

Outdoor strength training benefits all age groups

Essentials Strength: While the necessity of physical activity is universally understood, the environment in which we exercise is undergoing a re-evaluation. For decades, effective strength training was largely confined to indoor facilities due to the dependence on equipment manufactured solely for the indoors. However, a convergence of new research on “green exercise” and innovations in outdoor equipment design has opened a new frontier¹.



KOMPAN's development of the **Essentials Strength** line – a full set of strength machines featuring adjustable weight resistance – bridges the gap between the gym and the park. This white paper examines the scientific evidence supporting outdoor strength training across the lifespan. It argues that providing adjustable, scalable resistance in public spaces is not merely an amenity, but a critical public health intervention that delivers unique physiological, psychological and socio-economic dividends for teenagers, adults and seniors alike.

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The synergistic effect: Why outdoor strength training is superior

While indoor fitness provides a controlled environment, moving training outdoors introduces unique benefits. Research comparing outdoor and indoor exercise indicates that “green exercise” can reduce the Rating of Perceived Exertion (RPE), meaning individuals may workout efficiently while feeling less fatigued. Furthermore, exercising outdoors has been shown to improve cognitive function, specifically attention and working memory, more effectively than identical exercises performed indoors².

Furthermore, outdoor environments provide exposure to natural sunlight, facilitating vitamin D synthesis, mitochondrial function and neurotransmitter balance. Factors that are crucial for bone health, immune function and mental health. Benefits that are entirely absent in indoor gyms. The natural outdoor environment also offers cleaner, safer exercise spaces where fresh air and sunlight decreases the risk of infections³.

Teenagers: Building the foundation

Adolescence is a critical window for physiological development, yet physical activity levels globally are insufficient among this demographic. Introducing strength training during these formative years provides two major dividends: optimising skeletal development and bolstering mental health.

Optimising bone health

The adolescent years are the most critical phase for maximising peak bone mass (PBM). Often referred to as the “bone bank”, PBM is a primary determinant of skeletal health later in life. Resistance training provides the necessary mechanical loading to stimulate bone modelling and remodelling. Evidence suggests that vigorous physical activity and weight-bearing exercises are positively associated with cortical bone mass and geometry in adolescents, reducing the risk of osteoporosis in later adulthood⁴.

Combating the mental health crisis

Beyond physiology, adolescents face rising rates of anxiety and depression. Reviews suggest that exercise training enhances Brain-Derived Neurotrophic Factor (BDNF) and serotonin levels, improving mood and stress resilience in students. Furthermore, studies shows that strength training interventions have a significant effect on reducing anxiety and depression symptoms in adolescents⁵.

Teenagers are driven by social connection and autonomy. Outdoor spaces offer a unique scene for informal participation providing diverse opportunities for peer interaction, which mitigates social isolation. However, for this demographic to engage, the equipment must be credible. Scalable resistance allows teenagers to experience tangible progression – a key driver of motivation – rather than simply “playing” on static equipment.

Adults: General health and weight management

For the general adult population, the focus on strength training shifts toward metabolic health, body composition management and wellbeing.

Metabolic and muscular health

Resistance training is a potent tool for managing chronic conditions. A 2025 meta-analysis indicates that resistance training significantly reduces systemic inflammation and improves metabolic health in adults with type 2 diabetes. Furthermore, regarding body composition, concurrent training (combining aerobic and resistance exercise) has been found to be superior for increasing lean body mass compared to aerobic training alone⁶.

The Importance of effective equipment

For adults accustomed to commercial gyms, outdoor equipment has historically been disappointing due to a lack of resistance. Many outdoor machines rely solely on body weight or offer negligible resistance, failing to provide the stimulus needed for strength gains. The Essential Strength line addresses this “ineffective fitness” trap by providing adjustable weight resistance. This ensures that adults can perform exercises at the recommended intensity (often cited as 60-80% of 1-repetition maximum) required to elicit physiological adaptation⁷.

Seniors: Preserving independence and cognitive function

The demographic shift toward an ageing population necessitates effective strategies to maintain functional independence. Strength training is perhaps the single most important intervention for seniors, yet it is often under-prescribed or performed at insufficient intensities.

Combatting muscle loss with real strength training

Sarcopenia, the age-related loss of skeletal muscle mass and strength, leads to frailty and loss of independence. While popular beliefs often assume that seniors should use light weights, emerging evidence strongly supports “Real Strength Training” (60-80% of 1RM) as safe and highly effective for older adults, even those with chronic conditions. To achieve this safely outdoors, equipment must offer adjustable heavy resistance that mimics the biomechanics of indoor machines, allowing seniors to train at the optimal intensity without the instability of free weights⁸.



Fall prevention and bone health

Falls are a leading cause of injury in older adults. Strength training specifically improves muscle function and the ability to generate force quickly, which is critical for correcting balance after a trip. Additionally, resistance training has a direct correlation with maintaining bone mineral density in postmenopausal women and older men, significantly reducing fracture risk⁹.

Cognitive health

The benefits of strength training extend to the brain. Resistance training has been correlated with neurochemical markers

of brain health and improvements in executive function and memory in older adults. The multi-sensory stimulation of the outdoor environment further enhances these cognitive benefits, potentially offering a protective effect against cognitive decline¹⁰.

Socio-economic effects: The value of free public spaces

Investing in high-quality outdoor strength training zones generates substantial returns beyond individual health.

Socio-economic value and healthcare savings

Socio-economic status is a major determinant of physical activity; individuals in deprived areas are often the least active and have the poorest health outcomes. Private gym memberships create a financial barrier to entry. Furthermore, physical inactivity places a massive burden on healthcare systems. Creating free, high-quality public spaces for strength training democratises access to health, allowing individuals of all income levels to access the “medicine” of resistance training. This direct intervention can help reduce the stark health inequalities observed between different socio-economic groups¹¹.

Social cohesion and community safety

Parks with active programming and high-quality amenities foster social cohesion – the sense of trust and belonging within a community. Outdoor gyms serve as meeting points where diverse demographics – teenagers, adults and seniors – interact in a shared positive space. This activation of public space can also improve perceptions of safety; well-used parks are generally perceived as safer, creating a virtuous cycle of community usage and ownership¹².

Conclusion

The shift toward outdoor fitness is not just a trend; it is a turn to a more holistic understanding of health. By moving strength training outdoors, we capitalise on the restorative benefits of nature while addressing the specific physiological needs of every generation – from the bone density of teenagers to the metabolic health of adults and the functional independence of seniors. However, these benefits are contingent on the quality of the stimulus. The KOMPAN Essentials Strength line provides the necessary adjustable resistance to ensure that public spaces serve as effective, scalable and inclusive health hubs for the entire community.



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