**Positive effects of time in nature**

Simply being in green spaces with trees has significant positive effects on many aspects of our being – physiology, emotions, thoughts and behaviours. The more trees the better… up to a point. Views of nature, indoor plants, and nature on screen also have these effects, though often less pronounced. Sound and smell can also be brought inside to some extent.

The following research is cited in *Your Brain on Nature* (Selhub and Logan).

**Research highlights**

***Positive emotion***

 “Nature scenes increased positive affect – feelings of affection, playfulness, friendliness and elation were elevated in the group that viewed various nature scenes. Urban scenes… significantly cultivated one emotion: sadness. The nature scenes tended to decrease feelings of anger and aggression, and urban scenes tended to increase them.”

Ulrich went on to discover that viewing scenes of nature was associated with higher alpha wave amplitudes associated with increased serotonin production, and meditation. Ulrich showed nature scenes buffer against physiological, reactive behavioural and emotional or affective results of stress. Birdsong does this too!

Ulrich, R. Visual landscapes and psychological well-being. *Landscape Res* 1979;

4:17–23.

Ulrich, R, et al. Recovery from stress during exposure to everyday outdoor environments. Proceedings of the 17th annual conference of the Environmental Design Research Association. Apr 9–13, 1986, Atlanta, GA.

Ulrich, R. Natural versus urban scenes—some psychophysiological differences. *Environ Behav* 1981; 13:523–56.

Ulrich, R, et al. Stress recovery during exposure to natural and urban environments. *J Environ Psychol* 1991; 11:201–30.

“Emotions of pleasure and happiness are elevated with an increase in tree density” Selhub, Eva and Logan, Alan (2012). *Your Brain on Nature*,Toronto, Canada: Harper Collins CA.

**Stress buffering**

Research on Forest Bathing (Shinrin Yoku) shows that spending time within a Forest Setting reduces psychological stress, depressive symptoms and hostility, while at the same time improving sleep, and increasing both vigour and a feeling liveliness. They lower cortisol, blood pressure and pulse rate.

Chang, C, et al. Experiences and stress reduction of viewing natural environmental settings. *Acta Hortic* 2008; 775:139–46. Morita, E, et al. A before and after comparison of the effects of forest walking on the sleep of a community-based sample of people with sleep complaints. Biopsychosoc Med 2011;5:13.

Nature experience can dampen amygdala (fear/anxiety, reactivity, depressive mood) activity, and promote empathy, emotional stability and a positive mental outlook, love.

“Higher levels of nearby nature diminished the psychological impact of stressful life events in children”. (337 children studied, average age 9)

van den Berg, A, et al. Green space as a buffer between stressful life events and health.

*Soc Sci Med* 2010; 70:1203–10.

**Resilience**

Grit – nature may increase pain tolerance.

Park, S, et al. Pain tolerance effects of ornamental plants in a simulated hospital patient room.

*Acta Hortic* 2004; 639:241–47.

“Nature is like a little drop of morphine for the brain …when [the opioid] receptors are activated, people are less likely to perceive themselves as too stressed, they are more likely to form emotional bonds, and they tend to dwell less on negative memories, focusing instead on the positive.”

Selhub Eva and Alan Logan

**Nature and cognition**

Nature exposure gives cognitive restoration, and lower stress response to activities of equal cognitive load.

van den Berg, A, et al. Environmental preference and restoration: How are they related? *J Environ Psychol* 2003; 23:135–46.

Isen, A, et al. The influence of positive affect on clinical problem solving. *Med Decis Making* 1991; 11:221–27.

“Indoor scenes (such as an office, kitchen, hallway), compared with outdoor nature scenes (forests, water, mountains), consistently produce a higher level of activity in a specific area of the brain involved in scene processing”.

Selhub Eva and Alan Logan

“Preference for certain aspects of nature is culturally universal – trees (but not too densely packed), views that afford a vista or some degree of predator surveillance, the presence of fresh water, and a rich variety of plants and animals. Selhub Eva and Alan Logan, Your Brian on Nature, Collins, Toronto, 2014

**Bibliography**

Selhub, Eva and Logan, Alan (2012). *Your Brain on Nature*,Toronto, Canada: Harper Collins CA.