

# BIOPHILIA PHYSICAL HEALTH Research Brief

PARTNERSHIP INITIATIVE  
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Figure 1:  
Eco-therapy is an emerging modality that may recommend outdoor therapy sessions or simple exercises undertaken on one's own, such as listening to birdsongs, gardening, visiting a park without checking devices, and can be part of a general approach to well-being or a supplement to treatment (The Atlantic).

Source: <https://www.theatlantic.com/magazine/archive/2015/10/the-nature-cure/403210/>

#### Keywords:

Nature, healing, biophilia, garden, pain, health, green space

## CONTENT OVERVIEW

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## BIOPHILIA + PHYSICAL HEALTH SUMMARY

There is mounting evidence that interacting with nature delivers measurable benefits to people. Though this may seem primordially instinctive, interdisciplinary research is providing myriad studies illustrating specific benefits to physical wellbeing. Whether it provides distraction from pain, fresh air, a bolstered immune system, or restoration- a connection to nature is vital to a healthy lived experience.

# BIOPHILIA

## PHYSICAL HEALTH

### Research Brief



## I. Constructed Nature Exposure

Viewing a nature scene and listening to accompanying pastoral sounds as a form of distraction therapy may reduce pain. Distraction therapy is a technique in which patient attention is focused on a pleasant stimulus and away from a stressful or painful one. It often involves having patients look at pictures or videos and listen to music or other sounds. (Lechtzin 2003 946). Traditional sedation and anesthesia carry risk of adverse reactions and complications, require preparation and recovery time for patients, and require training of specialized personnel; all of these factors increase cost and discourage institutions from use of these pain reduction mechanisms. Nature sights and sounds, by contrast, intervention is extremely portable, compact, and does not require training to use. (Lechtzin 2010 970)

*Distraction Therapy: Sight and Sound*

Post op patients with the tree view had shorter postoperative hospital stays, had fewer negative evaluative comments from nurses, took fewer moderate and strong analgesic doses, and had slightly lower scores for minor post-surgical complications patients in similar rooms with brick walls. Although natural scene had comparatively great therapeutic influences, views out to a lively city street may be just as therapeutic for long-term, chronically under-stimulated patients. (Ulrich 1984 421)

*Views out: Nature and City*

Analgesic strength	Number of doses					
	Days 0-1		Days 2-5		Days 6-7	
	Wall group	Tree group	Wall group	Tree group	Wall group	Tree group
Strong	2.56	2.40	2.48	0.96	0.22	0.17
Moderate	4.00	5.00	3.65	1.74	0.35	0.17
Weak	0.23	0.30	2.57	5.39	0.96	1.09

Figure 2: Comparison of analgesic doses per patient for wall-view and tree-view groups. The wall-view group generally used more pain-reducing medication. (Ulrich 1984)

## II. Healing Gardens

Horticulture therapy can include imagining nature, viewing nature, visiting a hospital healing garden and, most significantly, physical gardening. The value of connecting to nature in physical, occupational, and speech rehabilitation and therapy was formally introduced to medicine in the US following the end of World War II. Horticulture therapy in a rehabilitation center not only improves health, well-being and life satisfaction, it also mediates emotional, cognitive and/or sensory motor functional improvement, increases social participation, and increases ability to be re-employed. (Soderback 2004)



Figure 3: Designing raised bed gardens that can be worked with adaptive tools allow for universally healthy body mechanics. Meaning resources can be shared by the widest possible range of users (Soderback 2004)

### III. Real Nature Exposure

Walking in a nature reserve initially fostered blood pressure change that indicated greater stress reduction than afforded by walking in the urban surroundings. The amount of time spent in nature, whether sedentary or active, is also a significant factor in reduction of blood pressure. (Hartig 2003)

*Nature walks  
as medicine*

“Forest bathing” (short, leisurely visits to a forest) increase levels of naturally occurring intracellular anticancer proteins (Fig. 10). Additionally, phytoncides (wood essential oils) released from trees are antimicrobial and strengthen the immune system. Incorporating forest bathing trips into a good lifestyle was first proposed in 1982 by the Forest Agency of Japan. It has now become a recognized relaxation and/or stress management activity in Japan. The results of a study using the Profile of Mood States (POMS) test demonstrated that a forest bathing trip significantly increased the score for vigor and decreased the scores for anxiety, depression, and anger. Habitual forest bathing may help to decrease the risk of psychosocial stress-related disorders, mental illness caused or influenced by life experiences (e.g. substance-related disorders, anxiety, schizophrenia, mood disorders, eating disorders, identity conflict, etc.). (Li 2010 10, 16)

*Nature walks  
as medicine*

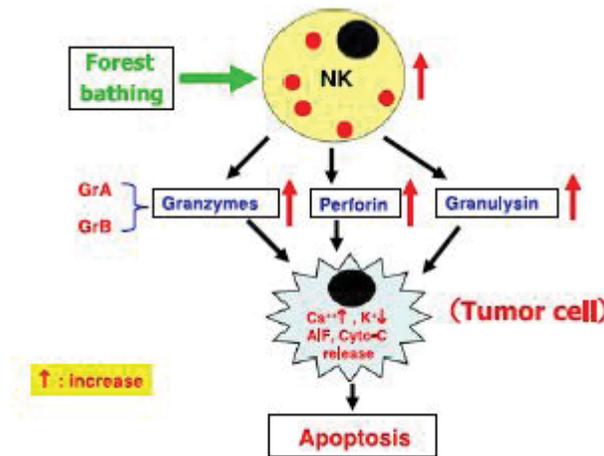


Figure 4: Mechanism of forest bathing-induced production of NK (“Natural Killer”, referring to the compound’s reported ability to kill tumors and virus-infected cells through the release of perforin, granzymes, and granulysin. This activity is catalysed by exposure to phytoncides, essential oils created in some trees- in this case, cedars.

Residents of neighborhoods with poor living conditions and few environmental amenities for restoration display more symptoms of chronic stress and poor health independent of the individual characteristics of residents. The positive link between green space and health was found to be relatively marked among the elderly, housewives, and people from lower socioeconomic groups. The researchers attribute these findings to the fact that these groups spend a relatively large amount of time in the home. (Van den Berg 2007)

*Nature  
Deprivation  
and Equity*

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