



2012

A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm

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A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm

by

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A Scholarly Project

Submitted to the Occupational Therapy Department

of the

University of North Dakota

In partial fulfillment of the requirements

For the degree of

Master's of Occupational Therapy

Grand Forks, North Dakota

May 12th, 2012

This Scholarly Project Paper, submitted by Andrea Hensrud and Gregory Holubok in partial fulfillment of the requirement for the Degree of Master's of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

Faculty Advisor

Date

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Title A Lifetime of Work: A Guide to Health Promotion and Wellness
 on the Farm

Department Occupational Therapy

Degree Master's of Occupational Therapy

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ACKNOWLEDGMENTS

The authors would like to thank everyone in the Occupational Therapy Department at the University of North Dakota. We would also like to thank our family and loved ones for supporting us. We would especially like to thank Carla Wilhite, MNM, OTR/L who was our advisor for this project. You provided us with guidance and support throughout the entire process. The knowledge you have on agriculture and rural health greatly influenced the outcome of this project. Thank you once again for your help with this project it will not be forgotten.

Abstract

The purpose of this project is to develop a guide to health promotion, wellness and adapting to life changes on the farm from an occupational therapy perspective to enhance quality of life for aging farmers and rural community dwellers. The authors completed a focused literature review on topics related to health promotion, wellness, adapting to life changes, making changes and aging in place. Data was collected through an extensive study of relevant information through professional journals, clinical text books, class discussion and related state and national associations. Upon completion of the review of literature, it was determined that older adults would benefit from resources guiding their continued participation within their own contexts resulting in an increase in quality of life.

The guide to health promotion and wellness is designed within the foundation of the Ecology of Human Performance (EHP) model and the Seven Dimensions of Wellness model for aging individuals on the farm. EHP provided a framework for interventions of adapting/modify, altering/ preventing (further problems) within the environment by looking at the person, task, context, and person-context-task interaction. The Seven Dimensions of Wellness (Witmer and Sweeney, 1992) encompasses a greater depth of the experience of the individual in all dimensions of his or her life. These dimensions include: social, emotional, spiritual, environmental, occupational, intellectual, and physical dimension. The Seven Dimensions of Wellness is being used within the product as a way to incorporate the holistic view of our consumers and provided a deeper

understanding of the aging adult. The resulting guide is a self-assessment tool to be used by farmers to promote longevity while living on the farm. It addresses issues related to aging in place, how to survey the farm, and the importance of accessibility and participation within a chosen context. The guide is designed to be disseminated directly to working farmers, or provided by other healthcare and non-healthcare professionals working with farmers.

This guide is tool for aging individuals, family/caregivers, and related professions working within the rural community. The goals of the guide are two-fold: (1) To increase the quality of life in aging farmers by empowering them to make the appropriate changes necessary to successfully age in place, and (2) to be used by all disciplines/professions in a variety of contexts working with aging farmers.

CHAPTER I

INTRODUCTION

In a survey conducted by the American Association of Retired Persons (AARP) (2011) on aging Americans 50 years and older; 88% of the participants responded that it is extremely or very important to have services that promote successful aging in place. However, only one in six people have made changes to their home that would allow them to successfully age in place (O'Neil, 2008 as cited in AOTA, 2012b). In another study by Rioux (2005), 114 women between the ages of 72 to 86 years were surveyed to assess the person's general well-being in living in their home. The results indicated even though many women were provided with suggestions from skilled medical professionals on ways to accommodate their home, only 21% of them actually modified their living environment. These results indicate that despite receiving recommendations on home modifications, older adults may be failing to make appropriate accommodations. This is believed to be because of lack of education on home modifications or lack of resources available to older adults.

Aging adults in the rural setting have limited support to age in their natural context successfully (Averill, 2003; Mabuza, Poggenpoel, and Myburgh, 2010) The availability of having a guide to help aging adults apply prevention methods or strategies in their everyday life at home can decrease their risk of unnecessary injury or fall, allowing them to continue to age in place (AOTA, 2012b). Right now, older people leave

their home environment to receive care due to the natural effects of aging or due to a fall (Aitken, et al., 2010; Corman, 2009). This may be because their home or environment does not support the natural course of aging. Research indicates that once an older adult leaves their home for healthcare, one-third discharge to definitive care (i.e. long term institutional care) because they cannot live independently in their home (Aitken, et al., 2010). Also, people living in rural and agricultural communities do not have the same access to health information and health resources as urban/suburban dwellers (Mabuza, Poggenpoel, and Myburgh, 2010). Presently there are limited resources available for aging adults in rural communities to assist with “aging in place”. The unique lifestyle, workplace, and familial contexts of an aging farmer must also be taken into consideration when designing health information that is culturally competent.

The authors’ product titled *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm* is designed to aid in supporting aging adults to return or stay in their home. The guide is designed to be disseminated directly to farmers, or by other healthcare and non-healthcare professionals working with farmers. This guide will be a tool for aging individuals, family/caregivers, and health professions working within the subject’s context. The results of the guide could lead to: preventing/delaying of institutionalization, prolong aging in the home as long as possible, prevent falls and injuries, improved wellness, and increase the ability to return to the home after hospitalizations or other healthcare services. The goals of the guide are two-fold: (1) To increase the quality of life in aging farmers by empowering them to make the appropriate changes necessary to successfully aging in place, and (2) to be used by all disciplines/professions in a variety of contexts working with aging farmers.

The guide to health promotion and wellness is designed within the foundation of the Ecology of Human Performance (EHP) model (Cole and Tufano, 2008) and the Seven Dimensions of Wellness model (Witmer and Sweeney, 1992) for aging individuals on the farm. EHP provided a framework for interventions of adapting/modify, altering/preventing (further problems) within the environment by looking at the person, task, context, and person-context-task interaction. The Seven Dimensions of Wellness (Witmer and Sweeney, 1992) encompasses a greater depth of the experience of the individual in all dimensions of his or her life. These dimensions include: social, emotional, spiritual, environmental, occupational, intellectual, and physical dimension. The Seven Dimensions of Wellness is being used within the product as a way to incorporate the holistic view of our consumers and provided a deeper understanding of the aging adult. The resulting guide is a self-assessment tool to be used by farmers to promote longevity while living on the farm. It addresses issues related to aging in place, how to survey the farm, and the importance of accessibility and participation within a chosen context.

The following chapters provide an overview of the background research and product development. Chapter II consists of a focused literature review addressing issues of aging in place, house and workplace modifications, health and wellness, and adult education and principles of patient education. The literature review supports a need for a guide for assisting aging adults in the rural community. Chapter III, the methodology, includes a detailed description of how the literature review informed the creation and design of the guide. The guiding models are identified and the application process is also described in this section. Chapter IV starts with an introduction to the product *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm* with a full copy of the

product in Appendix A. Chapter V is the final chapter and consists of a summary of the scholarly project, key information found throughout the process, and recommendations for implementation and further development of the product. The scholarly project concludes with a full listing of references.

CHAPTER II

REVIEW OF LITERATURE

Introduction

With the post World War-II baby boomers reaching retirement age; the number of elderly people in the United States is increasing dramatically. From 2005 to 2010 the population of adults, aged 65 and older, increased one percent; moving from 12 to 13% (United States Census Bureau, 2010). According to the United States Census Bureau (2010), it is estimated to only rise, thus increasing the population of elderly in America to 20% by 2050. By 2030, the number of older Americans will have more than doubled to greater than 70 million (Administration on Aging, 2001). With 1.5% of the older population living in group quarters and 59.5% in an institutionalized living arrangement (United States Census Bureau, 2010) it is only a matter of time before group quarters limits are reached.

Not only is the population entering the older adult stage on the rise- three times the rate of the general population, without prevention, they are also growing older and becoming less functional, putting them at a greater risk for institutionalization (Beidler & Bourbonniere, 1999). It is also estimated for every one older adult receiving institutionalized care, four more in the community would benefit from some type of skilled care to prevent institutionalization (Beidler & Bourbonniere, 1999). Occupational therapy is an example of the type of skilled care that could play a role in preventing unnecessary institutionalization and assist older adults in living productively at home.

Occupational therapists have the knowledge and skills to assess roles and daily living abilities or need for adaptations to support participation in daily living. In addition, occupational therapists have the attitudinal set of being client centered.

According to Stark, Landsbaum, Palmer, Somerville, and Morris (2009), client-centered home modifications are inexpensive preventive solutions that can assist older adults to participate and live successfully in their community. Further, they found “it may be possible to use environmental supports to compensate for functional loss, thus improving performance in activities of daily living (ADLs) and instrumental activities of daily living (IADLs)” (p.581). Research by Gitlin, Schinfeld, Winter, Corcoran, Boyce, and Hauck (2002) also supports that environmental intervention can positively influence health and functional abilities on older adults aging in place.

Yet, according to Satariano (1997), studies have focused on preventing disability with little attention to the influence of the environment on health and functioning. Research by Stark, Landsbaum, Palmer, Somerville, and Morris (2009) illustrated the importance of modifying the physical environment for older adults. Also, home modifications and use of assistive technology in the older adults’ home was found to reduce functional dependency and cost for personal assistance and healthcare (Stark, et al., 2009). Gillsjö (2011) found that the environment in the home can be therapeutic to the aging adult and can impact, both positive and negative feelings about the comfort they experience from living in their home.

To further investigate phenomena associated with aging in place, the authors of the paper initiated a focused literature review on addressing the issues of the lack of resources to support farmer’s safety and health and wellness while aging on the farm. The

results of the literature review provides insight into the definition of aging in place and how it can be incorporated into the lives of aging rural dwellers; health and wellness, and safety on the farm for older adults. The review ends with the selection of an appropriate model to support the scholarly project. The model of Ecology of Human Performance is discussed and justified for why it would work best with our product.

Aging in Place

Florence Clark (2012), president of the American Occupation Therapy Association (AOTA) emphasizes there is a need for accessibility consulting, home modifications, and health and wellness consulting as emerging trends that are part of AOTA's 2017 Centennial Vision. In the Centennial Vision, productive aging is identified as a key area in which occupational therapists are needed to provide expertise in the twenty-first century. The need to support productive aging is necessitated by society's increased longevity, changes in the workplace, the baby boomer generation's desire for quality of life and the rapidly growing segment of the aging population (AOTA, 2012). Because of this need, Occupational Therapists are becoming more involved with helping society age in place (AOTA, 2012b).

Aging in place is defined by King and Dabelko-Schoeny (2009) as a person aging in one's current, familiar location such as a home or non-healthcare environment. According to AOTA (2012b), the objectives to support the aging in place population include increasing an older adults' quality of life and their ability to successfully engage in meaningful occupations within their natural context while ensuring they are able to stay in their home as long as desirable. To support aging in place, older adults may need

to make necessary changes or modifications to their home (American Society of Interior Designers, 2012).

In a survey conducted by American Association of Retired Persons (AARP) (2011) on aging Americans 50 years and older, 88% of the participants responded that it is extremely or very important to have services that promote successful aging in place. However, only one in six people have made changes to their home that would allow them to successfully age in place (O'Neil, 2008 as cited in AOTA, 2012b). In another study by Rioux (2005), 114 women between the ages of 72 to 86 years were surveyed to assess their general well-being in living in their home. The results indicated even though many women were provided with suggestions from skilled medical professionals on ways to accommodate their home, only 21% of them actually modified their living environment. These results indicate that despite receiving recommendations on home modifications, older adults may be failing to make appropriate accommodations. This is believed to be because of lack of education on home modifications or lack of resources available to older adults.

Evidence suggests that older adults are staying in their preferred physical living environment as long as possible before relocating; often relocating unwillingly (Beidler and Bourbonniere, 1999; King and Dabelko-Schoeny, 2009; Aitken, Burmeister, Lang, Chaboyer, and Richmond, 2010). For many people, home is not merely a dwelling. For example Gillsjö (2011) conducted a qualitative study to explore the emotions associated with relocating from a person's home to an institution in order to receive skilled care. A major theme of the study was that, "the home is a place the older adult cannot imagine living without." (p. 6)

This view is also supported in Rioux's study (2005) where many of the women reported wanting to stay in their home because they had a high emotional attachment to memories and items within their dwelling. In a study on place attachment of people living in rural communities, Ponzetti Jr. (2003) concluded that participants had a particular attachment to their home, its meaning, and an assortment of thoughts, beliefs, feelings and attitudes that were evoked by a particular physical environment. Therefore, it is proposed that older adults would like to stay in their homes as long as possible because the context is meaningful to them.

However, information and support for staying within the home is often lacking in rural areas. According to Averill (2003) the national situation in many rural communities is an overall lack of skilled interventions such as health care, social services, and access to a pharmacy to aid in the management of an older adult's independence and health. Averill's (2003) research utilized a community-based participatory action research plan involving 22 participants in the community. Two groups were formed; one consisting of well-educated individuals who had recently moved to the community and the other group were local natives with lower levels of education and income. The results of the study indicated that the well-educated group had better access to healthcare, leaving the natives of the community less likely to receive healthcare despite their deep ties to the area. The study suggests far too little attention has focused on the growing population of rural elders, and also there is a need for healthcare professionals to reach all segments of the community, including those of different cultures and socioeconomic status.

Averill (2003) also provided a variety of examples of how to intervene on the behalf of rural elders. In one such example, advanced practice nurses developed a

network of interdisciplinary teams to care for the frail rural elders in an attempt to keep these individuals in their communities and homes, however outcomes were not reported. Further research is needed to determine if supports are effective. Averill (2003) reminds practitioners to return to the fundamentals of healthcare, such as empowering communities through holistic means and caring. Averill (2003) further proposed that future research facilitate community empowerment, which in turn, will result in a positive change in meeting the needs of rural elders.

To support the need for increased care for rural elders, Hollander, Feldman and Oberlink (2003) highlighted factors to define key features of an elder-friendly community. In a study consisting of 14 focus groups, Hollander, Geldman and Oberlink (2003) found that participants' desired programs to help them explore active participation within the community, sustain independence, and reduce the risk of isolation. The participants of the study reported financial security, health and health care, social connections, housing and supportive services, transportation and safety to be of the top needs for successful aging. These results were conclusive across all focus groups. Supporting these findings, Mabuza, Poggenpoel, and Myburgh (2010) found that challenges arose in peri-urban (areas immediately bordering an urban area or between suburbs and the countryside) and rural communities because of the lack of resources available to the elderly.

The two studies support the need for resources in a rural community to address social isolation, decreasing independence, learned helplessness, and the need for overall increase in wellness (Mabuza, Poggenpoel, & Myburgh, 2010; Hollander, Geldman, & Oberlink, 2003). In relation, elder-friendly programs can help older residents explore

active participation within the community, help them sustain independence, and reduce the risk of isolation (Hollander Feldman & Oberlink, 2003).

Living Well

One aspect of the concept of aging in place is learning to “live well”. The World Health Organization defines health as: “A state of optimal physical, mental, and social well being and not merely the absence of disease or infirmity” (World Health Organization, n.d.). Studies have shown that living well and staying active will increase an older adult’s ability to stay in the home or preferred physical environment (King and Dabelko-Schoeny, 2009; Senior Resource, 2012; Corman, 2009; Beidler & Bourbonniere, 1999). Literature suggests that having a safe home, along with being active, will allow a person to age in the natural context of home for a greater amount of time (AOTA, 2003; Corman, 2009). Rioux (2005) and Hollander, Geldman and Oberlink, (2003) suggest that adults who are more active throughout the day are more likely to live longer than adults who are less active during the day. Along with living well and staying active, studies suggest that older adults need to learn to assess the environment around them to determine how safe they are in their home, and what can be done in order for them to stay safe while aging in their chosen natural context (Senior Resource, 2012; Corman, 2009; AOTA, 2003).

Making changes before changes are needed is another aspect of living well and linked to aging in place, and is best described as preventing or stopping something unwanted from happening before it is too late. Applying prevention methods or strategies into everyday life at home can decrease the risk of unnecessary injury or falls (Corman, 2009; Senior Resource 2012; Aitken, et al., 2010); thus allowing a person to continue to

age in place. Currently, older adults frequently must leave the home environment to receive care due to the natural effects of aging or due to a fall (Aitken, et al., 2010), or is due to the home environment not providing the support needed to accommodate the natural course of aging. Aitken et al. (2010) indicates that once an older adult leaves the home for healthcare, one-third of the older adults discharge to definitive (i.e. long term) care because they cannot live independently in their home.

The product included with this paper is designed to help older adults avoid a situation in which they would not be able to return home. Designed by occupational therapy students, the guide provides information for rural or farm living older adults with information to make informed decisions about aging in place. The use of occupational therapy strategies to tackle problems of aging in place makes sense. Dunn, Brown and McGuigan (1994) suggest “occupational therapy is most effective when it is imbedded in real life” (p. 603). The goals of this guide are two-fold. To increase the quality of life in aging farmers by empowering them to make the appropriate changes necessary to successfully age in place, and to be used by all disciplines/professions in a variety of contexts working with aging farmers.

Safety on the Farm

Farming is frequently regarded as one of the most dangerous occupations in both Canada and the United States (Gerrard, 1998). Therefore, a section of the product will include basic safety and removal of safety hazards around the home/farm environment.

Gerrard (1998) found that safety is a topic that is frequently overlooked in a rural community. Long hours and unregulated workplaces are factors that lead to high incidences of injury within a farm setting. Amshoff and Reed (2005) stated farming

families are often inter- generational, thus techniques and customs are taught from within the family unit, and knowledge is passed down from father/mother to son/daughter, no matter how safe or unsafe the practices may be. The instruction of farming techniques, skills, and procedures through cultural transmission has created a strong familial and cultural bond that often proves difficult to remediate toward improving safety practices (Amshoff & Reed, 2005). However, the culture of prevention and safety must be carried over into programming for safety in the rural agricultural setting (Frank, McKnight, Kirkhorn, & Gunderson 2004).

Most contemporary organizational cultures require employees to have pre-vocational competencies in their chosen career; such as intensive training or education in the field before entering vocation. Because work environments are regulated in the United States, most companies also require continuing education in safety and proper procedure as part of yearly training requirements that employees must complete to maintain employment. These rules and procedures have been set into place to increase safety and decrease or eliminate injuries and fatalities in the workplace. These safety standards could be beneficial for rural families to incorporate into their daily work.

The use of assistive technology to improve home safety is another tool being studied for aging adults in rural communities. For example, Becker and Webbe (2008) review the “Buddy” device, an electronic assistive technology device that assists in care giving responsibilities and monitoring safety of both caregiver and the individual under care. The “PocketBuddy” is a handheld device that the older adult can have easily accessible and can carry in pocket of clothing. The “PocketBuddy” has been designed to be user friendly for aging adults. The device can record patient behaviors and the

emotional well-being of the caregiver, document daily activities and events, and schedule appointments and personal events, among several other features (Becker & Webbe, 2008). This information is manually inputted into the “PocketBuddy” and is sent to a centralized webpage that can be seen by all family members. Also, from this webpage, other family members can input appointments or reminders which allows the client and family to stay connected. This device would be beneficial to rural dwellers that do not have family close by, but do have a supportive family that wants to stay connected daily.

Averill (2003) states that rural elders regularly feel socially isolated and lonely, often secondary to their family having to leave for work to more urban areas and their lack of resources for social support in the community. Becker and Webbe (2008) found that virtual support such as computerized programs for contact to external support such as family and friends to visually check in on the individual is another tool being utilized to assist adults in aging in place safely.

Injuries on the Farm

Injuries in the rural setting are often overlooked due to poor reporting procedures. Agriculture is one of the top hazardous occupations in the United States (Blair, et al., 2005). Frank, et al. (2004) found that “the United States with its farmers, ranchers, and orchardists, generate some 16% of the world’s food and fiber on less than 7% of the world’s tillable land” (p. 226). With this kind of production farmers are rushed into planting and harvesting crops at prime times which usually lead to long hours, consequent fatigue and stress, and subsequently, to a high incidence of accidents.

With several factors that can lead to injury or death on a farm and the unsystematic collection of causative data it is hard to document on what the exact cause

is in every farm related accident or death (Pickett, et al., 2008). Some factors that can be correlated to the cause of injuries or death on farms are co-morbid conditions, age, sex and the job position held on the farm (Amshoff and Reed, 2005). Co-morbid conditions, such as arthritis or diabetes, are highly correlated with older individuals and the risk for injury. Other factors that lead to injury are the hazardous physical and contextual surroundings within a rural setting. A nationwide standardized recording program would help in the documentation of exact cases of injury or death in rural settings.

Pickett, et al., (2011) conducted a two year long study in Canada with a design model of assessing farm injury within the rural setting. The success of the study brought forth data that has never been collected before in such a large quantity. The study measured farm injuries in a questionnaire with follow-up questions of exactly what the injury was and how it happened. A knowledgeable adult on agriculture related issues living on each farm was asked to be the writer on completing this form. A high percentage of the forms filled out were done by males in the household. The categories in the study were as follows: socioeconomic farm work environment, physical farm work environment, and cultural farm work environment. Results indicated an increased risk for injury with the amount of time a person spent on the farm (full-time) and was correlated with higher exposure to risk for injury versus participants that work only part-time. Contextual factors did not produce a significant influence on risk injuries, although a more physically hazardous environment did produce a higher rate of injury risk among farmers (Pickett, et al., 2011).

Dimich-Ward, et al., (2004) stated that “falls are recognized to be a common cause of unintentional non –fatal injury and deaths among females, which account for

almost 90% of deaths in the USA for those over age 65” (p. 54). Gender is a factor that has not been analyzed thoroughly in farm related injuries and needs to be looked at more in depth. Other data reveals that increased hours of work correlate with higher injury and fatality rates and are often associated with males over the age of 55. Frank, et al., (2004) stated that noise induced hearing loss resulting from high noise exposure effects around 55% to 72% of farming populations, with prevalence of hearing loss increasing with age 65 and over. Protocols to address safety in the rural agricultural setting with individuals that have a hearing loss and may be older in age may be an area of interest to address in the guide.

Foundational Theories

The guide to health promotion and wellness is designed within the foundation of the Ecology of Human Performance (EHP) (Cole and Tufano, 2008) model and the Seven Dimensions of Wellness model (Mabuza, Poggenpoel, and Myburgh, 2010) for aging individuals on the farm. Winnie Dunn, an occupational therapy scholar, and her colleagues from the University of Kansas Medical Center designed the occupation-based model known as the Ecology of Human Performance (EHP). This model was formed with the notion that it not be limited to use by only occupational therapy (OT) practitioners; but by practitioners of various disciplines, supporting interdisciplinary collaboration.

Thus, the product of this scholarly project, a guide to living well and aging in place on the farm, is designed within the foundation of the EHP model. EHP provides a framework to *adapt/modify* or *alter and prevent* (further problems) in older adults’ environments by looking at the person, task, context, person-context-task interaction.

EHP focuses on the roles a person inhabits in context (like a home environment) and how each environment impacts the person and the ability to perform tasks or activities within that context.

The four main constructs of the model consist of *person*, *task*, *context* and *person-context-task interaction*. The *person* is defined by his/her complex skills from the sensorimotor, cognitive, and psychosocial domains constituting that person. The *task* is defined as a set of behaviors necessary to attain a goal. Tasks are considered to anything a person can engage in, and are thought to be endless in scope and without limits. In other occupation-based models, occupations are used in place of tasks. The term task is used specifically in the EHP model to allow uniform terminology across disciplines, allowing for a universal understanding of the term. In the EHP model, it is believed that tasks are the building blocks for occupation. For example, when looking at the occupation of laundry, tasks can be classified as sorting the laundry, bending over to pick up the laundry, measuring the amount of detergent and so on.

Context is then defined by conditions that make up a person's surroundings, and *personal-context-task transaction* is defined by the process in which a person partakes in a task within his/her context resulting in an outcome or human performance. (Cole & Tufano, 2008)

Within EHP, a healthy person is one who can demonstrate function and will engage in a high performance range of tasks. It is noted that people who can partake in tasks at this magnitude have the capacity to incorporate occupations and roles to match their personal variables and contexts. Disability occurs when there is either impairment in human performance or there is a mismatch between the person, task and context.

Insufficient performance may be due to the contextual factors that do not support human performance; for example, an older adult's home may not be favorable for participation in activities of daily living because a bathroom is located on a second floor the person can no longer access.

Change within EHP is driven by what a person wants or needs. According to this model, a person is more likely to engage in steps toward remediating function if they can see the meaningfulness of it. In other words, being one's own agent of change and being the primary decision maker, drives a person forward.

EHP has five specific strategies for intervention. Each strategy is targeted to assist the four main constructs: person, task, context, and personal-context-task transaction. The interventions include establish and restore, alter, adapt/modify, prevent and create.

Establish and restore empower a person by teaching them skills they have not already learned or by allowing them to regain skills they previously had. Alter focuses on the context of a person. This strategy involves the practitioner to assess the sensorimotor, cognitive and psychosocial aspects of a person to find the best match for one's context, allowing the client to participate within his/her own abilities. This strategy does not change the person. The context is analyzed to allow for a least restrictive environment. Adapt/modify focuses on a practitioner's ability to grade a task or context to the person's skill level, therefore setting the person up for success.

Prevent is a strategy used to minimize the risks and avoid the development of performance problems (p.122). Last, is the strategy of *create*. Create does not assume there is or every will be a problem; however it focuses on promoting performance. For example, to prevent older adults from being institutionalized a group of students have

chosen to create a guide empowering adults to adapt their home for successful aging in place.

It is proposed that the guide will alter, adapt/modify or prevent (further problems) the consumer's environment to support successful aging. Alter, adapt and modify will be addressed in the guide throughout part two and part three. In part one, education will be provided on the importance of living well and making changes before they are needed. Part one will aid in the prevention of further problems within the consumer's chosen context. The guide incorporates the interdisciplinary approach as it was designed to be disseminated directly to working farmers, or provided by other healthcare and non-healthcare professionals working with farmers.

The Seven Dimensions of Wellness (Witmer & Sweeney, 1992) was also used to guide the development of *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm*. The Seven Dimensions of Wellness encompasses a greater depth of the experience of the individual in all dimensions of his or her life. These dimensions include: social, emotional, spiritual, environmental, occupational, intellectual, and physical dimension. The Seven Dimensions of Wellness is being used within the product as a way to incorporate the holistic view of our consumers and provided a deeper understanding of the aging adult.

Social wellness (Witmer & Sweeney, 1992) is how a person communicates, relates and connects with other people in the community. This includes the relationships, social experiences, and collaboration of the individual with his or her surrounding networks. In a study by, Hollander, Goldman and Oberlink (2003) social connections was identified as a top need for successful aging. The social dimension of wellness and

examples of how to increase this area are identified in part one of the product.

Emotional wellness (Witmer and Sweeney, 1992) is how an individual copes with challenges or obstacles in his or her life. This dimension includes the psychological aspects involved in life. It recognizes the awareness and acceptance of one's feelings. Spiritual wellness comprises of your ability to achieve a sense of peace and harmony to understand the questions you have about the meaning of life. Both emotional and spiritual wellness topics appear in the first part of the guide. An introduction and examples of both dimensions are provided in this area.

Environmental wellness (Witmer & Sweeney, 1992) incorporates how an individual recognizes the responsibility they hold within their environment. This includes the surrounding air, water and land. Occupational wellness (Witmer & Sweeney, 1992) relates to the satisfaction or fulfillment an individual receives from their vocation, career, or jobs they hold while living a balanced life. This includes an individual's experience with occupations or daily activities. Environmental and occupational dimensions also appear in part one of the guides. Suggestions to improve each of these dimensions are located there as well.

Intellectual wellness (Witmer & Sweeney, 1992) is the desire to continue to learn and experience new things for intellectual growth. This is the ability to keep the mind active, keeping it open to explore the surrounding world and to question things and think critically. This also includes an individual's sense of humor. Physical wellness (Witmer & Sweeney, 1992) is how well an individual cares for his or her body through diet, exercise and regular physical examinations. This includes ones hearing, vision and physical status. Intellectual and physical dimensions are addressed in part one of the

guide.

Conclusion

The literature review and foundational theories assisted the authors in creation of *A Lifetime of Work: A Guide to Adaptation and Wellness on the Farm*. The EHP model and The Seven Dimensions of Wellness model (Witmer & Sweeney, 1992) assisted in the direction of the proposed interventions. The EHP model (Cole & Tufano, 2008) was chosen due to the emphasis that is placed on adapting a person's chosen context. The Seven Dimensions of Wellness model was adopted to incorporate the holistic view of our consumers and provided a deeper understanding of the aging adult. The topics portrayed were divided between the authors based on interest. The literature review was completed with a collaborative construct of the combined topics. Revisions of the literature were completed several times with guidance from a scholarly advisor. This was to ensure a focused and accurate description of the problem and supporting literature. The listed work inspired the authors to develop *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm*.

CHAPTER III

RESEARCH METHODOLOGY

The process of developing *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm* began after attending a school workshop. Following a lecture presented at a student work shop at the University of North Dakota on February 4, 2010 by Dr. Carla Wilhite, the authors were inspired to answer the call from AOTA's 2017 Centennial Vision to meet society's occupational needs by developing materials for both the profession and the community. The authors of this product have an extensive history with agriculture and the rural community. Both being raised on a farm, the authors witnessed firsthand the affects of working and aging on the farm along with the unique perspective farmers have on life and health.

First, the authors conducted a focused literature review. The review of literature included topics on aging in place, home and workplace modifications, health & wellness, and agricultural health and safety. Information was gathered through multiple online databases, including CINAHL, PubMed and OT Search. Professional articles were obtained online and in text at the Harley E. French Library at the University of North Dakota. Occupational therapy textbooks and articles were consulted regarding the same topics, as well as information on adult education and principles of patient education. The American Occupational Therapy Association (AOTA) along with United States Department of Agriculture (USDA), American Association of Retired Persons (AARP)

and other related aging associations also played a major role as sources for gathering information. The literature review revealed most aging individuals have a desire to age in place. However, there is a paucity of resources to accomplish aging in place designed for rural community dwellers, and specifically for farmers to successfully age in place. Following the literature review, a proposed outline of the product was developed. The guide was divided into three major sections. Part One introduces aging in place and provides recommendations for attaining healthy successful aging. The section also includes information on how to live well, stay active, plan to stay in the home, make lifestyle changes and home modifications before they are needed and provides resources for further exploration of aging in place.

Part Two provides information from evidence literature and reliable resources on adapting the physical living environment of rural aging dwellers. The section addresses modifications that take place in the home. The section includes checklists based on basic safety principles regarding the approach and entry to the home, the layout, doorways, and rooms within the home.

Part Three addresses modifications that can be made in a farmer's workplace. It provides information on the importance of safety regarding a farm's terrain, access, lighting, noise, environment, floors, and the arrangement of workspaces and workbench. Information from AOTA, USDA and AARP also guided the development of the section on identifying potential hazards in the workplace and unsafe work conditions.

Along with the literature review, the Ecology of Human Performance (EHP) model influenced the development of this guide. EHP provides a framework to adapt/modify and alter and prevent (further problems) in the environment by looking at

the person, task, context and person-context task interaction. Strong correlations between EHP and the development process are evident in all three parts of the guide. Part One focuses on adapting/modifying the lifestyle of the individual using the guide, while also preventing further problems through the education of staying well. EHP is also evidenced in Part Two and Three of the guide where the focus of the intervention is on adapting/modifying the users' natural context while preventing implications due to an unsafe environment.

The development of the product: *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm* was designed in Microsoft Publisher to aid in making the layout aesthetically pleasing to read. When creating the guide the reading level of a general population was considered. The goal was to keep the reading level around a 6th to 8th grade level and to avoid medical jargon to enhance readability and acquisition of knowledge by the older adult population. The reading level of the guide was calculated using the Flesch-Kincaid grade level tool in Microsoft Word. A Serif font was used to help guide the readers' eyes across the page. The size 14 font used was to accommodate aging readers' eyes. Photographs used to illustrate the text were primarily found in the public domain from agencies within the USDA, American Farm Bureau, and other sources. The photographs creator, agency, and web sources have been identified and credited on each photo wherever possible, as well as each section's bibliography.

In summary, the methodology for developing the guide to health promotion and wellness on the farm included a focused literature review, identification of EHP as a model, and the development of the product based on these findings. Information from

multiple sources was used to guide the creation of the guide in order to meet the need of aging rural adults.

CHAPTER IV

PRODUCT

The following product is a resource for healthy older adults aging in a rural environment such as on a farm. The product, *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm* addresses issues such as adapting to life changes and maintaining or enhancing wellbeing while continuing to live on the farm. The product is a guide designed as a self-help tool that a farmer or an older adult can use independently to look at making changes that will result in greater health and safety on the farm or home. From the educational guidance provided in the guide, the user will be empowered to develop a plan to make changes by self-assessing the readiness of the living and work environment and individual capacity necessary for aging in their home, as well as support and resources necessary to accomplish the plan.

Presently there are limited resources available to aging adults in rural communities to assist with “aging in place”, let alone a resource addressing the unique lifestyle of a farmer. Evidence supports the need for such resources to address problems of social isolation, decreasing independence, learned helplessness, and the need for overall increase in wellness (Mabuza, Poggenpoel, & Myburgh, 2010; Hollander, Geldman, & Oberlink, 2003).

This product consists of three parts. Part one provides educational materials on aging in place. The section includes information on how to live well, stay active, plan to

stay in the home, make changes before they are needed and provides resources on successful aging. Part two addresses modifications that take place in the home. This includes checklists and safety regarding the approach and entry to the home, the layout, doorways, and rooms within the home. Part three is similar to part two, only it addresses modifications that can be made in a farmer's workplace. It provides education and importance of safety regarding a farm's terrain, access, lighting, noise, environment, floors, and the arrangement of workspace and workbench.

This guide was designed within the foundation of the Ecology of Human Performance (EHP) model and the Seven Dimensions of Wellness model for aging individuals on the farm. EHP provides a framework to adapt/modify, alter and prevent (further problems) in the environment by looking at the person, task, context and person-context task interaction. The Seven Dimensions of Wellness (Witmer and Sweeney, 1992) encompasses a greater depth of the experience of the individual in all dimensions of his or her life. These dimensions include: social, emotional, spiritual, environmental, occupational, intellectual, and physical dimension. The Seven Dimensions of Wellness is being used within the product as a way to incorporate the holistic view of our consumers and provided a deeper understanding of the aging adult.

Strong correlations between EHP and Seven Dimensions of Wellness are evident in all three parts of the guide. Part One focuses on adapting/modifying the lifestyle (the seven dimensions of wellness) of the individual using the guide. This section also prevents further problems through the education of staying well. EHP is also seen in Part two and three of the guide where the focus of the intervention is on adapting/modifying the users' natural context while preventing implications due to an unsafe environment.

The complete product *A Lifetime of Work: A Guide to Health Promotion and Wellness on the Farm* is located in the Appendix A.

CHAPTER V

SUMMARY

The scholarly project was designed because of the authors' interest in aging in place, rural living and agriculture. Prior to the development of the guide, a focused literature review was conducted. Based upon the information gathered and the authors knowledge it was determined there is a need for a self-assessment tool that can be used by farmers to promote living well while living on the farm. Currently there are approximately 40.5 million Americans aged 65 and above (United States Census Bureau, 2010) and the majority of them express a desire to continue living at home as they age. A concept known as aging in place influenced the design of the scholarly project and subsequent guide. The document is a tool and source of information for individuals who are aging, family/caregivers, or interested health professions working within the rural community. The goals of the guide are two-fold: (1) To increase the quality of life in aging farmers by empowering them to make the appropriate changes necessary to successfully age in place, and (2) to be used by all health disciplines/professions in a variety of contexts who may be working with aging farmers.

The guide is designed to be disseminated directly to working farmers, or provided by other healthcare and non-healthcare professionals working with farmers. It is the author's mission to obtain a grant or funding by an organization such as the Center of Rural Health through the University of North Dakota that would pay for printing,

marketing, and disseminating the guide to interested parties in North Dakota. The grant could enable the author's the ability to begin pilot testing to measure the effectiveness of the guide in assisting rural aging dwellers.

Limitations and Recommendations

A limitation of this project is that it is aimed specifically at aging rural dwellers. This may limit the market of consumers that could benefit from this guide. Another limitation is that the project assumes that all aging rural dwellers are similar and does not account for possible difference in ethnic or regional/local culture. In addition, it is target toward healthy older adults and excludes modifications to be made for disabled farmers. At last a limitation of this product is that it has not been presented to aging adults and the outcomes are unknown if it will be effective at increasing the longevity of aging adults.

It is recommended that pretest and posttest assessment with standardized outcome measure be developed to assess the effectiveness of the guide with aging dwellers. Also, information on the guidelines from the American Disability Act and other context modifying resources be updated in the guide as adjustments are made and more research is found that supports best modifications or recommendations for aging in place. Our final recommendation is that more evidence-based research be done in regards to rural adults aging in place. Unfortunately there is currently a limited amount of resources that is directed to the topic of rural adults aging in place. It would be beneficial to complete a pilot study of how effective the guide was for aging rural dwellers. Information from the pilot study could modify the guide and/or adapt the approach for delivery of the guide for improved outcomes with the rural aging adults. The authors are in progress to publish the scholarly project through the Native American Coalition for aging in place, Center for

Rural Health through the University of North Dakota, and as a chapter within our advisor, Dr. Carla Wilhite's agrability project *A Lifetime of Work: A guide to Wellness and Health Promotion on the Farm*.

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Appendix A:

A Lifetime of Work: A Guide to Health and Wellness on the Farm

A Lifetime of Work: A Guide to Health and Wellness on the Farm



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SPECIAL
POINTS OF
INTEREST:

- Having a safe home, along with being well, may allow you to age in your natural context for a greater amount of time.
- Staying active may help you live longer.

AGING IN
PLACE

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Aging in place

PART I

What is Aging in Place?

Aging in place is the ability to live in your home for as long and as comfortable as possible. This ability to stay in your home may be extended through adapting, modifying and taking preventative measures within your home.

“Home is a place you grow up wanting to leave, and grow old wanting to get back to.”

- John Ed Pearce

Studies have shown that living well and staying active will increase your ability to stay in your own home or preferred physical environment. Along with living well and staying active, it is recommended that you assess the environment around you to determine how safe you are in your home, and what can be done in order for you to stay safe while aging in your chosen natural context.



Image from PRLOG, www.prlog.org.

Living Well

One aspect of Aging in Place is learning to live well. Living well is so much more than your physical health, the way you eat or how good your habits are. Living well includes not only your physical health, but also your mental health and spirituality. Evidence suggests that having a safe home, along with being well, will allow you to age in your natural context for a greater amount of time. Wellness is broken into seven areas to help you better understand what living well is. These areas include social, emotional,

spiritual, environmental, occupational, intellectual and physical wellness. When planning to live alone the need arises to increase all areas of wellness in order to live independently. For an older adult, improving your seven wellness areas could result in:

- Increased quality of life
- Longer and healthier life
- Active social interaction
- Mental and emotional health
- Active part of the workforce
- Financial independence



Image from Morehead State University, <http://www2.moreheadstate.edu/livewell>

Seven Areas of Wellness:

1. Physical Wellness

Physical wellness is how well you care for your body through your diet and exercise. Here are some ideas to increase physical wellness:

- Stay active (learn how on pg. 7)
- Regular medical check-ups
- Healthy diet
- Exercise
- Get enough sleep
- Avoid tobacco and excessive alcohol use
- Wear your seatbelt
- Protect yourself from injury or harm (falling)

2. Occupational Wellness

Occupational wellness relates to the satisfaction or fulfillment you receive from your vocation, career, or the jobs you hold while living a balanced life. It is

your ability to give positively to what you do, whether it is your career, organizations or society. All of this contributes to occupational wellness. Some ideas to increase occupational wellness

is to adapt your work in order to continue to stay safe at your job (see part 3). Another example would be to volunteer in the community if you are no longer able to work.

3. Social Wellness

Social wellness is how you communicate, relate and connect with other people in your community. It is the ability you have to develop and maintain positive relationships with your family, friends and others.

Here are some ideas to increase social wellness:

- Engage in healthy relationships
- Communicate your thoughts and feelings with others
- Get involved in your community
- Join a book club
- Socialize over coffee at a local spot
- Call or write to your family and friends
- Invite friends over for *Bridge*

4. Emotional Wellness

Emotional wellness is how you cope with challenges or obstacles in your life. This recognizes the awareness and acceptance of your feelings.

Here are some ideas to increase

emotional wellness:

- Tune into your thoughts and feelings
- Think positive, develop a more optimistic attitude
- Seek support from others
- Provide support to others
- Learn to manage your stress
- Accept and forgive yourself
- Seek Counseling



Image from Carla Wilhite, MNM, OTR/L.

5. Environmental Wellness

Environmental wellness incorporates how you recognize the responsibility you hold in your environment for the air, water and land surrounding you.

Here are some ideas to increase environmental wellness:

- Stop your junk mail or unnecessary paper mail
- Renew, Reuse, Recycle
- Conserve energy by turning out lights when you leave a room
- Don't litter

**Increase
your
Quality
of Life**

6. Spiritual Wellness

Spiritual wellness comprises your ability to achieve a sense of peace and harmony to understand the questions you have about the meaning of life.

Here are some ideas to increase your spiritual wellness:

- Explore spirituality by spending time alone
- Meditate or do Yoga
- Be curious
- Be fully present in all you do
- Listen to your heart
- Allow yourself and those around you to be fully immersed in who they are

7. Intellectual Wellness

Intellectual wellness is your desire to continue to learn and experience new things for intellectual growth. This is your ability to keep your mind active, keeping it open to explore the world around you, to question things and think critically. This also includes your

sense of humor. All of these things contribute to your intellectual mind. Here are some ideas to increase your intellectual wellness:

- Do crossword puzzles
- Take classes in the community such as cooking or

learning a new hobby

- Volunteer
- Read
- Seek people who challenge you intellectually
- Learn to appreciate art
- Learn something new

Evidence suggests that having a safe home, along with being well, will allow you to age in your natural context for a greater amount of time.



Image from Carla Wilhite, MNM, OTR/L.



Image from Carla Wilhite, MNM, OTR/L.

Staying Active

Research suggests if you want a quick cure to being young again, staying active may be your answer. Studies indicate that adults who are more active throughout the day

are more likely to live longer than adults who are less active during the day. Active participation therefore may result in healthy behaviors leading to increased

chances of staying longer in your home. This may be old news to you, but what is interesting to note is that any activity counts!

**Staying
active may
help you
live longer.**

How do I stay active?

Activities in which you exert any amount of energy may help you prolong life. These activities include but are not limited to daily household chores such as:

- Gardening
- Vacuuming
- Walking the dog
- Going up flights of stairs
- Sweeping floors
- Putting away groceries
- Making the bed
- Lawn work
- Caring for children or other adults
- Walking
- Washing the dishes while standing



Image from Carla Wilhite, MNM, OTR/L.

Planning to Stay at Home?

- Have you thought about where you want to be living in five years?
- Do you want to live in your house for the rest of your life?
- What changes do you need to make in order to stay at home?
- Are you already having trouble moving around your house?

These are questions many people have thought about or will start thinking about as they start to grow older.

The purpose of this guide is to provide you with information on staying well and how to adapt to life changes on the farm in order to enhance your quality of life as you age. This will allow you to continue to live at home as you grow older. We hope you find valuable information in the following pages.



Image from Carla Wilhite, MNM, OTR/L.



Image from Carla Wilhite, MNM, OTR/L

Making Changes before Changes are Needed

You may or may not be experiencing difficulties in or around your farm. If you are experiencing difficulties then you are ready to make changes around your farm.

However, if you are not currently experiencing difficulties you may be thinking “Why should I fix what isn’t broken?” Making changes before changes are needed is helping to prevent or stop something unwanted from

happening before it is too late. Applying prevention methods or strategies in your everyday life at home can decrease your risk of unnecessary injury or falls, allowing you to continue to age in place. Right now, older people leave their home environment to receive care due to the natural effects of aging or due to a fall. This may be because their home or environment doesn’t

support the natural course of aging. Research indicates that once an older adult leaves their home for healthcare, one-third of them discharge to nursing care because they cannot live independently in their home. This guide is designed to help you avoid a situation in which you would not be able to return home.

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Resources adapted from *The Future Me Website* for successful aging

www.thefutureme.com

Organizations and Websites

AARP—Health and Wellness

For people 50 and over, AARP provides information and resources, advocates on legislative, consumer, and legal issues; assists members in serving their communities; and offers a wide range of unique benefits, special products and services. This section of its Web site provides resources on everything from staying fit to aging well.

<http://www.aarp.org/health>

National Institute on Aging

Part of the National Institutes on Health, NIA conducts and supports biomedical, social, and behavioral research; provides research training; and disseminates research findings and health information on aging processes, diseases, and other special problems and needs of older people.

<http://www.nih.nia.gov>

Spiritual Eldering Institute

Based in Boulder, CO, SEI is a multi-faith organization dedicated to the spiritual dimensions of aging and conscious living, to affirming the importance of the elder years, and to teaching individuals how to harvest their life's wisdom and transform it into a legacy for future generations. <http://www.spiritualeldering.org>



Image from United States Department of Agriculture (2010).

You can also call 1-800-222-2225 for a free copy of the Resource Directory for Older People. This is a listing of services and organizations developed through the National Institute on Aging and the Administration on Aging. The list has 300 public and private organizations, like the yellow pages made specifically for you!

Resources adapted from *The Future Me* Website for successful aging—www.thefutureme.com

PART I
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LearningObjectives:

- **Benefits of assessing your home**
- **Checklist for assessing your home**
- **Modifications for your home**

MODIFYING YOUR HOME

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Modifying Your Home

PART 2

Home Assessment Checklist and Instructions for modifications to your house

More than 20,000 Americans die every year after accidents in their homes. Around 2.2 million older adults were treated in the emergency department from a nonfatal fall injury in 2009. From that number, 581,000 of the older adults were hospitalized from the fall. A large number of these falls happen within the home. Falls are the leading cause of injury, disability, nursing home placement, and death in adults over the age of 65 years.

These are alarming numbers, but



Image from Bernadette Van Pelt , USA.gov Image Gallery

Sometimes it's the smallest decisions that can change your life forever

- Keri Russell

what's more alarming is that thousands of these deaths and injuries can be prevented with home modification.

The following is a guide to address recommended modifications that can promote a safe and healthy environment for you and your family members to live in.

The key to success is often the ability to adapt

-Anthony Brandt

AGING IN PLACE



Image from United States Department of Agriculture (2010).

*“I want you
to look at
your own
home and
make it
accessible”*

Benefits for Adapting Your Farm House

There are several benefits for adapting or modifying your house to become more accessible. One of the main benefits is the ability to reduce injuries and falls within the house. Some ways to do this is by removing throw rugs,

electrical cords and having clear pathways for walking throughout ones house.

Other benefits for modifying your home are increased independence within the house, safety, comfort and convenience.

With the proper set up of the home you can promote energy saving in activities. In addition, you can evaluate your home inside and out to see how accessible it is for someone using a wheelchair or walker. Injuries within the farmhouse can lead to impairment in an older adults daily life such as social participation, overall health and economic cost for aging adults.

One in three aging adults 65 and older will fall each year.

Fortunately, you can take steps to decrease these risks.

American with Disabilities Act

Americans with Disabilities Act of 1990 (ADA) established guidelines for wheelchair users and individuals with disabilities in the community for public access. ADA guidelines are designed to meet the needs of the majority of users, no matter their ability or disability level.

Although it does not specifically apply to residential homes, it can be useful to keep the ADA guidelines in mind when modifying homes for an

individual’s need.

Many homes on the farm were built prior to 1990 and before the current, more standardized building codes. Those homes were not built for wheelchair use, walker access, and older adults. For these homes, home modification may be necessary using ADA guidelines or Universal Design. Universal Design is a concept of design that meets the needs of most users of a home.

Most commonly needed modifications are:

- Bathroom grab bars near the toilet and in the shower or the tub.
- Railings on both sides of a stairway, if possible.
- Widening of door frames for greater access to common areas such as bathrooms kitchens, and bedrooms
- Repair and removal of structural barriers such as inadequate flooring, uneven transitions between flooring surface, and other non-structural barriers such as furniture.

Structural issues and barriers to meeting accessibility guidelines are:

- Limited floor space
- Limited wall space for installing grab bars
- Wall studs that are generally 16 inches on center
- Unknown barriers within walls
- Financial limitations

Common devices and features for consideration are:

- Using textured versus smooth grab bars.
- One stair railing versus two stair railings.
- Height of grab bars in comparison to the user.
- Minimum width of door frames for walker and wheelchair access.

Adapted from: Instruction for Home Modifications to Prevent Falls: ADA Guidelines
By Dean Carroll OTR/L

**“Make
changes
before
changes
are
needed”**



Image from Microsoft
Office Word Clipart

Modify

Adapt

Prevent



Image from Microsoft Office Word Clipart

**Is your
home as
safe as it
could be?**

Checklist



- In the next portion of the guide there is a series of checklists for your home that will allow you to self-assess each area. Image from <http://camping-checklist.org/>
- The checklist includes several areas of your house such as the entrance/approach to your house, bathroom and even the layout and flooring of your home.
- The checklist provides you with correct recommendations that can make your home safer. Many of the changes are easy and inexpensive.
- Take the following checklists and thoroughly examine the different areas of your home, this will be a step towards change that will benefit you for the rest of your life.



Image from Microsoft Office Word Clipart

Approach/Entrance Checklist

- You have a clear walkway from the vehicle to the entrance
- The garage is setup to have a 3-foot clear path around the vehicle
- You have an automatic garage opener
- There is a bench or chair along your route into the house to take a rest break
- The walkways are at least 36 inches wide
- Your walkway is free of barriers and has a gradual slope of 1 inch of rise per 20 inches of sidewalk
- You have access to one entrance at ground level with no steps to enter
- The entrance with stairs has hand rails on both sides; stairs are of the same height and tread depth Example: (6" rise, 10" run)
- Your main entrance has a roof, canopy, or awning with sidewalls to protect it from the weather
- The front door of your house has a lever-style door handle (Not round doorknobs)
- Less than a five pound maximum force to open doors
- The front door has less than ½ inch rise in floor surface change
- Your main entrance has motion-sensor outdoor light
- The main entrance has address numbers that are highly visible
- Your entry doors have a minimum of 5' x 5' level, clear floor space on both sides for the task of opening and closing the door.
- You have a front entrance table to place items on when entering the house
- Windows at door or eyehole to see visitors
- The entrance door is a minimum of 36 inches wide to allow for a 34 inch clear opening when door is completely open
- You have lighting focused on the front door and keyhole

Common problems in a rural home

There may be several potential hazards to the approach and entrance of your house.



- There are no railings or they may be unstable for use.
- Your house has no lighting for approach to house.
- Steps are unsafe due to being steep, cracked or chipped away.
- There is no parking space close to the entrance to the house.

Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Railing may need to be added to entrances with stairs.

There is a bench or chair along your route into the house to take a rest break.

Solutions for problem areas

Solutions for these areas may be fixed by calling a local general contractor, family member, or yourself fix the problem areas.

- Install lever door knobs.
- Replace high steps or steps in poor condition in accordance with ADA guidelines.
- Improve exterior lighting.
- Contact a local contractor to get an estimate on the cost of a paving a driveway spot close to the entrance of the house. Recommended five foot aisle on each side of the car space.
- If cost is a limiting factor, see if a local 4-H or FFA chapter could do simple solutions as a service project.

Example: Habitat for Humanity or a college organization

Layout and Flooring Checklist

- One bathroom and bathroom located on main entrance level
- You have 36 inches wide doors on your main level and have a 32 inches clear opening through them
- Your doors have swing-away or swing clear hinges
- Doors throughout house have lever handles (Not round doorknobs)
- You have clear floor space on the pulling side of the door to back up into when opening door
- Your hallways are a minimum of 36 inches (recommend 48 inches)
- There is a 5 foot diameter in each room for the ability to turn around if you are wheelchair bound
- Your house does not have scatter rugs, high profile carpet or cords running throughout
- You have sturdy, low-pile and tightly woven carpet
- There are touch or rocker light switches throughout the house
- Your house has closets stacked on themselves throughout levels of house (allows for elevator option in future)
- You have highly visible, color contrasting material to distinguish steps
- Doors or entryways have no more that ½ inch rise in floor surface change

Common problems in a rural home



Image from Microsoft Office Word Clipart

Plan rooms to maximize function

Your house does not have scatter rugs, high profile carpet or cords running throughout

There may be several potential hazards to the layout and flooring of your house.

- You may have slippery surfaces, uneven carpeting or flooring, or carpeting or linoleum torn in places.
- Cluttered walking paths around your house.
- Poor lighting throughout the house.
- Outlets and light switches are difficult to reach or are not in convenient places throughout the house.

Solutions for problem areas

Solutions for these areas may be fixed by calling a local general contractors, family member, or yourself fix the problem areas.

- Make sure floor surfaces are dry, have carpet re-stretched to eliminate bumps or wrinkles. Use rug pads or carpet tape to secure down rugs and carpets.
- Eliminate clutter on floors by removing or reorganizing items in your house.
- You can replace old light bulbs with high wattage/low energy light bulbs to produce more light in your house. Having lights in each room and high traffic areas are important for safe travel in and around your house.
- Contact a local electrician to a examine your layout of outlets and light switches and ask for an estimate on how much it would cost to move them or add more outlets or light switches.

Have hallways clear of items



Image from Microsoft Office Word Clipart

Bathroom Checklist

- Your bathroom does not have scatter rugs, high profile carpet or cords running through it
- The bathroom has 36 inch wide door with a 32 inches clear opening through it
- You have a 5 foot diameter within the bathroom for the ability to turn around
- The walk-in shower has a lip to step over or little to no threshold (Lip is often no more than ½ inch and often design as a ramp)
- Your shower size is a minimum diameter of 40 x 40 inches.
- The tub or shower has non-skid surface or mats
- Grab bars intact by tub or shower
- Your toilet space is 5 feet deep by 3 feet wide (5 x 5 feet is preferred)
- The toilet seat is 17 to 19 inches above ground
- Toilet seat midline is 18 inches from sidewall or vanity
- Grab bars intact next to toilet
- Sink height is a 32 inch minimum
(Wall mounted or foldaway vanity doors for knee placement)
- There are touch or rocker light switches in the bathroom
- The walls alongside of the toilet and shower/tub have board blocking for current or future placement of grab bars
- Your shower/tub controls are offset for easy access
- The bathroom has lever handled faucets
- Shower and sink faucets are adapted to have a anti-scald pressure valve
- Tubs and showers have hand-held shower heads
- Bathroom door has lever handles (Not round doorknobs)

Common problems in a rural home



Microsoft Office Word
Clipart

Raise a normal height toilet up with a seat riser

“The walls alongside the toilet and shower/tub have board blocking”

A lever handle faucet that can be used with one hand in the shower



Image from Center For Universal Design

There may be several potential hazards in the bathroom.

- You may have a tub with a slippery bottom.
- Lack of grab bars near tub, shower or toilet area.
- Lack of bath chair in tub or shower.
- Presence of unsafe bath rugs near tub, shower, sink or toilet .

Solutions for problem areas

Solutions for these areas may be fixed by the following suggestions. Call a local general contractors or have a family member help assist you in placing grab bars securely.

- A rubber bath mat or adhesive non-skid decals can increase grip in tubs and showers.
- Adding grab bars will help assist in moving from seated positions in the bathroom areas. Also, it can help a person feel more secure when standing or moving around the bathroom.

- You can buy a bath chair or bench from your local hardware store. Do not use a regular household chair due to the chair legs ability to slip on the bathtub surface.

- Remove clutter from rails and floors. Buy clothes basket or plastic containers



Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Stairs Checklist

- Stairs within the house are easy to walk up and down
- The stairs have sturdy handrails running along both sides of the stairway
- Your handrails for the stairs extend horizontally past the bottom and top of the stairs (a minimum 12 inches).
- You have touch or rocker light switches at the bottom and top of stairs
- The treads do not go past the riser on the stairs
- The stairs have colored contrast anti-slip strips on front edge of steps
- Each stair (riser) is no higher than 7 inches per step
- Stair *treads* are a minimum of 8 inches deep (recommend 10 to 11 inches) and 6 inches high



Image from Center For Universal Design

The nosing sticking out past the riser can be a tripping hazard!

Stair tread is a different color than the riser to help see next step.



Image from Microsoft Office Word Clipart

Common problems in a rural home

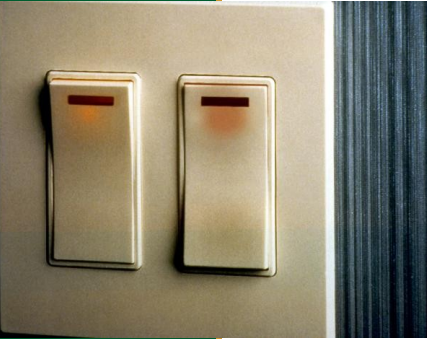


Image from Center For Universal Design

Rocker switches with constant illumination.

Plan out your day so you can go up and down the stairs as least as possible.

“Lighting to increase ability to see and reduce falls.”

There may be several potential hazards with the stairs in your house.

- Lack of railings on either side of the stairs.
- Steps are too steep for climbing.
- Steps without tread/carpet.
- Staircase area has poor lighting.

Solutions for problem areas

Solutions for the staircase may be fixed by the following suggestions below. Call a local general contractors or have a family member assist you with any replacement.

- It is recommended to have at the minimum one railing the length of the staircase. Railings on each side are preferred.
- Hold on to railings for stability. Have other family members carry items up and down the stairs. Have the lights on when walking up or down the staircase.



- You can mark the edge of the steps with bright color strips or textured contrasting tape to increase awareness of change of height.
- Increase the light bulb wattage/energy saving bulbs or add more lighting to the staircase area.

Image from DepotEco, <http://ecobatteries.net/Motion-Sensor-Stair-and-Hallway-LED/M/B0020MLFQO.htm>

Bedroom Checklist

- The bedroom has a ceiling that is reinforced in case you need to install a lift devices in the future
- The bedroom carpet should be: sturdy, low-pile and tightly woven carpet
- Easy to get in and out of your bed
- Mattress height is 22 to 27 inches
- The bed is situated to allow 36 inches of walking space on each side
- You have touch or rocker light switches in the bedroom
- The electrical cords are picked up from the ground
- You have a chair for dressing and undressing
- You have a 5 foot diameter within the bedroom for the ability to turn around
- Closet doors are at least 36 inches wide
- You can reach materials hanging on closet rods or shelves
- Closet has a power operated clothing carousel to provide access to all clothing
- Closet shelves and rods are adjustable to your preferred height



Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Bed risers can be used to raise your bed up anywhere from 2 to 12 inches normally

Common problems in a rural



Image from National Institute on Disability and Rehabilitation Research,
<http://abledata.com/>

Bed rail to assist moving in bed

“Easy to get in and out of your bed”

“You have space to walk around both sides of your bed”

There may be several potential hazards within the bedroom of your house.

- Electrical cords running across the room.
- Closet rods and shelves are not within reach.
- Unsafe carpet: uneven, torn or ripped carpet.
- Height of bed is too high or low.

Solutions for problem areas

Solutions for the bedroom may be fixed by following the suggestions below. Call a local general contractors or have a family member assist you with any replacement.

- Run electrical extension cords behind furniture. The cords rating should match the appliance or fixture it is powering.
- Re-hang rods or move shelves lower so they are within reach.

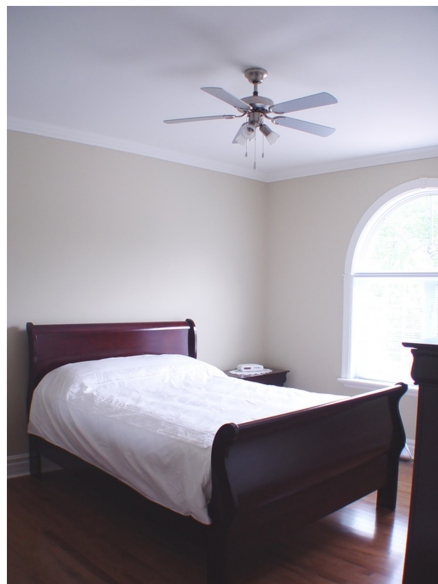


Image from Microsoft Office Word Clipart

- Have the carpet re-stretched to eliminate bumps or wrinkles. Use rug pads or carpet tape to secure down rugs and carpets.

- Bed risers can be purchased at your local shopping center to rise bed from 2 to 12 inches. You can remove the bed frame if bed is too high or buy a low profile mattress.

Kitchen Checklist

- There is a 5 foot diameter within the kitchen for the ability to turn around
- A minimum of 30 inches by 48 inches for approach to all appliances
- You have anti-scaled faucet with a single lever control
- You have a counter that is lower in height and it can accommodate a seat
- Your counters have round corners, with no sharp edges
- The kitchen has good lighting over main working areas
- You have touch or rocker light switches in the kitchen
- The kitchen counter tops are continuous between refrigerator, sink and stove top for moving objects
- The base cabinets have full-extension pull-out drawers and shelves for easy access to storage items
- You have a side-by-side refrigerator for easy access to items
- The kitchen has a built-in wall oven at counter top height
- The stove/oven controls are easy and safe to reach (recommended in front of stove)
- Dishwasher has a built in platform that raises it to counter top height
- The kitchen has electrical outlets that are within reach
- Your kitchen has ventilation above the stove
- A roll cart available in kitchen for moving/serving of items
- A pull out water spray handle to fill bowls or containers on counter
- Built in knee space under sink and stove
- Microwave at counter height
- Base cabinets have 6 inches to 9 inches toe kicks for feet

Common problems in a rural home

There may be several potential hazards within the kitchen.

- Your kitchen does not have enough space for moving around.
- You have to use a stool or chair to reach things out of the cupboard.
- Stove/oven controls hard to turn and read.
- There is no place to sit while working in the kitchen.



Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Height adjustable cupboards

“The kitchen is a high traffic place within the house”

Approach modification for cupboards in your kitchen.

Solutions for problem areas

Solutions for the kitchen may be fixed by following the suggestions below. Call a local general contractors or have a family member assist you with any major modifications.

- Remove extra furniture or clutter that is not used often in the kitchen. Push furniture against the wall to create more room.
- Move items that you use often to a lower shelf. You can purchase sturdy three step stepladder to use in the kitchen.
- You can buy adapter to assist in turning of knobs. Stick bright tape at the two most used settings.
- You can purchase a stool for sitting in the kitchen.



Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Living and Dining Room Checklist

- There is a 5 foot diameter within the living and dining room for the ability to turn around
- Electronic appliance controls are easy to use
- The living and dining room do not have scatter rugs, high profile carpet or cords running throughout
- Is the dining room table at a good height
- Dining room has hard floor surfaces or;
- Living or dining room has sturdy, low-pile and tightly woven carpet
- The rooms have touch or rocker light switches
- Furniture within the rooms is not crowded and you have a minimum of
- 36 inches of walkway space between objects
- The rooms do not have more the a ½ inch rise in floor surface from one to another
- The living and dining room is one continuous level

Creating a correct table height for the user can increase comfort for the individual.



Image from National Institute on Disability and Rehabilitation Research,
<http://abledata.com/>

Common problems in a rural home

There may be several potential hazards within the living and dining room of your house.

- Rugs may be slippery on different types of floors.
- Presence of electrical cords running along the floor
- Furniture is cluttered and does not allow an adequate 36 inches of walking space.
- There is not enough lighting within the rooms.

Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Ceramic non-slip floor tiles.

“The living and dining room is one continuous level”

Solutions for problem areas

Solutions for the living and dining room areas may be fixed by following the suggestions below. Call a local general contractors or have a family member assist you with any major modifications.

- Make sure floor surfaces are dry, have carpet re-stretched to eliminate bumps or wrinkles. Use rug pads or carpet tape to secure down rugs and carpets
- Run electrical cords behind furniture. Purchasing an extension cord will give you more cord length to accomplish this task.
- Eliminate furniture that is not being used in the two rooms. You can remove a leaf from the table to downsize it. Rearrange items to allow for the correct amount of room to walk.
- Increase the light bulb wattage or add more lighting to the living and dining room areas.



Image from National Institute on Disability and Rehabilitation Research, <http://abledata.com/>

Utility and General Checklist

- Laundry room is on the main floor of the house
- Electric outlets are placed about 18 inches to 24 inches above the floor
- Thermostat control is placed at least a minimum 48 inches from ground
- The circuit breaker panel is on the main floor and is easy to access
- The circuit break panel top is no more than 54 inches above the floor
- Anti-scaled faucets with a single lever controls throughout the house
- Light switches are placed from 42 inches to 48 inches above the floor
- The house has touch or rocker panel light switches
- Remote controls for frequently used lights
- The laundry room has front loading washer and dryers on raised platforms
- Service sink for routine maintenance chores
- Counter space for laundry activities



Image from National Institute on Disability and Rehabilitation Research,
<http://abledata.com/>

Front loading washer and dryers make it easy to load and unload items.

Also, the switches are at the front of the machine which make for safe and easy reach.

Common problems in a rural home

There may be several potential hazards within the laundry and utility room within your house.

- The rooms are full of clutter and hard to move around.
- There is not enough lighting within the rooms.
- The laundry room does not have a table within it for placing items on top of when completing tasks.
- The doorway is not wide enough to get through.

*Anti-scaled
faucets with a
single lever
controls
throughout the
house*

**Adapting
knobs
for
easier
turning
of
switches.**

Solutions for problem areas

Solutions for the laundry and utility rooms may be fixed by following the suggestions below. Call a local contractors or have a family member assist you with any major modifications.

- Eliminate furniture or items that are not being used in the two rooms. You can buy a shelf at the local hardware store to increase storage space. Rearrange items to allow for the correct amount of room to walk.
- Increase the light bulb wattage or add more lighting to the laundry and utility rooms.



Image from National Institute on Disability and Rehabilitation Research,
<http://abledata.com/>

- Purchase a table or rolling cart for holding or transferring items within the two rooms.
- Reverse door hinges to allow the door to swing away. Also, you can purchase double acting hinges that will allow around a one inch of more door space to go through.

Home Safety Checklist

- You have smoke and carbon monoxide detectors on each floor of house
- Warning detectors caution you through audio and visual signals
- You have a home emergency exit plan
- There are two ways to exit your home safely
- Emergency numbers are listed next to a phone
- Do you know how to turn off the electricity and gas in an emergency
- A fire extinguisher is placed at each level of the house
- There is a protective screen in front of fireplaces
- Do your interior doors have safety release locks
- Are your walls painted with lead-free paint
- Do you have “motion detector” lights installed on the Exterior of your house?



Image from <http://www.zootsinfo.com/wp-content/uploads/2012/01/Safety-Tips-for-Home-Fires.gif>

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Work sites

PART 3

LEARNING

OBJECTIVES:

- **Benefits of assessing your work site**
- **Checklist for assessing your work site**
- **Modifications for your work site**

WORK SITES

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Modifying Your Farm or Ranch

Assessing and modifying your home is a great start to being successful at aging in place. However, your home isn't the only area that needs attention. Your work (specifically if you work on a farm or ranch) holds the same risk of unnecessary injury or falls. Making changes to your worksite before they are needed could help you continue to work longer with

fewer complications. This section of your guide includes how to assess your work site along with suggested modifications you can do to make your work less stressful on your body. See page 9 for further information on *Making Changes before Changes are needed*.



Image from Carla Wilhite, MNM, OTR/L.

Farmyard and Approach

Your farmyard or ranch is unique to you and your location. The terrain you work on can be significantly different than your neighbor's down the road. What you need compared to other farmers or ranchers could be completely different. It is important to assess your farmyard or ranch to

ensure you are aware of workplace hazards. What to look for in your terrain relates to how accessible it is, or how easy/hard it is to get around from one place to another.



Image from Carla Wilhite, MNM, OTR/L.

Questions to Ask Yourself

- ___ Is your terrain: rocky?
Sandy? Flat? Hilly? Wooded?
- ___ How do you get around, do you have freedom of movement?
- ___ What is your farmyard or ranch set up like?
- ___ How far are your buildings or structures away from each other?
- ___ Can you easily walk on your terrain from place to place?
- ___ What is the distance between your buildings and fields?
- ___ What are the types of land and surfaces in and between fields?
- ___ Are their natural or manmade barriers such as ponds or fences?
- ___ Where does water drain in your farmyard or ranch?
- ___ Does your work area get muddy?

How to adapt to your rough terrain

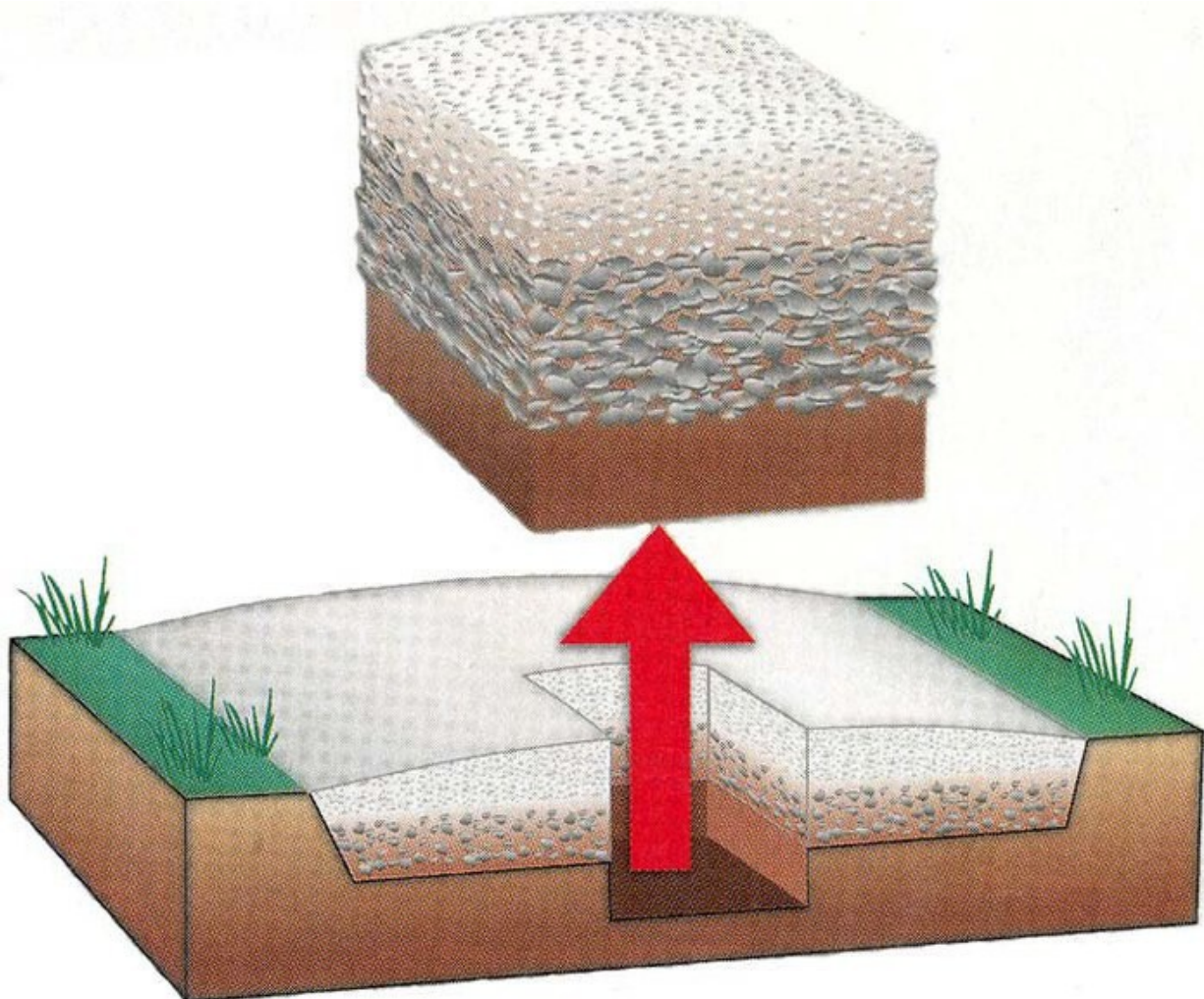
Good Gravel Driveway

Construct your driveway, utilized by primarily lighter-weight vehicles involves a variety of steps:

(1) Trenching out the area about 6 inches deep, (2) laying down a 4-inch base of 1 ½ to 2-inch granite or limestone rock, (3) then topdressing that base with 2 inches of ½ or ¾ inch clean (for example, no fines) or “1-inch minus” rock.

Once the layer compacts into the larger-diameter-rock base layer, the surface will be solid making it easy to walk on.

More examples of how to adapt your farmyard are located on pages 6-7.



Access, Entries and Exits

Entrance into your workplace should not be forgotten. Natural effects of the seasons can make conditions slippery from rain, snow and mud. It is important to assess your outdoor entrances to become aware of potential hazards.

Questions to ask yourself

- Is the entrance too small for you to get into with your wheelchair?
- Are your steps difficult to climb?
- Are your doors hard to open and close?
- Do your doors get damaged when your wheelchair bumps into it?
- Is there a raised threshold that blocks your wheelchair from entering your shop or causes a tripping hazard?



Image from Carla Wilhite, MNM, OTR/L.

Make your entries and exits more accessible

Your entrance is too small?

- Remove interior door or replace it with a sliding door.

Your steps are hard to climb?

- Add handrails on both sides from below bottom step to past top step
- Repair broken or loose steps
- Add non-slip surfaces
- Rebuild/replace steps that are too narrow or too steep
- Build a ramp to decrease hazards



Image from National Agrability Project (2008-2011).

Your doors are hard to open?

- Replace doorknobs with lever handles
- Modify doorknobs with an add-on lever

Damaged doors because of your wheelchair?

- Install kick panel to protect door

Raised threshold?

- Is there a raised threshold that blocks your wheelchair from entering your shop or causes a tripping hazard?
- Replace raised threshold with one that has a tapered lip
- Install wedge-shaped lumber to bride the gap between the threshold and the floor
- Install EZEge Modular Ramp System (see next page)

Make your farm more accessible

EZEdge Modular Ramp System

Farmers and Ranchers need durable pathways to use without slipping. EZEdge Modular Ramp System would provide a stable, durable, non-slip walkway and ramps for wheelchair and on-foot mobility for the transition from a finished threshold to level-landing surface. Contact Van Duerr Industries for pricing. 1 (800) 497-2003.



Image from National Agrability Project (2008-2011).

EcoTrack Tiles

Protects surfaces such as walkways, steps and ramps. The tiles screw onto the already installed surfaces and can also be used to refurbish worn materials. This product is useful for those with poor balance. The EcoTrack Tiles promote a

non-slip, stable walkway. Call Bike Track, Inc. at 1 (888) 663-8537 for more information or visit www.biketrack.com. Estimated cost is \$4 per 1 square foot tile.

Expanded Steel Ramp

Dale Baerg from Butterfield, MN made an Expanded Steel Ramp that would provide a stable non-slip surface from water, snow and even mud. The ramp allows the water, snow and mud to fall through the grid-work reducing the build up on the ramp and “cleaning up” his wheelchair before entering the home. For more information, call Dale Baerg, 1 (507) 956-2074 for more information.

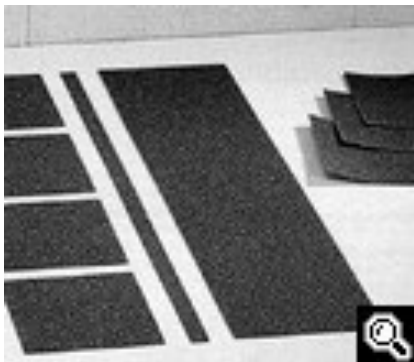


Image from National Agrability Project (2008-2011).

Non-Skid Adhesive Strips

Non-Skid Adhesive Strips can be applied to clean, dry, oil-free surface. These areas include wood, metal or concrete. This will improve traction on ladders, ramps and walkways. They come in a variety of sizes. Contact C & H Distributors, Inc. at

1 (888) 316-2223 or www.chdist.com. Cost is \$102.

Paint-On Grit

Paint-On Grit is a product that can be mixed with latex or oil-based paint. When mixed, it creates a gritty surface to improve traction. This product is carried by many paint stores at \$3 per gallon of paint. This product can be used both on interior and exterior surfaces.

Safety Deck II Grass Surfacing

Safety Deck II Grass Surfacing are mats that interlock with each other to protect grassed areas subject to wear and tear. This would include areas around playground equipment, on pathways or at gateways, along with other high-traffic areas. Grass is allowed to grow through the mats while making an area safe and accessible to wheelchairs and on-foot mobility. Contact Mat Factory, Inc. at 1 (800) 628-7626 or visit www.matfactoryinc.com. Cost is \$7.25-\$8.00/sq. ft.

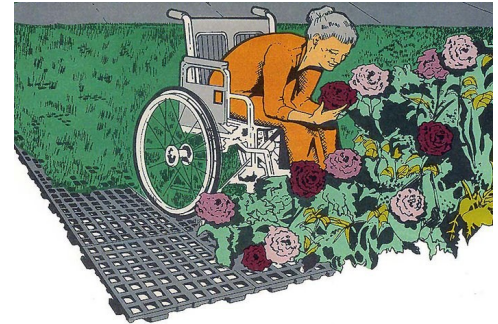


Image from National Agrability Project (2008-2011).

Skid-X Floor Coating



Image from National Agrability Project (2008-2011).

Skid-X Floor Coating is a heavy-duty epoxy paint helps to prevent falls and slips. It is resistant to food acids, gasoline, sugars, oils, grease, detergent, alkalis, and most solvents and hydraulic fluids. It adheres instantly to any surface either damp or dry. It can be applied with a short-nap roller and dries within 12 hours. Its available in 5 different colors. One gallon covers 100 to 125 square feet. Contact American Floor Products Company, Inc. at 1 (800)342-0424 or visit

www.afco-usa.com. Cost is \$220 - \$273/10 gallons dependent on color.

Other Products available: TuffTrack Grass Pavers (1-800-726-1994), HeatTrak Snow-Melting Traction Mats (1-866-766-9628) and Retrofit Stair Nosing (1-800-457-0869).

Lighting

Evidence suggests that lighting positively or negatively impacts your physical and social wellness, which ultimately affects your performance in meaningful activities. Despite this understanding, we tend to neglect the importance of adequate lighting, specifically in the workplace. Problems evolving from poor lighting in the workplace can range from eye-strain to serious musculoskeletal injuries. Now that you understand the importance of lighting in your shop, you'll find the following information beneficial to achieve adequate lighting.

WORK SITES

- ___ Is the lighting too bright?
- ___ Is there a lot of glare around your workshop?
- ___ Is it hard to get around because there are a lot of shadows?
- ___ Does the lighting support you in the task at hand?
- ___ Is your lighting energy efficient and environmentally sensitive?

Achieve Adequate Lighting

- If your lighting is too bright, you can decrease the amount of watts your light bulbs give off by purchasing new light bulbs.
- If you have a lot of glare, consider changing your lights to achieve an indirect ambient lighting. This will distribute your light upward to reflect off the ceiling. This is the most effective solution to reduce direct and reflected glare to absolute minimum.
- If there are a lot of shadows, consider changing your lights to achieve indirect ambient lighting as stated above. You could also increase the watts in your light bulbs or add more lighting in your shop. Shadows are likely caused by dim lighting or lighting that projects light directly downward compared to distributing light upward.
- If the light does not support your task at hand, consider installing a task light. This could be a table lamp or a light closer to where you are working.
- Changing your light bulbs from general purpose to energetic lighting will save on the environment and your energy bill. These can be found at your local hardware store.



Image from United States Department of Agriculture (2010).

Noise

Farmers fall into the category of professions at risk to develop impaired hearing. Research indicates that exposure to noise is one of the leading causes of hearing loss. It is estimated that 1 in 4 people who are exposed to loud noises in the workplace develop a hearing loss not related to aging. Loud noises are not only bothersome, noise can decrease concentration and cause serious injury.

• Prevent Hearing Loss



Image from United States Department of Agriculture (2010).

- Replace noise equipment or machinery with quieter ones
- Modify the way your equipment operates to generate less noise: improve lubrication, balance rotating parts
- Isolate yourself from noisy areas
- Segregate noisy areas with sound barriers and partitions
- If you are unable to do any of these things in certain areas such as operating motorized machinery, it is best to invest in a good pair of noise cancelling earplugs or headphones.

Environmental Control

. Temperature

Working in cold or hot temperatures impairs your ability to perform quality work and could be damaging to your health.

Cold temperatures impair blood flow to your extremities, specifically your fingers and toes. These areas could become numb, resulting in decreased feeling. This causes you to grip things harder which could lead to an increase in fatigue and soreness in your hands or other extremities. Working in cold temperatures could cause hypothermia or frost bite. Notice signs such as cold and burning sensations, numbness, hard or waxy-looking skins and red or white skin (frost bite). Symptoms such as fatigue, nausea, drowsiness, lightheadedness, shivering, confusion are signs of hypothermia.

It is essential that you protect yourself from these conditions by taking proper preventative actions. Wear appropriate winter gear when working in extreme cold. Take frequent breaks to warm your body and keep hydrated. Wiggle your fingers and toes to in order to keep blood flowing to your extremities. If extreme cold has caused hypothermia or frost bite, seek medical advice.

Hot temperatures can be just as damaging to your health as cold. It is important to notice symptoms such as severe fatigue, nausea, drowsiness and lightheadedness as this could be a result of heat stroke. It is important to drink a lot of water during the day and take frequent breaks in cool areas. It is recommended that you purchase inexpensive fans and set them up around your work area.



Image from United States Department of Agriculture (2010).

Environmental Control

• Air Quality

Healthy air quality is an important element of a safe work environment. You should be safe while working on the job, even on the farm. Dirty air quality could threaten your life. Here are key ways to help you fix the problem of poor air quality.

- Identify the source of the problem.
- Remove the problem. This can be easy (like taking out the garbage) or hard (like switching chemicals). Clean or replace damaged or dirty materials. Remove or replace materials that are too saturated to be cleaned.
- Make sure the ventilation is working and that airflow is not blocked.
- Store seed and other products properly.
- Dispose of garbage correctly
- Do not bring chemicals or products with strong odors into your shop.
- Be aware of safety hazards when handling chemicals or other products.
- Keep air vents open
- Wear a mask when working with strong chemicals or products.
- When it is difficult to limit your exposure to particles in the air, such as riding in the tractor, take necessary steps to reduce exposure, such as wearing a mask.



Image from United States Department of Agriculture (2010).

Floors and Surfaces

Your floor and surface conditions are another important factor in being safe at work. If you think about it, you spend most of your time using the floor to stand on or for commuting either by wheelchair or foot. Therefore, your floors should be safe and durable to keep you safe.

Slips and trips are the most common causes of injuries in the workplace. The main causes of these slips, trips and falls are:

- Uneven floors
- Unsuitable floor coverings
- Wet floors
- Changes in levels
- Trailing cables
- Poor lighting
- Poor housekeeping

Slips and trips are the most common cause of injuries in the workplace.



Image from Carla Wilhite, MNM, OTR/L.

Floors and Surfaces

• Consider the Risks

Look for potential slip and trip hazards such as floor coverings and their conditions, uneven flooring, trailing cables and the areas that are slippery due to common spilling. Don't forget about the outdoor terrain and how weather affects your work surface exteriorly.

- Clean up spills immediately or as soon as possible.
- Place equipment so cables don't cross footpaths.
- Wear suitable footwear to decrease slipping, mark slippery places with hazard signs.
- Make sure rugs are securely fixed to the floor to decrease tripping hazard. Eliminate rugs where you can.
- Make changes in levels visible by placing brightly colored tape where the level changes.
- Improve lighting (see page 9)

Arrangement of Workspace

. Design

Your workspace should be arranged to what fits you. A well-designed workspace prevents pain in your back, neck, arms and legs. This could increase your work productivity and efficiency. A work height at elbow level minimizes the energy you spend and doesn't use as much muscle strength. Adjust your workstation at or below elbow level. This way work will be carried out comfortably. If you do not position your workstation at this height, you will bend your body excessively just to reach your work. This will cause unnecessary pains low back pains that could lead to stiffness and other pains causing it hard to continue to work. Remember, you will be most comfortable and work most effectively when the height of your work is adjusted at or around elbow level.



Image from United States Department of Agriculture (2010).

. Seating

Use appropriate chairs and benches to make your work easier. Use a backrest to relax your back muscles by leaning against it. You may think that sitting is more comfortable than standing; however you need a healthy balance between the two as your bodies were meant to move. Walk around your shop and find jobs that can be performed in sitting, make appropriate accommodations to switch between standing and sitting throughout the day. You can attach backrests to benches or chairs. Remember, appropriate chairs need sturdy backrests to increase the quality of your work.

Arrangement of Workspace

. Work Methods



Image from United States Department of Agriculture (2010).

Choose a variety of work methods to switch between standing and sitting. You should also be aware of how much you bend over at the waist or squat during the workday. This will increase your quality of work by resting particular muscle groups while preventing overuse syndromes.

Staying in one position all day is tough on your body. For example, excessive standing will cause pain in your shins, feet and back. If it is essential you stay in one position for extended periods of time, allow yourself breaks to sit down or walk around (if you have been sitting for a long time) to give your muscles a rest. Remember, a continued single working posture for extended or long periods is damaging to your health. Find a variety of ways to shift your body positioning throughout the day to achieve comfort and efficiency. This could be buying a standing chair or stool, varying your jobs, or purchasing tools with long handles to decrease the amount of bending.

. Tools

Put frequently used tools, products and other materials within easy reach of you. This will minimize awkward movements such as over reaching and twisting in order to reach frequently used things. Using an “easy reach” rule of thumb to arrange your station. Gather the most frequently used materials and set them within easy reach. Rearrange tools and other materials that are less used further away. Organize your workspace to be less cluttered, add shelves and drawers to your immediate area if you need more storage for frequently used items. Moving your frequently used materials within easy reach will save you time and energy.

• Storing your Tools

Provide a home for each tool. Have you noticed it is hard to find a tool or end up tripping over a tool on the floor? Having a clutter free workspace will increase the safety in your shop. Providing a place for each tool will be a simple solution to increase safety and efficiency. Bring the tools back to the designated space after each use. This is a low-cost way to not only improve your safety and your work efficiency, but it will also improve your health.

Below is an example of a workspace that could be improved by finding a home for these tools.



Image from Carla Wilhite, MNM, OTR/L.

Materials Handling

• Handling Loads



Image from labsafety.com

Your work may require you to move both small and big loads from one location to another. Moving objects by hand may cause injury. Therefore, if possible, move objects by pushing or pulling a dolly, cart, trolley or conveyor. Lifting lower loads causes the most injuries when moving loads. If loads must be lifted from the floor, do so from between your legs vs. in front of your knees and feet. Always squat to pick things up and lift with your legs, not your back.

• Manipulating, Reaching and Grasping

Manipulations should be done most easily at about elbow height, in front of the chest and close to the body, which allows steady and secure arm and hand motions. This also facilitates good visual control.

Repeated reaching is discouraged unless the work you are doing is positioned closely and within reach with your body staying positioned.

Choose tools that can be operated easily or with minimal grip force. Doing so will decrease the likelihood of you becoming fatigued more quickly. Select light (but strong) tools with bigger handles. If you cannot find tools that have bigger handgrips, you can attach them yourself. Having an appropriate size handgrip will decrease the amount of energy spent holding onto your tool. Your grip size can be measured if you touch the tip of your thumb and the tip of your middle finger together. The size of the circle made should be the size of your tool grip.

PART 3
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