

Seeds

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COMMUNITY GARDENS

HEALTH, SOCIAL & ENVIRONMENTAL BENEFITS

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“Cities that build and maintain well-connected, attractive green spaces are likely to have healthier, happier and more productive citizens with fewer demands for health services.”

Braubach et al., Effects of Urban Green Space on Environmental Health, Equity and Resilience

“We are at an exciting time, for both gardens and people. There is an ever-increasing body of scientific evidence that gardens and gardening are good for our physical, mental and social wellbeing.”

Professor Alistair Griffiths, Royal Horticultural Society

“I know from personal experience how gardening helps heal many mental and physical ills. When you are sad, a garden comforts. When you are humiliated or defeated a garden consoles. When you are consumed by anxiety it will soothe you. When the world is a dark and bleak place, it shines a light to guide you on.”

Monty Don, RHS Your Wellbeing Garden

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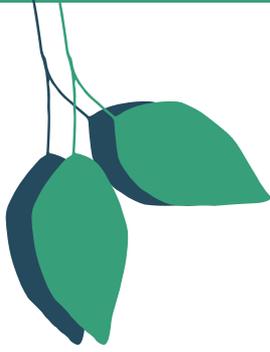
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INTRODUCTION

This report is a summary of research into the benefits of the charity, Seeds for Growth, establishing new community gardens on social housing estates in London. A review of 60 scientific studies, academic research documents and news articles provides persuasive, authoritative and significant evidence demonstrating that community gardens provide health, wellbeing and environmental benefits for people of all ages and diverse socio-economic backgrounds.





ABOUT SEEDS FOR GROWTH

Seeds for Growth is a registered charity which advances the quality of life for people from disadvantaged communities, primarily in London's East End.

Seeds for Growth was established in 2006 by people in Tower Hamlets who volunteered in projects to improve health and wellbeing, particularly for the Bangladeshi community.

Since then, we have established 36 community food co-ops, 35 school fruit tuck shops, regenerated seven community gardens, supported around 100 people annually through a range of services we provide and much more.

We address cultural, social and health issues by creating inspiring progression routes using arts, technology and action learning. We focus on improving health, wellbeing and access to outdoor community spaces.

Our vision is a world where everyone has health, wellbeing and fitness.

We are guided and informed by our belief in and commitment to:

Inclusiveness. We respect people, value diversity and are committed to equality.

Participation. We value and recognise the fantastic contribution of Seeds for Growth staff, volunteers and trustees.

Quality. We strive for excellence through continuous improvement.

Openness. We are committed to a culture of teamwork and collaboration.

Our charitable objects are to:

1. Advance the education of people from disadvantaged communities to improve their social and health issues and economic circumstances.
2. Support unemployed people to increase their self-confidence so enabling them to access work or to start their own business.
3. Improve health by providing dietary information, local fresh food sources and exercise.
4. Promote the conservation, protection and improvement of the physical and natural environment and to advocate for recycling and sustainability practices.
5. Develop training materials that support the rehabilitation of serving and ex-offenders.

ABOUT GREENING COMMUNITIES

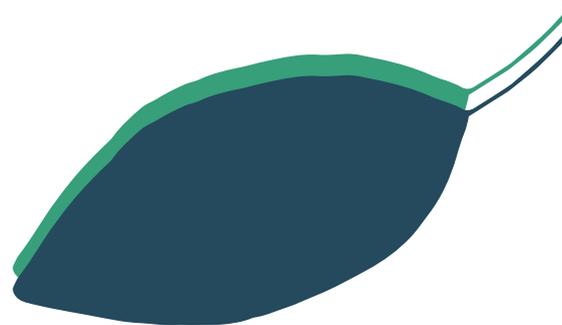
www.seedsforgrowth.org.uk/greening-communities

Greening Communities is a programme through which Seeds for Growth:

- Identifies underused and/or waste land on social housing estates.
- Engages with tenants to determine if they would like a community garden and, if so, what features they would like in the garden.
- Obtains the consent of the landowner to regenerate the land and raises the funds.
- Designs the garden with the tenants.
- Appoints a landscape architect and landscape construction team to bring the vision to life.
- Builds the garden, with tenants volunteering alongside professional builders.
- Supports the tenants to establish, maintain and run their garden.



EXECUTIVE SUMMARY



Greening Communities will unlock the vast amount of underused land located in social housing estates by empowering tenants to transform the spaces adjacent to their homes into new community gardens for them to use, maintain and enjoy.

This report demonstrates that new community gardens will provide a range of benefits to the health and wellbeing of those accessing the gardens and increase social connections between diverse groups and also many environmental benefits.

**IN 2019 THERE
WAS CIRCA 10.5
SQUARE MILES OF
UNDERUSED OR
VACANT LAND IN
LONDON.**

This research supports what we have learned from our experience of regenerating community gardens in London. Community gardens encourage residents to become more socially and physically active and to develop stronger ties to their area. Gardens provide nutritional value through the growing and consumption of organic fruit and vegetables, in addition to relief from stress and urban and sedentary lifestyles. Healthier diets of locally grown food can help prevent or curb poor diet-related ill-health, reduce obesity, lower food costs and reduce food miles. Furthermore, exposure to greater biodiversity can enhance resistance to allergy sensitisation and exposure to nature is proven to assist in clinical and surgical patient recovery.

These gardens provide spaces for community connection between people from different demographics, including people of all ages, families, BAME communities, refugees and migrants, people who are isolated, disabled, neurodiverse, in poor health and who are experiencing mental health issues.

The benefits of community gardens to the environment are also well-documented. They include providing oxygen through photosynthesis, blocking harmful sun rays and providing a cooling effect, and creating vital habitats for insects and birds.



SUMMARY: PHYSICAL BENEFITS

Numerous physiological benefits stem from engagement with nature in community gardens. (1)

Direct benefits include nutrition through eating produce grown in the garden, the promotion of physical activity (2), sedentary relief and reduction in allergy sensitisation due to exposure to certain microbes. Indirect benefits include the pleasure of having a view of a garden or walking through the garden. Additionally, active participation in horticultural therapy and passive reception of therapeutic horticulture can enhance clinical and surgical recovery. (3) Patients' recovery time can be lessened by having direct or indirect access to nature and studies demonstrate that patients experience reduced pain and higher pain tolerance during their recovery. (4)

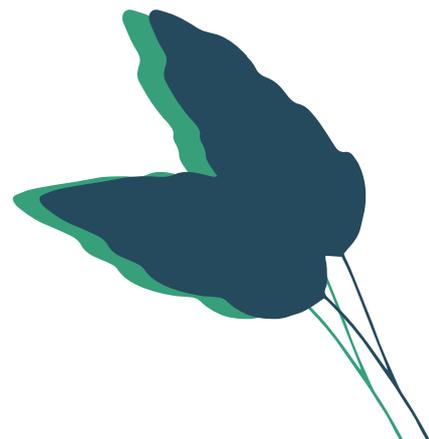
SUMMARY: MENTAL HEALTH BENEFITS

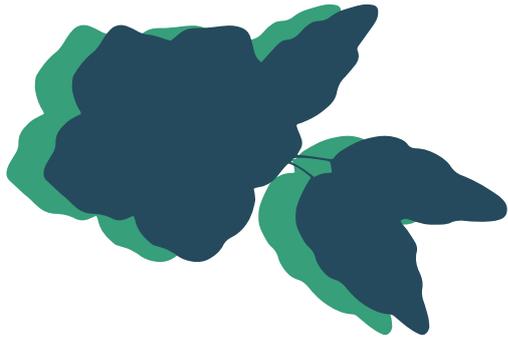
Close proximity to green spaces reduces stress levels, depression and anxiety. (5)

People who spend two or more hours outdoors a week reported being in better health and having a greater sense of well-being than those who did not get out at all. (6)

The satisfaction of keeping plants alive, along with the responsibilities that accompany gardening, provide a sense of purpose and worth. (7)

Additionally, gardening has been shown to be therapeutic. Instead of worrying about the everyday issues, the gardener's mind focuses on the task at hand. (8) Gardening can help people suffering from depression to break down social barriers by facilitating connections with other people, resulting in a reduction in feelings of loneliness and isolation. (9, 10)





SUMMARY: SOCIAL BENEFITS

Community gardens enable people to socialise through gardening and participating in other activities in the space. They reduce isolation and can be beneficial for isolated communities. (11)

The social element of community farm and garden projects was prominent in data gathered from 22 community garden projects in the UK by the Federation of City Farms and Community Gardens in 2007. According to their research “for vulnerable groups, attending the project represented their main point of social contact and provided an important source of support.”

Local allotment projects funded by People’s Health Trust have developed the social network of project participants, among other benefits. One participant of the Windsor Food Street told the Trust “There are no other inexpensive, inclusive places in our area where like-minded people from different backgrounds can come together to socialise and share a hobby”. (12)

SUMMARY: ENVIRONMENTAL BENEFITS

The environmental benefits of community gardens are numerous. Plants filter air and sunlight, provide a cooling effect and absorb sound, thereby reducing noise pollution. (13)

Plant roots draw out harmful chemicals and heavy metals from soil, which likewise absorbs rainwater, minimising flooding and reducing water flow into sewers. Gardens also provide vital urban habitats for insects and birds, and play an important role in pollination.

Additionally, the growing of organic food in community gardens reduces carbon footprints, thereby saving purchase costs and avoiding environmental damage caused by travelling to retailers. (14)



CHILDREN

Numerous studies have demonstrated that community garden-based programmes yield positive results on the health and wellbeing of children.



A recent study explored whether a child's self-discipline could be enhanced by contact with nature, examining whether near-home nature is related to the three forms of self-discipline of concentrating, inhibiting initial impulses and delaying gratification. (15) The study showed that the greener a girl's view is from home, the better she scored overall on all different forms of self-discipline. (16) However, the results for boys heavily contrasted the results for girls as it did not show any strong links between near-home nature and the various forms of self-discipline. (17) This was hypothesised to be because boys have less contact with nature immediately outside their homes as they typically play in nature farther from home than girls. (18)

Data from a 2004 controlled experiment in the United States, which involved 20-minute walks in three controlled environments, showed that children performed better in attention activities after walking in the greenest environment of the three settings. (19) Thus, affirming that exposure to natural settings was very effective in reducing attention deficit symptoms in children. In particular, the study found that green outdoor activities were beneficial in reducing Attention Deficit and Hyperactivity Disorder (ADHD) symptoms among boys and girls aged 5 to 18 years old.

Another study in Lithuania identified a significant positive relationship between children's mental health problems (total difficulties, hyperactivity, peer and conditional problems) and their proximity to city parks. (20) The findings demonstrated that green spaces most significantly benefited the mental health of children in lower income groups. (21)

In a community garden-based pilot programme, Growing Healthy Kids, 95 children aged two to 15-years-old participated in weekly gardening sessions, a 7-week cooking and nutrition workshop and social events for parents and children. (22) Height and weight data were collected from the children before and after the programme. By the end of the programme:

17% of obese or overweight children had improved their BMI classification.

All children that had normal BMI classifications maintained that classification.

Parents reported an 146% increase in the availability of fresh food led to a consumption increase of fruit by 28% and vegetables by 33%.

CASE STUDY
NORTH
CAROLINA,
USA

CASE STUDY
MICHIGAN,
USA

In Flint, Michigan, community gardens were used to provide youths, especially those from lower income families, with constructive activities outside of school. (23) A 2008 study of the impacts of these activities indicated that the gardens positively influenced the development of the youths by providing them with opportunities to cultivate the assets of constructive activities in the garden, to make positive contributions to society, have relationships with other youths and adults, gain interpersonal skills and cognitive and behavioural competencies and improve their knowledge of nutrition.

WOMEN

Community gardens play a significant role in sustaining and improving the health and wellbeing of women.



The Canadian Healthy Infant Longitudinal Development Study examined the relationship between the amount of green space around a mother during pregnancy and a positive birth outcome. (24) The research examined 2,510 births in Vancouver, Edmonton, Winnipeg and Toronto, Canada. The study showed a correlation between birth weight and green space, the higher the exposure to green space during pregnancy, the higher the birth weight. Additionally, a study of 39,132 live births from a registry birth cohort in Tel Aviv, Israel demonstrated that an increase in access to green space significantly increased birth weight and decreased the risk of low birth weight. (25)

Research also demonstrates that being closer to nature has a positive effect on stress levels and the immune systems of women. A UK study showed that women who have little or no greenery near their homes had higher stress levels than men in the same circumstances. (26) A study of 13 women in Japan demonstrated that 'forest therapy' had a positive effect on the immune systems of the participants, who spent three days and two nights in forest sites in Japan. (27) After walking in the forest, blood samples were taken from the participants, the results of which showed an increase in their immunity. Green plants increase the number of healthy hormones in the body, which reduces stress levels and occurrences of cardiological diseases. (28) Research was also conducted on middle aged women in Taiwan to examine how greenery stimulates the senses in women. (29) Results showed that even when the weather was rainy and chilly, a visit to an outdoor space had a positive effect on the mental health of the women, who reported that negative feelings like stress, anxiety and tension were reduced after their garden visits. Another study demonstrated that women who lived near green spaces had a 12 percent lower mortality rate than those living in areas which have a smaller number of green plants and gardens. (30)

A community garden can also increase personal safety for women. Women who walk or exercise on streets often face harassment, while parks can afford a safer, traffic-free environment. Women in a 2006 study of use of a New York City Park said they "felt freer to dress comfortably and less susceptible to unwelcome remarks." (31)

ELDERLY PEOPLE

Going outdoors locally maintains physical function in elderly people and enables them to integrate with their neighbours and to increase the strength of their social network.



Is now more difficult for people of all ages to access green spaces due to increased urban land development, and the resultant loss of public urban space. Consequently, people are less connected to nature and to each other. A meta-analysis of 143 studies with 290 participants conducted by Norwich Medical School demonstrated that green space exposure led to statistically significant reductions in diastolic blood pressure, salivary cortisol and heart rate. (32)

Additionally, walking in nature boosts short term memory more than walking elsewhere. (33) The Swedish University of Agricultural Sciences conducted a study which established that power of concentration increases for seniors after a visit in a garden outside the home as compared to resting indoors in their favourite room. The experiment involved taking blood pressure and pulse rate of two randomly selected groups of elderly people, of which one group was in a garden and the second group indoors in their favourite room. The experiment established that the group located in the garden gained improved power of concentration. (34)

Another study demonstrated a 20% improvement in the attention span and memory of older people after spending only one hour in a natural environment. (35)

Other studies have established the benefits for older people of being outdoors in the reduction of pain and stress, modulation of agitation and lessening of falls. (37) Ageing joints often become stiff as a result of arthritis, therefore walking or working in a garden can significantly increase an older adult's flexibility, lower blood pressure and cholesterol and reduce the risk of heart attack or strokes. (38) The physical activity of gardening can help increase balance and motor skills and has been shown to speed up the healing process of an elderly person recovering from illness or disease.

Spending time outdoors increases levels of vitamin D, which tend to be low amongst older adults. Low levels of this nutrient are often linked to pain in muscles and bones, inflammation, higher risk of Type 1 diabetes and several types of cancer. Moreover, higher levels of vitamin D can improve immunity by boosting the count of white blood cells. (39)

Older people who enjoyed gardening in their youth may have fond memories. The nostalgia associated with these memories may connect those with dementia and other types of memory loss to their past and stimulate impaired brain regions. (40)

Older adults are usually less likely to travel to green spaces that are a long distance from their home, which is why improving their immediate surroundings by creating small urban green spaces is important, (41) particularly since older people are likely to benefit from spending more time in community gardens on a regular basis. (42)



CASE STUDY UK

In 2018 Louise Baker from Your Health Limited, which runs residential care homes across the UK, introduced The Wildlife Trusts' 30 Days Wild project for elderly residents to engage with nature. (36)

The participants enjoyed picnics, potting plants, butterfly gardening and many other opportunities to engage with nature. Numerous positive impacts on residents' health was recorded.

For example, residents that suffered from dementia or other physical and mental disabilities became less agitated as they increased their time outdoors. One home manager observed that there were far fewer instances of falling during the project period; only four, compared to an average between five and 13 in the five months previous.

BAME & DISADVANTAGED GROUPS

Often deprived urban areas have poor air quality, negatively affecting mental and physical health.



In England, a study of the association between green space and mortality rates found that populations near greenery had the lowest level of health inequality. (43) One study found that the use of urban green space was a significant predictor of general health for African Caribbean, Bangladeshi, Pakistani and other BME groups. (44)

Disadvantaged people tend to cope with increased heat in natural ways as they cannot afford air conditioning and other expensive devices. (45) Local gardens can help disadvantaged people to cope with the increasing heat by providing a cooling effect.

A gardening program for disadvantaged people, Community Greening, has been running in New South Wales since 2000. (46) It has almost 100,000 participants and has established 627 community gardens.

91% of the participants who were surveyed felt the programme had benefited the community greatly. 85% said that the program had a positive effect on their health, 73% reported that they were exercising more due to the community gardens and 61% said they were eating better. The programme even helped one participant to stop smoking.

**CASE STUDY
AUSTRALIA**

REFUGEES

Gardens support refugees to rebuild their lives and to improve their mental health. (47)



Gardening acts as a source of therapy, improving the physical and psychological wellbeing of refugees and asylum seekers including those who have suffered torture and other abuses. Everyday activities such as gardening are a way to reconnect with positive and happy memories of home as well as being with other people, enabling refugees and others to reduce isolation and build trust. In this way, refugees may start to accept their new country as their new, potentially permanent, home. Refugees often have poor diets and community gardens can provide them with an excellent source of low cost or free organic food.

CASE STUDY
UK

Room to Heal is a UK charity that supports people who have had to flee persecution, torture and indefinite detention, “born out of the wish of five refugees desperate for some green space in which to feel free”. Initially, a corner of a local community garden was found where, every week a group of refugees and asylum seekers, met to talk in a therapy group, eat and work in the allotment. Room to Heal now offers a weekly therapeutic gardening group at the community centre where they are based. The community garden is the social centre of the range of services it provides, from physical and psychological therapy to practical assistance with housing and legal protection. They say, “nature-informed therapy can allow the therapeutic encounter to work as a vehicle for engendering ecological or nature conservation awareness and expand individual points of view to encompass social and collective perspectives.” (48) The food grown by Room to Heal’s members is often eaten at communal meals and the garden is a source of pride and healing for members, one of which said: “I had not known Spring before. Plants are living things and so am I. Very often I forget that I have a life, or I am living!!!! It’s amazing to see the plant grow and bear beautiful fruits.”

GENERAL HEALTH AND WELLBEING

The provision of urban gardens encourages and facilitates physical activity outdoors. (49)



Direct benefits derived from nature, via community gardens, include nutrition from eating plants grown in the garden, physical exercise, sedentary relief and reduction in stress, symptoms of illness and allergy sensitisation. Indirect benefits include the passive reception of nature through, for example, simply having a view of or walking through a garden. Direct and indirect, active and passive participation in nature is linked to physiological improvement.

The presence of a garden promotes physical activity. (50) Gardening for three or four hours can burn as many calories an hour in the gym (51) and gardening exercise can make people feel better by releasing endorphins. (52) Gardening also strengthens musculature and bones. (53) Exercising regularly is beneficial for a range of physical and mental health problems, and often contributes to improving other aspects of people's lives, including helping them sleep better or lose weight, which can very often boost self-esteem. Community gardeners have a better diet and regard their health more positively. (54)

Over 50% of people gardening met national guidelines for fruit and vegetable intake and reported 30% more physical activity than those who did not garden. (55) Additionally, physical activity performed in green spaces is more restorative and beneficial than physical activity performed in non-natural environments. (56)

The grassroots nature of community gardening initiatives also provide opportunities to learn valuable skills and knowledge, including about health and nutrition. A 2018 University of Glasgow study into community gardens in Glasgow found that many garden volunteers had gained skills and knowledge through the bottom-up processes of collective learning, in particular about how to organise, conduct and take minutes of meetings. (57) They noted that top-down government initiatives about healthy living had failed to generate the same level of involvement, and advocated for the grassroots community-led garden approach as a way of promoting health and wellbeing. Additionally, all the groups interviewed for the study emphasised the importance of recovering derelict spaces for community use.

MENTAL HEALTH

It has always seemed like common sense that spending time in nature is good for us.



Many studies have shown that gardening can reduce stress and associated depression in many different ways. Leisurely outdoor activities prevent diseases, improve physical health, reduce anxiety, depression and increase positive emotions. A lack of access to and participation in activities in natural environments has been shown to correlate with physical and mental ill-health.

Community gardening connects people to their community, which can be beneficial for people suffering from depression. Instead of cutting themselves off from others, which often lowers mood and further increases the risk of isolation, they may engage in conversation around plants and gardening, which later can lead to breaking down social barriers and building trust. (59)

Forestry England has gathered data from a series of studies that provide strong evidence of mood and attention span improvement and improved psychological stress recovery as a result of regular visits in a natural environment. Other studies too have demonstrated that walking among trees reduces the level of cortisol in a human body which is a hormone associated with stress. (60) Data collected from 20,000 people in England from 2014 to 2016 demonstrated that those who spent two hours or more outdoors reported being in better health and having a greater sense of well-being than those who spent very limited time outdoors. (61)

Caring for plants and the satisfaction of keeping plants alive, along with the responsibility that comes with gardening, provides a feeling of success and pride. For people suffering from mental health issues, it can provide a sense of purpose and worth. (62) For those living with anxiety, often associated with focusing heavily on the past or worrying about the future, spending time outdoors and admiring the dynamic cycle of nature can increase appreciation of the everyday and focus on the present. (63) Additionally, plants release oxygen which improves brain function (64) and endorphins or "happy hormones" released through physical activity can both reduce pain and enhance mood and create general feelings of wellbeing.

Gardening can also be a way of expressing anger and frustration as certain aspects, such as digging or cutting, allow a person to experience emotional relief. Additionally, the satisfaction that gardening provides can be very therapeutic, as instead of worrying about the everyday, the gardener's mind focuses on the tasks at hand. (65)

In 2019, the Cornbrook Medical Practice in Hulme, Manchester, launched a successful programme of communal gardening for patients suffering from anxiety, depression and loneliness. (66) The programme is backed by Manchester City's health commissioners as part of a move towards social prescribing and holistic approaches to improve wellbeing.



Such is the benefit of community gardens to those living with mental ill-health, Sydenham Garden in London received 441 patient referrals from health professionals in 2018-19. (58) Run by the Sydenham Garden Charity Trust, the garden is the site of weekly therapeutic sessions in addition to gardening and other activities that provide a form of “green therapy”. Typically, referrals last between six and 12 months, during which time the beneficiaries, known as ‘co-workers’ participate in gardening, arts and craft, cooking and opportunities to achieve qualifications. For those with Dementia, these activities are supplemented with Cognitive Stimulation Therapy.



PATIENT RECOVERY



Access to nature, even indirectly, has positive effects on patients recovering from a broad range of physical and mental ailments. (67) Research has demonstrated the clinical and therapeutic benefits of nature for patients. Hospital patients with plants in their room display less fatigue and pain, shorter hospitalisation, less anxiety and higher hospital and room satisfaction. (68) Gallbladder post surgery patients with a view of nature had shorter postoperative hospital stays, made fewer negative comments and took fewer potent analgesics. (69)

Nature experiences create positive distractions leading to better pain tolerance. (70) Active participation in horticultural therapy and passive reception of therapeutic horticulture can support clinical and surgical recovery. (71) Cardiac patients showed better heart rate management after exposure to nature as well as patients recovering from gallbladder surgery. (72)



OBESITY

Community gardens bring many dietary and health benefits that can prevent and curb obesity. A survey completed by 776 adults suggested that community gardeners were 3.5 times more likely to meet their recommended daily intake of fruit and vegetables. (73) A 2013 study examined BMI data from 198 community gardening participants in Utah, USA, and found that community gardeners had significantly lower BMIs compared to their neighbours who were not community gardeners. (74)

A 2018 study evaluating the relationship between green space and BMI in Germany found that participants with the lowest mean BMI lived within a distance of 800 meters to a park or forest, (75) and a 2018 study from Ireland demonstrated that people who lived furthest from green space were 13.3% more likely to be obese than those that lives nearest to green space. (76) The latter study also noted that living near to green space offered no advantages unless it was open and easy to access at appropriate times.

HORTICULTURAL THERAPY



Horticultural therapy and therapeutic horticulture provide examples of the healing potential of exposure to nature. Horticultural therapy is the active use of plants and nature, by trained professionals, as a medium through which certain clinically defined goals may be met. (77) The therapy can be administered in a healthcare facility or in a community setting. (78) Therapeutic horticulture, on the other hand, is the process by which individuals may develop well-being by using plants and horticulture through both passive and active involvement." (79) Community gardens can support both clinical horticultural therapy and therapeutic horticulture and it is widely accepted that people who live in greener areas benefit from improvements in their mental health. (80) One study on recovering cardiac patients showed that horticultural therapy led to better mood, stress reduction and better heart-rate management. (81) Another study of patients with chronic musculoskeletal pain, under a horticultural therapy programme, experienced an increase in both mental and physical health as well as an improved ability to cope with chronic pain. (82)



ALLERGY RELIEF

A key factor in allergy sensitisation is due to lack of exposure to the natural environment. In the late 19th century, Charles Blackley described hay fever as a disease of the 'educated class,' resulting from living in urban areas. (83) Children growing up on traditional farm lands, for example, are protected from asthma, hay fever and allergy sensitisation (84), and research in German and Austrian farmlands demonstrates that children who grew up in the countryside had less allergy-related diseases in later life. (85) Although the "Hygiene Hypothesis," which suggests that early exposure and infections boost the immune system in later life, has been disproved, research indicates that greater biodiversity in and around the home is linked to reduced asthma and allergy sensitisation. For example, in a 2014 study of several urban environments in the US, children with the highest exposure to specific allergens and bacteria during their first year were least likely to develop recurrent wheeze and allergic sensitisation. (86) Additionally, a 2012 study of teenagers in Helsinki demonstrated that greater biodiversity in and around a home, in which a teenager has lived their whole life, is linked to reduced asthma and allergic reactions. (87) Conversely, those living near bodies of water or in urban centres had significantly higher levels of allergies.

SOCIALISING



A community garden provides a place for people to socialise with their peers and reduces feelings of loneliness and isolation. Gardens are a space for community connection as gardening appeals to many people across demographic lines, thereby providing an opportunity for people to meet and interact. Community gardening allows people to connect to their community and supports those suffering from depression to break down social barriers and to build trust, which may result in a reduction of the feeling of loneliness and risk of isolation. (88, 89) Social and therapeutic horticulture projects in community gardens provide a valuable activity for groups of people experiencing exclusion or isolation. (90) For example, fieldwork conducted in a Cleveland, Ohio, garden named "The Kentucky Garden" demonstrated that bonds were created between members of the garden through the support and assistance offered by more experienced members to newer members. (91)



ENVIRONMENTAL BENEFITS

All plants and trees are very beneficial for the environment as via photosynthesis they filter the air, taking in carbon dioxide and emitting oxygen. Plant roots remove harmful chemicals and heavy metals, making the soil healthier and holding soil in place, thereby reducing soil erosion. Plants also create a cooling effect through the process of transpiration.

Gardens and parks also help to reduce traffic and other noise pollution by absorbing sound. Plant leaves, bark and stems absorb sound at different levels because of their surface dynamics, creating a peaceful and quiet environment.

Gardens and parks facilitate pollination, increasing biodiversity and the available food sources on Earth. Birds can help to keep away unwanted insects and vermin from gardens. Plants regulate rainwater, acting like a sponge, thereby reducing flooding and decreasing the volume of water entering the sewerage systems.

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