

# THERAPEUTIC BENEFITS OF GARDENING AND ACCESSIBLE GARDEN DESIGN

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## INTRODUCTION

You may have seen a bumper sticker or shirt or heard someone say “gardening is my therapy” in the past. Many people when asked why they garden state reasons such as “I love plants,” “being outside,” “nature” or “it makes me feel good when I am in the garden.” The National Gardening Survey reports that over 55 percent of households in the United States garden (National Gardening Association, 2022). There are numerous therapeutic benefits of gardening. This publication will focus on the therapeutic benefits of gardening and offer information about accessible garden design so anyone can begin gardening at home.

## THERAPEUTIC BENEFITS OF GARDENING

### Physical health improvements

There are many physical benefits of gardening, and these benefits can come in many forms. Gardening provides meaningful movement and physical activity. “Working in the garden restores dexterity and strength, and the aerobic exercise that is involved can easily use the same number of calories as might be expended in a gym” (Thompson, 2018, p. 202). Not many people would think that gardening is exercise; however, gardening can burn just as many calories, if not more, than some workouts. The Centers for Disease Control and Prevention (CDC) lists gardening as a moderate physical activity (CDC, 2022). Overall, gardening allows people to burn calories and provides cardiovascular improvements. Gardening also provides improvement of both upper and lower body strength while the joints and muscles are being worked. Furthermore, this movement can lead to the prevention of arthritis. Being outside working with plants allows for bacteria exposure and unconsciously builds one’s immune system (Cannon, n.d.; Muireach et al., 2023). Exposure to vitamin D while being outside gardening, especially in the warmer months, is another very important health benefit that gardening provides.

### Improved mental health

Not only does gardening provide therapeutic benefits for our physical health, it also provides many benefits for our mental health. Past research and studies have shown that the implementation of gardening, even just pictures or views of gardens, has helped the recovery of people all around the world. According to research from the Journal of Mental Health and Clinical Psychology, there have been associations demonstrated between the proximity of trees, green spaces and lower levels of stress, anxiety and depression. It has also been found in several countries that the use of green space reduces health inequalities (Thompson, 2019). Not only has research on gardening shown to reduce health inequalities, it also provides a multitude of benefits, including psychotherapeutic ones such as a positive mood, provides food security due to lack of distress and suicidal ideation, reduces mental disorders, and provides social support and it can be used as a leisure activity. Therefore, gardening can benefit anyone and they may not even realize it. The benefits of gardening have also shown to prevent the onset of dementia (Thompson, 2019). Not only have many therapeutic benefits from gardening been discovered through research, according to Ainami et al. (2022, p. 2), “clinicians should consider gardens as an important and promising health intervention.”

### Stress relief and increased relaxation

Gardening provides many benefits both physically and mentally. One area where gardening provides these benefits is through stress relief and increased relaxation. Mindfulness and just slowing down is very important for people due to the culture of living very busy and fast-paced lives. Therefore, gardening as a form of therapy can provide the perfect outlet for stress relief, mindfulness and building self-esteem through accomplishment. In today’s society, our world demands more and more from people, creating a need to unwind and relax. According to information from the American Institute of Stress (AIS), 45 minutes of gardening can reduce stress and cortisol levels. Cortisol is a hormone produced by the body in times of stress (Boyd, 2019). Other research has shown that gardening can also reduce depression and anxiety (Soga et al., 2017). Directly related, mindfulness is a very common and popular way to combat stress and anxiety. Everyone wants to have times of relaxation in their lives, and what better way to do this than through gardening. Gardening can look different for everyone, and the benefits may vary from person to person.

## **THERAPY VS. THERAPEUTIC**

While these two terms may seem like the same thing, just switched around, horticultural therapy and therapeutic horticulture are defined differently by the American Horticultural Therapy Association (AHTA). Both terms are relatively similar, but the differences are important when talking about the therapeutic benefits and treatment protocols a person is receiving through gardening.

### **Horticultural therapy (clinical, active treatment, supports treatment goals)**

Horticultural therapy is “the participation in horticultural activities facilitated by a registered horticultural therapist to achieve specific goals within an established treatment, rehabilitation, or vocational plan. Horticultural therapy is the active process, requiring an established treatment plan” (AHTA. n.d.).

### **Therapeutic horticulture (active or passive, supports program goals)**

The definition of therapeutic horticulture is “the participation in horticultural activities facilitated by a registered horticultural therapist or other professionals with training in the use of horticulture as a therapeutic modality to support program goals. Therapeutic horticulture is the process through which participants enhance their well-being through active or passive involvement in plant and plant-related activities” (AHTA, n.d.). Therapeutic horticulture can be part of an overall health program or offered in community settings.

## **POPULATIONS WHO CAN BENEFIT FROM THERAPEUTIC GARDENING**

### **Veterans**

As of 2021, there were over 19 million veterans in the United States, with nearly half receiving some form of disability assistance (U.S. Census Bureau, 2021). However, that number likely does not reflect the actual number of veterans struggling with disabilities such as Post-Traumatic Stress Disorder (PTSD), anxiety, depression, mental health and physical disabilities from trauma sustained while serving. These disabilities can lead to a multitude of other problems such as increased domestic violence, child abuse, homelessness, unemployment and substance abuse, further perpetuating the lack of sufficient support for those who have sacrificed for our country. A large percentage of veterans come from rural communities, and many have expressed the desire to find meaningful work (Fleming, 2015). Additionally, being in the military has equipped them with the skills necessary to be a productive member of the workforce, so farming training programs have emerged as a way to meet the agricultural demands of our nation and provide employment to transitioning veterans. Gardening and agriculture careers and activities can be therapeutic for veterans by providing both physical and cognitive benefits.

The United States Department of Agriculture (USDA) and other organizations are committed to employing, educating and empowering veterans in the agriculture field. Purdue University has reported that there are thousands of jobs available in agriculture but not enough people with the education to fulfill them. Many of these positions can be filled with a bachelor's degree or through certificate programs (USDA). It is imperative that these programs are easily accessible to veterans, so they can receive the necessary education to work these jobs. This benefits veterans by providing them with a stable income and the country's agricultural industry by employing qualified and devoted workers.

### **Mental and behavioral health**

Gardening does more than just provide physical improvements, it can also have significant positive effects on mental and behavioral health. Researchers at Texas A&M University report that gardening and plant care can help distract the mind, putting it into a quieter and more relaxed state. This is incredibly advantageous for people with mental health disorders such as bipolar disorder, schizophrenia, obsessive compulsive disorder and others. Gardening can provide an outlet for these people to remain grounded and quiet their mind. These disorders can cause an array of symptoms that lead a person to lose touch with reality, so horticultural therapy and gardening can give them the tools they need to ground themselves and remember what is real and what is not (Schattenberg, 2022).

Additionally, gardening can provide a sense of pride and accomplishment, further fostering a positive relationship with mental health. Some people with mental health disorders feel as though they do not have anything positive in their life or that they do not have anything to live for, and gardening can give them something to be proud of as well as something for them to take care of and continue to work on and grow.

## **ACCESSIBLE GARDEN DESIGN**

There are many ways to design or adapt a garden so that it is accessible to someone, despite any physical restraints that they may have. When using gardening as a form of therapy, it is crucial to ensure that the environment is accessible to all participants. The use of raised garden beds and accessible tools is very necessary to achieve participation for all people.

## Basic characteristics

Therapeutic garden characteristics are very important to ensure that the best practices are set and providing their specific benefits. The gardens used for therapeutic purposes must be accessible to people who will be using the space. Be sure to consider people who use with walkers, wheelchairs or other assistive devices. Pathways must be wide enough to accommodate wheelchairs or two people walking side by side and smooth enough to allow all mobility aids to be used on them. As stated by the American Horticultural Therapy Association, when these modifications are ensured, it eases the task of gardening for all participants and also enhances their experience (Hazen, 2013).

## Raised beds (height)

To ensure adaptability, you can equip with raised garden beds. This adaptation allows for participants to see the plants in the beds, study what they are looking at and work in the garden beds. Ensuring that the garden beds are raised means that anyone in a wheelchair or walker is able to work right at the height of the garden beds. This allows for the garden to be brought to the gardener and the surface level of the garden bed is firm and free of any obstacles. Stated by the Master Gardener Foundation of Grays Harbor/Pacific County, it is very important that the width of the raised beds do not exceed half the reach of the gardener so that they can reach everything in the garden bed, even from a sitting position (Sanderson). There are a number of raised bed garden kits available on the market today. Be sure to read reviews and keep in mind an understanding of your own unique needs and preferences when choosing a raised bed system.

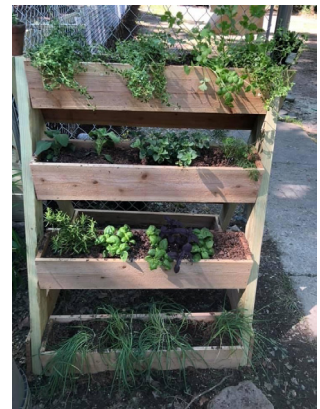
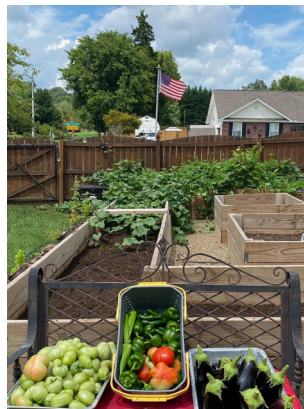
Some common materials for raised beds include the following:

**Wood** — Untreated wood is recommended. Cedar is often the wood of choice for raised gardens beds because of its durability.

**Plastic** — There are many raised beds made from plastic and provide different colors and styles. Plastic can tend to break down over time in the sun. Some concerns may be related to microplastics in soil as plastic raised beds break down. When using plastic beds, be sure to monitor for cracks and breakdown of the plastic and replace the raised beds when needed. Be aware that darker colored plastics may get hot to the touch in the sun.

**Stone/brick** — Bricks or stones may be a more expensive option. They are durable and will hold up better over time. Be aware that individuals with skin issues may be more likely to have abrasions and scrapes when leaning up against stone or brick raised beds.

**Metal** — Gardens beds can be made out of metal. When using metal, be sure to use products that were designed for raised garden beds. If you are modifying other metal systems such as animal feeding troughs, be sure to smooth edges to reduce the chance of getting cut. Be aware that metal may get hot to the touch in the sun.



*Differently shaped and sized raised garden beds for easier access.  
Source: Frontline Gardens*

## Adaptations (accessible tools)

When using gardening as a therapeutic intervention, it is also very important to have accessible tools. Not everyone will be in a wheelchair or walker, but many people may have strength and grip issues. Tools used for gardening can be adapted to fit anyone's needs, such as back, hip, leg, knee, arm or hand issues, assisting anyone to garden. Many tools can be purchased lightweight so that they can be more easily used for those with grip and strength issues. Another adaptation is larger-grip tools, with bigger handles that are far easier to grip and hold than something smaller. Sometimes people also need tools with longer handles due to poor hip mobility, back pain or range of motion. No matter what physical limitations people may have, there is always a way that equipment can be adapted so they can participate in gardening, allowing them to gain from its many health benefits. Start planning your garden and implement accessible design ideas.



*Adaptive gardening glove to help with grip strength.  
Source: UT Gardens*



*Two different easy grip long-reach tools.  
Source: UT Gardens*



*Easy grip arm support cuff, attached to gardening fork (Left). Easy grip trowel, (Right).  
Source: UT Gardens*



*Adaptive gardening glove strapped to easy grip trowel used to help grip strength issues.  
Source: UT Gardens*

## CONCLUSION

Gardening has many benefits, from beautifying your home to providing fresh fruits and vegetables to enjoy. There are also numerous therapeutic benefits for any gardener that include physical activity, stress reduction and overall health and wellness. One of the unique aspects of gardening is that you can grow plants anywhere. If you own or rent a home, you can create a garden oasis to enjoy, or, if you live in an apartment, you can look for community gardens to volunteer at or reserve a garden plot to grow your own plants. You can also find many ways to grow inside including houseplants, as well as other container gardening techniques. Below is a list of additional recourses and readings to further explore the therapeutic benefits of gardening.

## ADDITIONAL RESOURCES

**American Horticultural Therapy Association** — [www.AHTA.org](http://www.AHTA.org)

AHTA is the national organization advocating for the development of the horticultural therapy profession and the practice of horticulture for human well-being. AHTA supports the professional development, education and expertise of horticultural therapy practitioners.

**FrontLine Gardens** — <https://frontlinegardens.org/>

FrontLine Gardens is a non-profit organization committed to providing therapeutic gardening resources, both equipment based and therapy based, to our Nation's Military Veterans and Law Enforcement Officers. It is provided to those injured in the line of duty and/or those suffering from Post-Traumatic Stress Disorder (PTSD). Therapy at Frontline Gardens is promoted through gardening in a positive manner and also in cooperation with other organizations to provide for clients' needs when successfully beginning rehabilitation.

**National AgrAbility** — <http://www.agrability.org/>

The National AgrAbility is a national program focused on enhancing the quality of life of farmers, ranchers and other agricultural workers with disabilities. They provide many services and information including an assistive technology database called The Toolbox, training events offered around the country, information about funding assistance, and resources for veterans and beginning farmers.

**New Farmer Academy** — <https://www.tnstate.edu/extension/NFA.aspx>

If you are a veteran and interested in learning more about farming, consider taking part in the New Farmer Academy. This academy is a seven-month certificate program designed for individuals with an interest in becoming agricultural entrepreneurs. Clients for this academy include those who are new to agriculture, those transitioning into agriculture or individuals looking for a post-retirement opportunity. New Farmer Academy focuses heavily on teaching concepts, providing information and facilitating the hands-on experience needed to be successful in the agricultural business.

**Tennessee AgrAbility Project** — <https://agrability.tennessee.edu/>

Tennessee AgrAbility educates and assists Tennessee's farmers, farm workers and their family members that have disabilities so they can increase their independence. The mission of Tennessee AgrAbility is to enhance and protect the value of life and preserve livelihoods for farm families touched by disability. Tennessee AgrAbility provides services such as home and farm assessments to identify accessibility and safety, health and safety education to reduce secondary injuries, planning adaptations that increase independence and productivity, link families to sources of financial assistance and support networks, and more.

**The Southern Ag Exchange Network (SAGe Network)** — <https://southernagexchange.org/>

The SAGe Network is the Southern Region effort of the U.S. Department of Agriculture's Farm and Ranch Stress Assistance Network (FRSAN), which is made up of four regional groups charged with addressing heightened stress and elevated suicide rates in rural farming communities. By coordinating resources to alleviate stressors, the SAGe Network supports the overall well-being of people and is breaking the stigma of mental health in the agriculture world.

## FURTHER READING

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Marcus, C. C., and N. A. Sachs. 2013. *Therapeutic landscapes: An evidence-based approach to designing healing gardens and restorative outdoor spaces*. John Wiley & Sons.

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## FURTHER TRAINING

The University of Tennessee offers an online Horticultural Therapy Certificate. For more information about this program, visit <https://plantsciences.tennessee.edu/horticulturaltherapycertificate/>.

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