

Nature-Based Interventions Cut NHS Costs and Improve Wellbeing: Evidence Shows up to £12 Return per £1 Invested

New analysis drawing from systematic research finds that green and blue social prescribing programmes—such as gardening, walking, and surfing—deliver measurable economic and health benefits for people living with long-term conditions.



Background

Social prescribing connects individuals to community-based activities and services that address practical, social, and emotional needs affecting health and wellbeing. As a key element of Universal Personalised Care, it typically involves link workers who co-create care plans based on what matters most to the individual. Green Social Prescribing builds on this model by offering referral pathways to Nature-based interventions (NBIs), which are structured programmes that promote physical, mental, and social wellbeing through meaningful engagement with natural environments. NBIs may include green exercise such as walking, hiking, and forest bathing; gardening and horticultural therapy; nature-based rehabilitation; mindfulness and water-based activities like swimming and kayaking.

Systematic Review Methods

- A systematic review of six primary studies and five reviews assessed the **economic impact of NBIs** for people living with long-term conditions. The review followed an academic gold standard approach (PRISMA and Cochrane Handbook guidelines) to ensure methodological rigour. NBIs included water-based activities, running, walking, gardening and horticulture, woodland activities, mindfulness, climbing, and wildlife habitats.

Key findings

- Six primary studies and five reviews were included.
- Single studies focussed on children and young people and adults with obesity. Most studies (n=8) considered adults with poor mental health.
- Economic evaluation methods included cost savings (direct comparison of intervention vs. standard care), cost effectiveness e.g. QALYs (health outcomes per cost unit) and social return on investment (broader social / environmental value).

Key Messages for Commissioners

- **Cost Savings:** The evidence suggests that NBIs (surfing, running, walking, gardening) can reduce intervention costs compared to NHS programmes, reduce inpatient visits, hospital admissions, and medication use (1-7).
- **Cost Effectiveness (QALYs):** NBIs were found to be cost-effective at between £6,800 and £8,600 (woodland activities) per QALY, well below NICE thresholds (£20,000-£30,000) (6,7).
- **Cost Effectiveness (WELLBYs):** NBIs for adults with poor mental health across seven sites in the UK provided a return on investment of £1.88 for every pound invested in the programme using a WELLBY approach (8).
- **Social Return on Investment (SROI):** NBIs have been reported to have an SROI up to £11.94 return per £1 invested (gardening and horticulture). (5-11).
- **Broader Impact** - NBIs improved mental wellbeing, social trust, and physical activity. There is a need for more consistent and rigorous approaches to economic evaluation that can accurately capture cost-effectiveness across diverse outcomes.

Table of Included Studies

Study	Population	NBI	Method	Outcome
Alejandre (1)	CYP with physical/mental illness	Surfing ("Blue prescription")	Cost savings	£50/session vs. £265/year in mental health care costs. Widely perceived as beneficial.
Awara (2)	Adults with mental illness	Running (part of multicomponent intervention)	Cost savings	90% reduction in inpatient days; fewer ED visits.
Bhardwaj (3)	Adults with obesity	Walking / activity monitor	Cost savings	
Jones (4)	Adults with mental ill health	Gardening	Cost saving	GP visits reduced, but overall cost increased by £399.17/person/year. Small sample (n=9).
Hartfiel (9)	Adults with mental ill health	Bushcraft, woodland walks, mindfulness, etc.	SROI using SWEMWBS, PA, GSES, Social Trust	SROI ranges: £1: £1.11 to £4.67 depending on scenario.
Haywood (8)	People with mental ill health	7 GSP sites	SROI using WELLBYs	£1: £2.42; or £1: £1.88 when including leveraged resources in test and learn sites.

Study	Population	NBI	Method	Outcome
Ireland (10)	Adults with mental ill health	Gardening	SROI	ROI: £1: £2.04; sensitivity analysis: £1: £1.25; Mind-specific ROI: £1: £0.82.
Sendall Wildlife Trust (11)	Adults with mental ill health	Wildlife Trusts' Natural Health Services	SROI	ROI varies: £1: £0.34 to £2.16 depending on duration and assumptions.
Makanjuola (5)	Adults with mental ill health	Walking & climbing	Cost saving + SROI	Annual savings: £272 (face-to-face), £27 (online); SROI: £1: £4.12-£7.08 (face-to-face), £1: £2.36-£3.34 (online).
Bragg Natural England (6)	Adults with mental/physical ill health	Volunteering, gardening, nature-based recovery	Cost savings, SROI, QALYs	Multiple ROI values: up to £1: £10.70; QALY cost-effectiveness noted.
Natural England (7)	Adults with mental ill health	Horticulture, walking, wildlife-rich environments	Cost saving, SROI, QALYs	Savings: £7,082/person; ROI: £1: £2.35-£11.94; QALY cost: £8,600.54 (below NICE threshold).

Note. A quality-adjusted life year (QALY) is a measure of the state of health of a person or group in which the benefits, in terms of length of life, are adjusted to reflect the quality of life. One QALY is equal to 1 year of life in perfect health. NICE considers interventions costing between £20,000 and £30,000 per additional QALY gained to represent good value for money for the NHS.

A Wellbeing-Year (WELLBY) is defined as one point of self-reported life satisfaction measured on a 0-to-10 Likert scale for one individual for one year. The latest willingness-to-pay value is between £10,000 and £16,000 per WELLBY.



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