

FOREST BATHING+ (FB+): COMPREHENSIVE EVIDENCE SUMMARY



A Nature-Based Intervention for Mental Health and Emotional Regulation

This document provides a comprehensive summary of the academic research, clinical evidence, and strategic implementation of Forest Bathing+ (FB+) as a structured mental health intervention.

World Economic Forum

Winners of the prestigious Forest and Health Innovation Challenge

The Forest Bathing Institute (TFBI) was selected by the World Economic Forum as a "Top Innovator" in the Forest and Health Innovation Challenge, recognising its leadership in advancing nature-based therapies; <https://tfb.institute/press-release-winners/>



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To find out more about Forest Bathing+ visit our website
www.tfb.institute



1. CONSOLIDATED OUTCOMES SUMMARY

Across multiple independent and collaborative studies, FB+ has demonstrated consistent improvements across core mental health domains:

- **Anxiety Reduction:** Identified in 3+ independent studies, including controlled trials and applied programmes.
- **Depressive Symptom Improvement:** Demonstrated in 3+ studies, including controlled trials and student population research.
- **Negative Mood Reduction:** Evidenced in 4+ studies, showing significant reductions in tension, anger, fatigue, confusion, and depressive affect.
- **Positive Mood Increase:** Identified in 3+ studies, including increases in vigour, esteem-related affect, and positive emotional state.
- **Stress Reduction:** Observed across controlled trials, psychometric profiling, and emerging psychophysiological research.
- **Wellbeing & Social Connection:** Validated in both controlled research and real-world implementation with vulnerable and underserved populations (asylum seekers, individuals at risk of homelessness).
- **Nature Connectedness:** Supported by environmental mechanism studies highlighting biologically plausible pathways (NVOCs).

Summary Conclusion: The accumulated evidence demonstrates that Forest Bathing+ is not a recreational activity, but a structured, evidence-informed mental health intervention with academic validation, biological plausibility, and translational readiness for national health infrastructure.

2. THE FB+ INTERVENTION FRAMEWORK

Forest Bathing+ (FB+) is a structured, manualisable evolution of the Japanese practice Shinrin-Yoku. It is designed as an evidence-informed intervention integrating:

- Guided sensory engagement and nervous system regulation.
- Mindfulness-based and group-based relational processes.
- Trauma-informed facilitation principles.



3. PEER-REVIEWED RESEARCH DOSSIER

3.1 - Clinical and Comparative Trials

- **Pragmatic Controlled Trial (McEwan et al., 2021):** A comparison between FB+ and Compassionate Mind Training (CMT). Findings showed significant improvements in wellbeing and nature connectedness, with reductions in rumination comparable to established psychological approaches.
- **Qualitative Mechanism Study (McEwan et al., 2021):** Clarified the mechanisms of action, reporting that FB+ promoted deeper sensory engagement and enhanced emotional processing compared to standard mindfulness.
- **International Replication (Li et al., 2024):** A controlled trial in Thai young adults found greater mood improvements and superior reductions in anxiety markers in the forest group compared to urban mindful walking.

3.2 - Environmental & Mechanistic Science

- **Natural Volatile Organic Compounds (McEwan et al., 2023):**

Research in UK forests found that NVOCs are significantly greater and more diverse than in urban settings, supporting the biological plausibility of the physiological benefits of FB+

- **Psychophysiological EEG Pilot (Bournemouth University):**

A pilot study (n=14) exploring the neural correlates of FB+. Baseline measures identified mild depressive symptoms and elevated rumination; the research establishes the feasibility of using EEG markers to map autonomic shifts.

4. APPLIED IMPLEMENTATION & POPULATION RESEARCH

4.1 - Green Social Prescribing (Surrey Heartlands 2021–2023)

- TFBI delivered a 6-week pilot for moderate mental health needs and vulnerable groups. Independent evaluation by UCL and the University of Derby reported:
- Significant reductions in discomfort and negative thoughts.
- Increased positive affect.
- Identified the economic context: A Forestry Commission report estimates £141 million in annual mental health cost savings from woodland exposure in England.

4.2 - 2026 Maternal Mental Health (The Mother Nature Project)

An NIHR Doctoral Fellowship funded project (Dr. Katie Hall) developing a manualised nature-based intervention for postnatal depression (affecting 10–20% of women). This project assesses feasibility for full clinical trials.

4.3 - Student Population Research

A dissertation study at the University of Cumbria (Ambleside Campus) found that FB+ led to significant reductions in tension, depression, and anger in students, while the control group showed worsening negative mood.

5. INNOVATION & DIGITAL THERAPEUTICS

- **A 2026 Virtual Immersion in Natural Environments (VINEs):**

Research aimed at identifying active therapeutic elements in VR delivery to support mobility-limited patients, reduce geographical inequality, and provide winter resilience within NHS estates.

- **2025 Knowledge Translation:**

The Healing Power of Trees (Evans & Terebenina) synthesises global forest medicine research into a framework aligned with Western public health systems.

6. STRATEGIC ALIGNMENT & POLICY CONTEXT

The FB+ evidence base aligns directly with:

- **NHS Long Term Plan:** Prevention and early intervention.
- **Community Transformation:** Reducing mental health inequalities and supporting workforce wellbeing.
- **Green Health:** Supporting net-zero co-benefits through nature-based integration.

7. COLLABORATION OPPORTUNITIES

The Forest Bathing Institute is now positioned to expand this successful, evidence-informed intervention.

We invite collaboration opportunities with NHS Trusts, Integrated Care Boards (ICBs), government bodies, and academic institutions to scale up Forest Bathing+ (FB+).

Key areas for collaboration include:

- Multi-site implementation pilots within clinical and community pathways.
- Health economic evaluations to further quantify long-term NHS savings.
- Workforce development to embed nature-based facilitators within the health social-care infrastructure.
- Specialist research into maternal mental health, youth services, and digital therapeutic integration.

Conclusion: Forest Bathing+ represents a rare convergence of academic rigour, mechanistic science, and implementation readiness. We welcome the opportunity to work with partners to transition this promising evidence into an embedded public health infrastructure.