

W E B I N A R - E U R O P E A N F O R E S T I N S T I T U T E

FOREST THERAPY

I N T E G R A T I N G E N V I R O N M E N T A L S C I E N C E ,
M E D I C I N E A N D P U B L I C H E A L T H



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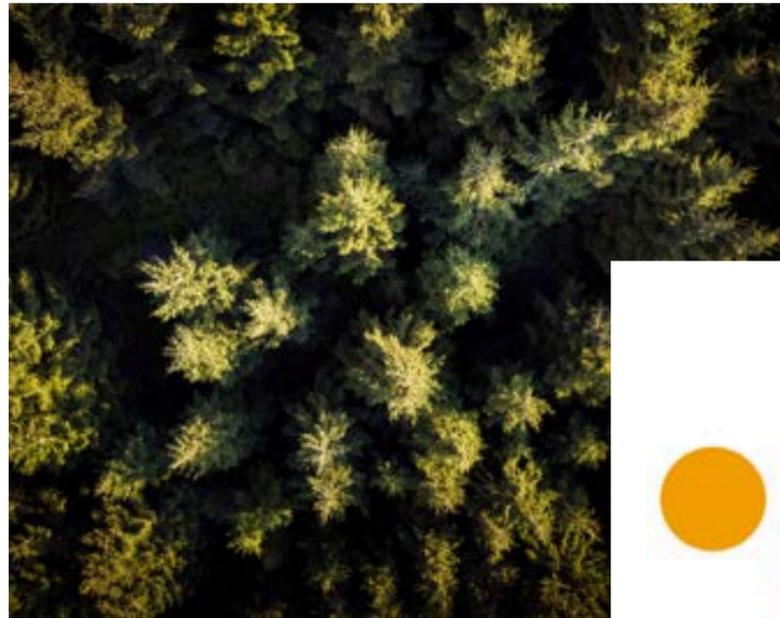
Scientific Communicator - Planetary Health

Member of International Society of Doctors for Environment (ISDE) Italia

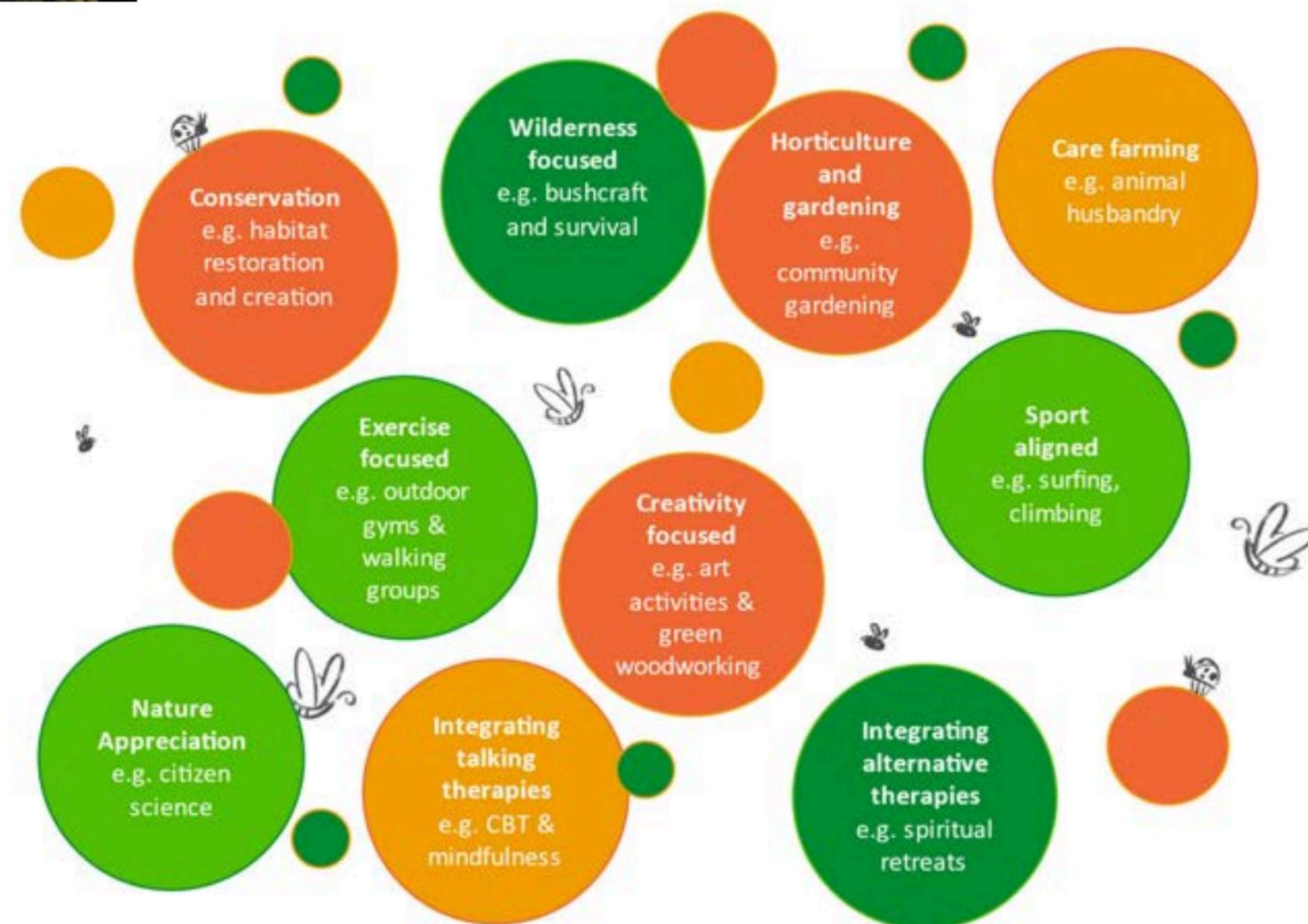
and One Health Commission of the Florence Medical Council

Forest Therapy Practitioner

NATURE BASED INTERVENTIONS



- Care–farming or farm therapy including horticulture and animal–assisted therapy
- Residential retreats
- Forest bathing and Forest Therapy
- Wilderness therapy
- Ecotherapy
- Pet therapy
- Green gyms or environmental volunteering
- Outdoor exercise or play
- Outdoor education (1)



Nature-based interventions (NBIs) are activities, strategies, or programs taking place in natural settings to improve the health and well-being of people by integrating the benefits of nature exposure with healthy behaviours. (2, 3)



J. Fullam, H. Hunt, et al. (2021) A handbook for Nature on Prescription to promote mental health. Version 1. University of Exeter.



FOREST THERAPY

A SUPPORTIVE AND PREVENTIVE HEALTH INTERVENTION

Forest therapy is a specialized, guided, and **subtype of nature-based interventions**.

It's a structured, evidence-informed practice that promotes psychophysiological regulation through **guided immersion in biodiverse natural environments**.

FOREST THERAPY ≠ FOREST BATHING

Forest bathing consists in immersion in natural forest environment to promote physical, mental, and emotional wellbeing through activities like meditation and unguided walks.

Forest therapy is a structured approach guided by trained practitioners (psychologists, meditation instructors, naturopaths, wilderness guides, and environmental educators) who facilitate therapeutic experiences in natural and biodiverse settings. The certifications and backgrounds of forest therapy guides exhibit considerable heterogeneity, lacking a universally recognized training standard across all countries. (4)

MULTIPLE INTERACTING PATHWAYS

Forest therapy likely operates through multiple interacting physiological and psychological pathways.



1) Sensory Modulation

- Low-stimulation environments
- Soft fascination
- Attention Restoration Theory (5)

2) Autonomic Regulation

- Parasympathetic activation
- Heart rate variability
- Stress recovery

3) Immune & Environmental Interaction

- Phytoncides
- Microbial exposure
- Biodiversity hypothesis

4) Embodiment & Interoception

- Slowed movement
- Interoceptive awareness
- Grounding

WHAT DOES SCIENCE TELL US?

A SUPPORTIVE AND PREVENTIVE HEALTH INTERVENTION

- Reduced physiological stress (↓ salivary cortisol, ↓ blood pressure, ↑ HRV)
- ↓ systolic blood pressure and diastolic blood pressure
- Improved mental health outcomes (anxiety, mood, stress-related symptoms)
- Support for the treatment of chronic diseases (diabetes, obesity, cardiovascular and mental disorders)
- Immunology: ↑ NK cells
- Short-term and medium-term effects
- Potential role of VOC's (effects in laboratory and preclinical models)

The strongest evidence concerns stress-related outcomes and autonomic regulation (6).





RSPB NATURE PRESCRIPTIONS: SCOTLAND

They are created with and delivered by a wide range of professionals, including GPs, social prescribing link workers, wellbeing connectors, occupational therapists and others. The Nature Prescription encourages people to connect with nature in a way that is personal and meaningful to them, at a time to suit them.

GREEN SOCIAL PRESCRIBING: ENGLAND

A government-backed initiative launched in 2020 to improve mental health by connecting people with nature-based activities Green social prescribing includes both what is known as green and blue activities.

DOCTORS PRESCRIBING NATURE

HEALTHY PARKS HEALTHY PEOPLE EUROPE

An EUROPARC's programme that promotes Europe's Parks and Protected Areas as a key asset for health and well-being.

PARK RX AMERICA AND CANADA

Park Rx America is a Community Health Initiative whose mission is to prescribe parks to prevent and treat chronic disease and promote wellness by connecting patients to parks.

NATURE STEP TO HEALTH: LAHTI

A 10-year initiative for planetary health in Lahti region. It combines regional health and environmental targets, and brings together various fields and stakeholders to co-create an actionable model, and to develop planetary health.



GREEN PRESCRIPTIONS: ITALIAN CASE



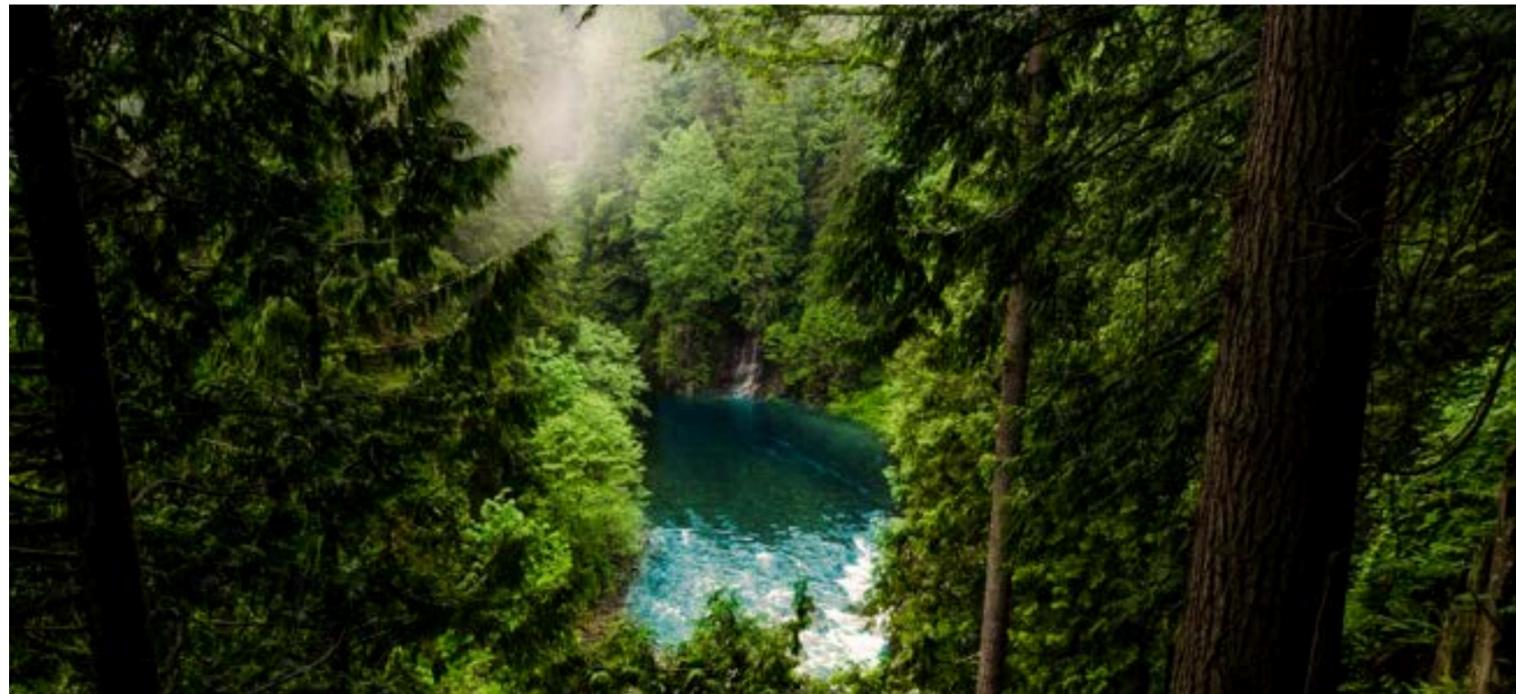
STRUCTURED, NON-PHARMACOLOGICAL CLINICAL INTERVENTIONS THAT USE CONTACT WITH NATURE TO IMPROVE HEALTH OUTCOMES

- Integrated into the patient's diagnostic and therapeutic pathway and **prescribed by a physician**, with possible **multidisciplinary support**
- Based on a **biopsychosocial assessment** to identify clinical needs, personal goals, autonomy, and potential risks
- **Personalized and goal-oriented**: activities are adapted to the individual rather than standardized
- Require **active interaction with living ecosystems**

Structured therapeutic process in 4 key phases (8):

1. Biopsychosocial Assessment & "What Matters to You"
2. Objectives & Environment Selection
3. Interaction Modality (Ecological-Enactive Approach)
 - Nature offers non-repetitive action opportunities
 - Functional exploration, not structured exercises
 - Activates body's self-regulatory capacities
4. Monitoring, Follow-up & Continuous Assessment

GREEN PRESCRIPTIONS



A 9-month **pilot study** observed a significant decrease in medication dosages, reduction in symptoms, cumulative effects over time, and a lasting improvement in perceived quality of life in chronic and complex patients (7, 8).

Clinical process

- Definition of **shared therapeutic goals**
- Selection of **safe, accessible, and biodiverse environments**
- Tailored **nature-based activities**
- Ongoing **monitoring of clinical outcomes**, quality of life, and adherence

Evidence

- Longitudinal research indicates that **ecosystem quality is associated with better outcomes**
- Exposure to more biodiverse and ecologically functional environments is associated with greater improvements

System-level implications

- Supports prevention and management of chronic conditions
- Promotes healthy behaviors and social connection
- May contribute to healthcare cost reduction

LIMITS & OPPORTUNITIES ⁽⁹⁾

CURRENT LIMITS OF RESEARCH

- Small sample sizes
- Heterogeneous protocols
- Limited long-term follow-up
- Difficulty in randomization
- Limited generalizability (majority of studies in Asia)
- Poorly understood mechanisms of action
- Most studies have a moderate to high risk of bias

KEY OPPORTUNITIES

- Focus on prevention and long-term conditions
- Integration with public health systems
- Interdisciplinary research (medicine, ecology, social sciences) and One Health perspective
- Research in Europe: a unique opportunity to explore diverse cultural contexts, environmental conditions, and healthcare systems
- Study of environmental factors (biodiversity, VOCs, air quality)
- Personalization of interventions
- Context-adapted protocols





HEALTHCARE SYSTEMS & PREVENTION

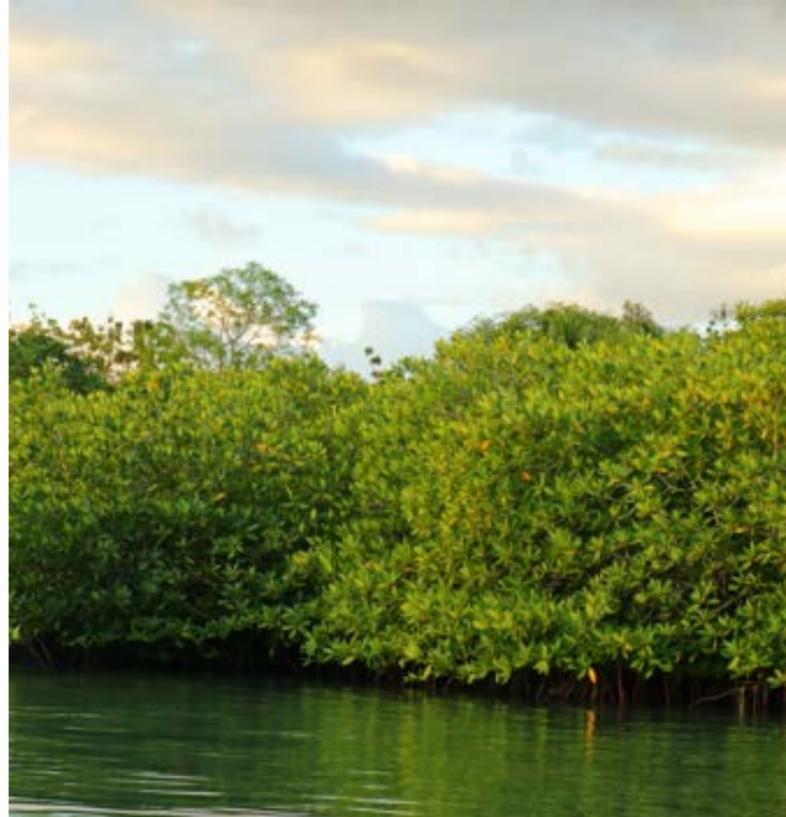
FOREST THERAPY AND HEALTHCARE SYSTEMS

- Not a replacement for medical treatments
- Role in prevention and health promotion
- Strong relevance for:
 - stress-related disorders
 - mental health
 - healthy ageing
- Potential role in reduction of NHS costs

NHS ENGLAND DATA (2021-2023): GREEN SOCIAL PRESCRIBING PROGRAM (10)

- 85% uptake of prescriptions
- Significant improvements in mental health
- Reduction in GP visits: up to 42%
- Reduction in A&E visits: 15-24%
- Reduction in secondary care costs

(observational health system data)



BEYOND WELLNESS TOURISM: A PLANETARY HEALTH POINT OF VIEW ⁽¹¹⁾



A critical risk

- Transformation into wellness tourism
- Pressure on ecosystems
- Loss of therapeutic and ethical integrity

A different perspective

- Forest Therapy as:
 - a tool for biodiversity protection
 - environmental awareness
 - pro-environmental behaviors

**HEALTH AND ECOSYSTEM PROTECTION AS
INTERCONNECTED GOALS**

TAKE-HOME MESSAGE

Integrating nature in prescriptions is not a trend

- It is a promising preventive and complementary health approach
- It requires scientific rigor
- Ethical responsibility is essential
- Ecological sustainability must be central

HEALTH OF PEOPLE AND HEALTH OF ECOSYSTEMS
CANNOT BE SEPARATED



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THANK YOU

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