

# Being outdoors: What educators can learn from cross disciplinary research on the benefits of the outdoors on health

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### Ancient questions

**As people living in a modern world, our connection with nature is varied, which has an impact on health. This paper looks at cross-disciplinary research conducted on the impact the outdoors has on health, more specifically mental, physical, social and spiritual benefits. Results from different fields of research collectively strengthen claims made for the positive influence time outdoors has on health, and prompt educators to ask how Christian schools can take this knowledge and apply it in an educational setting for the benefit of students.**

Our connection with the outdoors varies. We may live in houses, apartments, and buildings, drive air-conditioned cars to our thermostat-controlled offices and complete a workout in an indoor gym. Alternatively, we may spend large amounts of time outdoors for work as bricklayers or tour leaders, or enjoy leisure in outdoor sports, or simply reading a book, jogging or undertaking multi-day trips, travel by varied forms of bike or scooter riding or simply walking. Whichever way we choose, we can never escape the foundation of life that a connection to the outdoors, living and non-living, brings. The World Health Organisation defines Health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” (2019).

This article aims to highlight research conducted examining the effect the outdoors has on people, in particular, our mental, physical, social and spiritual elements of health. The research undertaken is derived from a broad range of study areas to provide evidence that the effects of the outdoors is not

simply contained within one area of knowledge, such as education. A widespread literature indicates its positive influence on all areas of health.

### Nature & scope

For this article, it is necessary to identify some key terms used and the understanding of these within the scope of this article. A starting point is a definition of ‘outdoors’. In general, the outdoors refers to any space that is not contained within a building, or man-made environment. In general, ‘nature’ refers to “areas containing elements of living systems that include plants and nonhuman animals across a range of scales and degrees of human management, from a small urban park through to relatively ‘pristine’ wilderness” (Bratman, et al., 2012, p. 120). The term ‘green spaces’ is extended to represent any space that may have some form of nature growing in it, generally by design (Berman et al., 2012). Green spaces may include but are not limited to parks, ovals, walkways with foliage growing alongside, or a garden bed. It is difficult to fully comprehend and articulate the breadth of the outdoors, nature and green spaces within the context of this article and debates such as the degree to which something may be defined by these terms is beyond the scope of this article.

### Mental benefits

As a society and as leaders in the ‘technology era’, Western Civilisation has experienced incredible developments in technology, including automation of machinery. Conversely, however, the increase of urbanisation has been associated with an increase in stress-related diseases and mental disorders (Krabbendam, & van OS, 2005; Peen et al., 2010; van Os et al., 2010). In Australia alone, the most recent national survey estimated that almost half (45%) of the adult population will experience a mental disorder

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at some point in their life, and one in seven (13.9%) adolescents were assessed as having a mental health disorder in the previous 12 months. Of these diagnosed disorders; anxiety disorders, ADHD and major depressive disorders were the most prevalent (Australian Institute of Health and Wellbeing, 2018). The effect of quality time in the outdoors has been documented through research for some time. Studies across the globe concur from a plethora of angles the positive effect nature has on: cognitive functioning, attention, impulse inhibition, positive mood, emotions, neural pathways, decreased stress, memory, self-wellbeing, and psychophysiological functioning (Taylor et al., 2002; Berman et al., 2012; Ulrich & Simons, 1991; Brown et al., 2013; Barton, 2009; Nicholls & Gray, 2007). One study looked at the physical outlook of student's study windows at home and correlations with various factors including self-discipline and academic performance. Results showed that the more natural the view from the window, increased girl's academic performance by up to 20%. Boys find distant green spaces (ie. park, playground, natural space, forests) equally as important (Taylor et al., 2002). Another study by Bratman et al., (2015) had participants walk a particular route with an urban outlook (city), or natural outlook (green space) for 90 minutes. Outcomes from this showed a decrease in both reported rumination (a predictor to the onset of mental disorders) and neural activity in the subgenual prefrontal cortex, for those whose outlook contained the green space, compared with the city walk. Similarly, van den Berg et al., (2015) looked at the recovery effects of viewing green spaces compared with urban spaces on autonomic nervous system activity. Participants were placed in a psychological stress test, then shown images of either green spaces or urban spaces. Results were conclusive and indicated that even five minutes of viewing green spaces can support recovery from post-stress. These studies, with others, culminate in compelling evidence to show the positive outcome that the outdoors has on psychological wellness, which has a rippling effect on many other areas of life, including the physical body.

## Physical benefits

Linked with the psychological benefits the outdoors provides, research covers an array of fields that document the effects of the outdoors on the body. In the healthcare sector a breakthrough study by Dr Roger Ulrich (1984) was the first to use the standards of modern medical research [strict experimental controls and quantified health outcomes] to demonstrate that having nature views in a hospital setting does in fact speed up recovery, lead to patients requiring significantly less pain reduction

and experiencing fewer post-surgical complications. Ulrich went on to conduct further research amongst (heart surgery) patients and confirmed these same results (2001). A literature review in this field of study revealed a broad range of evidence from scientific studies on the health benefits of the outdoors including, but not limited to, reduced stress (Berto, 2014), lower blood pressure (Duncan et al., 2014), improved postoperative recovery (Park & Mattson, 2009), improved pain control (both chronic & acute) (Diette et al., 2003; Lechtzin et al., 2010; Han et al., 2016), improved child development (cognitive and motor) (Kellert, 2005), reduced obesity (Bell et al., 2008) reduced diabetes (Brown et al., 2016), improved immune function (Li et al., 2008), improved congestive heart failure (Mao et al., 2017) and better general health for adults, children, and cancer survivors (Wheeler et al., 2015; Ray & Jakubec, 2014; Kim et al., 2016). From this, it is not surprising that doctors in Scotland have been authorized to prescribe time in the outdoors as part of medical prescriptions for the past few years in the form of 'green scripts'. What once started as a 'niche idea' has now become a substantial part of many doctors' prescriptions to patients (Bauers, 2015). The research for prescribing exercise as medicine has long been established, and many professions (physiotherapists, allied health professionals, and exercise physiologists) utilise Exercise is Medicine (EIM) within the healthcare system (Alencar, 2014). Yet, as the research above states, there are proven benefits to spending time in the outdoors, not just simply undertaking physical activity. Other nations, besides Scotland, are responding to the physical benefits of time spent in the outdoors, including Australia which hosted the decennially convened International Union for Conservation of Nature (IUCN) World Parks Congress to discuss the health and medical benefits of our country's natural parks (IUCN World Parks Congress Sydney, 2014). From the perspective of healthy bodies, the research is clear on the benefits of spending time outdoors. These benefits, however, are not restricted to only psychological and physical changes related to predictors of our health, but it also impacts one of the greatest learning areas within schools—social interactions.

## Social benefits

Social inclusion and support are pivotal aspects to a child's growth and development during school years, and although not always taught explicitly in a curriculum, relationships have been recognised as keys to wellbeing, belonging, attendance, participation and long term achievement in schools (Meads & Ashcroft, 2000; Ashcroft et al., 2015; Loe,

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2017). These key attributes along with a positive impact on a range of other factors such as: self-control, resilience, confidence, cooperation, together with development of responsibility, the building of empathy and enjoyment of classroom learning have all been attributed to activities undertaken in the outdoors (Christian, 2010; Williams, 2015). Students have long been taken on programs in the outdoors, but to what effect? In 2009 Outdoor Youth Programs Research Alliance (OYPRA) developed a three-year study about the impacts a five-day camp program has on student's physical, mental, confidence, and connectedness (OYPRA, 2012). Results identified that students who went on camp were more independent, less anxious, worked harder at school and felt more connected to their school community. These trends were similar regardless of the school, type of camp or student gender. [Those most impacted were students who started with lower levels of self-efficacy and/or high levels of anxiety]. Dr. Rob Loe mentions in a case study for his Relational Schools survey (Loe et al., 2017), one school whose catalyst for strong relationships was an Outward Bound trip undertaken by students. "The challenging environment had forged connectedness, belonging, understanding, respect, and an alignment of purpose and goals" (p. 14). Whether formally or informally the outdoors enhances improvements in children's lives. A study conducted by Plymouth University on the impact of family camping in the UK found that 98% of parents said camping made their kids appreciate and connect with nature; 95% said their kids were happier when camping; and 93% felt that it provided useful skills for later life (Williams, 2015). Children identified their highlights from camping as: making and meeting new friends, having fun, playing outside and learning new skills. The outdoors has been used as a place of change, challenge and growth for both small groups and individuals for decades, and research shows the value and benefit the outdoors can provide in developing the broad range of elements of health—including the physical, mental, social, and also spiritual aspects.

## Spiritual benefits

From a spiritual perspective throughout human history, there has been a strong connection with being outdoors and feeling spiritually connected. This connection extending throughout time, also involved religious practices, beliefs, and gods worshipped (McQuillan, 2015). In a secular child psychology study, when describing a significant spiritual experience, 80% of respondents described this occurring in the outdoors (Paffard, 1973). Specific language such as; nature, mountainside, hills, lake, sea, and rivers were often used, and were

associated with times of solitude, and/or times in the evening or night (Paffard, 1973). Barrett (2012) posits that from birth, children have sense-making brains; that is, they observe patterns and purpose in nature and presume a designer. As adults we scientifically categorise these elements such as the Fibonacci sequence, elements of the periodic table, and the light spectrum, to name a few. Thomas Aquinas [1224-1274] proposed that "Sacred writings are bound in two volumes – that of creation and that of Holy Scripture" (Aquinas, 1273, p. 59). When children are fully engaged with all senses, as when immersed in nature, Louv (2012) suggests children have a heightened ability to sense a higher power. This ability of people to connect with God when in the outdoors should come as no surprise then. Gary Thomas, in his book *Sacred Pathways* (1996), describes nine ways Christians 'worship'. One of these is described as 'Naturalists' – those who love the outdoors and connect with God through nature. Throughout the Bible we see a God whose grandeur is on display through His created nature. His first introduction is through the Creation story. Throughout both the Old and New Testament, writers are enamoured with a God who reveals Himself through this creation (Genesis 1, Psalms 8:3-4; 18:15; 19:1-2; 24:1-2; 95:4-5; 104:1,4; Job 38-39, Isaiah 45:18, Matthew 6:26; Romans 1:20, Revelation 4:11; 10:6). Therefore, connection with nature has the potential to enrich a child's relationship with God by creating moments of awe and wonder. This may be an experience in the sweeping views of the horizon at sunset, the brilliance of the first light at dawn, the fierceness of the wind, or the intricacies of a bug's design. Steve Bourma-Prediger, author of *For the Beauty of the Earth: A Christian Vision for Creation Care* (2010) says "We only care for what we love. We only love what we know. We only truly know what we experience" (p. 21). Allowing exploration of the natural world first-hand prompts children to ponder the origins of life from a first-hand perspective and allows the opportunity to have their eyes open to God's character through first-hand experiences.

## In summary

The findings of this research review provide overwhelming evidence of the impact the outdoors has on health from a mental, physical, social and spiritual understanding. The WHO (n.d.) defines health as: "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (para. 2). Extensive research collated from a broad field of studies provides concrete evidence about the impact nature and the outdoors can have on these elements of health, including spirituality. Within a Christian education

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setting, this research can influence change through implemented short or long-term programs integrated into teaching methods, or simply changing the environment in which content is taught. As discussed, spending any amount of time outdoors, spanning a spectrum from having a ‘natural’ outlook from windows through to multi-day hikes with student groups, provides health benefits. Christian schools are encouraged to think about the changes they can make to optimally provide these mental, physical, social and spiritual health benefits to their students.

## TEACH

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Figure 1: The Hillcrest Environmental Reserve (previously - the wetlands) is 10 acres at the back of our school