



Fostering Resilience and Functional Recovery in Patients

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Part 1. The SOF Mindset

Individuals serving in Special Operations Forces (SOF) possess rare mental attributes that allow them to endure rigorous selection, unrelenting training, and high-risk deployments worldwide. Books such as *Navy SEAL Mental Toughness* (Lambertsen, 2016; McMillan, 2023) enumerate key traits: unshakable confidence, resilience, focus, composure, and an unsatiated need to succeed. Research confirms that a **"stress-is-enhancing" mindset** predicts greater success during SEAL selection (Smith et al., 2020).



Research Background: What the Literature Shows

Danish Frogman Study

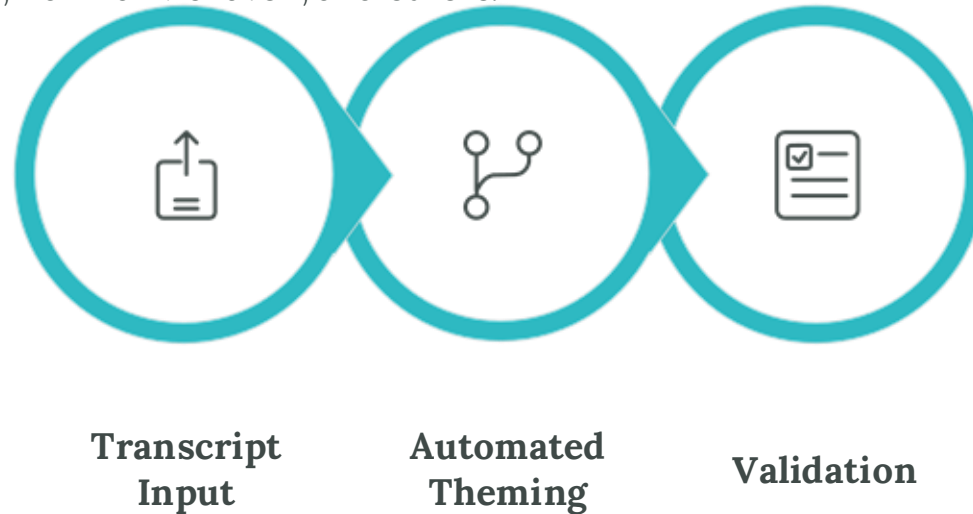
Bech et al. (2021) found SOF candidates scored higher in **Conscientiousness** and **Agreeableness** vs. university students, and showed greater extraversion and lower neuroticism after training.

Systematic Review (Jones et al., 2022)

A comprehensive review on defense resilience found **mental toughness, confidence, resilience**, and a stress-enhancing mindset all contributed to successful selection, graduation, and completion tasks.

Study Aim & Methods

A computer program was created using Google Colab to analyze **over 140 hours** of SOF interview transcripts. Interviews ranged from 15–120 minutes and featured well-known SOF figures including David Goggins, Jocko Willink, Admiral McRaven, and others.



The program rank-ordered main psychological themes and subthemes, assigning relevance scores correlated with thematic word frequency across all transcripts.

The 7 Ranked Psychological Strengths

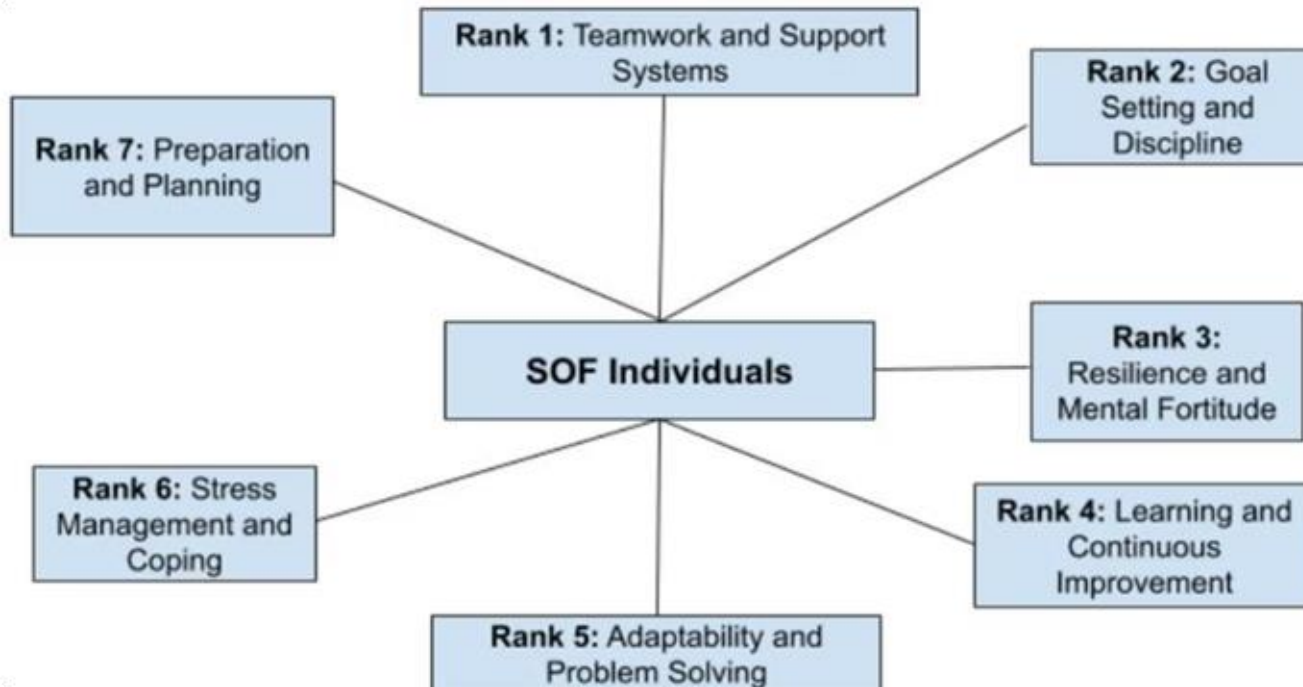
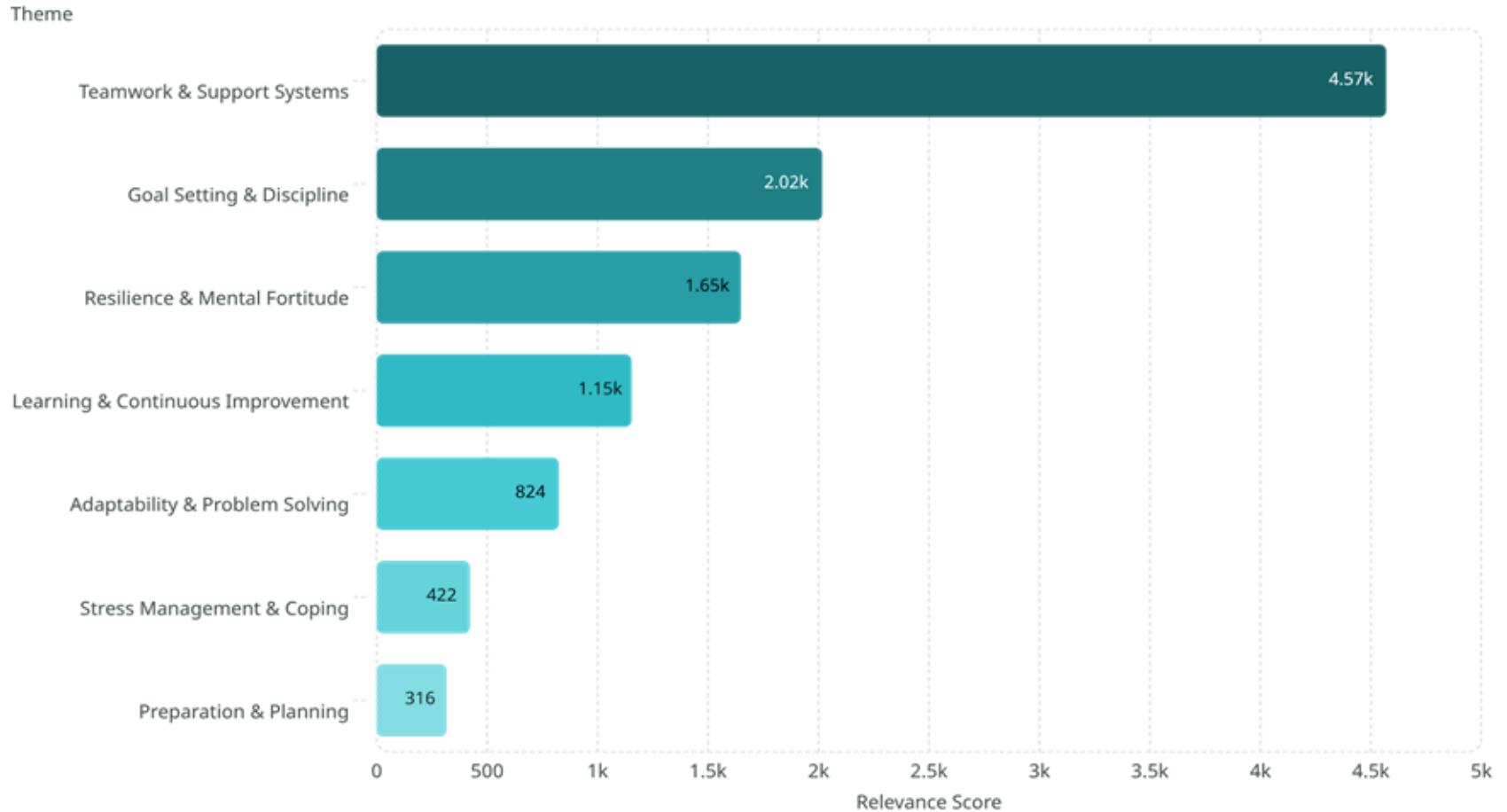


Figure 1. Psychological strengths of SOF individuals, derived from computer-assisted thematic analysis of 140+ hours of interviews.

Results: Relevance Scores at a Glance



 RANK 1 — RS: 4,569

Teamwork & Support Systems

The highest-ranked theme. SOF interviewees consistently described strong bonds with their team, unit, and brotherhood — supporting each other, building trust, and working together to overcome obstacles.

"You can't paddle the boat by yourself... we're called the SEAL Team for a reason. You can't go on a mission by yourself." — **Admiral William H. McRaven**

Team Cohesion & Unity

RS: 3,214

Mutual Support & Assistance

RS: 1,411

Trust & Communication

RS: 656



Teamwork: The Brotherhood in Action

"Teamwork and unit cohesion are critical... The 'pickup team' approach should not be permitted in mission critical areas." — **Lt. Jim Lechner, Ret. Army Ranger**

"It feels so good to be part of this community... every member is reliant on the other member and everyone's serving each other." — **Chadd Wright, Ret. Navy SEAL**

Goal Setting & Discipline

Strategies related to goals, missions, and plans to overcome significant obstacles. Subthemes include clear objectives and focus (RS: 1,559), maintaining discipline and routine (RS: 459), and tracking progress (RS: 85).

"You're not responsible for all this right. You're just responsible for step one." — **Eddie Penney, Ret. Navy SEAL**

"How I do every day is how I do every day. It's a discipline. It's a regimen. It was a choice I made." — **David Goggins, Ret. Navy SEAL**

Resilience & Mental Fortitude

Core Subthemes

Mindset & Attitude

RS: 554

Handling Fear & Pressure

RS: 250

Persistence & Grit

RS: 171

In Their Own Words

"When things get tough: Be tough, step up, step toward the threat, step toward the conflict." — **Jocko Willink**

"You have to be willing to die for it... you have to learn to manage that." — **Chadd Wright**

Learning & Continuous Improvement

Strategies for learning, growth, and applying lessons from failure, feedback, and debriefing. Subthemes: learning from failure (RS: 1,020), personal/professional development (RS: 387), seeking feedback (RS: 161).

"The first part of my success was learning how to fail properly." — **David Goggins**

"All you're going to do from failure is learn and grow if you've got a positive mindset. It's also impossible to only succeed." — **Ant Middleton, Former UK Special Forces**

🔧 RANK 5 — RS: 824

Adaptability & Problem Solving

Flexibility in adjusting to new situations and the ability to think creatively. Subthemes: flexibility and adjustment (RS: 258), creative problem solving (RS: 101).

"One thing the Unit taught all of us was to improvise, adapt, and overcome. You figure out a way around the obstacle and never say 'I quit.'" — **Dale Comstock, Ret. Delta Force**



Stress Management & Coping

Managing stress physically and mentally, utilizing breathing, mindfulness, and coping strategies. Subthemes: managing physical stress (RS: 164), breathing & mindfulness (RS: 75), coping mechanisms (RS: 26).

"You have to be very conscious of those [panicking thoughts]. And when they try to work their way in, you have to shut them down. Choose to think something positive." — **Chadd Wright**

"You wanna be calm and cool... very peaceful, very mindful." — **David Goggins**

Preparation & Planning

Anticipating obstacles and training effectively through rehearsal and scenario planning.

Subthemes: training and rehearsal (RS: 867), thorough planning (RS: 191), anticipating scenarios (RS: 85).

"SEAL training hardens you up... it equipped all of us to know that if you're hurt, you're beat, or you're shot, you can get through it." — **Dick Couch, Ret. Navy SEAL**

Comparing Computer Analysis to Qualitative Research

Contemporary qualitative research on UK Special Forces Operators (Breen & Cotterill, 2025) identified 10 key personality traits. Significant synergy exists between both methodologies, validating the computer program's findings.

Computer-Assisted Analysis

Teamwork & Support Systems

Goal Setting & Discipline

Resilience & Mental Fortitude

Learning & Continuous Improvement

Adaptability & Problem Solving

Stress Management & Coping

Preparation & Planning

UK SF Qualitative Study

Humility, Emotional Regulation, Coping Mechanisms

Drive & Self-Control

Resilience & Stubbornness

Humility & Adaptability

Adaptability & Perseverance

Emotional Regulation & Coping Mechanisms

Self-Control & Drive

Strengths, Limitations & Conclusion

Strengths

- Novel computer-assisted approach to 140+ hours of transcripts
- Rich, real-world data from elite SOF personnel
- Strong synergy with independent qualitative research

Strengths, Limitations & Conclusion

Limitations & Conclusion

Results may differ with additional or different interview subjects and cannot be generalized to entire populations.

However, the findings provide a **roadmap for clinicians** to develop targeted programs that cultivate and sustain these psychological attributes for long-term mental and physical resilience.



Part 2. Managing Emotionally-Based Mental Disorders by Adopting a Warrior Mindset

The Contrast: SOF Mindset vs. Emotional Disorders

SOF Warrior Mindset



RESILIENCE

Ability to recover quickly.

GOAL FOCUS

Unwavering focus on objectives.

ADAPTABILITY

Flexible in changing situations.

STRESS-IS-ENHANCING

STRESS-IS-ENHANCING

Stress as a challenge.

TEAMWORK

Shared effort for mission success.

CONTINUOUS LEARNING

Commit to skill development.

Emotionally-Based Disorders

WORRY

Persistent negative thoughts.

UNCERTAINTY

Hard to tolerate unknown outcomes.

AVOIDANCE

Avoiding difficult situations.

RUMINATION

Repeatedly focusing on distress.

NEGATIVE EMOTIONS

Overwhelming negative feelings.



ISOLATION

Withdrawing from others.

PARALYZED

Feeling unable to act.

Adopting a warrior mindset may offer significant therapeutic value— moving beyond symptom management toward genuine functional improvement for those with anxiety and depression.

Study Methods: Evidence Search

01

Database Search

PubMed and Google Scholar searched for literature published 2000–2026.

02

Search Terms

SOF mental attributes combined with "mental health," "anxiety," "depression," "psychological treatment," and "psychological technique."

03

Inclusion Criteria

Sources linking evidence-based interventions directly to the specified mental attributes; neurobiological and biochemical data included where applicable.

04

Supplementary Search

Hand-searched journals and books as needed following initial screening.

Teamwork & Support Systems → Clinical Application

From a mental health perspective, teamwork is best achieved through **shared decision-making** — clinician and patient working collaboratively, with transparent information sharing. Clinicians must offer warmth, deep listening, and foster social connections through group programs and peer support (Bradshaw et al., 2022; Francis et al., 2024).



Shared Decision-Making

Boosts quality of life, empowerment, and self-efficacy; counters fear and distrust.



Clinician Emotional Support

Warmth, kindness, and deep listening optimize patient outcomes.



Social Support Networks

In-person connections lower perceived stress, buffer anxiety/depression, and reduce loneliness.

The Power of Social Support: Key Evidence

Ruihua et al. (2025)

51 studies: social support from family, friends, and faculty directly improved emotional stability, reduced stress, and enhanced resilience, self-esteem, and emotional intelligence.

Acoba (2024)

426 adults: high support from family and significant others lowered perceived stress, increased positive affect, and reduced anxiety and depression symptoms.

Li et al. (2023)

4,000+ adults: close confidants and practical help lessened anhedonia and negative self-appraisal. Men benefited more than women from social support for symptom reduction.



THEME 2

Goal Setting & Discipline → Clinical Application

Effective goal setting for patients with anxiety/depression must account for **emotional context**. Positive affect (PA) accounted for 31% of variance in meaning in life vs. only 4% for goal appraisals (King et al., 2006). **Compassionate goals** (ecosystem perspective) reduce emotional distress, while self-image goals increase it (Crocker et al., 2010). Depressed patients need flexible, realistic goals that decouple self-worth from outcomes.

Goal Setting: Collaborative Approach & Self-Control

Collaborative Goal Setting

Jacob et al. (2022): For young people with anxiety/depression, collaborative goal setting improved self-agency, ownership, and was empowering — especially when experiencing hopelessness. Must be tailored to individual preferences and account for trauma, perfectionism, and rumination.

Self-Control as Discipline

Higher self-control → lower depression, perceived stress, and psychiatric symptoms (Boals et al., 2011). Self-control shapes positive cognitions, enhances habit formation, and weakens impulsive behaviors (Conner et al., 2023). An internal locus of control and self-control are independently associated with better physical and mental health (Botha & Dahmann, 2023).

Resilience & Mental Fortitude → Clinical Application

Resilience is defined as "the capacity to adapt swiftly and successfully to stressful/traumatic events" (Shrivastava & Desousa, 2016). It is a neurobiological construct that protects against mental disorders. Higher resilience is associated with better quality of life across diagnoses including depression, bipolar disorder, and schizophrenia (Chuang et al., 2023). Mental toughness (MT) — 50% heritable but susceptible to environmental change — is a powerful buffer against emotionally-based disorders (Lin et al., 2017).

The Neuroscience of Resilience: The aMCC

The Anterior Mid-Cingulate Cortex

Touroutoglou et al. (2020) identified the **aMCC** as a key brain hub integrating signals for goal-directed behavior and tenacity. Stronger aMCC–striatal connectivity correlates with greater grit, growth mindset, and lower apathy. Dr. Huberman dubbed it "**The David Goggins Structure**" — purposely doing hard things builds this region and supports ongoing resilience.

How to Build the aMCC

- Regular aerobic exercise (increases grey matter volume after 6 months)
- Deliberately doing difficult/uncomfortable tasks
- Transcranial magnetic stimulation (neuromodulation)

Katsumi et al. (2022): Greater aMCC cortical thickness predicted resilience against postoperative delirium in SuperAgers.

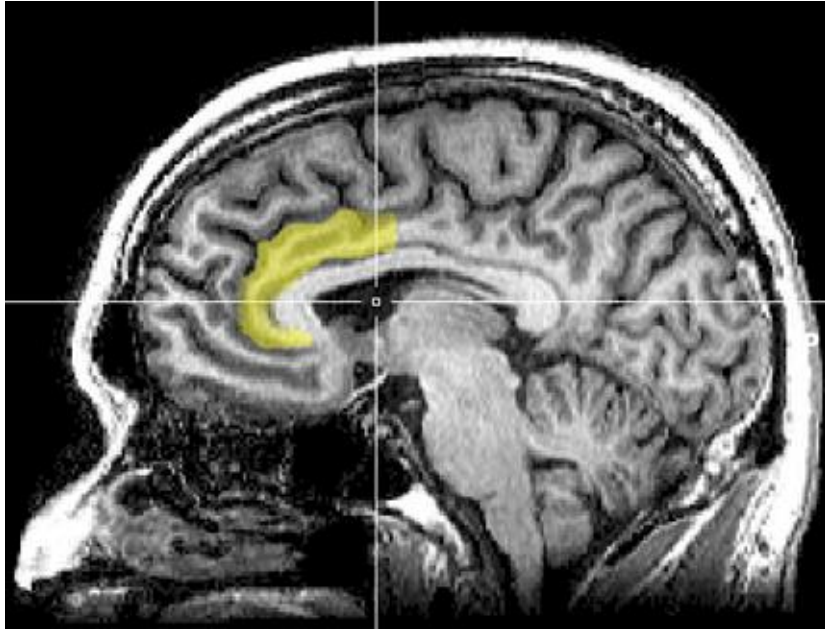
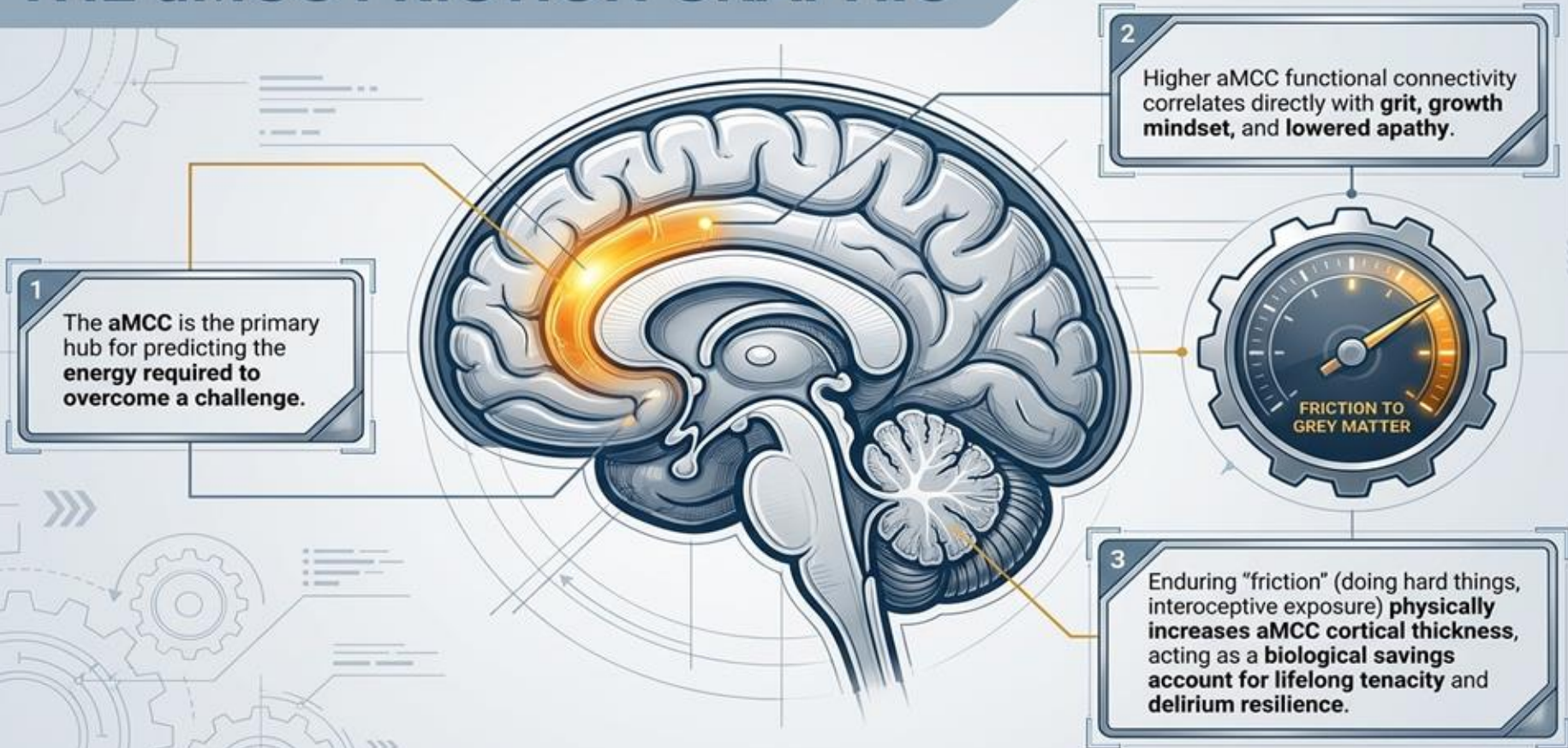


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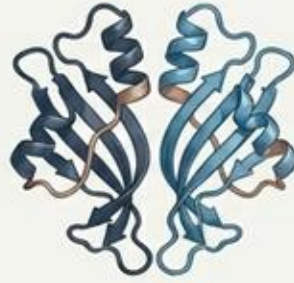
THE aMCC FRICTION GRAPHIC



Enter BDNF: The Brain's Biological Fertiliser

Brain-Derived Neurotrophic Factor (BDNF) is an essential growth factor synthesised in the central nervous system, critical for neuronal survival, differentiation, and synaptic neuroplasticity.

Note: BDNF levels naturally concentrate in the prefrontal cortex and limbic system.



The Precursor: Pro-BDNF

- Binds to pan75 neurotrophin receptors (p75NTR) with low affinity.
- Split by extracellular enzymes (metalloproteinases and plasmin).



The Catalyst: Mature BDNF (mBDNF)

- Binds with high affinity to Tyrosine Receptor Kinase B (TrkB) receptors.
- Initiates powerful neuroprotective and neurogenic intracellular cascades.

THE BIOLOGICAL CURRENCY OF RESILIENCE

BRAIN-DERIVED NEUROTROPHIC FACTOR (BDNF)

Role: The key neurotrophin supporting neuronal survival, neurogenesis, and cognitive plasticity.



HIPPOCAMPAL PLASTICITY

Mechanism: High BDNF maintains robust hippocampal circuits, allowing the brain to flexibly adapt to novel threats without defaulting to fear.



HPA-AXIS INSULATION

Outcome: The strengthened hippocampus inhibits the hypothalamic-pituitary-adrenal (HPA) axis, preventing the systemic flood of corticosterone/cortisol.

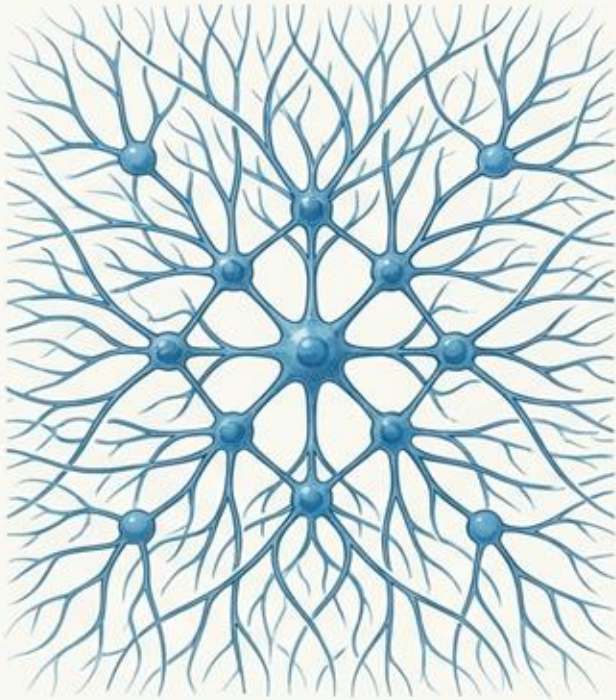


KEY INSIGHT:

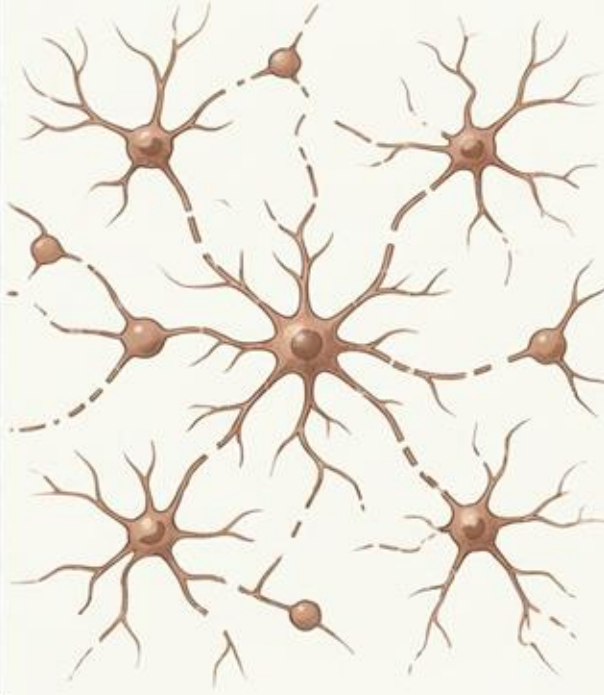
Chronic stress inherently downregulates BDNF, creating a feed-forward loop of depression and cognitive rigidity. We must actively intervene to restore it.

Depression Induces Structural Atrophy

Healthy State



Depressed State



THE BURDEN OF STRESS

Acute and chronic stress reduce vital neurotrophin levels.

HIPPOCAMPAL DEGENERATION

This deficit leads to a marked decrease in the size of the hippocampus, the critical structure governing emotion and memory consolidation.

CELLULAR APOPTOSIS

Clinical investigations demonstrate depression is associated with smaller neuron size and quantifiable neuronal loss, particularly within the sub-ventricular and sub-granular zones of the dentate gyrus.

GLIAL MALFUNCTION

Microglial cells and astrocytes actively drive neuroinflammation, secreting pro-inflammatory cytokines (IL-1 β , IL-6, TNF- α) via MAPK pathways, further amplifying cellular damage.

BDNF: The Biochemical Equivalent of the aMCC



Dietary Polyphenols & Flavonoids

Polyphenol containing foods like pomegranates, blueberries, and grapes increase plasma BDNF. Flavonoids found in foods (apigenin, quercetin) boost hippocampal BDNF, enhancing neuroplasticity and neurogenesis (Carrillo et al., 2025; German-Ponciano et al., 2022).



Aerobic Exercise

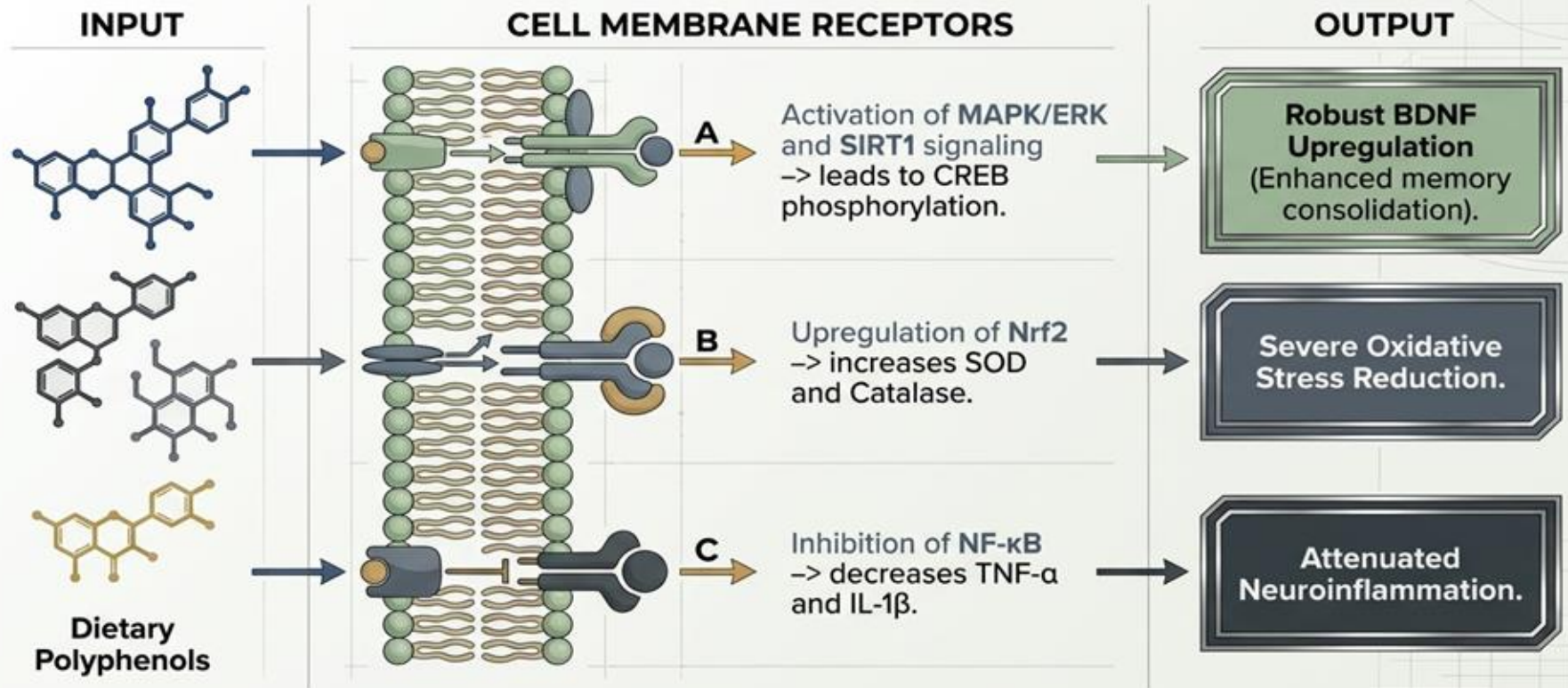
6 months of aerobic exercise increased hippocampal volume by 2%, reversing 1–2 years of age-related loss, directly associated with increased serum BDNF (Erickson et al., 2011).



Positive Thinking Training

Increases serotonin, activates dopamine neurons, dampens cortisol, and strengthens synaptic connectivity – improving cognitive adaptability and decision-making (Dar et al., 2025).

THE BDNF CASCADE DIAGRAM



The BDNF Bottleneck



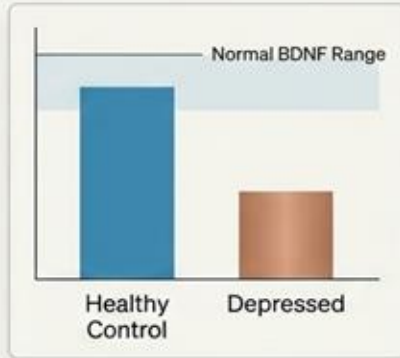
Major Depressive Disorder is increasingly recognised as a failure of neuroplasticity.

The inability of the nervous system to adapt to stress down-regulates BDNF.

Reduced BDNF blunts the TrkB/PI3K/Akt pathways, leading to compromised adult hippocampal neurogenesis, synaptic atrophy, and depressive phenotypes.

The therapeutic goal:
Widen the bottleneck.
Rescue and amplify BDNF.

Translating to Clinical Evidence: Serum Biomarkers



The Depressive Deficit

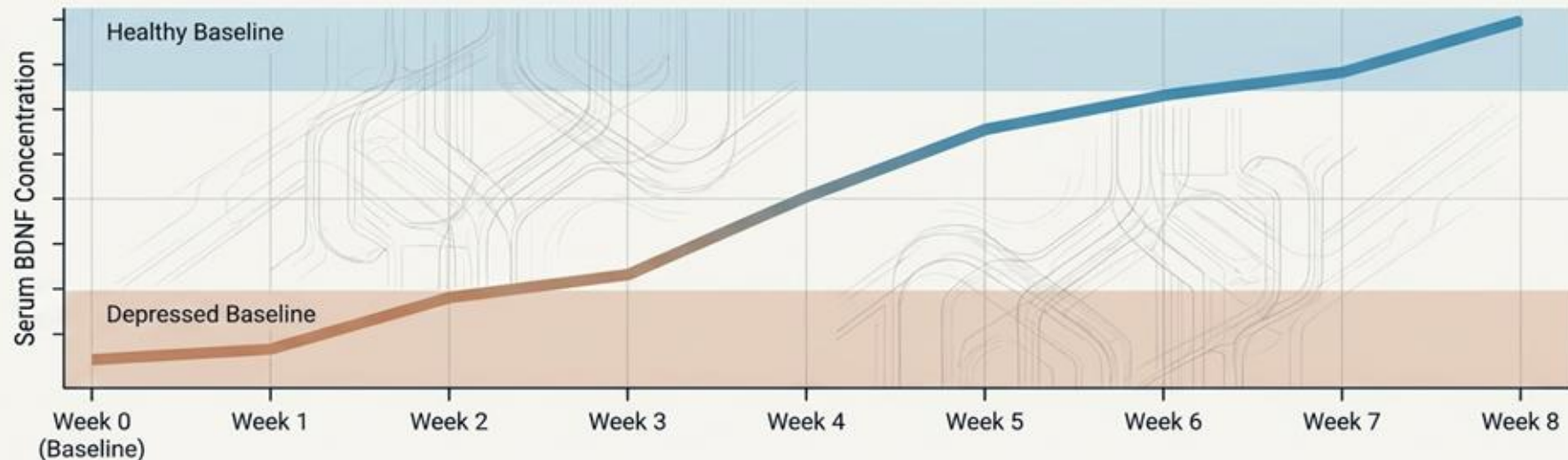
- Depressed patients exhibit significantly reduced serum and plasma BDNF levels compared to healthy controls.
- Severe mental illness severity directly correlates with the depth of this BDNF suppression.



The Genetic Vulnerability

- The BDNF Val66Met polymorphism increases genetic predisposition to depression.
- Individuals with the Met66 allele demonstrate reduced hippocampal volume, decreased hippocampal activation, and inferior memory episode quality.

Normalising the Network



Pharmacological Reversal

Treatment with SSRIs (e.g., escitalopram, sertraline, paroxetine) and SNRIs successfully elevates serum BDNF.

Temporal Tracking

BDNF levels rise steadily throughout the course of treatment. Clinical recovery and mood stabilisation mirror this upward trajectory of peripheral BDNF.

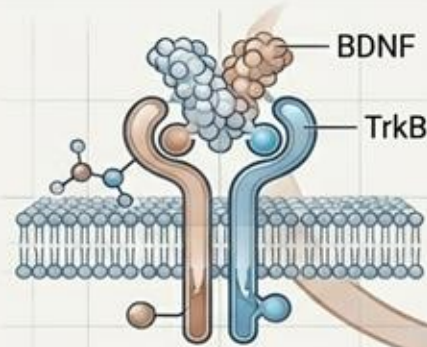
Clinical Utility

Serum BDNF serves as a quantifiable biomarker to track patient response and network recovery, moving psychiatry closer to objective, structural diagnostics.

The Paradigm Synthesised

SSRIs do not simply elevate mood by flooding synapses with serotonin. They are biological catalysts for cognitive flexibility.

1. Hardware Repair (Molecular)



2. Software Update (Functional)



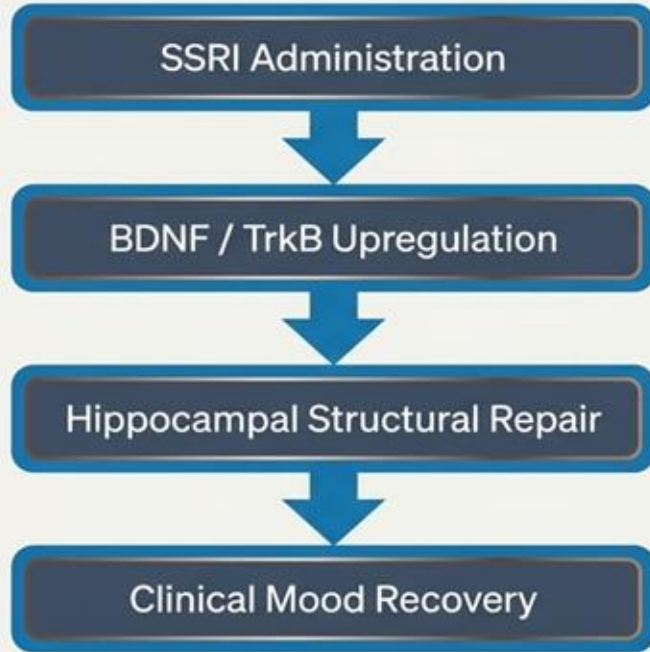
By upregulating the BDNF/TrkB cascade, SSRIs reverse structural atrophy and forge dense, new synaptic networks in the hippocampus and cortex.

This newly built infrastructure lowers the energetic barrier to relearning (modulating the insula), allowing patients to uncouple fixed, depressive associations.

The Revelation: Antidepressants provide the neuroplastic flexibility required to unlearn a depressive state.

SSRIs as Triggers for Neuroplasticity

Antidepressants are not just serotonin boosters; they are biological tools that initiate structural repair.



The Mechanism of Rescue:

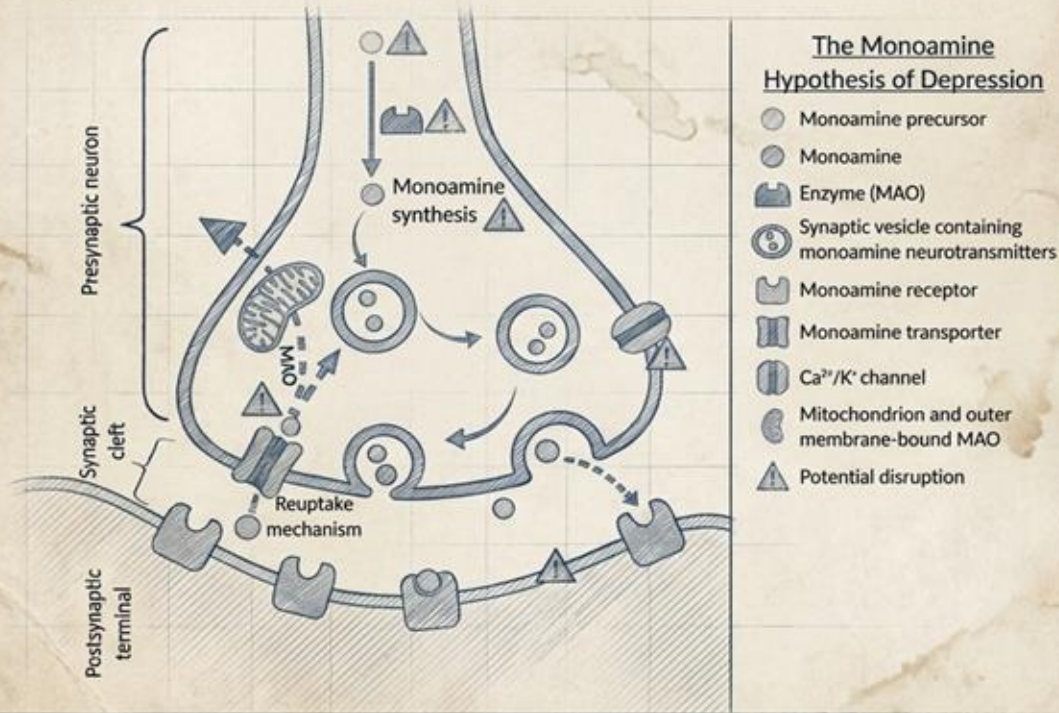
- Chronic SSRI administration enhances the expression of TrkB receptors and dramatically increases BDNF activity.
- This normalises BDNF levels, reversing stress-induced dendritic atrophy.
- Promotes long-term synaptic potentiation and the formation of new synaptic junctions.

The Conclusion:

The therapeutic lag of 2-6 weeks is precisely the time required for this neurogenesis and network remodelling to occur.

The Monoamine Limitation

The standard paradigm focuses on restoring synaptic levels of serotonin, norepinephrine, and dopamine. However, correcting chemical imbalances does not correct structural neural degradation.



The Clinical Reality

20%

Currently available antidepressants achieve complete symptom relief in only ~20% of adult patients with moderate to severe MDD.

>50%

Over 50% of antidepressant users report significant side effects (anxiety, weight gain, sexual dysfunction), leading to high attrition rates.

High Relapse

Relapse is common without continuous, years-long administration.

THE BOTANICAL MODULATOR MATRIX: ADAPTOGENS & NOOTROPICS

BOTANICAL	ACTIVE COMPOUND	MECHANISM	CLINICAL APPLICATION
 <i>Bacopa monnieri</i>	Bacosides (specifically Bacoside A).	Upregulates BDNF mRNA and proBDNF/mBDNF protein expression.	Reverses cholinergic amnesia; potent memory enhancer .
 <i>Withania somnifera</i> (Ashwagandha)	Withanone / Withanolides.	Prevents stress-induced reduction of BDNF transcript variant-1 .	Antistress; protects against cognitive impairment from hypobaric hypoxia and scopolamine.
 <i>Panax ginseng</i>	Ginsenosides (Rg1, Rb1, Re).	Prevents stress-mediated decline in BDNF mRNA ; acts on prefrontal cortex .	Improves learning; anxiolytic and antidepressant-like effects under acute immobilization stress.

THE BOTANICAL MODULATOR MATRIX: POLYPHENOLS & NEUROPROTECTORS

BOTANICAL	ACTIVE COMPOUND	MECHANISM	CLINICAL APPLICATION
 <i>Camellia sinensis</i> (Green Tea)	Epigallocatechin gallate (EGCG), Theanine.	Modulates MAPK/ERK cascade, phosphorylates CREB, suppresses NF-κB.	Facilitates neurogenesis; mitigates anxiety; protects against metabolic/high-fat diet cognitive damage.
 <i>Rhodiola rosea</i>	Salidroside.	Long-lasting increase in BDNF protein levels; induces stem cell differentiation into dopaminergic neurons.	Increases organism resistance to physical/chemical stressors; antidepressant effects.
 <i>Crocus sativus</i> (Saffron)	Crocin / Safranal.	Enhances CREB, BDNF, and VGF transcript levels in the hippocampus.	Potent antidepressant-like effect; neuroprotection against oxidative stress.

Three Distinct Keys to Neuro-Restoration

Treating Treatment-Resistant Depression (TRD) and cognitive decline requires more than a single blunt instrument. It requires a multi-pronged biological strategy to restart BDNF transcription, protect the systemic environment, and force physical neurite outgrowth.

Acetyl-L-carnitine (LAC) The Epigenetic Key



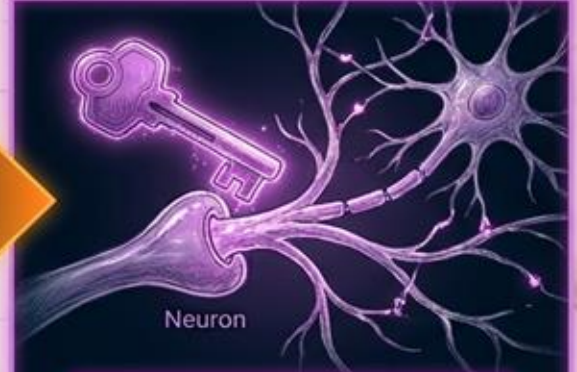
Targets the **Nucleus**
to unlock DNA.

Curcumin The Environmental Key



Targets the **Systemic Synapse**
to clear inflammation.

Lion's Mane The Structural Key



Targets **Terminal Ends**
to force neurite outgrowth.

Reversing Epigenetic Locks



Endogenous Epigenetic Agent

LAC is not merely an energy substrate; it is an endogenous epigenetic agent.

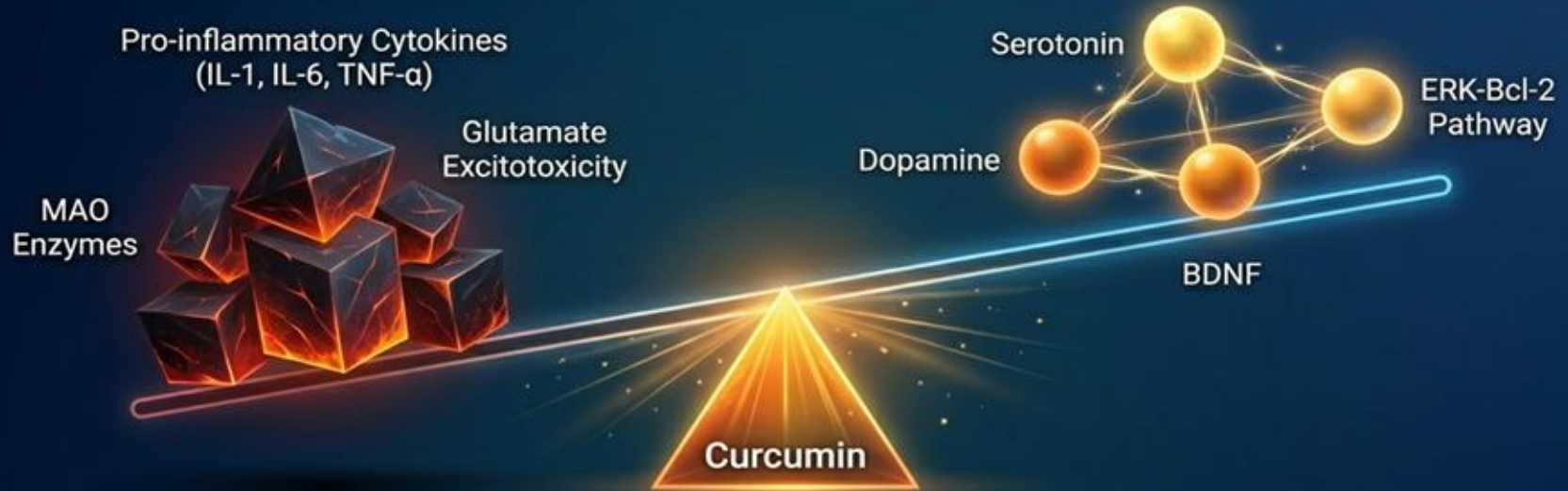
Targeting Locked Genes

In depressive states, key neurotrophic genes are physically locked. LAC acetylates histones, physically loosening the DNA strand.

Rapid Neurotrophic Induction

This rapid epigenetic induction up-regulates the mGlu2 receptor and rapidly restarts BDNF gene transcription.

Rescuing the Neurotrophic Environment



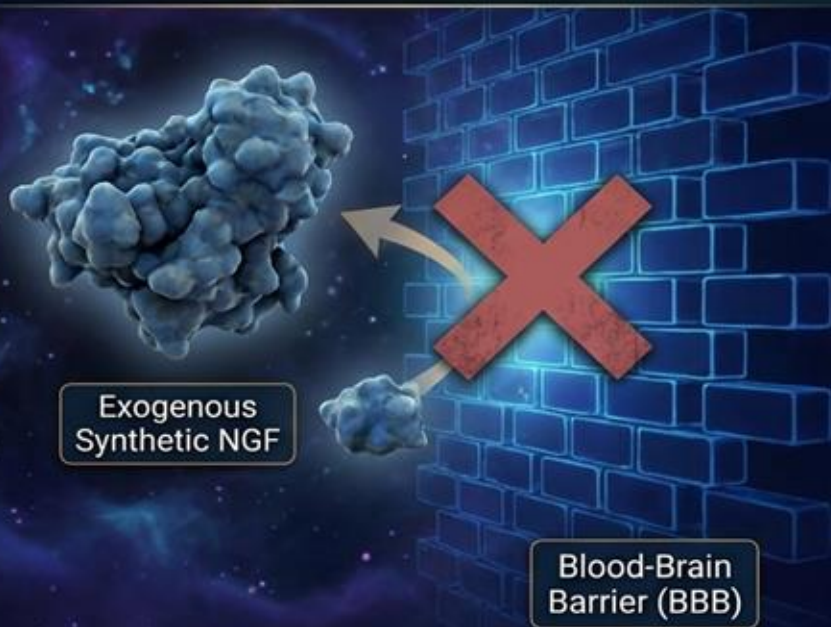
Depression is increasingly linked to systemic inflammation. Excessive $\text{TNF-}\alpha$ and IL-6 induce glucocorticoid resistance and actively degrade the neurotrophic environment.

Curcumin acts as an orally bioavailable blocker of $\text{TNF-}\alpha$. By extinguishing neuro-inflammation, it rescues the ERK-Bcl-2-BDNF pathway from stress-induced degradation, allowing endogenous neurogenesis to resume.

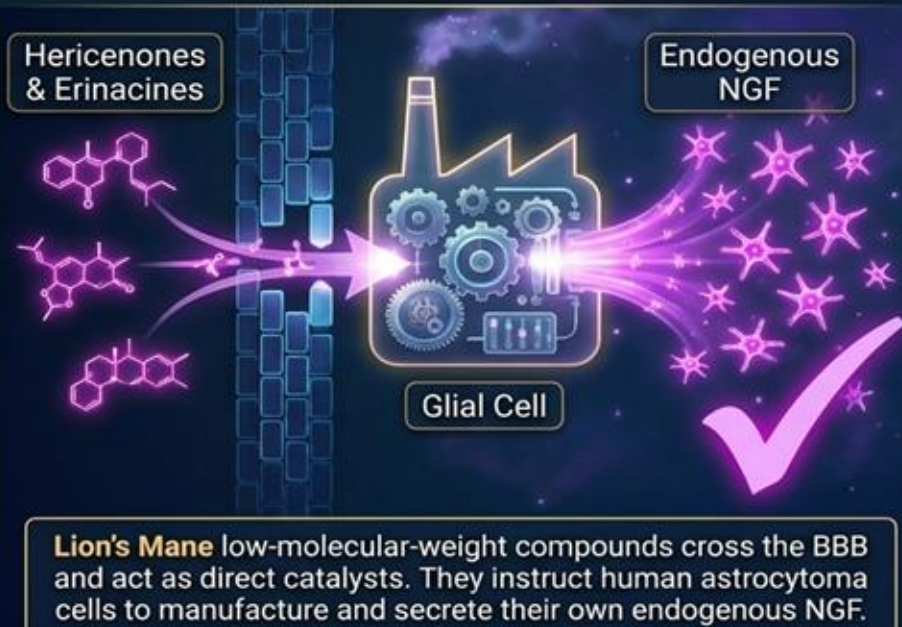
Endogenous Catalysis vs. Exogenous Delivery

Nerve Growth Factor (NGF) is essential for basal forebrain cholinergic system maintenance, but large synthetic NGF molecules cannot penetrate the blood-brain barrier.

The Synthetic Failure



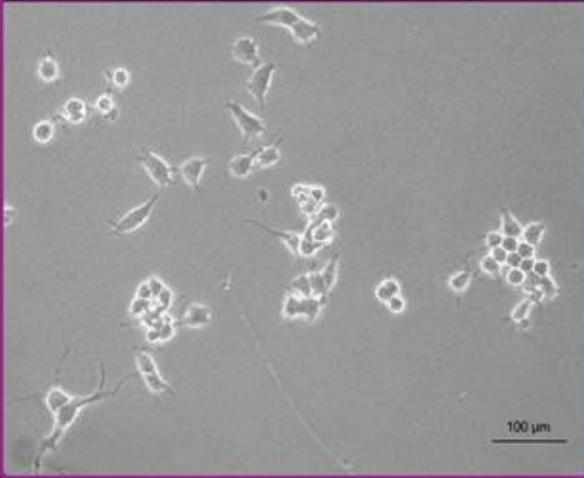
The Natural Bypass



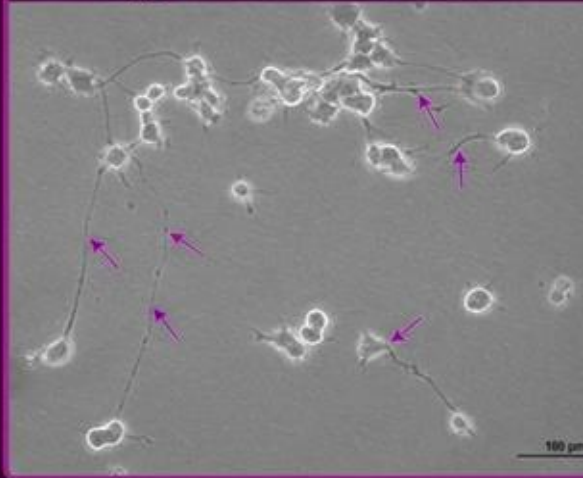
Physical Evidence of Neurite Outgrowth

In vitro application reveals profound structural plasticity. The extract does not just provide neurotrophic support; it **forces physical axonal elongation** and **dendritic branching**, expanding the neural network's architecture.

Undifferentiated Control



50 µg/mL Lion's Mane extract

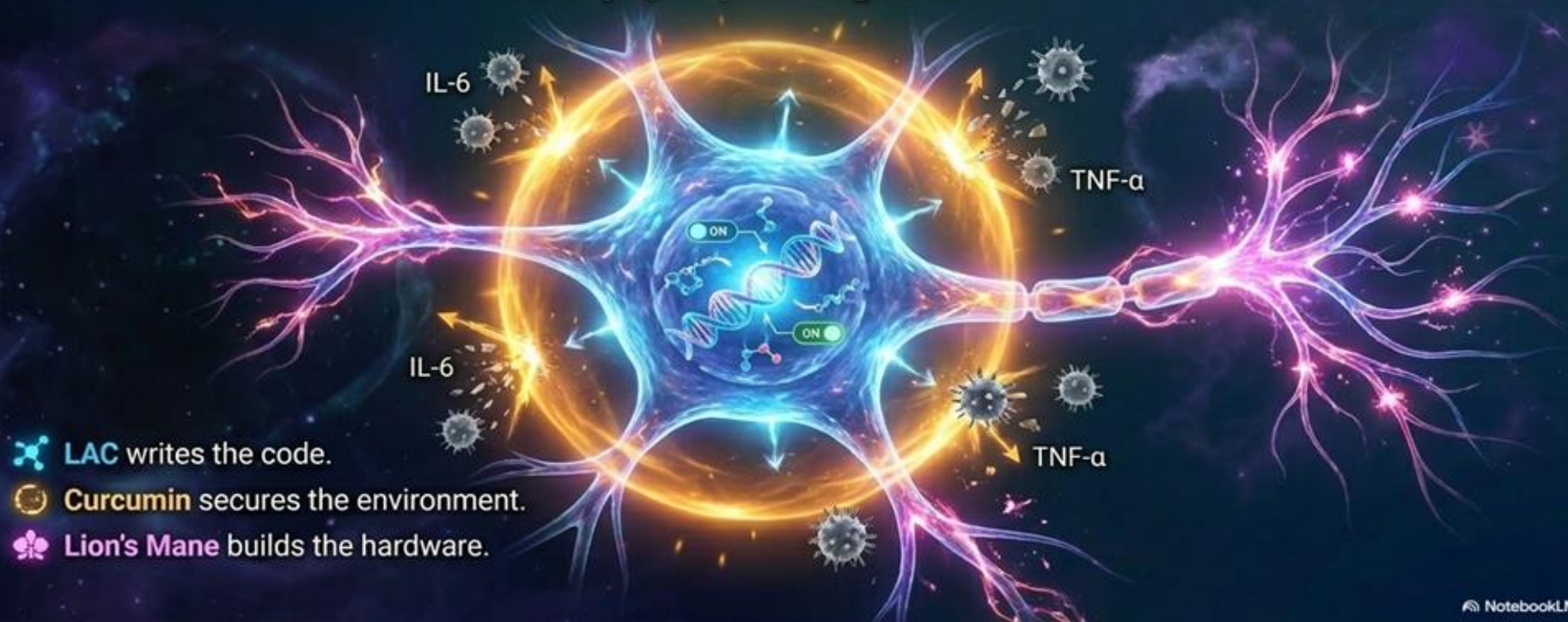


64.8% Increase

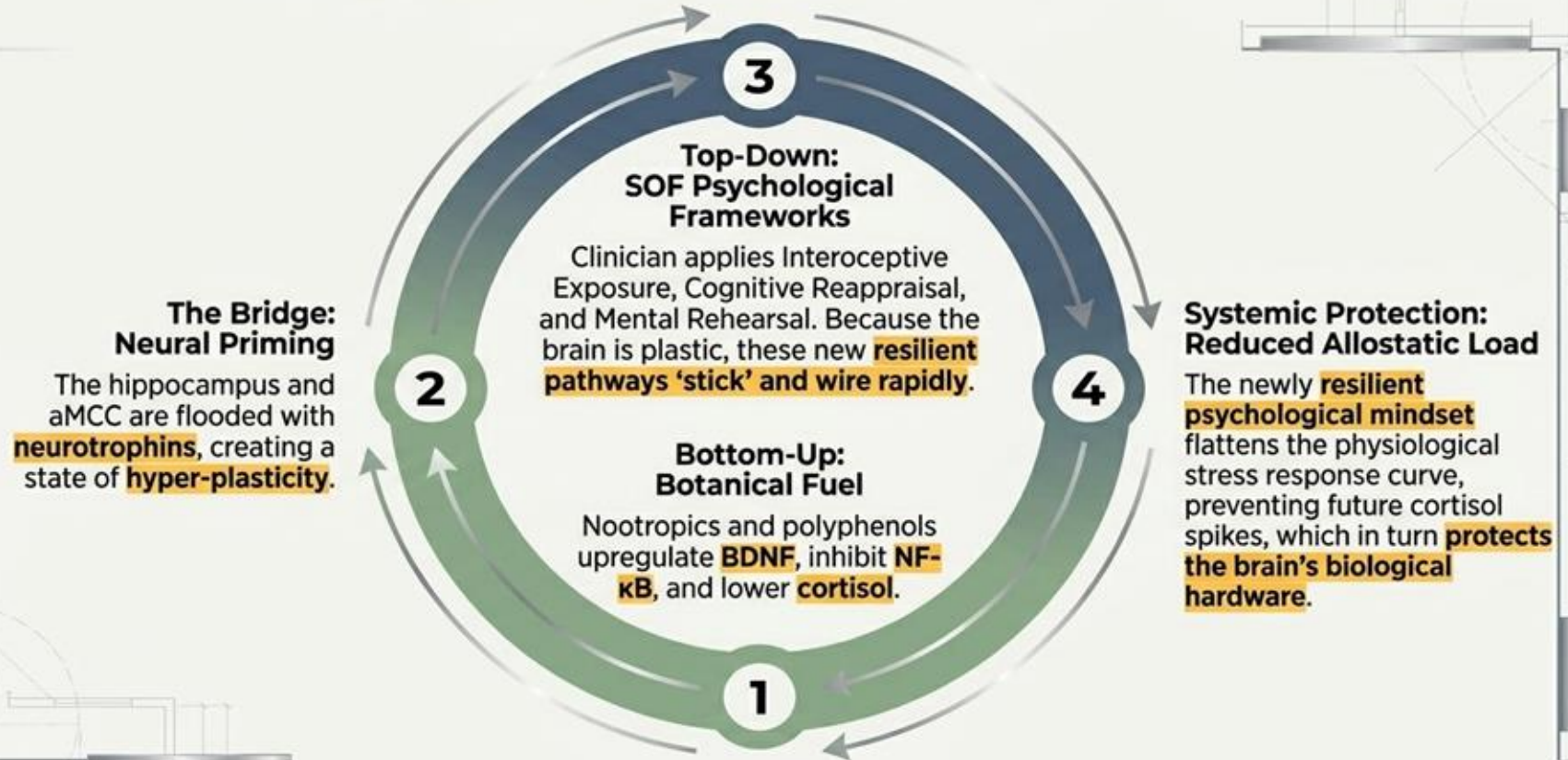
Lion's Mane aqueous extract induced a massive 64.8% increase in neurite-bearing cells (compared to a 43.4% increase from direct synthetic NGF application).

Convergent Neuroplasticity

Treating depression is not a guessing game of interchangeable supplements.
It is a symphony of biological action.



THE SYNERGISTIC CLINICAL PROTOCOL





Positive Thinking: Evidence for Resilience

Eagleson et al. (2016)

GAD patients using positive imagery for one week showed significant reductions in worry and trait anxiety, plus increases in optimism — equal across all three positive ideation techniques.

Taherkhani et al. (2023)

8-week positive thinking training in older adults significantly improved resilience and life satisfaction, maintained at 2-month follow-up.

Pourdavarani et al. (2024)

8 sessions of positive thinking training significantly reduced anxiety and increased happiness in older adults.

Learning & Continuous Improvement → Clinical Application

When goal failure occurs, **rumination** typically follows, intensifying depression and anxiety (Jones et al., 2013). Breaking this cycle requires targeting self-regulation and encouraging adaptive disengagement from maladaptive goals. Carlson & Fishbach (2024) identify two stages: **goal setting** (choosing realistic targets) and **goal striving** (practicing learning from failure/LFF).

→ Reframe Failure

Shift perception from "lack of commitment" to "insufficient progress."

→ Encourage Vicarious Learning

Learn through the experiences and mistakes of others.

→ Foster Self-Distancing

Mentally remove oneself from the situation to gain emotional objectivity.

→ Promote Growth Mindsets

Cultivate intrinsic motivation and normalize discussing failure.

Adaptability & Problem Solving → Clinical Application

Psychological flexibility — how a person adapts to fluctuating demands, reconfigures mental resources, shifts perspective, and balances competing needs — is a fundamental determinant of health (Kashdan & Rottenberg, 2010). Its absence underlies depression (rumination, explanatory inflexibility) and anxiety (experiential avoidance, stereotyped responses). Higher adaptability is a stable, transdiagnostic protective factor for mental health (Ren, 2025).

Building Psychological Flexibility & Problem Solving

Psychological Flexibility Strategies

- Mindfulness: openness and acceptance of present-moment experiences
- Coping flexibility: alter strategy based on situational demands
- Enhance executive functioning and distress tolerance
- Reduce experiential avoidance via exposure and values-based action

Structured Problem Solving (SPS)

A 5–6 step evidence-based approach: define the problem → brainstorm solutions → evaluate pros/cons → choose best solution → implement → review. Effective for depression, anxiety, and other life stresses (Blashki et al., 2003). Problem solving therapy alone is moderately effective for depression; combined with psychoeducation and cognitive restructuring, it is effective for both anxiety and depression (Michelson et al., 2022; Metz et al., 2023).

Available
worksheets:
<https://www.racgp.org.au/getattachment/c8bec5cd-427e-471c-92ae-b2b326a091cd/attachment.aspx>

Structured problem solving worksheet

STEP 1: Defining the problem

- The first thing you need to do is talk over your problems with your doctor so that you can identify those difficulties you need to solve.
- It is helpful to make a list of all the problems you have.
- Make your own difficulty list below for the problems and choose one that is troubling you the most. Work on this problem first. You can come back to the other problems later.

Problem list	Difficulties associated with the problem	How important is the problem to ME? (5 = not very important, 10 = very important)	How difficult is the problem to solve? (5 = easy, 10 = hard)
eg. Being unemployed	eg. Financial difficulties	eg. 8	eg. 6
1.			
2.			
3.			
4.			
5.			

- I need to work on problem number _____ first.
- Further elaboration of the problem (eg. Who is part of the problem? What is the problem? When does the problem arise? Where does the problem arise?) – use a separate piece of paper if you need it.

- Now you need to re-state your problem as a defined goal. For example, 'What will I do for a job?' could be better expressed as a goal, 'To find a job within six months'. This helps you to have something to aim for.
- Try to be as specific about your problem as possible and try to set a date, so that you can clearly determine when you have achieved your goal.
- My new goal is:

STEP 2: Think of solutions to your problem through brainstorming

SOLUTION OPTIONS

- _____
- _____
- _____
- _____
- _____

I need to discuss possible solutions with: _____

Figure 1. SP5 worksheet

Structured problem solving worksheet (continued)

STEP 3: Weigh up the pros and cons of each possible solution

Solution	Advantages	Rate importance (5 = low, 10 = high)	Disadvantages	Rate importance (5 = low, 10 = high)
1.				
2.				
3.				
4.				
5.				

STEP 4: Decide which solution is the best one (sometimes multiple solutions are best!)

The best one I could think of is:

STEP 5: Put your solution into action

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

Step 5: _____

STEP 6: Review the problem solving attempt

- Have things worked as planned?

- Are there additional problems that need working through?

- Is there more you need to plan and organise to put your solution into action?

Adapted with permission from: Morgan H, Sumich H, Hickie I, Naismith S, Gander J, Scott E, Davenport T. Structured problem solving worksheet: eight steps. Melbourne: Educational Health Solutions, 2000.

Figure 1. SP5 worksheet (continued)

Stress Management & Coping → The Biology of Chronic Stress

Chronic stress triggers systemic activation of immunological, neuroendocrine, and metabolic pathways, causing cumulative damage to the **amygdala**, **hippocampus**, and **hypothalamus** — directly initiating anxiety and mood disorders (Al Bazzal et al., 2025). Neuroimaging identifies stress-affected regions including the prefrontal cortex and hippocampus as associated with emotional dysregulation and cognitive decline.



Breathwork: A Powerful Stress Intervention



Slow Deep Breathing

~6 breaths/min augments vagal tone, HRV, and relaxation. Counteracts sympathetic activation and facilitates parasympathetic activity (Jerath et al., 2015; Zaccaro et al., 2018).



Box Breathing & 4-7-8

Specific techniques improve mood, reduce anxiety, and modulate neural activity via the prefrontal cortex and vagus nerve (Siebieszuk et al., 2025).



Immediate Effects

Even a single 5-minute deep breathing session reduced state anxiety, increased vagal tone, and elevated HRV in both young and older adults (Magnon et al., 2021).

Breathwork - Mechanism

- “We hypothesize that reversing homeostatic alterations with meditation and breathing techniques rather than targeting neurotransmitters with medication may be a superior method to address the whole body changes that occur in stress, anxiety, and depression. Detrimental effects of stress, negative emotions, and sympathetic dominance of the autonomic nervous system have been shown to be counteracted by different forms of meditation, relaxation, and breathing techniques. We propose that these breathing techniques could be used as first-line and supplemental treatments for stress, anxiety, depression, and some emotional disorders” (Jerath et al., 2015, p.1070).

Breathwork - How much? How often?

Experimental Group (N=15; from baseline to 8 weeks)	Control Group (N=15; from baseline to 8 weeks)
BAI Score: <u>19.13</u> $\pm$ 7.52 to <u>5.33</u> $\pm$ 4.52	BAI: <u>19.87</u> $\pm$ 10.75 to <u>18.20</u> $\pm$ 9.87
Heart Rate (number/minutes): <u>85.52</u> $\pm$ 8.02 to <u>76.97</u> $\pm$ 7.14	Heart Rate (number/minutes): <u>82.82</u> $\pm$ 5.50 to <u>83.63</u> $\pm$ 6.17
Breath Rate (number/minute): <u>16.24</u> $\pm$ 2.27 to <u>12.59</u> $\pm$ 2.40	Breath Rate (number/minute): <u>16.04</u> $\pm$ 1.43 to <u>16.16</u> $\pm$ 1.81
Chen et al., 2017	

Breathwork - How much? How often?

Old (N=22 from final sample)	Young (N=25 from final sample)
HF Power: Mpre = <u>31.01</u> , SDpre = 10.81 vs. Mpost = <u>60.33</u> , SDpost = 28.20	HF Power: Mpre = <u>29.97</u> , SDpre = 13.39 vs. Mpost = <u>43.72</u> , SDpost = 21.53
Perceived State Anxiety: Mpre = <u>24.89</u> , SDpre = 5.01 vs. Mpost = <u>22.18</u> , SDpost = 3.29	Perceived State Anxiety: Mpre = <u>28.60</u> , SDpre = 6.49 vs. Mpost = <u>24.46</u> , SDpost = 4.88
Magnon et al., 2021	

Mindfulness Meditation: Evidence & Mechanisms

Physiological Benefits

MBSR and mindfulness meditation reduce cortisol awakening response, blood pressure, heart rate, C-reactive protein, triglycerides, and TNF-alpha relative to active controls (Pascoe et al., 2017).

Enhances neural regions linked to emotional processing, mitigating anxiety and depression while fostering stress resilience (Calderone et al., 2024).

Minimum Time Required

Basso et al. (2019): Just **13 minutes of daily guided meditation for 8 weeks** mitigated negative mood, improved attention, working memory, and recognition memory, and decreased state anxiety — compared to a podcast control group.



THEME 7

Preparation & Planning → Mental Rehearsal

Mental Rehearsal (MR) harnesses cognitive imagination to simulate scenarios and rehearse complex tasks. MR workshops increased employee confidence regarding workplace bullying (Fehr & Seibel, 2016). In arachnophobia treatment, post-exposure MR produced significantly greater reductions in fear, lower anticipatory distress, and better behavioral approach vs. controls (McGlade & Craske, 2021) — suggesting MR enhances long-term treatment durability and mitigates relapse across anxiety disorders.

Mental Rehearsal for Depression & Intrusive Memories

In an N-of-1 study (Kandris & Moulds, 2008), imaginal exposure MR was used to address intrusive memories following a breakup. At 6-month follow-up, intrusive memories remained minimal, distress remained low, and depression was **fully remitted**.

MR decreased avoidance and rumination while facilitating emotional processing — key mechanisms underlying recovery from depression. Because exposure frameworks are foundational to treating social anxiety, OCD, and related disorders, MR represents a highly promising augmentation strategy.

Interoceptive Exposure: Preparing for Physical Fear

Interoceptive Exposure (IE) involves repeatedly inducing physical sensations associated with anxiety (shortness of breath, palpitations, dizziness) to promote tolerance and reduce distress (Boswell et al., 2013).

1 Extinction of conditioned fear

Neutral physical sensations are decoupled from frightening experiences.

2 Disconfirm irrational beliefs

Exposure in the absence of feared consequences generates new corrective information.

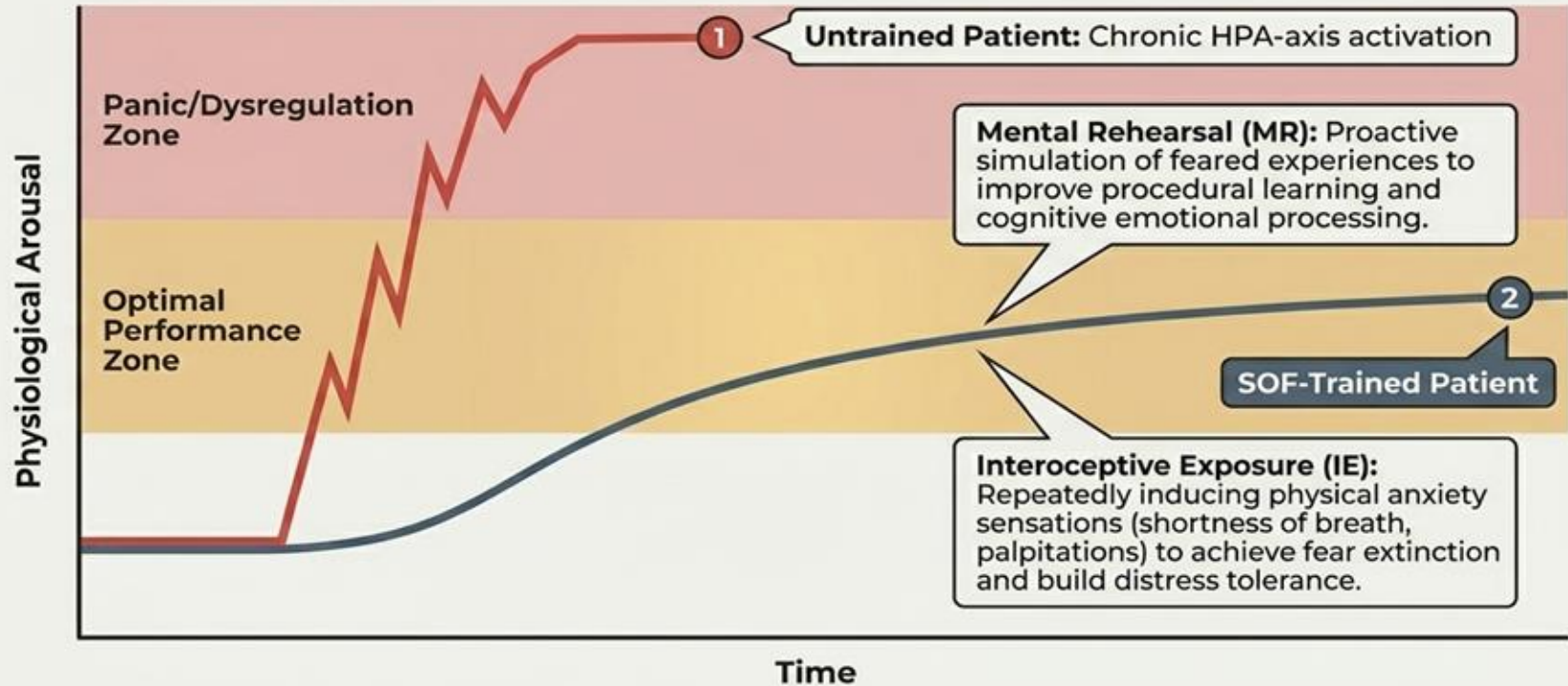
3 Build self-efficacy

Coping with feared sensations increases confidence and self-acceptance.

4 Clinical validation

Boswell et al. (2013): Significant ASI score decreases coincided with IE module introduction; reductions predicted lower clinical severity at 6-month follow-up.

THE STRESS-RESPONSE ACTIVATION CURVE



Evidence-Based Treatment Matrix

A summary of the seven warrior mindset themes mapped to evidence-based clinical strategies.

Theme	Key Strategy	Primary Outcome
Teamwork & Support	Shared decision-making; in-person social networks	↑ Quality of life, self-efficacy, resilience
Goal Setting & Discipline	Compassionate /flexible goals; self-control training	↓ Distress, ↑ motivation, habit formation
Resilience & MT	Positive thinking; aMCC engagement; BDNF strategies	↓ Anxiety/depression, ↑ neuroplasticity
Learning & Improvement	LFF strategies; reframing; growth mindset	Breaks rumination-failure cycle
Adaptability & Problem Solving	Psychological flexibility; SPS therapy	↓ Avoidance, ↑ emotional regulation
Stress Management	Breathwork (~6 breaths/min); MBSR	↓ Cortisol, ↑ HRV, ↓ anxiety
Preparation & Planning	Mental rehearsal; interoceptive exposure	↑ Confidence, ↓ ASI, fear extinction

The Warrior Mindset Framework for Mental Health



Each of the seven SOF psychological strengths maps directly to evidence-based clinical interventions that can meaningfully reduce anxiety and depression while improving overall functioning.

THE FUTURE OF INTEGRATIVE MENTAL HEALTH

1. Beyond Symptom Management:

We must treat patients for **durable functional recovery**, not just palliative suppression.

2. The Hardware of Tenacity:

High-level psychological traits (aMCC grit, SOF adaptability) biologically require **BDNF** to **wire into the nervous system**.

3. The Ultimate Synergy:

Botanical medicines are the **neurobiological fuel** that allows elite psychological conditioning to take root.

True resilience is engineered—requiring elite psychological software running on optimized biological hardware.



Conclusion: From Battlefield to Clinic

The psychological strengths of SOF personnel — forged under extreme conditions — offer a compelling and evidence-supported framework for treating emotionally-based mental disorders. By adopting a **warrior mindset**, patients can move beyond symptom management toward genuine functional transformation.

- ✔ The adoption of these seven attributes provides clinicians with a practical roadmap: cultivate teamwork, set compassionate goals, build resilience through the aMCC and BDNF, learn from failure, develop psychological flexibility, master breathwork, and rehearse for challenges.

Key Takeaways & Clinical Implications

SOF Strengths Are Teachable

The 7 ranked psychological attributes are not innate — they can be cultivated through targeted, evidence-based interventions in clinical settings.

Neurobiology Supports the Framework

The aMCC, BDNF, and neuroplasticity research confirm that resilience and mental toughness have measurable biological substrates that respond to exercise, diet, and behavioral training.

Accessible Entry Points

Positive thinking training, 5-minute breathwork, and 13-minute daily meditation all demonstrate significant therapeutic effects — lowering the barrier to adoption for patients.

Beyond Symptom Management

The warrior mindset framework targets root psychological processes — not just symptoms — offering a path to lasting resilience, empowerment, and quality of life.

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