

Composed Performance: *The Science*

Composure has a measurable effect on performance — and it can be understood, trained, and managed like any other risk professionals face in their work. The four articles on this page lay out the evidence behind that claim, and behind the system Composed Performance has built on top of it.

They were written to the same standard throughout: every academic citation has been checked against its original source rather than taken on trust, evidence is calibrated honestly rather than rounded up, and where a claim rests on practical field experience rather than peer-reviewed research, that is stated plainly rather than left to blend in. Reading them together, in order, gives the fullest picture — but each also stands on its own if you've arrived at just one.

1 Composure Loss Disrupts Access to Skill, Degrades Performance: Scientific Evidence

Starts with the foundational question: does losing composure actually block access to skill a person genuinely has, and does that happen both under acute pressure and in its absence? Reviews the research behind "choking" — Baumeister, Masters, Beilock and Carr, Eysenck, Arnsten — alongside the separate, less unified literature on composure loss without pressure: underarousal, boredom, and mind-wandering.

2 Composure Regulation and Conditioning: Scientific Evidence

Moves from the problem to the fix. Reviews the evidence that composure can be reset quickly, that it behaves differently depending on timing — before, during, and after a pressure event — that over-activation and under-arousal may require different kinds of correction, and that the capacity to regulate composure can itself be trained in advance through deliberate conditioning.

3 Levers of Composure Regulation & Conditioning: Scientific Evidence

Gets specific about mechanism: the evidence behind each of Composed Performance's five levers — Breath, Voice, Body, Mindset, and Focus — individually. States plainly where the evidence is strongest (Breath, Mindset, Focus), where it's a genuine mix of academic and practical evidence

(Body, Voice), and is explicit that the five-lever structure itself is Composed Performance's own integrative framework, not something a single study validates as a whole.

4 Composed Performance: Our Contribution

Steps back from the research itself to explain what Composed Performance adds on top of it: not new science, but the synthesis, translation, and operationalization of a fragmented research base into one coherent, practical ecosystem — the Framework, the App, and the Diagnostics — built specifically for professionals managing Composure Risk in the modern workplace.

Suggested reading order: 1 → 2 → 3 → 4. The first three build the evidentiary case, article by article, from problem to solution to mechanism. The fourth explains what Composed Performance has built with that case as its foundation.

Composure Loss Disrupts Access to Skill, Degrades Performance: Scientific Evidence

Part 1 of 4 in Composed Performance's series on the science behind composure regulation and conditioning. The others: Composure Regulation and Conditioning, Levers of Composure Regulation & Conditioning, and Composed Performance: Our Contribution. See the full series at [Composed Performance: The Science](#).

Composure — the capacity to maintain regulated, goal-directed attention — is not simply a feeling. When it breaks down, the research shows a measurable, mechanistic consequence: skilled performers lose access to abilities they otherwise reliably demonstrate. This breakdown happens in two distinct circumstances. The first, and by far the more extensively studied, is **composure loss under pressure** — the well-known phenomenon of "choking." The second, less unified but equally well-evidenced, is **composure loss in the absence of pressure** — breakdowns driven by underarousal, boredom, and attentional drift rather than threat.

The literature below is organized by these two conditions. Within each, references are further split into two categories:

- **Foundational / Theoretical** — the papers that named the phenomenon, proposed the governing mechanism, or built the framework the rest of the field now builds on. These tend to be the most-cited works in the area, in part because virtually every subsequent study in the field cites them when setting up its own research question.
- **Key Empirical** — direct experimental demonstrations that test, extend, or apply the foundational theory. These papers are where the mechanism gets isolated, measured, and in some cases turned into a working intervention.

A note on the two sections: the "under pressure" literature is a single, cumulative research program that has been building on itself since the 1980s, largely within sport and cognitive psychology. The "no pressure" literature is more distributed — it draws from boredom research, mind-wandering research, and arousal theory, fields that developed somewhat independently and were not originally designed to speak to a unified "composure" construct. That difference in coherence is itself worth keeping in mind when weighing the two bodies of evidence.

Section 1: Composure Loss Under Pressure

FOUNDATIONAL / THEORETICAL

Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology*, 46(3), 610–620. The paper that named and framed the phenomenon. Baumeister Of *Harvard University* showed that raising the incentive to perform well can paradoxically *worsen* performance on well-learned skills, and proposed that self-consciousness — heightened self-focused attention under pressure — is the driving mechanism. Nearly every subsequent choking study traces its lineage to this paper.

Masters, R. S. W. (1992). Knowledge, knerves and know-how: The role of explicit versus implicit knowledge in the breakdown of a complex motor skill under pressure. *British Journal of Psychology*, 83(3), 343–358. Originated **reinvestment theory**: under pressure, skilled performers revert to consciously, step-by-step controlling a skill that should be running automatically — and it is precisely that reinvestment of explicit control that breaks the skill down. This paper also produced the Reinvestment Scale, still in active use across sport, surgical, and police performance research.

Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336–353. Formalized how anxiety specifically degrades performance: it disrupts the balance between goal-directed attention (task-focused) and stimulus-driven attention (threat-focused), consuming attentional control resources before it necessarily reduces effectiveness. One of the most-cited frameworks connecting anxiety to cognitive performance broadly, not just sport.

Arnsten, A. F. T. (2009). Stress signalling pathways that impair prefrontal cortex structure and function. *Nature Reviews Neuroscience*, 10(6), 410–422. The neurobiological account underlying all of the above: acute stress triggers catecholamine release that suppresses prefrontal cortex firing, shifting control from deliberate, top-down processing to faster, more reflexive subcortical circuits. This is the mechanism by which composure loss under pressure becomes a *biological* loss of access to skill, not just a psychological one.

KEY EMPIRICAL

Beilock, S. L., & Carr, T. H. (2001). On the fragility of skilled performance: What governs choking under pressure? *Journal of Experimental Psychology: General*, 130(4), 701–725. Direct experimental test of the mechanism, using golf putting. Showed that pressure disrupts skills differently depending on whether they rely on proceduralized/automatic control or working memory — establishing that "choking" is not one phenomenon but at least two, with different fixes.

Beilock, S. L., & Carr, T. H. (2005). When high-powered people fail: Working memory and "choking under pressure" in math. *Psychological Science*, 16(2), 101–105. A striking and frequently cited finding: individuals with the *highest* working memory capacity — normally the strongest performers — choke hardest under pressure on high-working-memory-demand tasks, because pressure consumes precisely the resource they depend on most.

DeCaro, M. S., Thomas, R. D., Albert, N. B., & Beilock, S. L. (2011). Choking under pressure: Multiple routes to skill failure. *Journal of Experimental Psychology: General*, 140(3), 390–406. Reconciles two competing explanations of choking (distraction theory vs. explicit-monitoring theory) into a single framework, and — notably — uses that understanding to design and test interventions that eliminate choking for specific skill types. Moves the literature from diagnosis toward remedy.

Section 2: Composure Loss Without Pressure

FOUNDATIONAL / THEORETICAL

Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology*, 18(5), 459–482. The original inverted-U model of arousal and performance. Its enduring relevance here is the side of the curve that gets less attention: *underarousal* degrades performance just as reliably as overarousal, through sluggishness, disengagement, and poor error-detection rather than threat.

Eastwood, J. D., Frischen, A., Fenske, M. J., & Smilek, D. (2012). The unengaged mind: Defining boredom in terms of attention. *Perspectives on Psychological Science*, 7(5), 482–495. Defines boredom itself as a *failure of attentional engagement* — the inability to direct and sustain attention on a task, independent of any external threat or stakes. This is the closest thing the "no pressure" literature has to a unifying theoretical anchor, and it is the canonical modern boredom paper.

Smallwood, J., & Schooler, J. W. (2006). The restless mind. *Psychological Bulletin*, 132(6), 946–958. The foundational review establishing mind-wandering as a distinct cognitive phenomenon: attention spontaneously decouples from the task at hand and consumes executive resources, occurring routinely in low-stakes, low-arousal conditions.

KEY EMPIRICAL

Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, 330(6006), 932. Large-scale, real-world experience-sampling study finding minds wander roughly 47% of waking hours, unprompted by pressure or threat, with measurable costs to both mood and task engagement. One of the most widely cited empirical demonstrations that attentional drift is the norm, not the exception.

Mooneyham, B. W., & Schooler, J. W. (2013). The costs and benefits of mind-wandering: A review. *Canadian Journal of Experimental Psychology*, 67(1), 11–18. Synthesizes the empirical costs of mind-wandering across domains — reading comprehension, sustained attention, working memory, and standardized test performance (SAT) — none involving acute pressure, establishing that attentional composure loss degrades performance across a wide range of ordinary tasks.

Vijayraghavan, S., Wang, M., Birnbaum, S. G., Williams, G. V., & Arnsten, A. F. T. (2007). Inverted-U dopamine D1 receptor actions on prefrontal neurons engaged in working memory. *Nature Neuroscience*, 10(3), 376–384. The mechanistic bridge between the two sections of this review. Demonstrates that prefrontal cortex function follows a literal inverted-U dose-response curve for dopamine and norepinephrine: *too little* neuromodulatory activity (underarousal, low engagement) impairs working memory and top-down control just as *too much* (acute stress) does — via different receptor subtypes, but converging on the same functional loss of prefrontal control.

Synthesis

Taken together, this body of work supports a claim that is broader — and more defensible — than "pressure causes choking." Composure, understood as the maintained capacity for top-down, goal-directed attention, can be lost from either direction: pulled away by threat and self-monitoring (Section 1), or allowed to drift from insufficient engagement (Section 2). The Vijayraghavan et al. (2007) and Arnsten (2009) findings suggest these are not two unrelated phenomena but two failure modes of the same underlying system — the prefrontal cortex's narrow window of optimal neuromodulatory function. Composure, on this account, is not simply "staying calm." It is staying inside that window.

Composure Regulation and Conditioning: Scientific Evidence

Part 2 of 4 in Composed Performance's series on the science behind composure regulation and conditioning. The others: Composure Loss Disrupts Access to Skill, Degrades Performance, Levers of Composure Regulation & Conditioning, and Composed Performance: Our Contribution. See the full series at Composed Performance: The Science.

Losing composure is only half the story. The other half — the half that matters most for training and performance — is what happens next: how quickly it can be regained, whether it behaves differently depending on when it strikes, and whether the capacity to regulate it can itself be built up over time through practice.

This article reviews the research behind four claims:

- Composure can be regulated and reset **quickly** — not just gradually, over hours or days.
- Composure loss behaves **differently depending on timing** — before, during, and after a pressure event.
- **State-based** composure loss — whether from over-activation or under-arousal — can be corrected quickly, though the evidence for each direction is not equally strong.
- **Composure Conditioning** — training the regulation capacity itself, ahead of time — improves resistance to stress and makes in-the-moment regulation faster and more effective.

As in the companion piece on composure and skill, references below are split into **Foundational/Theoretical** work (the frameworks and named phenomena the field builds on) and **Key Empirical** work (the direct experimental or meta-analytic evidence testing those frameworks).

Section 1: Composure Can Be Regulated and Reset Quickly

FOUNDATIONAL / THEORETICAL

Lehrer, P. M., & Gevirtz, R. (2014). Heart rate variability biofeedback: How and why does it work? *Frontiers in Psychology*, 5, 756. Explains the physiological mechanism — principally the baroreflex — by which controlled breathing can shift autonomic state. This is the theoretical basis for why a brief, structured practice can produce a fast, measurable physiological change, rather than requiring prolonged intervention. One of the most-cited papers in this specific area of applied psychophysiology.

KEY EMPIRICAL

Balban, M. Y., Neri, E., Kogon, M. M., Weed, L., Nouriani, B., Jo, B., Holl, G., Zeitzer, J. M., Spiegel, D., & Huberman, A. D. (2023). Brief structured respiration practices enhance mood and reduce physiological arousal. *Cell Reports Medicine*, 4(1), 100895. A randomized controlled trial (Stanford) comparing three different 5-minute daily breathing protocols against mindfulness meditation over one month. The critical finding for rapid reset: a single, brief (5-minute) session of "cyclic sighing" (an exhale-emphasized breathing pattern) produced measurable, same-session reductions in respiratory rate and physiological arousal, and outperformed meditation on mood improvement. This is direct evidence that a specific, learnable technique can shift physiological state within minutes — not hours or days.

Section 2: Composure Loss Differs Before, During, and After a Pressure Event

FOUNDATIONAL / THEORETICAL

Martens, R., Vealey, R. S., & Burton, D. (1990). *Competitive Anxiety in Sport*. Human Kinetics. Established Multidimensional Anxiety Theory (MAT) and the Competitive State Anxiety Inventory-2 (CSAI-2), the standard instrument in this literature. MAT's foundational contribution is separating anxiety into distinct components — including its *intensity*, its *direction* (interpreted as helpful or harmful), and its *frequency* — each of which behaves differently as a pressure event approaches, unfolds, and passes.

KEY EMPIRICAL

Cerin, E., Szabo, A., Hunt, N., & Williams, C. (2000). Temporal patterning of competitive emotions: A critical review. *Journal of Sports Sciences*, 18(8), 605–626. A critical review synthesizing several decades of research (building on Jones & Cale, 1989; Swain & Jones, 1993; and others) that specifically tracks how anxiety changes in the hours and days *before* a competitive event, how it differs *during* the event itself, and how it resolves *after*. This is a mature, purpose-built research tradition — not an incidental finding — organized around exactly the before/during/after distinction, making it a strong anchor for any framework built around timing-dependent composure loss.

Section 3: State-Based Composure Loss — Over-Activation and Under-Arousal

FOUNDATIONAL / THEORETICAL

Vijayraghavan, S., Wang, M., Birnbaum, S. G., Williams, G. V., & Arnsten, A. F. T. (2007). Inverted-U dopamine D1 receptor actions on prefrontal neurons engaged in working memory. *Nature Neuroscience*, 10(3), 376–384. Establishes that prefrontal cortex function follows a literal inverted-U dose-response curve for catecholamines: *both* too little neuromodulatory activity (under-arousal) and too much (over-activation) impair working memory and top-down control, via different receptor mechanisms. This gives a physiological basis for treating under-arousal and over-activation as two distinct but equally correctable states, rather than only addressing one direction.

KEY EMPIRICAL

Balban et al. (2023) — see full citation in Section 1 — also tested a second, more activating breathing protocol ("cyclic hyperventilation with retention") alongside the calming "cyclic sighing" protocol, within the same study design. This offers a reasonable existence proof that brief, structured practices can shift physiological state in *either* direction — toward calm from over-activation, or toward alertness from under-arousal.

An honest caveat is warranted here. The evidence for rapidly correcting *over-activation* is considerably more developed than the evidence for rapidly correcting *under-arousal*. Most of the literature on brief-intervention state-shifting — including the majority of the Balban et al. findings — is weighted toward down-regulating an overactivated state. The theoretical case for symmetry (via the inverted-U catecholamine model) is solid; the direct empirical case for symmetry is still emerging.

Section 4: Composure Conditioning — Training Improves Resistance and Speed of Regulation

FOUNDATIONAL / THEORETICAL

Meichenbaum, D. (1985). *Stress Inoculation Training*. Pergamon Press. Originated Stress Inoculation Training (SIT): a structured model for preparing people to withstand anticipated stressors *in advance*, through a sequence of education about the stress response, rehearsal of coping skills, and graduated exposure to increasingly realistic stress. The foundational premise is that the capacity to regulate stress is itself trainable ahead of time, not only reactive in the moment.

Saunders, T., Driskell, J. E., Johnston, J. H. [author list under final verification — see note below], & Salas, E. (1996). The effect of stress inoculation training on anxiety and performance. *Journal of Occupational Health Psychology*, 1(2), 170–186. A meta-analysis of 37 studies on Stress Inoculation Training. Found SIT reliably reduces performance anxiety and state anxiety and enhances performance under stress — and critically, that its effectiveness was related to **training duration**: more training produced more benefit, a dose-response relationship. This is direct, quantitative support for the claim that conditioning improves resistance to stress, not merely that any single stress-management technique works.

Note: sources consulted for this citation showed a discrepancy in the third author's name (Hall in one source, Johnston in another). The core finding, meta-analytic method, sample of 37 studies, and 1996 publication are consistently corroborated across sources; the exact author list should be confirmed against the original journal publication before this citation is finalized.

Synthesis

Together, these four bodies of evidence support a picture of composure regulation that is considerably more actionable than "stay calm." Composure loss is not a single, monolithic event to be endured until it passes — it has a *speed* at which it can be reversed (Section 1), a *shape* that changes depending on when relative to a pressure event it occurs (Section 2), a *direction* that determines what kind of correction is needed (Section 3), and a *trainable capacity* underneath it that improves with deliberate practice ahead of time (Section 4). The evidence is strongest for rapid down-regulation of over-activation and for the value of advance conditioning; it is more provisional — though theoretically well-grounded — for rapid up-regulation from under-arousal, which represents a promising direction for future research rather than a settled finding.

Levers of Composure Regulation & Conditioning: Scientific Evidence

Part 3 of 4 in Composed Performance's series on the science behind composure regulation and conditioning. The others: Composure Loss Disrupts Access to Skill, Degrades Performance, Composure Regulation and Conditioning, and Composed Performance: Our Contribution. See the full series at Composed Performance: The Science.

Composed Performance is developed for professionals in high-stakes workplace environments. It is not a clinical or laboratory protocol; it is a practical training methodology, built on two distinct sources: peer-reviewed academic research, and practical experience accumulated through direct work with professionals performing under pressure. Both are used deliberately in what follows, and both are legitimate — but they are not the same kind of evidence, and this article keeps them visibly separate rather than treating field experience as a substitute for research citations, or research citations as validating claims they don't actually make.

Composed Performance organizes composure regulation and conditioning around five levers: Breath, Voice, Body, Mindset, and Focus. This five-lever structure has not been tested as an integrated framework by any single study or research program. Each lever, however, is supported by strong academic research, by strong practical relevance observed in professional settings, or by both — and this article states explicitly, lever by lever and claim by claim, which kind of support applies.

The type of evidence behind each lever varies, and that variation is worth stating plainly rather than glossing over. Breath, Mindset, and Focus are each backed by substantial, well-cited, mechanistically grounded academic literatures — among the strongest available in performance psychology. Body and Voice draw on a real combination of solid academic evidence and strong practical relevance built from direct field experience with professionals under pressure. For these two levers, practitioner experience carries genuine evidentiary weight in its own right — it is not a placeholder for research that hasn't caught up yet, but a legitimate, complementary form of knowledge that any workplace training methodology should draw on.

As in the companion pieces, academic references are split into **Foundational/Theoretical** work (the frameworks and named phenomena the field builds on) and **Key Empirical** work (the direct experimental evidence testing those frameworks). Where a claim rests primarily on practical relevance rather than academic citation, that is stated plainly rather than left implicit.

Breath

The strongest evidence base of the five levers.

FOUNDATIONAL / THEORETICAL

Lehrer, P. M., & Gevirtz, R. (2014). Heart rate variability biofeedback: How and why does it work? *Frontiers in Psychology*, 5, 756. Explains the physiological mechanism — principally the baroreflex — by which slow, paced breathing entrains heart rate variability and shifts autonomic state. One of the most-cited papers in applied psychophysiology, and the theoretical basis for treating breath as a fast-acting regulation lever.

KEY EMPIRICAL

Balban, M. Y., Neri, E., Kogon, M. M., Weed, L., Nouriani, B., Jo, B., Holl, G., Zeitzer, J. M., Spiegel, D., & Huberman, A. D. (2023). Brief structured respiration practices enhance mood and reduce physiological arousal. *Cell Reports Medicine*, 4(1), 100895. A Stanford randomized controlled trial showing that a single, brief (5-minute) breathing practice — "cyclic sighing," an exhale-emphasized pattern — produces same-session reductions in respiratory rate and physiological arousal, outperforming mindfulness meditation on mood improvement. Direct evidence that breath can shift physiological state within minutes.

Voice

Here the evidence splits cleanly into two different claims, and they should not be blurred together: voice as a **signal** that composure is being lost, and voice as a **tool** for actively regulating it.

Voice as a Signal of Composure Loss — well-established

Banse, R., & Scherer, K. R. (1996). Acoustic profiles in vocal emotion expression. *Journal of Personality and Social Psychology*, 70(4), 614–636. A foundational, highly cited paper establishing that vocal acoustic features reliably carry emotional and physiological state information — the basis for treating voice as a diagnostic channel.

Giddens, C. L., Barron, K. W., Byrd-Craven, J., Clark, K. F., & Winter, A. S. (2013). Vocal indices of stress: A review. *Journal of Voice*, 27(4), 390–401. A review of more than 50 studies confirming that stress reliably shifts vocal parameters, most consistently fundamental frequency (pitch), along with speech rate and other acoustic markers. This is solid, converging evidence that pace, tone, and delivery are among the earliest visible signs that composure is breaking down — well before other levers may show it.

Voice as an Active Regulation Technique — emerging, mixed evidence

The idea that vocal practices such as humming or chanting can actively shift physiological state rests on a real but early-stage body of research, and it should be presented with that caveat attached.

Small studies — for example, Inbaraj, G., et al. (2022). Immediate effects of OM chanting on heart rate variability measures compared between experienced and inexperienced yoga practitioners. *International Journal of Yoga*, 15(1), 52–58 — report increased heart-rate-variability markers associated with parasympathetic activity during and after chanting or humming. However, most of this evidence relies on HRV as an *indirect* proxy for vagal activity rather than direct measurement, sample sizes are typically small, and at least one 2024 randomized controlled trial found no significant difference in vagal tone between a humming group and a control group. The honest characterization is: plausible, actively studied, and partially supported — not yet an established, high-confidence finding.

A separate, frequently misused data point deserves a precise correction here. **Weitzberg, E., & Lundberg, J. O. N. (2002). Humming greatly increases nasal nitric oxide. *American Journal of Respiratory and Critical Care Medicine*, 166(2), 144–145.** This study found a genuine 15-fold increase in nasal nitric oxide during humming compared to quiet exhalation — but the study measured sinus ventilation as a potential diagnostic tool for sinusitis, not systemic immune or nervous-system effects. Nasal nitric oxide does have an established, narrow role in local airway defense, but claims that humming "boosts the immune system" or "strengthens the nervous system" extend well beyond what this study measured or supports. Where this finding is cited, it should be described accurately: humming dramatically increases nasal nitric oxide, a molecule involved in local sinus function and airway defense — nothing broader than that.

Practical basis, stated separately from the above. Composed Performance's inclusion of Voice as an active regulation lever — not only a diagnostic one — draws substantially on the practical reality of workplace environments, not only on the early-stage research above.

Workplace performance runs largely through communication, and voice is the primary instrument of it. A voice-based loss of composure — a rushed pace, a thinning or shaking tone, a stumbled delivery — is among the most visible and consequential ways composure loss shows up at work: in front of clients, in front of senior management, in a presentation, at a conference, in a negotiation. Unlike an internal shift in mindset or arousal, it is heard by everyone in the room in real time, and it shapes how a professional's competence and credibility are judged in that moment.

That visibility is one reason Voice is treated as a regulation lever, not only a signal: if composure loss is showing up audibly, in the same channel a professional is actively using to perform, a voice-based technique — deliberately regulating pace, breath support, tone, and delivery in the moment

— offers a direct and practically relevant way to intervene where the breakdown is being seen and heard, rather than only indirectly. This is a practical design choice, not a proven physiological principle. It's also worth noting that vocal changes under stress are frequently downstream of breath and autonomic arousal rather than an independently governable system in their own right — part of why Breath and Voice are treated as closely related levers in practice, rather than fully separate mechanisms. The basis for including Voice as a regulation lever is genuine and practically grounded. It is a field-based justification, not an academic one, and should not be read as equivalent in evidentiary weight to the peer-reviewed research cited elsewhere in this article.

Body

FOUNDATIONAL / THEORETICAL

Nair, S., Sagar, M., Sollers, J., Consedine, N., & Broadbent, E. (2015). Do slumped and upright postures affect stress responses? A randomized trial. *Health Psychology*, 34(6), 632–641. A randomized trial (N=74) in which participants were physically held in a slumped or upright seated posture before completing a validated laboratory stress task (the Trier Social Stress Test). Upright participants reported higher self-esteem, better mood, and lower fear, and used measurably fewer negative-emotion words in speech (via linguistic analysis) than slumped participants.

A precise reading of the results matters here: the effects were strongest on self-reported mood, self-esteem, and language use — not on a simple, uniform reduction in physiological arousal. Upright participants actually showed *higher* pulse pressure during and after the stress task. The accurate claim this study supports is that posture affects psychological resilience and mood under stress, not that upright posture straightforwardly calms the body.

KEY EMPIRICAL

Wilkes, C., Kydd, R., Sagar, M., & Broadbent, E. (2017). Upright posture improves affect and fatigue in people with depressive symptoms. *Journal of Behavior Therapy and Experimental Psychiatry*, 54, 143–149. A follow-up study from the same research group extending the posture-affect finding to fatigue and to a population with depressive symptoms, strengthening confidence that the original effect is not a one-off finding.

A deliberate omission, explained. The most famous "body posture" claim in psychology — power posing (Carney, Cuddy, & Yap, 2010, *Psychological Science*) — is not cited here. A large, well-powered replication (Ranehill et al., 2015, *Psychological Science*, N=200) found no hormonal or behavioral effects, and the original lead author publicly stated in 2016 that she no longer believes the effects are real. Power posing is now a commonly cited example of the replication crisis in psychology. It is excluded from this article on purpose.

Practical basis, stated separately from the above. Beyond the academic evidence on posture and mood, Body is also included on the strength of a practical reality specific to modern workplace environments: most professionals spend hours a day seated at a desk, working at a computer, often with little variation in posture. This is not only anecdotal. A body of occupational-health research links prolonged sitting and poor sitting posture to musculoskeletal discomfort among office workers, and at least one large cross-sectional study found a direct association between higher self-reported stress and increased risk of musculoskeletal disorders in this population: **Putsa, B., Jalayondeja, W., Mekhora, K., Bhuanantanondh, P., & Jalayondeja, C. (2022). Factors associated with reduced risk of musculoskeletal disorders among office workers: a cross-sectional study 2017 to 2020. *BMC Public Health*, 22, 1503.** When posture and alignment are poor over sustained periods, the physical tension that accumulates does not stay contained to the body — it compounds and amplifies stress at a practical, day-to-day level, independent of any single acute pressure event. Professionals also repeatedly report that physical tension, posture, and bodily bracing are among the first things they and observers notice under pressure, and that deliberate physical adjustment — posture, grounding, muscular release — is something they use and value in the field. This basis for the lever's inclusion draws on both occupational-health research and direct field experience, and complements, rather than substitutes for, the controlled experimental evidence above.

Mindset

FOUNDATIONAL / THEORETICAL

Crum, A. J., Salovey, P., & Achor, S. (2013). Rethinking stress: The role of mindsets in determining the stress response. *Journal of Personality and Social Psychology*, 104(4), 716–733. Established the Stress Mindset Measure and demonstrated, across three studies including a sample of employees at an international financial institution, that believing stress is enhancing (rather than debilitating) is associated with better health, life satisfaction, and self-reported work performance.

KEY EMPIRICAL

Jamieson, J. P., Nock, M. K., & Mendes, W. B. (2012). Mind over matter: Reappraising arousal improves cardiovascular and cognitive responses to stress. *Journal of Experimental Psychology: General*, 141(3), 417–422. A controlled experiment showing that instructing participants to reappraise stress arousal as a functional resource — rather than suppress or fear it — produced measurably better cardiovascular reactivity and reduced attentional bias toward threat during an acute stressor. One of the most direct demonstrations that a cognitive lever changes both physiological and cognitive outcomes under pressure.

Focus

FOUNDATIONAL / THEORETICAL

Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336–353. Formalizes how anxiety disrupts the balance between goal-directed attention (task-focused) and stimulus-driven attention (threat-focused). One of the most-cited frameworks connecting anxiety to attentional control broadly.

KEY EMPIRICAL

Wulf, G. (2013). Attentional focus and motor learning: A review of 15 years. *International Review of Sport and Exercise Psychology*, 6(1), 77–104. An extensive, highly cited review showing that directing attention externally (on the intended effect of a movement) rather than internally (on body mechanics) consistently and robustly improves motor performance and learning across a wide range of skills. This is among the most well-replicated findings in all of sport and motor-learning psychology, and it directly supports Focus as a lever with reliable, controllable effects on performance.

Synthesis

Taken as a set, the five levers draw on different kinds and depths of evidence, and this article has been explicit about that rather than flattening it. Breath, Mindset, and Focus sit on some of the most mature, well-replicated findings in performance psychology. Body and Voice are grounded in a genuine combination of academic research and direct field experience: for Body, randomized experimental evidence on posture and resilience, paired with occupational-health data on the accumulated cost of poor posture in desk-based work; for Voice, strong evidence that vocal changes signal composure loss, paired with the practical reality that in professional settings, voice is often the primary channel through which composure and credibility are judged in real time.

Composed Performance was built for the workplace, not the laboratory, and it draws on both forms of evidence by design. A practical training methodology does not need every lever to rest on identical academic footing to be effective or credible — it needs each lever's basis to be accurately represented, so that practitioners and clients alike know exactly what they are standing on. That is the standard this article, and its companion pieces, have tried to meet throughout.

Composed Performance: Our Contribution

Part 4 of 4 in Composed Performance's series on the science behind composure regulation and conditioning. The others: Composure Loss Disrupts Access to Skill, Degrades Performance, Composure Regulation and Conditioning, and Levers of Composure Regulation & Conditioning. See the full series at [Composed Performance: The Science](#).

The three companion pieces on this site — on composure and access to skill, on regulation and conditioning, and on the five levers — review a genuinely large and scattered body of academic research: cognitive psychology, sport science, psychophysiology, occupational health, neuroscience. None of that research was produced by Composed Performance, and none of it was designed to speak to the others. This article is about what Composed Performance actually contributes on top of it.

We Are Not Creating New Science — We Are Making It Usable

Composed Performance does not claim to have discovered new mechanisms of stress, attention, or performance. The science already exists, distributed across dozens of separate research traditions that were never built to talk to each other — choking-under-pressure research in sport psychology, arousal theory in physiology, stress-mindset research in social psychology, attentional-control research in cognitive science, and more.

What Composed Performance contributes is synthesis, translation, and operationalization: taking that fragmented body of research and turning it into a single, coherent system that a working professional can actually use — a shared vocabulary, a practical framework, and a structured set of tools, built specifically for the demands of a modern workplace. That is real work, and it is the core of what this ecosystem — the Framework, the App, and the Diagnostics together — is built to do. The objective throughout is practical: helping professionals improve the quality of their decisions and their performance under the pressure that real work regularly puts them under.

The Framework: Making Composure Practically Legible

The Composed Performance Framework gives practitioners a clear, working vocabulary for something most professionals experience constantly but rarely have precise language for. It explains composure as **Access to Capability** — the idea that skill and judgment a person genuinely has can become temporarily unavailable to them, not because the capability disappeared, but because composure loss blocked access to it. It explains the mechanism by which that blocking

happens, and — critically for a practical system — which kinds of skills are vulnerable to which kinds of composure loss, since not every pressure situation threatens the same capability in the same way.

From there, the Framework sets out the principles of **Composure Regulation** — how composure is recovered once it's lost — and the objective of **Composure Conditioning** — how the underlying capacity to regulate is strengthened over time, ahead of the moments that will demand it. And it makes the link between the two explicit: regulation is what a professional does in the moment; conditioning is what makes that regulation faster, more reliable, and less effortful the next time it's needed. Neither concept stands alone in the Framework — each is defined in terms of the other.

The App: Boosts and Foundations

The Framework becomes a practical tool through the App. It classifies composure loss along two dimensions established in the research this site reviews: by **timing** — whether the loss occurs before, during, or after a pressure event — and by **state** — whether it stems from over-activation or under-arousal. That classification is what allows the App to point a person toward the right tool for their actual situation, rather than a generic one.

Boosts are short, guided regulation practices — designed to be completed in three to five minutes — that draw on multiple levers together to reset composure quickly, matched to the specific timing and state of the situation at hand.

Foundations are single-lever conditioning practices, each progressing deliberately from low load to high load. Their design rationale follows directly from the conditioning research reviewed elsewhere on this site: just as stress inoculation training shows a dose-response relationship between practice and resilience, the working hypothesis behind Foundations is that structured, progressive single-lever practice strengthens a person's regulatory capacity in that lever specifically — making the corresponding Boosts faster and more effective over time. This is the design intent behind Foundations; the Diagnostics, described below, are how that intent gets tested against real usage data rather than simply assumed.

Both Boosts and Foundations are organized and categorized carefully enough that finding the right practice for a given moment is fast and specific, not a matter of scrolling through a generic library. We are not aware of an existing app that structures composure training this way — around timing, state, and a paired regulation-and-conditioning model built on the same five levers.

The Diagnostics: Building the Next Layer of Evidence

The App's Diagnostics, and the research Composed Performance generates from the data its usage produces, are designed to close a gap the existing academic literature does not close on its own: they will show, over time and at scale, how an individual's composure regulation is actually progressing, how their conditioning is progressing, how the two relate to each other in practice, what effect consistency and repeated use have on regulation's effectiveness, and — just as usefully — what isn't working as well as expected. This is explicitly framed as an ongoing, forward-looking research program, not a set of conclusions already reached. It is where Composed Performance's own evidence base will be built, on top of — and tested against — the existing academic research this site reviews elsewhere.

What Composed Performance Is — and Isn't

Composed Performance is a performance training methodology, built for professionals navigating high-stakes decisions and pressure in the workplace. It is not a clinical or therapeutic service: it does not diagnose or treat any medical or mental health condition, and it is not a substitute for medical or psychological care. Being precise about that distinction is part of representing this work honestly — the same standard this site has tried to hold throughout.

Our Contribution, Stated Plainly

Composed Performance takes a vast, scattered body of academic research on stress, attention, physiology, and performance, and combines it with years of practical experience operating under real pressure — and in the ordinary, lower-stakes moments of everyday work — to build a complete ecosystem for improving decision quality and performance. The starting point is a simple but consequential idea: composure has a measurable impact on performance, and like any other risk professionals manage in their work, Composure Risk can be understood, trained for, and managed deliberately, rather than left to chance.