

CONVERGENCE

OPERATIONAL GROUP

Operator Syndrome: More than a Number

Testosterone Screening, Operator Syndrome, and a Health-First Path for the Warfighter

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From symptom to system.

Abstract

In July 2026, the Department of War directed mandatory testosterone screening for all service members aged thirty and older, citing Human Performance Optimization and the health burden known as Operator Syndrome. This paper affirms the Department's underlying concern; the health of warfighters, during and after service, is a moral and operational priority. It then examines whether a universal screen is the right instrument for it. Drawing on the observational work that defined Operator Syndrome and on higher-tier clinical evidence for testosterone therapy, it argues that low testosterone is sometimes a true cause of harm and sometimes only a downstream marker of a larger physiological load. A screen that cannot tell those apart risks becoming a lab-and-script pathway that treats numbers rather than people. A more rational path stratifies by cause, reserves treatment for genuine indications, and surrounds it with integrated, biopsychosocial care that spans the fields of medicine, the command and social structures of the force, and the whole arc of a career.

A Foundation: Load, Injury, and the Body That Carries Them

Begin with a claim that is well supported and not in dispute. The cumulative physiological cost of chronic stress, what McEwen and Stellar named allostatic load, produces measurable changes across the neuroendocrine, metabolic, and immune systems as the body repeatedly mobilizes to meet demand and never fully stands down.¹ For the career special operator, that load is extraordinary: years of sleep restriction, energy deficit, threat vigilance, and repeated physical trauma, sustained over a working life spent at the tip of the spear.

Traumatic brain injury sits close to the center of this picture, and it does more than add to the load; it can change its magnitude directly. Blast overpressure and concussive impact can injure the pituitary gland, and the endocrine consequences are common rather than rare. A 2024 systematic review and meta-analysis of fifty-two studies and 7,367 patients found that roughly one in three individuals show pituitary-axis dysfunction after TBI, with hypogonadism among the most frequent deficiencies; a portion of these are transient, but some persist or emerge late.² Earlier syntheses reached the same conclusion, with chronic hypopituitarism near 28% after TBI and higher rates in severe injury.³ This is the foundation the rest of the argument rests on: chronic load reshapes the body, and TBI can amplify that reshaping, sometimes to the point of an organic endocrine lesion.

Clinical Anecdote as Signal, Not Proof

It was into this space that Frueh and colleagues introduced Operator Syndrome, describing an interrelated constellation of TBI effects, endocrine dysfunction, sleep disturbance, chronic pain, substance use, depression, relational strain, and existential injury, understood together as the natural consequence of a very high allostatic load.⁴ The contribution is real and humane. It gave a scattered set of complaints a coherent name and pointed care toward the whole person.

The evidentiary weight of that work should be stated plainly, and stating it honors rather than diminishes it. The paper is explicitly naturalistic and observational, built from consultations with more than fifty operators and their families over six years, without a control group, and drawing on self-reported figures the authors themselves label anecdotal.⁴ This is hypothesis-generating clinical evidence: valuable for direction, insufficient for causal or prevalence claims. It tells us where to look. It does not, by itself, tell us what to prescribe. That distinction matters greatly when a single sentence in such a paper becomes the rationale for a Total-Force clinical mandate. The right response to a compelling clinical signal is to build the study and the care model it warrants, not to convert an unproven association into a standing order.

The Memo and the Risk of a Lab-and-Script Pathway

The Department's July 2026 memorandum makes testosterone screening a mandatory element of the Periodic Health Assessment for all personnel aged thirty and older, frames it as support for Human Performance Optimization, and ties it explicitly to lessons from treating Operator Syndrome, including targeted testosterone therapy.⁵ The intent, to protect and optimize the force, is sound. The mechanism is where caution is warranted.

A universal screen creates a powerful default. Once a number is measured, a low result invites a prescription, and the distance from screening to supplementation is short. The clinical evidence counsels against letting that distance close automatically. In the population where testosterone therapy is actually indicated, meaning men with symptoms and consistently low morning testosterone, the large TRAVERSE trial found therapy noninferior to placebo for major cardiac events over about two years, which is reassuring; yet the same trial recorded more atrial fibrillation, acute kidney

injury, pulmonary embolism, and, in a companion analysis, more clinical fractures in the treated group.^{6,7} The Testosterone Trials are more sobering still: even in men with documented low levels, restoring testosterone improved sexual function and modestly lifted mood but produced no gain in vitality, no cognitive benefit, and a physical-function signal only when results were pooled across sub-trials.⁸ Correcting the laboratory value did not restore the person.

In the operational and eugonadal setting the case is weaker again. In a military-relevant trial, a single dose of testosterone undecanoate before a twenty-day multi-stressor operation preserved fat-free mass but did not prevent the decline in physical performance; tissue was spared, capability was not.⁹ Meta-analytic strength gains in older men are small and inconsistently functional, and professional guidelines specifically advise against prescribing testosterone to eugonadal men.^{10,11} Against uncertain benefit stand real costs that fall hardest on a young force: erythrocytosis is the most consistently reported adverse effect and carries thrombotic risk,^{10,11} and exogenous testosterone suppresses the hypothalamic-pituitary-gonadal axis, reducing or halting sperm production. Under the World Health Organization Task Force protocol, sixty-five percent of men became azoospermic within six months, and while most recovered after cessation, only about half returned to baseline sperm density and some required up to two years.¹² For service members still building families, that is not a footnote.

A Better Tack: Treat the True Cause, Surround It With Care

None of this argues that testosterone is wrong. It argues for rationality about when the number is the problem and when it is a messenger. The clinical hinge is a distinction the Endocrine Society already draws: organic hypogonadism, caused by a structural lesion such as pituitary injury, versus functional hypogonadism, driven by conditions like sleep loss, energy deficit, and chronic stress that are often reversible when the underlying state is treated.¹¹ A blanket age-based screen cannot see this distinction. It will find low numbers in both groups and, absent discipline, will treat them alike.

The recommendations that follow are proposals, and honesty requires naming their tradeoffs rather than presenting them as a free improvement. Integrated, biopsychosocial care is more expensive than a single lab draw, harder to staff, and slower to stand up; it asks for scarce specialist time, coordination across commands, and sustained funding rather than a one-time test. A universal screen is cheap, fast, and easy to administer, and those are real virtues that the alternative must answer for. The argument here is not that cost does not matter but that a lab-and-script pathway is cheap precisely because it addresses only the surface, and that the more expensive model is likelier to produce the health and readiness the Department is actually paying for. Each proposal below should be weighed with its cost in view.

Stratify before you screen, and screen before you supplement

For the operator with blast or impact exposure, low testosterone may be an organic injury; here a full pituitary evaluation, not a testosterone value in isolation, is the right response, and replacement, when confirmed, is appropriate treatment of a true cause. For the operator whose low reading reflects accumulated load, the causal target is the load itself: sleep, recovery, nutrition, pain, and psychological health. Supplementing that operator corrects a readout while the system that produced it keeps eroding. The same evidence that limits broad supplementation supports precise treatment for those genuinely deficient, so the goal is not fewer interventions but better-aimed ones.

Adopt a biopsychosocial frame, because the injury is biopsychosocial

Operator Syndrome is not a disease of one organ. It is the convergence of the biological, the psychological, and the social, and it must be understood in the frame Engel described more than four decades ago rather than through a single laboratory value.¹³ The biology includes endocrine, neurological, sleep, and pain systems that interact rather than fail in isolation. The psychology includes mood, cognition, hypervigilance, and the existential weight of loss, killing, and survivor's guilt. The social includes marriage, family, unit, and the abrupt loss of tribe at transition. A testosterone result speaks to a sliver of the first domain and is silent on the rest. When the assessment matches the true breadth of the injury, the intervention can too, and the operator is seen as a whole person embedded in relationships rather than as a number on a panel.

Integrate the care; do not silo it

The dominant failure mode in both military and civilian medicine is fragmentation: endocrinology adjusts a hormone, sleep medicine addresses apnea, behavioral health treats mood, orthopedics manages pain, and no one owns the whole. In a population whose problems are interrelated by design, siloed care quietly recreates the very cascade it is meant to interrupt. The alternative is genuinely multidisciplinary and integrated care, in which neurology, endocrinology, psychiatry, psychology, sleep medicine, physical therapy, orthopedics, and primary care work from one shared assessment and one plan for the same person. This is the centralized, team-based model that special-operations clinicians themselves have called for, precisely because it obviates the fragmentation typical of American health systems and brings every relevant clinician into a single conversation with the operator.⁴ A testosterone decision, when one is warranted, is made inside that conversation, monitored for hematocrit and fertility, and revisited over time, rather than issued as a standalone prescription.

Integrate across the human system, not only the medical one

Integration cannot stop at the clinic door. The warfighter lives inside a command structure and a social world that shape health as powerfully as any medication. Command sets the operational tempo, the sleep and recovery that follow, the stigma or safety attached to seeking care, and the permission to stand down long enough to heal. Family and unit carry the load between clinical encounters and often notice decline first. A care model that ignores these structures treats the individual while the system that surrounds him keeps generating the injury. The better model brings line leadership, family, and the social supports of the force into the plan as partners, aligning medical care with the command and cultural realities in which recovery actually happens. Health is produced across the whole human system, so care must be delivered across it as well.

Span the whole career, not a single age band or rank

The July memo draws its line at age thirty, but allostatic load and blast exposure do not respect that boundary. A twenty-six-year-old with heavy breaching exposure may carry a greater endocrine and neurological burden than a forty-five-year-old in a support role. Care should follow exposure and need across the full arc of service and beyond it, from accession through the peak operational years, into the fragile transition to civilian life, and through the long tail of retirement when many of these injuries finally surface and when access to military medicine has often lapsed. It should reach across rank as well, since the enlisted operator and the senior officer carry the same physiology under the same load. A model organized around age or grade will miss the people who need it most; a model organized around exposure and need will find them.

A proportionality lesson already on the books

The Department has recently modeled exactly this kind of reasoning. In April 2026 it made the annual influenza vaccine voluntary, calling a blanket mandate for every member in every circumstance overly broad and not rational.¹⁴ Within weeks, after the death of a basic trainee from influenza-like illness, the services requested and received exceptions that restored the vaccine where risk was concentrated, among recruits in close quarters and healthcare personnel.¹⁵ The lesson is not that mandates are bad or that autonomy trumps readiness. It is that interventions should be matched to the stratum of risk they address: removed where blanket application is disproportionate, and applied precisely where the risk-benefit case is strong. Testosterone screening deserves the same proportionality. Neither testing-and-supplementing everyone nor testing no one should be a foregone conclusion.

Conclusion

The Department is right that warfighter health matters, now and after service, and right that Operator Syndrome deserves a serious response. The most faithful way to honor that concern is not a single biomarker measured across the force but a stratified, cause-first approach: one that reserves testosterone therapy for those who truly need it and surrounds every such decision with integrated, biopsychosocial care that crosses the specialties of medicine, engages the command and social structures of the force, and follows the operator across the whole span of a career without regard to age or rank. From symptom to system is not a slogan here. It is the difference between treating a number and caring for a person, and it is the standard the men and women who carry this load have earned.

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