FACT SHEET
ADULT HEALTH AND NATURE

Current State of Adult Health

Adult populations in the United States are burdened by chronic diseases that lead to decreased quality of life, increased health care costs, and preventable morbidity and mortality. Many of these illnesses have a strikingly disproportionate impact on minority populations and those with low socioeconomic status.

More than one third of the population, or 149 million U.S. adults over age 20, is overweight or obese.[1,2] Obesity is associated with increases in mortality rates and risk for widespread chronic illnesses, including type 2 diabetes, hypertension, high cholesterol, heart disease, stroke, respiratory illnesses, and some cancers.[1,2] Type 2 diabetes is associated with shorter life expectancy and minority adults are twice as likely as white adults to be affected.[3] More than 60 million Americans have hypertension and high cholesterol, much of which is uncontrolled.[4] Cardiovascular disease affects 1 in 3, or more than 83 million, and heart attack and stroke are the first and third leading causes of death in the United States.[4] Death rates are 37% higher among African Americans than whites and American Indian and Alaska natives have the highest percentage of premature death associated with cardiovascular disease.[4] Asthma is another chronic illness on the rise that affects over 18 million, or 1 in 12, adults.[5] Multi-race and black adults, women of all races, individuals with lower income and education levels, and those who are overweight are more likely to have asthma.[5,6] Mental illness is also prevalent, affecting 25% of all U.S. adults, and can adversely affect the outcomes of other chronic illnesses.[7]

Lifestyle modification with medical management, diet, physical activity, and behavior therapy, including stress management, are recommended for the control of these conditions.[3,4] Nature has long been used in cultures around the world as a form of healing and a way to foster good health. Research demonstrates that contact with nature benefits people of all ages and can positively impact health. Access to nature has been related to better health, greater physical and mental well-being, restoration from stress, and greater social connectivity.

Nature and Health

Connection with the natural environment is beneficial for the body and can positively influence health. The natural environment can aid in the healing process and potentially prevent negative outcomes for hospitalized patients. One study looked at the view outside the window of twenty three matched pair post-op cholecystectomy patients. Those facing natural environments, compared to a brick wall, were shown to have shorter hospital stays, received fewer negative evaluative comments from nurses, and took less pain medication.[8] Another study looked at using distraction with sights and sounds of nature during flexible bronchoscopy with conscious sedation to reduce pain. Researchers found a four to five-fold increase in pain control in intervention groups compared to control groups.[9] Studies from Japan connect *Shinrin-yoku*, or bathing the senses in the forest environment, with health benefits when compared to city settings. This immersion in nature is shown to lower pulse rate and blood pressure, and decrease sympathetic nerve activity, the body's natural stress response.[10] One study specifically connected forest bathing with a reduction in blood pressure and inflammation in the elderly.[11] Large epidemiological studies in Canada, Denmark, Japan, and the Netherlands that control for potential socioeconomic and demographic factors show that having access to nature lowers rates of cardiovascular disease, stroke, obesity, and depression[12-16] and is associated with better immune system functioning[17] and fewer health problems.[18]

Physical Activity and Well-Being in Nature

Physical activity promotes health and can have a substantial impact on the state of chronic disease. Life expectancy, obesity, type 2 diabetes, cardiovascular disease, mental illness, and even quality of sleep have all been shown to improve when individuals increase physical activity. In addition to the health disparities that exist for these diseases, data shows that some minority groups are less likely to get the exercise needed to meet recommended levels.[19]

A number of studies connect physical activity in outdoor natural environments with greater physical and mental well-being. Across socioeconomic levels, people are more likely to walk if they live near parks and a positive association exists between physical activity and access to green space.[20-23] A large study in England revealed that those living closer to parks are more likely to achieve recommended levels of physical activity.[24] Epidemiologic studies indicate that an active lifestyle protects brain functioning in the elderly and can delay onset of dementia and Alzheimer's Disease.[25,26] Adults getting active by volunteering at least 200 hours over a four year study were 40% less likely to develop high blood pressure.[27] Another study found that even looking out a window at natural elements or settings has been shown to increase aspects of well-being and satisfaction with where people live.[28] It has been shown that looking at nature pictures while

running on a treadmill yields a significant improvement in blood pressure and a positive effect on mood and self-esteem.[29] Furthermore, exercise within a natural environment, when compared to indoor exercise, is associated with decreases in tension, confusion, anger, and depression.[30] Study participants with major depressive disorders have been shown to have increases in mood and a significant increase in memory span after a nature walk compared to an urban walk.[31] Researchers in Edinburgh looked at EEG recordings while participants took a 25 minute walk and results showed evidence of lower frustration, engagement, and arousal, and higher meditation when moving into green space.[32] Another study took participants backpacking in the wilderness for 4-6 days without access to electronic technology and found that creativity and problem solving increased by 50%, supporting the positive effects of immersion in a natural setting.[33]

Nature as a Stress Reducer

Some stress can be a positive and motivating force. Chronic stress, however, can have negative impacts on health and exacerbate illness. Many studies associate access to nature with reduced levels of stress. Studies have shown that participants report less stress the more often they visit green spaces and have access to nature.[21,34,35] When residents of public housing have views of trees rather than entirely built surroundings, they show greater capacity to cope with stress, better conflict management, and lower levels of family aggression.[36-38] One study utilized salivary cortisol sampling to look at green space and stress in deprived communities. Researchers found a significant positive correlation between decline in cortisol and increased quality of green space in the living environment of deprived communities.[39] Another study found decreases in cortisol levels and mood enhancement with 30 minutes of outdoor gardening, further highlighting nature as a valuable resource for health promotion.[40]

Social Interaction in Nature

Positive social connectivity can improve the lives and health of individuals and the communities they live in. Social support provides a buffer against stress, anxiety, and depression, which can all adversely affect chronic illness.

The natural environment helps to connect people. One study found that 83% more participants engaged in social activity in greenspace, as opposed to barren space.[41] Participation in community gardens is associated with reduced social isolation, a sense of collective efficacy, and increased social networks, social involvement, and neighborhood attachment.[42-45] Among public housing residents, having green views predicts a

stronger sense of community and more social ties with neighbors and greener surroundings are associated with a greater sense of safety.[37,38]

Recommendations

U.S. Department of Health and Human Services
The 2019 Physical Activity Guidelines advise adults to be physically active with aerobic and muscle-strengthening activities. Recommended aerobic activity may consist of at least 2 hours and 30 minutes of moderate activity, 1 hour and 15 minutes of vigorous activity, or a combination of both every week.[46] Muscle strengthening activities should be done at least 2 days per week to work all major muscle groups.[46] Active adults are less likely to develop many chronic illnesses and have a healthier body size and composition. Both men and women of all races and ethnicities have been shown to benefit from the recommended activity levels. The Physical Activity Guidelines are available at: https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf.

Centers for Disease Control and Prevention:
The CDC encourages adults to participate in both aerobic and strengthening activities several days per week for health benefits. The CDC provides strategies for all ages to get active, available at: www.cdc.gov/physicalactivity/index.html. The CDC also advises adults to engage in healthy outdoor activity, such as walking and gardening. For more information, visit www.cdc.gov/features/VitalSigns/Walking and www.cdc.gov/Features/gardeningtips.

Surgeon General:
The *Surgeon General's Vision for a Health and Fit Nation 2010* report recommends walking outdoors in their communities to promote better health. Americans are encouraged to add walking to daily routines to promote regular physical activity. For more information, visit: www.surgeongeneral.gov/initiatives/walking/index.html.

American College of Sports Medicine:
Exercise is Medicine is a program coordinated by the American College of Sports Medicine to encourage physicians to prescribe, assess, and review physical activity plans for all patients at every visit. Physical activity is recommended to help prevent and manage chronic illness. It has been suggested that patients would be more inclined to exercise if told by a physician. Recommendations on how to exercise safely with a variety of health conditions is provided. For more information, visit www.exerciseismedicine.org.

Conclusion

The power of nature cannot be underestimated. Evidence suggests that nature can improve many aspects of health and decrease the burden of chronic disease. The benefits of nature should be

emphasized by health practitioners, policy makers, housing agencies, and natural resource departments. Access to natural areas and green spaces should be a priority for all people, no matter their age, socioeconomic status, or living environment.

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