On metabolic health, the T4DM trial tested something different: can testosterone prevent diabetes from developing at all. In 1,007 at-risk men also given a lifestyle program, 21 percent on placebo progressed to type 2 diabetes over two years, versus only 12 percent on testosterone, a significant reduction.

PART FOUR

LONG-TERM, REAL-WORLD DATA

Randomized trials are capped at one to two years. An 11-year registry comparing 428 treated hypogonadal men against 395 untreated controls found sustained improvements in weight, waist circumference, glucose, HbA1c, lipids, and blood pressure across all weight categories, and a striking mortality difference: 77 deaths (19.5%) in the untreated group over the study period versus 23 deaths (5.4%) in the treated group.

A separate, more intensive trial combined supervised diet and exercise with or without transdermal testosterone in men with newly diagnosed diabetes. Adding testosterone produced significantly better glycemic and metabolic outcomes: 81.3 percent of the combined group no longer met criteria for metabolic syndrome by the end of the trial, versus 31.3 percent with diet and exercise alone.

A Note on Scientific Currency: Why This Is a Living Paper

- The 11-year registry data is observational, not randomized, and the mortality difference should be read with appropriate causal caution even though the pattern is striking
- The diabetes-prevention benefit applies most clearly to men already at metabolic risk, not a general hypogonadal population

PART FIVE

WHAT THIS IS NOT: A NOTE ON DOSE

A landmark 1996 study gave normal, non-deficient young men supraphysiologic testosterone doses, several multiples above physiologic replacement, and found dramatic muscle and strength gains even without exercise. This answers a genuinely different question than everything above it in this Paper.

Every benefit described here concerns restoring deficient testosterone to a normal physiologic range in deficient men, not high-dose use in already-normal men for performance enhancement. Conflating the two is exactly the kind of imprecision that has muddled public understanding of this topic elsewhere.

This resource is an educational overview of the Testosterone Trials, TRAVERSE substudies, and related research on the benefits of testosterone therapy, with balancing caveats, including a genuinely mixed finding on fracture risk. It does not replace an individualized evaluation. Always consult your provider before starting, adjusting, or stopping any hormone therapy.