

The “High-T Sharpens Instinct” Narrative

What the biohacker claim draws on, what mainstream research actually finds, and where the two diverge

A focused companion report, integrating findings from “Intuition, ESP, and Psychic Ability in Relation to Testosterone”

Introduction and scope

A previous report surveyed the full range of material connecting testosterone to intuition and psi, spanning mainstream endocrinology, parapsychology, folklore, and fringe biohacker discourse. That report identified one strand in particular as a live, informal, and widely circulated claim: the idea, common across testosterone-optimization forums, manosphere content, and popular biohacking writing, that raising testosterone sharpens a person's “gut,” decisiveness, and situational read — a masculine, action-oriented form of instinct. This report focuses on that specific narrative. It asks what real science it draws on, what directly relevant peer-reviewed research exists, and where that research supports, complicates, or contradicts the popular version of the claim.

The short version, developed across the sections below, is that the strongest controlled evidence points in a more complicated direction than the popular narrative suggests: testosterone does appear to increase reliance on fast, intuitive judgment over slower deliberation, but the controlled studies that tested this most directly found that reliance made people's answers worse, not better. Separately, testosterone reliably tracks confidence and risk appetite, which is where the “sharper read” feeling most plausibly comes from, even though confidence and accuracy are not the same thing.

Where the narrative comes from: testosterone, risk, and the trading floor

The most frequently cited real science behind the high-T intuition narrative is John Coates's research on testosterone and financial risk-taking, conducted with Joe Herbert at Cambridge and published in the Proceedings of the National Academy of Sciences in 2008. Coates and Herbert followed 17 male derivatives traders on a London trading floor over eight consecutive business days and found that traders' morning testosterone levels predicted that day's profitability: on days when a trader's testosterone was above his own personal average, he went on to make significantly higher profits than on days when it was below average.

The proposed mechanism was a feedback loop the researchers termed the “winner effect”: a profitable trade raises testosterone, elevated testosterone increases confidence and appetite for risk, and that boosted confidence and risk appetite feed into the next trade — for a while, productively. Coates and Herbert were explicit that this was a double-edged mechanism rather than a simple case for “more testosterone, better instinct.” They noted that if testosterone continued to climb, or became chronically elevated (as it might during a market bubble), the same mechanism could tip into overconfidence, excessive risk-taking, and impaired rational risk assessment — a pattern later work connected to market bubbles and crashes. A related strand of research found that traders' second-to-fourth digit ratio, the same prenatal-testosterone proxy used in the paranormal-belief literature discussed in the companion report, was also associated with higher profits and longer trading careers, and a separate study found that

testosterone and facial masculinity (another pubertal-androgen proxy) correlated with greater risk-taking in an investment game, although digit ratio itself did not replicate that association in that particular sample.

This body of work is genuinely peer-reviewed and replicated in its core finding — testosterone tracks confidence and risk appetite in competitive, high-stakes settings — which is exactly why it functions as the credible seed of the popular narrative. What the popular retelling adds, and what Coates's own papers do not claim, is the further step that this translates into a generally sharper or more accurate “gut read” of situations outside the narrow context of competitive risk-taking.

Timeline: key studies on testosterone, risk and intuitive judgment

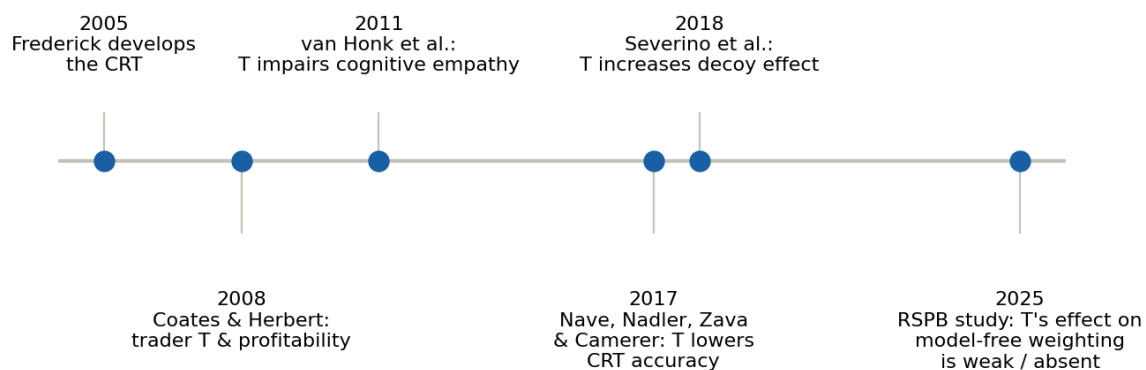


Figure 1. Key studies discussed in this report, in chronological order.

Testing the claim directly: testosterone and the Cognitive Reflection Test

The most direct experimental test of whether testosterone increases reliance on intuitive judgment comes from Amos Nadler, Gideon Nave, Colin Camerer, and David Zava, published in *Psychological Science* in 2017 and covered accessibly in outlets including Caltech's own news office and Wharton's Knowledge at Wharton. In the largest testosterone-administration behavioral study of its kind at the time, 243 men received either a testosterone gel or a placebo and then completed the Cognitive Reflection Test (CRT), the same three-item instrument discussed in the companion report, which is specifically designed so that each question has an intuitive answer that springs to mind quickly and is wrong, alongside a correct answer that requires deliberately overriding that first impression.

The testosterone group scored roughly 20 percent lower than the placebo group, gave incorrect answers more quickly and correct answers more slowly, and this pattern held after statistically controlling for age, mood, math ability, treatment expectancy, and fourteen other hormones. The authors' own interpretation, echoed by lead author Colin Camerer, was that testosterone works through confidence enhancement: participants given testosterone felt more certain their first, intuitive answer was correct and therefore saw less need to check it. Co-author Gideon Nave framed the CRT explicitly as a case where going with your gut is the wrong strategy, while noting separately that

intuitive, fast responding is not always maladaptive — it can be the better strategy in situations, such as physical competition, where responding slowly is especially costly. Nave and colleagues have also proposed an evolutionary framing: that testosterone's facilitation of rapid, intuitive responding could be adaptive specifically in contexts like mating or physical challenge, where speed matters more than accuracy, even though the same tendency actively hurts performance on an abstract reasoning puzzle like the CRT.

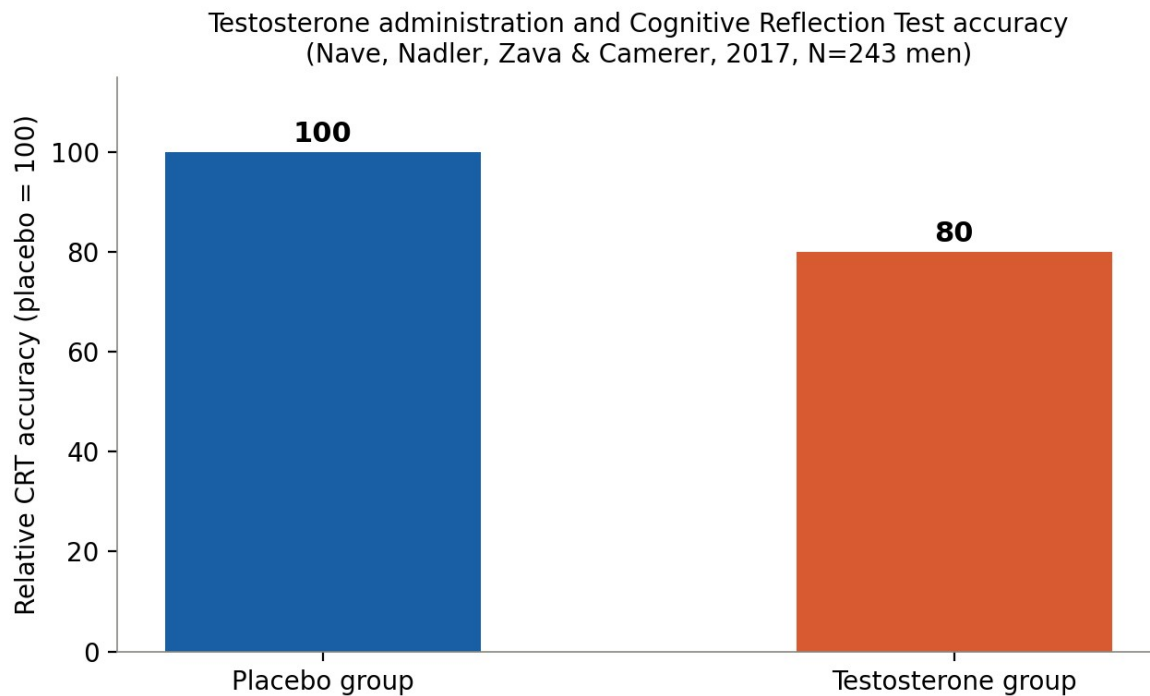


Figure 2. Relative CRT accuracy of the testosterone group versus the placebo group (indexed to placebo = 100), based on Nadler, Nave, Camerer & Zava (2017).

This finding sits in an important, complicated relationship with the digit-ratio study by Brañas-Garza and Espín described in the companion report, which found that women with more prenatally masculinized digit ratios performed better, not worse, on the CRT. Reconciling the two is possible but requires care: the Nadler/Nave/Camerer study examined acute, adult testosterone administration in men, while the Brañas-Garza/Espín study examined developmental, prenatal androgen exposure as a predictor of adult cognitive style in women. The two studies are frequently cited together in the literature as evidence that testosterone's organizational (prenatal, developmental) and activational (acute, adult) effects on reflective-versus-intuitive cognitive style can point in different directions — a nuance that is almost always lost when either finding is repackaged into a simple “testosterone equals better or worse intuition” claim.

Corroborating and complicating evidence: automatic judgment and decision heuristics

A separate 2018 study led by Carmelo Mario Vicario and colleagues, examining exogenous testosterone administration in healthy men, found that the testosterone group showed a larger “decoy effect” — a well-documented bias in which adding an inferior third option changes preferences between two original options in

predictable, non-rational ways. The authors interpreted this as evidence that testosterone promotes more automatic, intuitive judgment, broadly consistent with the CRT findings, though again the direction of the effect was toward a known cognitive bias rather than toward improved judgment.

More recent work complicates even the basic claim that testosterone shifts weight toward intuitive processing at all. A 2025 study in *Proceedings of the Royal Society B* administered testosterone to 216 healthy men and used computational modeling to separate “model-based” (deliberate, goal-directed) from “model-free” (reflexive, habit-like) decision-making in a sequential task. The researchers found no evidence that testosterone shifted the balance toward model-free, intuitive valuation; instead, testosterone reduced the weight placed on model-free valuation and lowered performance specifically on easier trials, a pattern the authors describe as speaking against the general “fast intuitive thinking hypothesis.” The same paper notes that an earlier attempt to combine data across three testosterone-and-CRT experiments found the average effect on intuitive responding was weak and inconsistent across studies, tempering how far even the original 2017 finding generalizes.

Taken together, the corroborating and complicating strands do not so much refute the original CRT finding as narrow it: testosterone's effect on cognitive style looks real but modest, task-dependent, and more clearly established for confidence and follow-through than for the underlying accuracy of the initial impression.

Confidence, risk, and the dual-hormone hypothesis

Beyond the trading-floor literature, a broader body of research links testosterone to confidence and status-seeking more generally, which helps explain why the “sharper read” narrative feels subjectively true to people who raise their testosterone even where the accuracy evidence is thin. The dual-hormone hypothesis, developed by Pranjali Mehta and Robert Josephs, proposes that testosterone's behavioral effects on dominance and risk-taking are not fixed but are moderated by concurrent cortisol levels: testosterone predicts status-seeking and confident behavior most strongly when cortisol, the stress hormone, is low, and that relationship weakens or reverses when cortisol is high. Subsequent trading and investment research has built directly on this framework, examining testosterone and cortisol jointly rather than testosterone alone, generally finding that both hormones can increase financial risk-taking and that their interaction, not testosterone in isolation, better predicts real-world risk behavior and, in some analyses, market-level instability.

This dual-hormone, context-dependent picture is a further complication for the popular narrative, which typically treats testosterone as a simple dial: turn it up, and instinct sharpens. The research instead suggests that the same testosterone level can push toward either productive confidence or impaired judgment depending on a second variable — stress — that biohacking content built around testosterone optimization alone rarely accounts for.

A competing interpretation: does testosterone clear emotional “noise” out of judgment?

One interpretation offered in biohacking and fringe wellness writing reframes the empathy-impairment finding itself as a point in favor of the “sharper instinct” narrative, rather than evidence against it: the claim is that baseline testosterone levels impair cognitive empathy because testosterone reduces or dampens overwhelming emotional input that would otherwise interfere with clear-headed judgment — in effect, that testosterone buys decisiveness by turning down emotional “noise.” This is a more specific and more biologically grounded claim than the general

“high-T sharpens instinct” narrative, and unlike most of that narrative, it maps onto an actual, named research program rather than pure inference from the trading-floor literature.

The relevant work is van Honk and colleagues' own program on testosterone and emotional processing, developed alongside the cognitive-empathy findings discussed in the companion report. An earlier study, Van Honk et al. (2005), found that testosterone administration reduces emotional interference during decision-making, and a related study by Hermans, Putman, and van Honk (2006) found that a single testosterone dose attenuates automatic facial mimicry of others' emotional expressions — the unconscious, fast “catching” of another person's facial affect that normally precedes and feeds conscious empathic judgment. At the neural level, van Honk and Schutter have proposed that testosterone down-regulates fronto-limbic connectivity, decoupling the brain's cortical, cognitive-processing regions from the subcortical, limbic regions that generate raw emotional signals. Their own description of the resulting cognitive style is notable: with less limbic signal reaching cortical processing, thinking becomes, in their words, more purely cognitive — “cold and instrumental.” A 2016 follow-up fMRI study confirmed a physical version of this mechanism directly, showing that testosterone reduces functional connectivity between the inferior frontal gyrus and the anterior cingulate and supplementary motor areas during the Reading the Mind in the Eyes task — the same task used in the original 2011 finding — a network involved in integrating sensory information with action.

This gives the biohacker claim a real, if narrow, evidentiary foothold: testosterone does appear to reduce the degree to which others' emotional signals, and possibly one's own, intrude on cognitive processing, and van Honk's group has explicitly described the resulting state in language close to “clearer, less emotionally clouded” judgment. It is a short step from that description to the popular claim that testosterone helps a person avoid being overwhelmed by emotion and therefore read a situation more decisively.

Two things complicate that step, however. First, reduced emotional interference is not the same as improved judgment, and the two most direct behavioral tests of the broader claim point the other way: the impaired performance on the Reading the Mind in the Eyes task is a straightforward accuracy deficit, not merely a change in processing style, and the CRT studies discussed above found that testosterone's “clearer,” faster processing produced more confidently wrong answers, not more correct ones. Second, the empathy-impairment finding itself has not replicated cleanly: Nadler and colleagues (2019) ran two large-scale testosterone-administration experiments using mind-reading paradigms and found no significant effect on cognitive empathy in either one, and a 2022 study found that testosterone administration changed participants' error rates and boosted their confidence without any detectable change in the brain activity underlying cognitive or affective empathy — a pattern that again separates testosterone's effect on felt confidence from any effect on actual accuracy or emotional processing. Finally, van Honk and colleagues have also connected this same fronto-limbic decoupling mechanism to their “Triple-Balance-Model” account of the emotional-processing deficits seen in psychopathy, which is a useful caution rather than an indictment: it suggests that “reduced emotional interference” sits on a continuum, and that the version of it associated with confident, decisive, low-empathy processing is mechanistically related to, not simply the benign opposite of, a pattern that in its more extreme or chronic form is clinically maladaptive.

On balance, this interpretation is the most scientifically serious version of the “high-T intuition” narrative reviewed in this report, because it identifies a real, named mechanism rather than gesturing at trading-floor confidence. But the mechanism it identifies — turning down limbic input to cortical processing — has only inconsistent support as a stable effect, and even where the underlying emotional-dampening effect is observed, it has not been shown to

improve the accuracy or quality of the judgments that result. “Less overwhelmed by emotion” and “more correct” are not the same claim, and the literature reviewed here supports the first far more consistently than the second.

Testimonial evidence: testosterone replacement therapy and self-reported confidence

The companion report noted that much of the “high-T intuition” claim circulates as anecdotal testimony from testosterone-replacement-therapy (TRT) users rather than as controlled research. It is worth being precise about what more formal self-report data on TRT actually shows, since it is more substantial than an unmoderated forum thread but still falls well short of demonstrating sharpened instinct or judgment. A 2024 cross-sectional survey of 905 men using TRT in the United Kingdom found that 85 percent rated the treatment as effective or very effective, with majorities reporting improvements in overall quality of life, mental wellbeing, and self-esteem and self-confidence specifically. A separate qualitative interview study of TRT users reported similar themes in participants' own words: men described improvements in self-confidence, professional success, and social engagement alongside physical and mood benefits, though several also described social stigma around using the therapy.

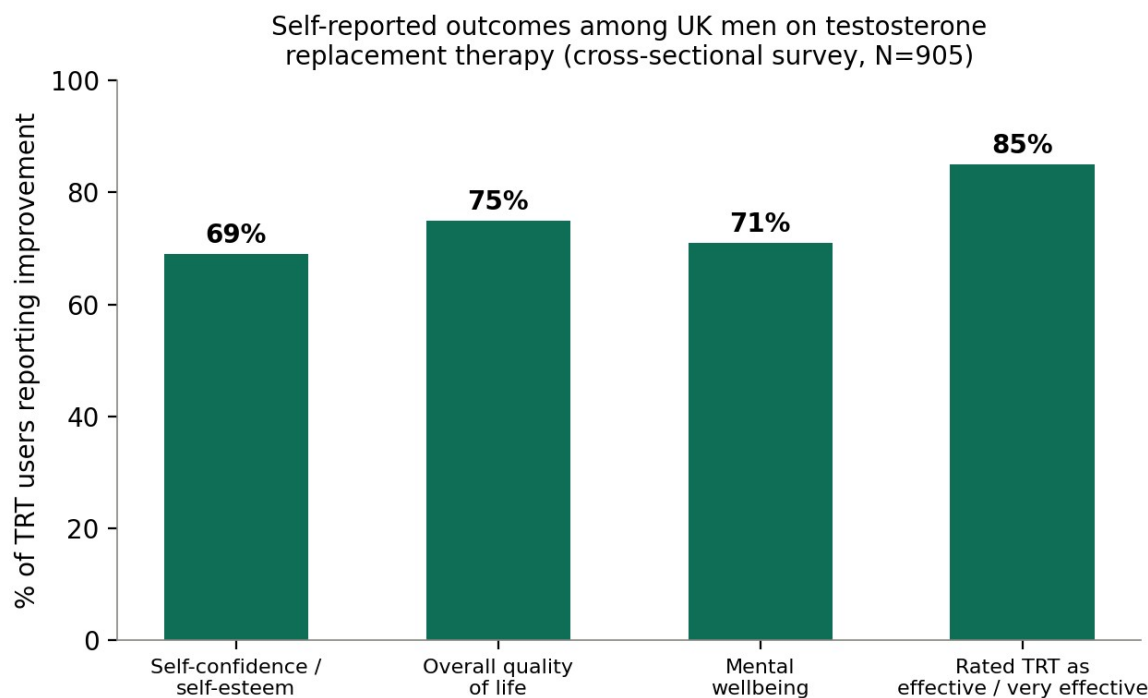


Figure 3. Self-reported outcomes among UK men on testosterone replacement therapy (cross-sectional survey, N = 905).

These findings are genuine and consistently replicated across TRT survey literature, but they are self-report measures of confidence and wellbeing, not measures of decision accuracy, intuitive judgment, or any psi-adjacent “read” of situations. Rising confidence is precisely the mechanism the Nadler/Nave/Camerer CRT study identifies as the pathway by which testosterone degrades reflective accuracy — so this testimonial literature, read carefully, offers indirect support for why users feel their instincts have sharpened while the controlled cognitive evidence suggests what has actually increased is certainty, which is a related but distinct thing from correctness.

Synthesis: what the narrative gets right and where it overreaches

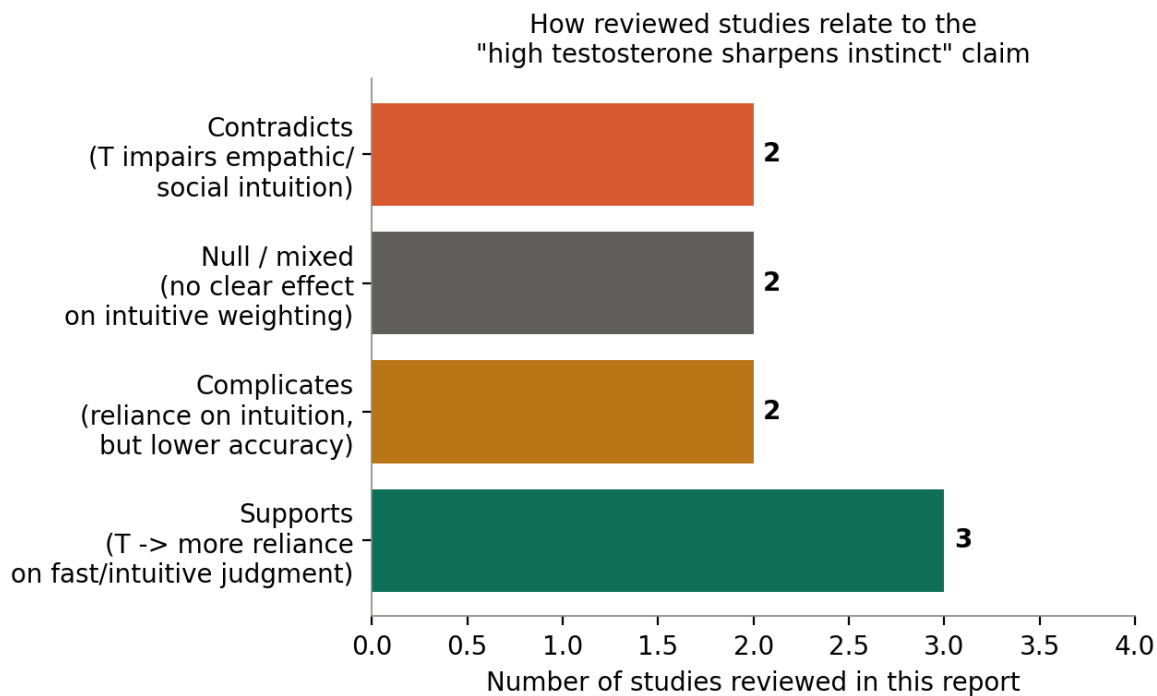


Figure 4. How the studies reviewed in this report relate to the claim that higher testosterone sharpens intuition or instinct.

- Gets right: testosterone reliably increases confidence, risk appetite, and reliance on fast, first-impression judgment over slower deliberation, in both acute-administration experiments and real-world trading-floor field data.
- Gets right: self-reported confidence and social/professional assertiveness reliably rise with testosterone-replacement therapy, which plausibly explains why the subjective feeling of sharpened instinct is widely and sincerely reported.
- Overreaches: the controlled study that most directly tested testosterone's effect on intuitive-versus-reflective judgment (the CRT) found that greater reliance on intuition produced worse, not better, answers — the opposite of what “sharpened instinct” implies.
- Overreaches: more recent computational-modeling work finds the shift toward intuitive processing itself is weak, inconsistent, or absent, undermining even the more modest claim that testosterone reliably reweights cognition toward intuition.
- Context-dependent: the dual-hormone hypothesis suggests testosterone's behavioral effects depend heavily on concurrent cortisol and situational stakes, so a blanket claim about testosterone and instinct, independent of context, is not well supported by the endocrinology.
- Domain-specific: the trading-floor evidence for a testosterone “edge” is specific to competitive, fast-feedback risk-taking; it does not establish a general benefit to situational awareness, social “read,” or

judgment outside that narrow domain, and stands in direct tension with the companion report's finding that testosterone impairs cognitive empathy and social mind-reading.

- Best-grounded version, still incomplete: the claim that testosterone “clears emotional noise” out of judgment by reducing fronto-limbic interference has real support from van Honk’s own research program, making it the most credible version of the narrative reviewed here — but the underlying empathy-impairment effect has failed to replicate in later large-sample studies, and reduced emotional interference has not itself been shown to improve decision accuracy.

Read against the companion report's full survey, this material fills in the missing middle of the “high-T intuition” narrative: it is not baseless, since it draws on real, replicated findings about testosterone, confidence, and risk-taking. But the strongest direct tests of the specific claim that testosterone improves intuitive judgment find the opposite — more confidence in a faster, more often wrong answer — which is a meaningfully different and more cautionary finding than the popular version of the story conveys.

Selected sources

Coates, J. M., & Herbert, J. (2008). Endogenous steroids and financial risk taking on a London trading floor. *Proceedings of the National Academy of Sciences*, 105(16), 6167–6172.

University of Cambridge press office (2008). “Testosterone levels predict City traders’ profitability.” cam.ac.uk.

Nadler, A., Nave, G., Camerer, C. F., & Zava, D. (2017). Single dose testosterone administration impairs cognitive reflection in men. *Psychological Science*; reported in *Caltech News* (“Testosterone Makes Men Less Likely to Question Their Impulses”) and *Knowledge at Wharton* (“Is Testosterone to Blame for Bad Decisions?”).

Severino et al. (2018). Exogenous testosterone increases decoy effect in healthy males. *PMC / NCBI*.

Delineating testosterone’s impact on model-based and model-free decision-making processes (2025). *Proceedings of the Royal Society B*.

Mehta, P. H., & Josephs, R. A. Dual-hormone hypothesis of testosterone and cortisol interaction in status-seeking and dominance behavior.

Cueva, C. et al. Cortisol and testosterone increase financial risk taking and may destabilize markets. *Scientific Reports / PMC*.

Sapienza, P., Zingales, L., & Maestripieri, D. (2009). Testosterone and financial risk preferences. *Evolution and Human Behavior / ScienceDirect*.

Van Honk, J. et al. (2005). Testosterone administration reduces emotional interference during decision-making; Hermans, E. J., Putman, P., & van Honk, J. (2006). Testosterone administration reduces empathetic behavior: a facial mimicry study. *Psychoneuroendocrinology*.

Testosterone reduces functional connectivity during the ‘Reading the Mind in the Eyes’ Test (2016). *Psychoneuroendocrinology / ScienceDirect* — fMRI follow-up to van Honk et al. (2011).

Nadler, A. et al. (2019). Two large-scale testosterone-administration experiments finding no significant effect on cognitive empathy in mind-reading paradigms, discussed in Single-dose testosterone administration modulates instant empathic reactions. ScienceDirect.

Testosterone administration does not alter the brain activity supporting cognitive and affective empathy (2022). PMC / NCBI.

A cross-sectional survey of experiences and outcomes of using testosterone replacement therapy in UK men (2024). Translational Andrology and Urology.

A Qualitative Exploration of Testosterone Replacement Therapy: Men's Experiences and Healthcare Barriers. Research Square / preprint.

Companion report: "Intuition, ESP, and Psychic Ability in Relation to Testosterone" (user-supplied document), for Brañas-Garza & Espín (digit ratio and CRT), van Honk, Terburg & Bos (2011, testosterone and cognitive empathy), and related material on the Empathizing–Systemizing framework.