The Aging Workforce:
Implications for the Occupational and Environmental Health Nurse

by
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ABSTRACT

The U.S. population is aging and so too is the U.S. labor force. Workers are remaining on the job and in the workforce longer because of increasing life expectancies, necessity, and desire. In 2006, the labor force participation rate for those 55 years and older was 38%. This number, according to the Bureau of Labor Statistics, will rise to almost 43% by 2016 (Toosi, 2007). Employees and employers must be prepared to face the benefits and challenges that arise with an aging workforce. Understanding the cognitive and physiologic changes that occur with aging is important to the successful employment of aging workers.

As the labor force ages, many opportunities and challenges arise in the work environment. Employers benefit from the aging workers’ expertise, experiences, and loyalty. However, workplace injuries and illness, workers’ compensation costs, and health care costs are significant issues for both the employee and employer. The occupational and environmental health nurse (OEHN) is uniquely positioned to assist both employee and employer in the identification and elimination of workplace injuries and in the design and implementation of strategies and programs to promote health and wellness. The OEHN may assume many roles to successfully meet the health and safety needs of the aging worker including clinician/practitioner, leader, health promotion specialist, educator, and collaborator.
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CHAPTER 1

INTRODUCTION

Americans are living and working longer than ever before. The average life expectancy today is approximately 78 years of age. The older worker turning 65 in the year 2000 can expect to live an additional 18 years. Those working until retirement age, typically to the age of 65, can expect to live almost 20 years beyond retirement (Rogers and Wiatrowski, 2005).

Because of improved health and increased life expectancy, employers now find employees choosing to work well beyond the traditional age of retirement. According to the American Association of Retired Persons (AARP), some older workers may elect to remain employed for self-fulfillment, social interaction, and the desire to stay mentally and physically active (2008). Still others may choose to work to secure the benefits of health care and prescription drug coverage (Silverstein, 2008). For a growing number of older workers financial, economic, and health care trends have combined to impact not only their retirement accounts but also their retirement plans and hopes for the future.

As the worker ages, it becomes necessary for not only the employee but also the employer to deal with changing cognitive and physical capabilities of the aging worker. The normal changes experienced by the older worker – visual disturbances, hearing loss, decreased joint mobility and muscular strength, altered sleep regulation, delayed reaction times and compromised aerobic capacity – affect the worker in both the domestic and work locale (Wegman, 2004). The changes associated with advancing age are individual and vary from worker to
worker depending upon lifestyle choices, genetics, health habits, and the work environment.

The effects of aging can be accommodated in the workplace through injury and illness prevention strategies, ergonomics, technology solutions, age appropriate education and training, as well as health and wellness promotion. Through the combined efforts of the employee, employer, and occupational health nurse, strategies to minimize injuries and illnesses and accommodate those with age-related impairments can be developed and implemented.
CHAPTER II
LITERATURE REVIEW

Scope of the Problem

Workforce demographics are changing. Longer life expectancy, lower birth rates, the coming of age of the baby boomers, and the decision to delay retirement all contribute to the “graying” of our workforce. The United States population is aging and the workforce is aging along with it. The median age of the civilian labor force is projected to continue to increase in the future to reach 42.1 years of age by 2016, an increase from 35.4 years in 1986 and 40.8 years in 2006 (Toossi, 2007). In addition, workers in the labor force aged 55 and older are expected to increase by 46.7% from 2006-2016 with the proportion of this age group increasing from 11.9% in 1996, to 16.8% in 2006, and to a projected 22.7% in 2016. According to information released by the Bureau of Labor Statistics (BLS)(2008), “between 1997 and 2007, employment of workers aged 65 and over increased 101%, compared to a much smaller increase of 59% for total employment (16 and over).” The graying of the workforce is expected to continue in the future. According to the BLS (2008), workers 65 years and older are projected to represent 6.1% of the total labor force by 2016, up dramatically from the 3.6% share in 2006.

Definition of Older Worker

Although the term older worker is commonly used, there is no exact age or single definition commonly recognized to define the older worker. Naumanen (2006) defines the aging worker as a mature adult and suggests that it is
impossible to establish an exact age for the aging worker as everyone ages independently and in a personal manner. According to the Sloan Work and Family Research Network (n.d.), the inconsistencies used to define the older worker makes comparing and contrasting “…demographic predictions, the findings of research, and the analyses of policies” difficult. In addition, definitions of old or older worker vary considerably in research literature and studies often lack rational for assigning a particular age to define the aging worker (Hedge, Borman and Lammlein, 2006).

Chronological age is typically the method employed to categorize the aging worker (Kowalski-Trakofler, Steiner, and Scwhartz, 2005). According to Ilmarinen (2001), “chronological aging starts at birth and ends at death. Therefore, anyone in the work force …can be considered an aging worker.” While the Age Discrimination and Employment Act (ADEA) of 1967 specifically protects employees and job applicants aged 40 and over from age discrimination (The U. S. Equal Employment Opportunity Commission, 1967), the American Association of Retired People (AARP) has established 50 years of age for membership eligibility. Still others consider 65 years of age as the benchmark age as it has been the traditional age for retirement, initiation of Social Security benefits, and eligibility for Medicare (Hedge, Borman and Lammlein, 2006). Resnick (2002) states “… one individual at age 55 may be significantly impacted (an “old” 55) whereas another individual may be very active and show little impact of age (a “young” 55). Data from the 2000 American Perceptions of Aging in the 21st Century Survey revealed that only 14% of those responding to
the survey thought that chronological age is the most important indicator of age. According to the study, 41% felt the primary marker of age was physical activity while 32% indicated that mental functioning was the most important factor (Pitt-Catsouphes & Smyer, 2005).

However, functional age might be a better index to use when determining work ability and safety on the job. “Functional age is a measure of how well a person can function in a certain environment (or at a certain job) when compared with other people of the same chronological age” (Kowalski-Trakofler et al., 2005). Ilmarinen (2001) states, “…the definition of an aging worker is generally based on the period when major changes occur in relevant work-related functions during the course of work life.” The functional ability of workers varies from one individual to another such that chronological age is not always a dependable indicator of functional performance (Kowalski-Trakofler et al.).

**Life Expectancy**

Since 1900, the average life expectancy has increased about 30 years. A child born in 2004 can expect to live 77.9 years (Administration on Aging, 2007). According to the U.S. Census Bureau (2008), Americans have a projected life expectancy of 78.3 years in 2010 with an increase to 79.5 in the year 2020. Females continue to outlive their male counterparts by approximately 5 years. By 2020, females are projected to live to 81.9 years and males to 77.1 years of age. This increase in length of life can be attributed to numerous societal changes including better nutrition, improved medical care and medications, better prenatal and reproductive health, fitness, disease prevention, and advances in
medical technology that allow for early detection and treatment of health problems (Leggett, 2007).

**Baby Boomer Effect followed by the Baby Bust**

After World War II, the U.S. saw a considerable increase in the number of children born. Between the years 1946 and 1964, the population grew by 78 million. This group is collectively referred to as the “Baby Boomer” generation. In 2008, the oldest of the 78 million turned 62 and was eligible for early Social Security benefits (AARP, 2008). By the year 2011, those born in 1946 will celebrate their 65th birthday and be eligible for Medicare benefits. According to the U.S. Census Bureau (2007), the Baby Boom Generation makes up 39% of the nation’s current workforce, and the median age of the labor force will reach 41.6 by 2014 (Toossi, 2005). Of those Baby Boomers born between 1946 and 1964, 12% are working part-time and 68% are working full time (Roper, 2004).

The Baby Bust refers to the period after the Baby Boom when the birth rate dropped significantly. According to Demott (2001), “Baby Busters are children born between 1965 and 1980, when the U.S. birthrate took a dive, thanks to the Pill, legalized abortion, and shifts away from the traditional family”. Consequently, total births in the U.S. dropped to 56.6 million during the bust years resulting in a decline in entry-level workers in the mid-1990s with likely labor shortages in mid-level and executive positions in the years to come (Hedge, Borman & Lamleinn, 2006). The BLS (2008) projects that the number of workers in the 16-24 age group will decline during the period 2006-2016 with a -6.9% change while workers age 25-54 will rise slightly, 2.4% during the same
period. This is in sharp contrast to the 65 and older age groups that are each expected to skyrocket by more than 80%.

**Delayed Retirement**

Older workers are choosing more and more to remain in the labor force rather than retire. This trend may be due in part to good health, the result of financial circumstances, or the desire to remain active (Ohio Bureau of Workers Compensation, n.d.). From 1994 to 2004, the percentage of those in the workforce over the age of 55 increased from 12% to 15.6% and this number is expected to rise to nearly 24% by 2020 (Toossi, 2005). The results of a survey conducted by the American Association of Retired People (2008) show that 70% of respondents over the age of 45 intend on working in some capacity during their retirement years. However, this survey was conducted in the spring of 2007, before the severe downturn in the U.S. economy. If the survey was conducted today given the current economic crisis, it is possible that the number planning to work beyond retirement age might be even higher (AARP, 2008).

Numerous factors impact a worker’s decision to continue working past retirement age. Concerns about financing health care expenditures, Social Security benefits, and the current economic impact on retirement income and savings affect the older worker. For some, the work setting is viewed as a social outlet providing opportunities to interact with others and make a contribution to society (AARP, 2008).

Improvements in technology, medications, and medical care are allowing Americans to live longer lives than ever before. With increasing life
expectancies, Americans are more likely to experience age-related health changes and are thus faced with the challenge of financing their health care expenditures. The rising cost of health care, health insurance, and prescription drugs are important issues for the older worker. For many workers, employer-sponsored retiree health care coverage has been cutback or is not available. Therefore, many workers are remaining at work longer to maintain their private health insurance coverage until the age of 65 when they become eligible for the Medicare Health Insurance Program (Silverstein, 2008).

As the age to receive full Social Security benefits increases, workers find themselves working later in life to reach retirement age. In 1983, Social Security Amendments made provisions to increase the full retirement age to 65 years for Americans born after 1937. For those born in the time frame from 1943 to 1954, normal retirement age was established as 66 years of age and 67 years of age for those born after 1959 (Social Security Administration) (SSA) (2007). The improved health of older people and increased life expectancy were cited as reasons for increasing the retirement age. The 1983 amendments also gave older workers the option to begin receiving Social Security retirement benefits at age 62. This choice, however, resulted in a permanent reduction in benefits of over 20%. However, over the course of a lifetime, the early retirement option yields the same total benefits as full retirement (SSA, 2007).

As the cost of living increases and the U.S. economy faces its largest economic downturn since the Great Depression, many workers are faced with the realization that they may not have enough money saved to make it through their
retirement years. With the typical retiree receiving only 40% of their pre-retirement earnings, an average of $1,056 per month from social security (SSA, 2009), the need for securing other resources during retirement may be necessary. According to a report by the AARP (2003), a financially secure retirement should consist of four components: Social Security, private pensions and personal savings, health insurance, and earnings.

With the recent economic changes, increased costs for food and fuel and the continued decline in the stock market and home equity values, many workers are planning to work longer to restore their shrinking savings and retirement accounts. Today many workers bear a greater personal responsibility for their retirement accounts than in past years (Government Accounting Office, 2005). Many employers no longer offer pension plans or defined benefit programs for their employees. Instead, many employers offer defined contribution plans such as 401(k)s. These plans rely on contributions to individual accounts and investment returns on those accounts. Therefore, more of the risk for the success of the retirement account is placed on the worker (Hedge et al., 2006). Many of these retirement accounts have taken tremendous loses during the recent economic crisis resulting in shrinking retirement nest eggs and the necessity for older workers to remain in the labor force “…to avoid outliving their savings” (Hedge et al.).

With the changing mortality rates, shifts in pension coverage, changing health insurance coverage, cost of living increases, and recent economic turmoil, the reality for many older workers was that they are in significant danger of out
living their retirement savings (Hedge, Borman & Lammlein, 2006). According to a 2007 AARP (2008) survey, 37% of respondents in the sample of 1,500 older workers, ages 45 to 74, stated that the single most important reason for working was the need for money. Both current financial need and working to ensure future financial security were cited as reasons to delay retirement.

Another reason cited by workers to continue working beyond retirement age is the need to find social and psychological fulfillment (AARP, 2008). For some, working beyond traditional retirement age provides a source of identity, provides purpose, and ensures a sense of structure. According to Hart (2007), many workers “…identify so closely with their careers they hesitate to retire in the traditional sense” and “… the notion of retiring at 65 and living many more years with no set “purpose” is daunting to many”. In addition, working into traditional retirement years allows an opportunity for the older worker to remain engaged, mentally stimulated, and physically active.
CHAPTER III

REGULATIONS AND POLICIES RELATED TO THE AGING WORKER

There are a number of public policy interventions that impact the older worker. These include occupational safety and health laws designed to provide not only a safe worksite but also safe workplace practices for all workers. Other policies include antidiscrimination laws that protect workers against both age and disability discrimination.

Occupational Safety and Health Protections

The Occupational Safety and Health (OSH) Act of 1970 was enacted by Congress into U.S. law to “assure as far as possible every working man and woman in the Nation safe and healthful working conditions…” (U.S. Department of Labor, 2009a). Congress found that “…injuries and illnesses arising out of work situations impose a substantial burden upon, and are a hindrance to, interstate commerce in terms of lost production, wage loss, medical expenses, and disability compensation payments” (U.S. Department of Labor, 2009a). The OSH Act created the Occupational Safety and Health Administration (OSHA) at the federal level and allowed individual states to enforce and administer their own health and safety programs given that the state programs “…extend OSHA or equivalent health and safety protection” (Wegman, 2004) as the federal mandate.

Therefore, employers are mandated by OSHA to provide a safe workplace for all employees, young and old alike (Wegman & McGee, 2004). According to the National Institute of Occupational Safety and Health (NIOSH) (2004), by 2010 middle-aged and older workers will outnumber younger ones. Because the
aging worker is at increased risk of falls, longer healing times, more severe injuries, and increased fatality rates (The Safe Workplace, 2009), it is imperative that employers implement the guidelines and recommendations set forth by OSHA to ensure a safe and healthy work place and working conditions.

**Antidiscrimination Laws**

**The Age Discrimination in Employment Act of 1967 (ADEA)**

The Age Discrimination and Employment Act (ADEA) of 1967 specifically protects employees and job applicants aged 40 and over from age discrimination (The U.S. Equal Employment Opportunity Commission, 1967). “The ADEA is the primary federal statute that prohibits employers from discriminating against employees in terms, privileges and conditions of employment on the basis of age” (Employment Law Information Network, 2009). An employee must be at least 40 years old to meet ADEA guidelines but there is no maximum age or cap on an employee’s age under this law. The ADEA applies to both private and public employers with twenty or more workers. Employment agencies, labor organizations with 25 or more members, and apprenticeship and training programs are also subject to ADEA guidelines (Lockwood, 2003).

Discrimination ranges from failing to hire older workers to limiting or removing them from responsibilities and activities to encouraging them to seek early retirement. Failure to provide the opportunity for training to remain current with job requirements and giving negative feedback on performance evaluations based on age are other methods classified as age discrimination (Hedge, J.W.,
The ADEA helps to ensure that employers consider the skills and abilities of the adult and older adult worker rather than age (Sterns, H.L. & Miklos, S.M., 1995). This anti-discrimination legislation “…forbids mandatory retirement based on age and limiting or classifying employees in any way that adversely affects their status due to age” (Lockwood, 2003).

**The Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) of 1990 offers protection to any worker with a disability. Title I of the ADA “…prohibits employers, state and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions, and privileges of employment” (The U.S. Equal Employment Opportunity Commission, 2008). The ADA applies to employers with 15 or more employees. The ADA covers both state and local governments and applies not only to employment agencies but to labor organizations as well.

Disability is defined by ADA as a physical or mental impairment that substantially limits one or more major life activities; a record of such an impairment; or being regarded as having such an impairment. The ADA requires that a qualified employee or applicant with a disability be capable of performing the essential tasks and functions of the job - with or without reasonable accommodation. Making facilities readily accessible to and usable by those with disabilities, modified work schedules, job reassignment to a vacant
position, providing interpreters, and providing or modifying equipment or devices are illustrations of reasonable accommodation. An employer is mandated to make reasonable accommodation if it would not cause an “undue hardship” on the operation of the employer’s business. However, the employer is not required to lower either the standards of quality or production to make reasonable accommodation (The U.S Equal Employment Opportunity Commission, 2008).

Under the ADA, an employee must be allowed to return to work, despite impairments, so long as the individual can perform the essential functions of the job. Older adults, who have sustained major impairments that might previously have prevented them from returning to work in the past, are now protected. The ADA “…provides equal protection to workers of all ages and is an example of legislation that will benefit older workers without directly protecting them at a certain age” (Sterns, H.L. & Miklos, S.M., 1995).

**Family and Medical Leave Act**

The Family and Medical Leave Act of 1993 (FMLA) grants medical leave to eligible employees and guarantees the employee the right to return to work in the same or equivalent position and maintain the same benefits, wage compensation and terms and conditions of employment upon completion of the work leave (Rogers, 2003). According to Rogers (2003), the FMLA was established to “…balance the demands of the workplace with the needs of families and promote the stability and economic security of families…” FMLA affords the employee the opportunity to care for an immediate family member, a newly born or adopted child, or to attend to their own personal medical
condition without being asked to “…choose between continuing their employment and meeting their personal and family obligations tending to vital needs at home” (Rogers, 2003).

The Family and Medical Leave Act grants a total of 12 work weeks of unpaid, job-protected leave over the course of any 12-month period to eligible employees for specified family and medical reasons. The employee may be granted leave for one or more of the following reasons:

- Birth and care of the employee’s newborn child;
- Adoption or foster care placement of a son or daughter with the employee;
- Caring for a spouse, child, or parent with a serious health condition; or
- Inability of employee to work because of a serious health condition (U.S. Department of Labor [U.S. DOL], 2009c; U.S. DOL, 2009d; Rogers, 2003).

The Family and Medical Leave Act of 1993 applies to “…all public agencies, including state, local, and federal employers, local education agencies (schools), and private-sector employers who employed 50 or more employees in 20 or more workweeks in the current or preceding calendar year, …”(U.S. DOL, 2009c). An employee is eligible to received FMLA benefits if:

- The employee has work for a covered employer;
- The employee has worked for the covered employer for a total of 12 months;
• The employee has worked a minimum of 1,250 hours over the past 12 months; and
• The employee works at a location where at least 50 employees are employed by the covered employer within a 75 mile radius (U.S. DOL, 2009c, Rogers, 2003).

The Family Medical Leave Act provides assurance to aging workers that their job, benefits and wages will be available to them in the event that they would need to leave work for a period of time to care for their own health needs or the needs of an immediate family member – perhaps an aging parent. Eldercare, or caring for an elderly relative, is an example of a situation when FMLA may be utilized by the older worker. As more families are taking on the responsibility of caring for their aging and disabled relatives, eldercare issues will continue to impact both employers and aging workers (Shultz & Adams, 2007).

The occupational and environmental health nurse (OEHN) in collaboration with human resources personnel can assist the aging worker with issues regarding FMLA though measures such as employee education, providing information and resources, and assisting with referrals (Rogers, 2003).

**Wage and Benefit Protection**

**The Older Workers Benefit Protection Act**

The Older Workers Benefit Protection Act (OWBPA) of 1990 is legislation passed by Congress which amended the ADEA of 1967. The purpose of the OWBPA is to protect the aging worker by prohibiting discrimination with respect to all employee benefits. The OWBPA “…forbids discrimination by
employers based on age when providing employee benefits, like severance” (Labor Law Attorneys, 2009).

Specifically, the act protects those older workers who have been asked to sign “…waivers stating that they will not sue their employers if they are laid off” (Shultz & Adams, 2007) and the Act ensures that employees are not coerced or pressured into signing waivers of their rights. Additionally, “…employers must pay the same amount for each benefit provided to an older worker as is paid for a younger worker” (HRHero.com, 2009).

**Workers’ Compensation**

Workers’ compensation is a state operated insurance system with each individual state establishing its own laws and managing its own workers’ compensation program. Therefore, workers’ compensation provisions such as injury/illness coverage, benefit amount, and “…length of time for which benefits are paid…” vary among state programs (Rix, 2001). Benefits are provided though employer-carried insurance plans in the form of private insurance, state funds, or self-insurance systems (McEwen, 2002). According to McEwen (2002), “benefits are awarded to individuals who sustain physical or mental injuries from their employment, regardless of who or what was the cause of the injury or illness.” This no fault system does not require that the injured worker provide proof that the injury was caused by employer negligence (Boden, 2000). A worker must meet the following conditions to qualify for workers’ compensation benefits: (a) there must an injury or illness; (b) the injury or illness must “arise
out of and in the course of employment”; and (c) there must be medical costs, lost wages, or disfigurement (Boden, 2000).

There are several issues to consider with respect to workers’ compensation and the aging worker. According to Rix (2001), the conditions of older workers are more likely to be “medically ambiguous” than those of younger workers as the older workers are likely to have one or more chronic conditions potentially impacting the injury/illness. Essentially, some injuries/illnesses sustained by the older worker may be difficult to identify and definitively diagnose as being caused during and by work.

A study conducted by the Workers’ Compensation Research Institute (WCRI) concluded that the growing number of older workers in the workforce will have little impact on workers’ compensation costs. This is due in part because older workers often shift to or remain in safer and less strenuous jobs making them less prone to workplace injury and illness (Tattrie, Gotz & Liu, 2000). In addition, the study reports that costs per workers’ compensation claim for middle-aged workers are significantly higher than for their younger counterparts. However, the per-claim cost for the older worker is only marginally higher than those of the middle-aged worker. Furthermore, the researchers report that older workers file fewer workers’ compensation claims than do younger coworkers, thus offsetting the slightly higher claim costs (Tattrie, Gotz & Liu, 2000). Consequently, employers may not identify increased frequency of workers’ compensation claims with the older worker but may encounter more
costly claims “…due to greater severity with associated lost time, wage replacement, and health care costs” (Healy, 2001).
CHAPTER IV

CHANGING CAPABILITIES – COGNITIVE AND PHYSICAL ATTRIBUTES OF AGING

The aging process is gradual, progressive, and inevitable. According to Naumanen (2006) all people age at the same chronological speed. However, the way in which individuals physically age is determined by many factors including genetics, lifestyle choices, health habits, environment, occupation, economic and social support, recreational and work activities, injuries, and disease processes. Although the effect and rate of aging varies among individuals in a given age range, the process of aging is very specific to the individual (Ohio Bureau of Workers’ Compensation, n.d., Kowalski-Trakofler et al., 2005). One person at age 55 may be very active and demonstrate minimal effects of aging while another individual may be significantly impacted by the aging process (a “young” 55 year old as opposed to an “old” 55 year old).

Cognitive and physical changes are seen in the aging population and clearly impact the older worker in terms of memory and concentration as well as flexibility and range of motion. These differences singularly or in combination with losses in vision, hearing, and muscular strength and/or declines in information processing and decision-making abilities have a definite effect on the performance of the older employee. By anticipating and planning for both the cognitive and physical changes that occur with aging, some workplace injuries and illnesses can be prevented or occur with minimized consequences (Silverstein, 2008).
Cognitive Function

Mental capacity changes occur as one ages. This cognitive aging speaks to “…age-related changes in the fields of memory, attention, intelligence, language, decision-making, learning, and information processing” (Kowalski-Trakofler, et al 2005). Cognitive changes occurring in older adults may be caused by altered mitochondrial functioning, brain atrophy, neurotransmitter depletion, loss of neurons, and alteration of white matter (Buckner, 2004). A single occurrence or combination of changes has implications for older workers and their capability to learn and execute work-related tasks.

While verbal skills and vocabulary remain fairly constant in the older worker, attributes such as “…inductive reasoning, selective attention, dual-task activities, and information processing…” tend to decline with age (Canadian Centre for Occupational Health and Safety [CCOHS], 2002). As noted by Park and Schwartz (2000), age-related declines in information processing speed, inhibition and sensory function, and working memory, all have implications for the work performance of the older employee.

According to Salthouse (1996), there is “…a decrease in the speed with which many processing operations can be executed and that this reduction in speed leads to impairments in cognitive functioning…” in older adults. Declines in working memory may make learning new concepts difficult and/or time intensive. The older worker with decrements in attention capacity or the inhibition function may find “…it difficult to perform concurrent activities or to switch their attention between competing displays of information (Kowalski-
Trakofler, et al (2005). Simply stated, the older worker may have difficulty concentrating on relevant information and blocking out extraneous data. Some older adults require more processing time. Therefore, training may be more time consuming with older workers and there may be a need for more practice or assistance. Older learners are interested in the logic, validation, and justification behind the information being taught (CCOHS, 2002).

To accommodate cognitive changes in the older worker, training requirements may need to be more “practically” based or built upon previous experiences and knowledge. Many older workers are employed in jobs in which they rely strongly on accumulated knowledge, experience, and task-related expertise. According to Park and Schwartz (2000), research has indicated that older adults perform well on tasks when they are experts on a subject or in familiar environments. Rix (2007) reports that “…cognitive skills such as verbal ability that rely on years of knowledge don’t appear to decline with age.” The decline in mental capacity experienced by some older adults may be compensated for by their communication skills and seasoned decision-making experiences.

**Visual Acuity**

By the age of 65, approximately one in three people will have some type of vision-reducing eye disease/condition. Age-related changes in vision can occur from normal changes with aging as well as from age-related visual pathology. Normal changes include presbyopia, the loss of ability to focus on near objects or the reduced ability to adjust focus that is normally corrected with prescription eyeglasses. Changes also occur in peripheral vision, visual acuity, and depth
perception. In addition, age-related pathology including cataracts, glaucoma, macular degeneration, and diabetic retinopathy (Quillen, D.A., 1999) contribute to the major health care problem of vision loss.

These conditions result in decreased visual acuity, reduced range of visual accommodation, and diminished color sensitivity and discrimination. Between the ages of 40 and 50, visual acuity begins to decline resulting in difficulty seeing distant objects and requiring additional light. Declines in visual accommodation make focusing on close objects more difficult. Difficulty adapting to sudden light changes also occurs with age. Chromatic distortion develops with age and leads to a reduced sensitivity to colors such as blue and violet (Hedge, Borman & Lammlein, 2006). In addition, the loss of contrast sensitivity, diminished depth perception, and susceptibility to difficulties with glare may result with age-related visual changes (Silverstein, M., 2008; Kowalski-Trakofler, et al., 2005).

Suggestions to assist with reduction in visual perception include increased lighting thereby improving contrast between objects, reducing glare, and providing indirect lighting. Further recommendations include the creation of gradual transition zones between areas of high and low lighting and consistent lighting throughout the work environment to avoid the need for light/dark adaptation. Avoiding shades of blue, blue on green or blue on black, colors the older worker has difficulty differentiating, and placing signage in easily seen places free of clutter are additional approaches to aid visual perception (Ohio Bureau of Workers’ Compensation, 2005).
Hearing

According to the Center for the Deaf and Hard of Hearing (2007), “…by age 55, 25% of people will have some degree of hearing loss and nearly 90% of people over the age of 80 will have hearing loss.” Hearing loss can not only significantly limit one’s independence and impact the quality of one’s life, but also affect one’s ability to work. After the age of 50, workers begin to lose sensitivity for pure tones, especially high frequency hearing or high pitch sounds (Silverstein, 2008). This progressive, bilateral, high frequency hearing loss is called presbycusis and affects approximately 23% of those between the ages of 65 and 75 (Seidman, Ahmad and Bai, 2002). This type of hearing loss usually manifests itself as the inability to pick up a particular voice or sound in the midst of other noises.

Other declines in auditory function include difficulty in understanding conversations, localizing sounds in space, and increased sensitivity to loudness (Kowalski-Trakofler, et al 2005). This decline in auditory function is particularly important where audible signals or alarms are utilized for safety as individuals may be at risk for injury if unable to hear warning devices, like horns, in the workplace. In addition, verbal commands may be difficult for older workers to hear, potentially resulting in errors, mistakes, or injuries. “Hearing loss restricts one’s ability to interact with others; to get, receive, and interpret information; and to use sounds to identify hazards…” in the home and work environment (Mosner, E. & Spiezle, C., 2003).
Several measures can be implemented to assist older workers with hearing loss. Silverstein (2008) recommends noise reduction measures, implementing redundant warning signals such as flashing lights, cell phones with vibration, slowing rate of speech, and telephone amplification devices to combat hearing loss in older workers. Other suggestions include minimizing background noise, utilizing warning devices such as horns that are sufficiently loud, using sound-absorbing construction materials, and avoiding work environments that create echoes (Ohio Bureau of Workers’ Compensation, 2005).

**Musculoskeletal Function**

The musculoskeletal system is affected by advancing age in a multitude of ways. However, the effects of aging are variable and depend upon the activity level and conditioning of the individual. With increased age, there is a loss of lean muscle mass particularly after age 40 to 45 years. There is also a reduction in flexibility and range of motion. Loss of bone density, joint stiffness, and arthritic changes are not uncommon in the older adult. These changes in the musculoskeletal system reduce the functional capacity of the individual, reduce the ability to perform strenuous work, and increase the likelihood of injury (Ohio Bureau of Workers Compensation, n.d.) According to Kenny, Yardley, Martineau & Jay, up to a 25% decline in musculoskeletal capacity could be observed in individuals between the ages of 30 and 65 (2008).

Possible strategies for fitting the workplace to the worker to accommodate changes in joint mobility, diminished muscular strength, and problems with manual dexterity are numerous. Silverstein (2008) suggests the following
workplace ergonomic methods to reduce physical stress on the body of the older worker: substituting mechanical devices for manual strength, reduction of repetitive tasks, allowing adequate rest and recovery periods, implementing job rotation, reducing stressful and static work postures, or alternate job assignments.

Sleep Regulation

Sleep regulation is often affected in the older adult. Common reported sleep problems include difficulty falling asleep, early awakening, and sleepiness during the day (Foley, Monjan, Masaki, Enright, Quan and White, 1999). This resultant disruption in sleep and possible sleep deprivation can result in decreased attention and reaction times leading to concerns about safety and health. This is of particular concern for those older employees working hours other than those associated with a typical workday of 7:00 AM to 6:00 PM., also known as shift-work. Berger and Hobbs (2006) states that shift-work often results in sleep disturbances, difficulties with alertness and performance, and social isolation. Additionally, shift-work can impact the health and safety of workers due to increased accidents and injuries. Costa and Di Milia (2008) found the following:

Shift- and night-work requires employees to work at times that disrupt their lives from the biological and social harmony that is enjoyed by day workers. In the short term, these temporal changes interfere with psychophysical homeostasis (circadian rhythms, sleeping/wake cycle, etc.), performance efficiency (vigilance, errors, accidents), and family and social relations. (p. 172)

Since the older adult demonstrates “…increased tendency to earlier waking, better performance earlier in the workday, and poorer tolerance for evening and night shifts” (Wegman, 2004) and the potential impact on performance and safety, older workers should consider working early rather than
late shifts. Other ways employers can accommodate aging workers is by allowing flexibility in work schedules and shifts, decreasing night work, reducing work load, providing adequate time off to allow for sufficient rest between shifts and after working extended days, and supporting the need for increased breaks during the shift to compensate for fatigue (Costa, G. & Di Milia, L., 2008).

**Reaction Time and Balance**

According to Rogers and Fisk (2000), the aging process is associated with changes in motor skills such as slower response times, decline in ability to maintain continuous movements, disrupted coordination, increased variability in movements, and decreased flexibility. In general, the detection of events and reaction times tends to be slower as individuals age. This slowing down can be explained, in part, by the decline of sensory organs, neurological, and musculoskeletal systems (Kowalski-Trakofler et al., 2005). With slower response times, older adults may not have the ability to react in a timely manner to hazardous situations either at home or at work.

Balance and body position can be affected in the older worker placing them at increased risk of injury from trips and falls (Silverstein, 2008). The physiologic systems (vision, vestibular or inner ear, muscular strength and tone, joint sensation, nervous system feedback, circulatory system) that play a key role in balance maintenance can become impaired with age. This impairment can result in the older worker’s inability to maintain safe upright postural balance. In addition, the development of certain medical conditions or the effects of certain medications can affect balance in the older worker. An example is the
development of high blood pressure in the older adult. Both the condition of hypertension as well as the medications used to treat it can affect balance (Ohio Bureau of Workers Compensation, 2005).

To counter the effects of increased reaction time and reduced balance in an older employee, the following suggestions should be considered:

- Ensure that workers have adequate and uniform lighting throughout the work environment;
- Encourage workers to have age-appropriate evaluations of vision and hearing problems to identify and address any problems related to reaction time;
- Provide adequate housekeeping to ensure that walking surfaces are free of clutter, spills, and ice to assist those at risk for injury or harm due to impaired balance;
- Install handrails on inclines or stairs;
- Provide slip resistant walking surfaces;
- Encourage wearing low-heeled; slip-resistant footwear;
- Utilize color contrast on stairways to distinguish between stair risers and treads;
- Encourage physician follow-up about medication side effects that affect balance; and
- Engage in a physician approved exercise program (Silverstein, 2008, Ohio Bureau of Workers Compensation, n.d.).
Cardiovascular and Respiratory Function

Increased work activity may become difficult, hazardous, and require more recovery time because of the reduction in the capacity of the cardiopulmonary system. “There is a progressive decline in the functional capacity of the cardiovascular system with increasing age which, depending upon job task requirements, may compromise the ability of the worker to fulfill a given job” (Kenny et al., 2008). According to Hedge, Borman & Lammlein (2006), decline in cardiac and aerobic capacities occurs with age. Specifically, lungs lose breathing capacity, blood pressure increases, resting heart rate slows, cardiac output decreases, and arterial and venous elasticity diminishes.

Cardiovascular respiratory function declines 15-25% from age 20 to age 65. In addition, oxygen consumption declines sharply after age 50 making strenuous physical activity more challenging for the older adult (Ohio Bureau of Workers Compensation, 2005). Kenny et al. (2008) suggests that aerobic capacity declines on average about 5–15% per decade after age 30. As a result of these cardiac and respiratory changes, there are fewer older workers employed in physically demanding occupations.

The declines in cardiovascular and respiratory functioning in the older adult may compromise the ability to fulfill job tasks in an older worker. To support older worker safety and health, the employer and employee can utilize one or a combination of the following measures:
• Avoid working in extremes of temperature (hot or cold) as these conditions increase stress and reduce capacity of the cardiovascular and respiratory systems;
• Provide shorter working hours;
• Allow for frequent breaks;
• Avoid or minimize overtime;
• Use caution when performing physical or demanding work; and
• Encourage self-pacing versus machine-paced work (Ohio Bureau of Workers Compensation, n.d.).

**Chronic Disease**

According to the CDC (2009a), chronic diseases result in 70% or 1.7 million deaths in the U.S. each year. As demonstrated in Figure 4-1, chronic diseases such as cardiovascular disease (primarily heart disease and stroke), cancer, and diabetes are the leading causes of death and disability in the U.S. The CDC reports that in 2005, 133 million people, or almost half of all Americans suffered from at least one chronic medical condition (2008a). Chronic disease tends to be more common with age and disproportionately affects older adults. The CDC (2009b) reports, “…about 80% of older adults have at least one chronic condition, and 50% have at least two.” More than 60% of older workers between the ages of 50 to 64 report at least one chronic condition and also “…report that their health care costs are twice those of younger working adults” (Davis, Collins, Doty & Holdgren, 2005). According to the U.S. Workplace Wellness Alliance
Figure 4-1 Leading Causes of Death
United States, 2005

Diseases of the Heart
Cancer
Stroke
Chronic Respiratory Disease
Unintentional Injuries
Diabetes Mellitus
Alzheimer's Disease
Influenza and Pnuemonia
Inflammatory Kidney Disease
Blood Poisoning

(2009), older workers with one or more chronic disease conditions will miss on average 1.5 times more work days than their younger counterparts who also have more than one chronic condition.

According to DeVol and Bedroussian, (2007), chronic conditions can “…shorten lives, reduce quality of life, and create considerable burden for caregivers” and may result in loss of function, disability, increased health care costs, and long-term care issues (CDC, 2009b). The CDC (2008a) states, “the prolonged course of illness and disability from such chronic diseases as diabetes and arthritis results in extended pain and suffering and decreased quality of life for millions of Americans”. These chronic diseases result in significant alterations in the daily lives and activity for 1 out of 10 Americans or approximately 25 million people (CDC, 2009a).

The economic impact of chronic disease in the U.S. is staggering. Chronic diseases are not only prevalent in the U.S. but are also costly, resulting in escalating health care expenditures. More than 75% of the $2 trillion spent on medical care costs in the U.S., is spent on the medical care and treatment of people with chronic disease (CDC, 2008a). In addition, people with chronic disease account for:

- 91% of all prescriptions filled;
- 81% of all hospital admissions; and
- 76% of all physicians visit (Johns Hopkins, 2004).

The impact of chronic illness affects workers in their personal lives as well as at the worksite. According to DeVol and Bedroussian (2007), chronic disease
often results in reduced productivity on the job, “…as ill employees and their caregivers are often forced either to miss work days (absenteeism) or to show up but not perform well (presenteeism)”

The overall health of workers is impacted by factors within and outside the workplace. The National Institute for Occupational Safety and Health (NIOSH) (n.d.) suggests, “just as workplace conditions can affect health and well-being at home and in the community, exposures and activities outside of working can substantially determine health, productivity, and well-being during work.”

Even though chronic diseases such as heart disease, cancer, and diabetes “…are among the most common and costly health problems, they are also among the most preventable” (CDC, 2009). Although genetics, access to health care, environment, and age contribute to the risk of developing chronic disease, there are numerous interventions that the individual can implement to prevent or lessen the effects of chronic illness. Adopting healthy behaviors and making lifestyle changes can help prevent or control the often, damaging effects of chronic disease (CDC, 2009). Suggested healthy behaviors and lifestyle changes include avoiding tobacco, eating healthy and nutritious foods, engaging in physical activity, (CDC, 2009).
CHAPTER V
WORKPLACE ILLNESS/INJURIES AND
WORKPLACE SOLUTIONS

Challenges to employers of older workers will include preventing work-related illness and injuries and controlling workers’ compensation costs in addition to providing accommodations to employees with return-to-work restrictions and those with non-work related disabilities. Through the identification of workplace safety and health needs of the aging worker, employers will be able to protect the knowledge and expertise that veteran employees provide (Sargeant-Matthews, 2005). This recognition in combination with injury prevention strategies, ergonomic interventions, technological solutions, education and training approaches, and wellness promotion will allow the older worker to continue to be a valuable asset in the workplace.

Workplace Illness/Injuries

Older workers deal with many of the same workplace hazards and safety issues as do their coworkers. However, the nature of the injury sustained by an older worker is often more severe than the injury suffered by a younger worker (Rogers & Wiatrowski, 2005). Falls, assaults, transportation incidents and harmful exposures are the most common events resulting in work-related injuries or death (Rogers & Wiatrowski, 2005). According to Silverstein (2008), older workers tend to have more serious, but less frequent injuries and illnesses in the workplace as compared to their younger co-workers and older workers experience “…lower overall rates of non-fatal work-related injury and illness compared with
younger workers.” In a review of 13 studies, Laflamme and Menckel (1995) suggests, “The most common finding is that accident frequency tends to decrease as age increases.”

According to the U.S. Department of Labor (2003), almost 75% of injuries and illnesses occurred to workers aged 25 to 54. By comparison, workers age 20 to 24 and those aged 55 to 64 accounted for 11% and 10%, respectively, of all injuries and illnesses sustained in 2003. Workers age 65 and older represented only 1.9% of total injuries and illnesses. Silverstein (2008) suggests that skill, judgement, and maturity play a significant role in the decreased number of accidents in older workers. Another possible explanation for this finding is the potential of selection bias caused by the healthy worker effect.

Silverstein (2008) suggests that despite typically low injury rates in older workers, the impact or severity of the workplace injury tends to be high because injuries sustained by older workers tend to be more severe as a result of more disabling conditions such as fractures and multiple injuries. Additionally, older workers require longer recuperation times and have a need for more days away from work as compared to an identical injury sustained by one of their younger coworkers (Rogers and Wiatrowski, 2005). The Bureau of Labor Statistics reports that, “…lost-time injuries and illnesses among those aged 65 and older tended to be more severe than those among younger workers. Figure 5 - 1 shows injured workers aged 65 and older were away from work a median of 18 days in
Figure 5-1 Median Days Away From Work for Nonfatal Injuries and Illnesses by Age, 2003

2003, compared with a median of 8 days for all workers and 12 days for workers aged 55 to 64” (Rogers & Wiatrowski, (2005).

Furthermore, older workers tend to die at an increased rate from work-related injuries than do younger workers. According to Rogers and Wiatrowski (2005), “Of the 5,575 workplace fatalities in 2003, 523 - just under 10% - were among workers aged 65 and older.” However, workers 65 years and older had a workplace fatality rate nearly three times that of younger workers or 11.3 fatalities for 100,000 workers (See Figure 5-2) (Rogers & Wiatrowski, 2005).

**Workplace Solutions**

**Injury Prevention**

Workplace injuries affect a company in terms of reduced productivity, reduced profits, and lost knowledge. These are lost when an employee is injured and out of the work force. Therefore, utilizing workplace safety initiatives not only protects the worker but also protects the bottom line of the employer (Sargeant-Matthews, 2005). According to the American Association of Retired People (2000), “employers have a vested interest in the physical well-being of their workers, if for no other reason than because illness and injury costs money in the form of sick leave, disability and other benefits, and lost productivity”. Employers must develop and implement programs that protect employees and ensure that the work environment and the needs and abilities of the worker are coordinated appropriately. Promoting the health and safety of workers not only protects the health and well being of the employee, it also protects the employer from the negative consequences and indirect costs of workplace illness or injury.
Figure 5-2 Fatality Rate by Age, 2003

One of the most fundamental processes used to control occupational exposures and hazards is the use of effective control measures. The hierarchy of controls is utilized to protect workers from injury and illness in the workplace. This hierarchy of controls consists of: hazard elimination or substitution with a less toxic substance, isolation and containment, engineering controls, work practice controls, administrative controls, and personal protective equipment (PPE), with the most effective methods at the top of the control hierarchy (Rogers, 2003). Following the measures in the hierarchy of controls typically leads to a reduction in the risk of illness or injury and the implementation of safer work systems and practices (NIOSH, 2009).

Both elimination and substitution are very effective methods of reducing hazards in the workplace. However, they also tend to be very difficult to implement into existing work processes. Elimination removes or eliminates the hazard (hazardous material or dangerous activity) from the work process, while substitution replaces the existing hazard with one that is less hazardous (NIOSH, 2009). If the work process is still in the design or development phase, elimination and substitution may be very inexpensive and simple solutions to execute. However, an existing process may require extensive and potentially expensive changes to employ the techniques of elimination or substitution (NIOSH, 2009). Examples include substituting leadless pigments in paint (International Labour Organization [ILO], n.d.) and replacing asbestos with safe artificial insulation fibers (Rogers, 2003).
Isolation and containment involves “removing the hazard to a location away from the worker and enclosing the hazard by placing a barrier between the exposure source and the worker” (Rogers, 2003). Separating the hazard or dangerous work practice from those involved in the work also describes isolation and containment. An example of isolation and containment is a “…puncture-resistant container for needles/sharps” (Rogers, 2003).

Engineering controls comprise the design and installation of systems to “…limit or prevent the release of toxic materials in the worker’s environment” (Rogers, 2003). Engineering controls can be very effective in protecting workers as they achieve control without the need of active participation by the workforce. According to NIOSH (2009), “well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.” Engineering controls are implemented to protect the worker when elimination and/or substitution of the work process or materials cannot be accommodated. Examples include machine guarding or enclosure of blades and presses that prevent the worker from coming in contact with dangerous parts or local exhaust ventilation to remove pollutants from the air (ILO, n.d.).

Work practice controls include the education and training of workers with regards to “…the proper use of control strategies and effective work practice procedures…”(Rogers, 2003). Ensuring compliance of control strategies and work procedures aids in minimizing exposure risk. Good housekeeping
practices, good hygiene, and immediately placing contaminated sharps into a sharps container are examples of this control measure.

Administrative controls are measures implemented to limit potential or actual hazard exposure to the worker “…so that the amount of exposure is reduced to or below permissible levels” (Rogers, 2003). An example of this type of control measure might include job rotation to limit the amount of time workers spend in hazardous conditions. Management leadership and workforce participation are often necessary for administrative control methods to be effective. Administrative controls can be utilized with other methods of control to further reduce exposure to hazards. For example, administrative controls can be used with engineering controls and personal protective equipment by setting a “…four-hour limit for work in a fully enclosed, high noise area where ear protectors are required” (ILO, n.d.).

Personal protective equipment (PPE) is used to minimize exposure to hazardous materials. Employers provide “…adequate and appropriate protective devices…” (Rogers, 2003) that when utilized, minimize employee exposure. OSHA mandates the utilization of personal protective equipment (PPE) to minimize or reduce employee exposure when engineering and administrative controls are not practical or effective methods of reducing exposures to acceptable levels (U.S. DOL, 2009b). Examples of PPE include gloves, masks, gowns, shoe covers, safety goggles, and ear plugs (Rogers, 2003). The efficacy of PPE depends upon a worker’s understanding of the equipment, compliance with its use, and proper fit of the equipment (Rogers, 2003). Because both
administrative controls and PPE require significant effort by workers, they are often less effective than other measures higher up on the list of control measures.

In addition to control measures to improve injury prevention in the workplace, management commitment and worker input are critical to the successful implementation and acceptance of any injury prevention program. “Effective injury prevention programs depend on the active involvement of management” (Farm Employers Labor Service [FOLS], 2009). Employee buy-in to workplace safety initiatives is more likely to occur when management commitment is demonstrated to the workforce. This commitment can be actualized through such measures as routine safety training, conducting workplace safety inspections, establishing organizational policies/procedures to ensure safe and healthful work practices, appropriate allocation of resources (financial, material, and personnel), and setting a good example by requiring that management participate in all safety initiatives (FOLS, 2009; Department of Industrial Relations, 2005). Employee participation in injury and illness prevention programs ensures that workers have input and a voice in identifying workplace hazards and problem solving (EHS Today, 2003). According to Pipow (2008), “…employers should solicit worker input, since they have firsthand experience with the tasks.” Companies can gain valuable insight and increase worker acceptance by seeking employee participation (EHS Today, 2003). Furthermore, seeking the input of the older worker is of benefit not only to management but also the employee. This allows management to draw from
the worker’s knowledge, experience, and expertise and reinforces that the older worker’s opinions and ideas are valued.

**Ergonomics**

The science of ergonomics looks at the type of work being performed, the tools utilized to complete work, and the entire job environment to find an optimal fit between the worker and the job. The goal of ergonomics is to assure that the worker is “…safe, comfortable, and less prone to work-related injuries…” no matter the job assignment (National Institutes of Health, 2009). In order to achieve a healthy and productive workplace, it is essential to fit the job to the worker by coordinating the task, tools, and environment to the needs of the worker (Kowalski-Trakofler, et al., 2005). Ergonomics takes into account the worker’s capabilities and limitations to ensure that job tasks, equipment, and the environment suit each worker.

The science of ergonomics is often employed in industry as a reaction to increased reports of injuries or rising worker’s compensation costs. Utilizing a proactive approach, as opposed to reactive approach, ergonomics seeks early intervention and prevention to lower injury incidence and associated costs. Through assessment and evaluation of a particular job and its associated risk factors for injury, a proactive approach to ergonomics works to anticipate and prevent problems before they arise. Understanding the capabilities and limitations of the older worker and having a keen awareness of the work processes and requirements of the tasks are valuable tools in developing ergonomic workplaces (Kowalski-Trakofler, et al., 2005).
The ergonomic strategies utilized to decrease the risk of overexertion type injuries in the aging workforce are the same strategies suggested for the general work population. However, the aging worker is at increased risk because of reduced flexibility, reduced range of motion, joint stiffness, and reduced bone density. These changes tend to “…reduce the total capacity of the individual, reduce the ability to perform heavy tasks, and increase the likelihood of injury from cumulative events or a sudden episodic event (Ohio Bureau of Workers Compensation, 2005). Therefore, using ergonomic principles helps to reduce awkward postures, aids in avoiding injuries that may exacerbate pre-existing or aggravate naturally deteriorating conditions, and provides compensation for the diminishing physical capabilities of older workers (Ohio Bureau of Workers Compensation, 2005). Examples of such ergonomic principles include:

- Reduce the physical requirement of work particularly lifting, pulling or twisting (reconfigure work stations, use lifting device, job rotation, vary tasks);
- Perform work tasks between mid-thigh and mid-chest to avoid bending;
- Perform job tasks close to the body to reduce over exertion;
- Avoid above-the-shoulder work;
- Attempt to eliminate squatting, stooping and kneeling; and
- Avoid awkward positioning and postures.

McMahan and Philips (1999) site three main strategies that employers and older workers can implement to combat musculoskeletal injury type problems: reduce extreme joint movement, reduce excessive forces, and reduce highly repetitive tasks. This approach to injury reduction is the same for both the young
and aging worker. However, the aging worker is at increased risk of injury and tends to require longer recovery times. Therefore, focusing on general safety and ergonomic strategies can help reduce the likelihood of work-related injuries in the older worker population (Ohio Bureau of Worker’s Compensation, 2005). The specific suggestions offered to meet these objectives include maintaining an acceptable and comfortable range of motion, avoiding large wrist deviation, minimizing twisting and reaching, using clamps to grip parts instead of hands, lessening pressure by the use of padding, keeping cutting edges sharp, utilizing power tools, rotating jobs, and/or automating work processes. In addition, creating an ergonomic workstation can “…help prevent or alleviate pain and discomfort that may be experienced by individuals who have arthritis, previous injuries, poor circulation, or a variety of other issues” (Langton, 2008). The following are key components and crucial elements in creating a proper ergonomic workstation:

- Adjustable furniture;
- Sit/stand workstations;
- Padded or supportive flooring for long periods of standing; and
- Standing stools to lean on when standing.

Another ergonomic approach is the incorporation of principles of “universal design”. The aim of this approach is to provide products and work environments that can be utilized safely and effectively by employees with wide ranging differences such as sex, age, physical capabilities, and other characteristics. This design concept is valuable when creating age-friendly
workplaces. Employing the strategies of “universal design” helps to eliminate or minimize hazard exposures so that young employees can reach the status of older worker without injury and function safely and effectively as they age (Silverstein, 2008).

With the potential for diminished physical capacities in older workers, making ergonomic modifications in workplace design helps to accommodate the needs of an aging worker (McMahan & Phillips, 1999). It is the responsibility of both employers and employees to ensure that the older worker can perform the job safely within their physical capabilities. It is important to ensure that a worker is suited for a particular job or task and has the ability to complete the work safely. For maximal safety, the employer should always attempt to fit the job task and related tools to the individual. However, it is the responsibility of the employee to understand the physical limitations and notify management if work can no longer be completed safely so that job accommodations can be made.

**Technology Solutions**

Computer knowledge and skills comprise an important aspect in the employability of workers in today’s job market. As employees continue to work longer and delay retirement, the need to adopt new skills and invest in technology-related skills continues to escalate. Accessible and assistive technology solutions can assist the older worker with some of the physical changes associated with aging and utilization of computers (Mosner & Spiezle, 2003).
Accessibility features consist of product options that allow for adjustment of product settings to accommodate individual needs. These features can assist with a range of vision, hearing, and/or mobility needs associated with aging. The improvement in accessibility offers not only increased usability and productivity but also comfort for the worker.

Accessibility solutions for mild age-related vision impairments include enlarging font size, changing font settings, and customizing color displays and computer screens. Accessibility accommodations for workers with hearing loss include volume control features as well as the ability to change sound notification to visual notification thus allowing the worker to receive text captions to inform them of system events. An example of this application is the use of a dialog box that appears to notify users of new e-mail messages. Accessibility features are also beneficial to the older worker with impaired mobility issues. Keyboard filters can assist with erratic motion, tremors and decreased response time. Additionally, mouse properties such as pointer and cursor size and double-click speed can be adjusted (Mosner & Spiezle, 2003).

Assistive technology products or accessibility aids are designed to accommodate the specific needs of an individual’s disability. A Braille display and screen reader allows those with visual impairments the ability to “read” e-mail and access online information. Workers with limited dexterity can utilize speech/voice recognition technology to perform work tasks. Other examples of assistive devices include alternative keyboards, wands, joysticks, touch screens, speech synthesizers and Braille embossers (Mosner & Spiezle, 2003).
Worker Safety and Health Training for the Older Worker

While older workers are very capable of acquiring knowledge and learning new skills and procedures, working memory issues may cause a slowing of the process. Strategies used to train older people may need to be modified to improve the efficiency of the learning process. Training older workers should be viewed as an investment as the potential increased costs associated with additional training may be offset by decreased turnover and absenteeism in the older workforce (Czaja & Shariat, 2000).

Successful education and training for the older worker may need to be “practically” based meaning that new skills and information must be explained so that it is based on previous work and life experiences and fits into what the employee already knows and understands (CCOHS, 2002). “Increased age is also associated with increased experience that tends to raise experience-related functional capacities” (Wegman, 2004, p. 187). In addition to learning through personal experiences, older workers can learn through group support and mentoring, allowing the learner the opportunity to take an active role in the learning process (Kowalski-Trakofler et al., 2005). Another key component to successful education and safety training is the role and support of management. “Management's role/support of safety training and its transfer to the jobsite, setting goals and providing feedback to motivate use of the knowledge gained, and offering incentives or rewards for reinforcing safe performance all seemed crucial to attaining a positive result” (Cohen & Colligan, 1998).
According to Kowalski-Trakofler and colleagues (2005), task-specific, general ergonomic and postural awareness, age awareness, and employee wellness training should be considered for the older worker. “Task-specific training should occur upon hiring, when a new process or tool is introduced, or when design changes have been made…” General ergonomic and postural awareness training will assist the older worker in understanding the physical capabilities and limitations of workers and help to identify risk factors for workplace injury or illness. Age awareness training is necessary to provide education about the aging process and its relation to job design. “Information about cognitive, perceptual, physical, and physiological declines should also be discussed, and workers should be given an opportunity to devise solutions for their specific work environment” (Kowalski-Trakofler et al, 2005).

**Health/Wellness Promotion**

Health promotion activities are designed to assist individuals in adopting healthy behaviors and to promote enhanced health. Shea and Haasen (2006), state “…that ‘to stay well’ is less costly than ‘to get well,’ that to prevent is more rational than to cure, and that a healthy lifestyle enhances the chances for improved health, longevity, and the quality of life.”

According to the Centers for Disease Control and Prevention (2003), 5 chronic diseases (heart disease, cancer, stroke, chronic obstructive lung disease, and diabetes) cause approximately 70% of all deaths in the U.S. each year. These 5 diseases become more common as people get older and result in considerable disability and dysfunction. In addition, they are responsible for enormous
medical expenses. Many of these leading causes of death such as cardiovascular disease, stroke and cancer are preventable through lifestyle changes such as smoking cessation, exercise, and diet (CDC, 2008).

Wellness programs often focus on prevention and education. Programs can include health awareness education, disease management, stress reduction, flu vaccinations, and cancer screenings (O’Rouke & Sullivan, 2003). Additional strategies for health promotion interventions might include back care programs, physical activity/exercise, smoking cessation assistance, nutritional counseling, and weight loss programs (Shultz and Adams, 2007).

Health promotion practices benefit both the older employee as well as the employer. The aging worker benefits from the convenience of having wellness services in the workplace as the employee spends many waking hours at the workplace. Additionally, the older worker benefits directly from health promotion interventions as they result in improved health. This is illustrated by the fact exercise increases muscle size and strength, improves balance, decreases the risk of osteoporosis and fractures, fosters a sense of well-being, and can reduce the risk of injury (Kowalski-Trakofler et al., 2005). Furthermore, employees can garner the benefits of greater ongoing health, longevity, fewer episodes of illness, feeling physically and emotionally healthier, and enjoy the “…good feelings that flow from self-mastery and personal achievement” (Shea & Haasen, 2006).

Wellness programs provide significant benefits not only to employees but also to employers. One of the most significant benefits is the reduction of
organizational health care costs. Ideally, as employees become healthier, the need for health services will decline and medical, insurance, and other associated health care costs will decrease as well (Schultz & Adams, 2007). Health promotion activities will further benefit the employer if the improved health of the workforce results in increased worker productivity (Levy & Wegman, 2000), enhanced corporate image, decreased absenteeism, higher employee morale, and lower peripheral costs such as those associated with securing temporary personnel to fill in for ill employees (Shea & Haasen, 2006). Decreased employee turnover, reduced workplace injuries, and improved lifestyle are also benefits of health promotion programs (Kowalski-Trakofler et al., 2005).

A corporate wellness program aims to promote a healthy workforce – the young worker as well as the aging worker. Runy (2008) states, “maintaining the health of the workforce is critical regardless of age group. Wellness programs can help older workers cope with some of the physical stress of the job as well as age-related issues.” Company-sponsored wellness programs serve the dual purpose of addressing and preventing disease and disability in the aging worker and working to maintain lower health care costs for the worker and employer (Murray, 2008).

According to O’Rouke (2003), “…a corporate wellness program pays for itself. Healthy employees are more productive and efficient, less likely to file costly medical claims or go on disability leave and less likely to leave the organization…” For many businesses, the employee is the greatest asset and resource. Successful and effective health promotion and wellness programs are a
means to care for and maintain a company’s valuable human resources while at the same time protecting and reducing the bottom line.

**Employee Assistance Programs**

Employee Assistance Programs (EAPs) are programs designed to help employees who are experiencing problems or hardships in relation to their personal and/or professional lives. Whereas wellness programs concentrate their attention on helping the employee through programs that are aimed at prevention, EAPs are focused on employees who are already experiencing problems ranging from mental health issues to financial difficulties to substance abuse. A partial listing of pertinent issues/topics on which the EAP might offer guidance that would be of benefit to the older worker are retirement option considerations, postponing retirement, financial counseling, marriage counseling, or dealing with grief after the loss of a spouse or parent (Shultz and Adams, 2007).
CHAPTER VI

ROLE OF THE OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSE IN WORKING WITH THE AGING WORKER

As the U.S. labor force ages, the OEHN is presented with new opportunities and challenges. To meet the health and safety needs of the older worker, occupational health professionals must take into account current and future trends and changes in the demographic make-up of the labor force. In addition, Healy (2001) advocates that the OEHN “…needs to be aware of the risk associated with the aging process including physiological changes of aging, comorbidities, and chronic diseases, and psychosocial factors as well as the impact those risks have on work ability”. Understanding issues that face older workers including the care of aging parents, dealing with personal health issues, retirement considerations, and evaluating personal relationships is essential to caring for the aging worker population (Leggett, 2007).

The nature of occupational health nursing practice is dynamic, multifaceted and ever evolving (Randolph, 2003). To successfully meet the health and safety needs of the aging worker, the OEHN must wear many different hats and fulfill numerous nursing roles. While some practice settings require that the OEHN carry out one or more roles other occupational health settings necessitate that the OEHN target specific role responsibilities. Factors influencing the roles that the OEHN will cultivate in the workplace include management commitment to occupational health, type and size of worksite, and expertise and skill level of the OEHN (Randolph, 2003). In working with the
aging worker the OEHN will emphasize the roles of clinician/practitioner, leader, health promotion specialist, educator and collaborator.

**Clinician/Practitioner**

The role of the OEHN as a clinician/practitioner is fundamental to the practice of occupational and environmental health. In this position, the OEHN applies the nursing process to direct the care of workers, young and aging, for both occupational and nonoccupational injuries and illnesses (Randolph, 2003). Mangino (2000) suggests that the OEHN provide initial assessments for employees, ensure that the employees are safe and effective, as well as promote wellness in the workforce. Thus, the OEHN as clinician/practitioner provides the initial assessment of the older worker who serves to document baseline medical findings so that in the event of an injury or illness, the OEHN can distinguish between pathological findings and normal or baseline results. To ensure safety “…the job requirements for strength, speed, visual and hearing acuity, agility, and mental capacity must not exceed those of the employee” (Mangino, 2000). The OEHN must be able to objectively evaluate the baseline capacity of the worker and understand the demands of the job to appropriately match the job to the employee. In caring for the aging worker, the OEHN must help to ensure that the employee has the physical capabilities to be not only safe but effective as well (Mangino, 2000).

**Leader**

The OEHN as leader is not only instrumental in assisting employees as they age, but also in leading employers as they work to incorporate older
employees into the workforce. According to the Government Accounting Office (2005), most employers are not yet actively pursuing strategies to assimilate older workers into the workforce through recruitment or retention practices. The OEHN has a unique opportunity to consult with employers, collaborate with management, and provide leadership in dealing with issues associated with the aging worker. According to Randolph (2004), management looks to the OEHN to help maximize worker productivity and minimize health care costs and to “…take a seat at the management table, providing input about staffing and budget issues and corporate policies and procedures that positively impact worker health and safety, thus maximizing the bottom line.” The OEHN can play a critical role in the employer’s understanding of workplace hazards, job modifications, safety concerns, and training issues affecting the older worker (Mangino, 2000).

**Health Promotion Specialist**

Another key role in occupational and environmental health nursing is the position of health promotion specialist. The goal of health promotion programs is to improve the health status and productivity of the workforce while reducing the cost of healthcare (Randolph, 2003). Therefore, health promotion initiatives are particularly important for aging workers as they are at greater risk of chronic disease potentially resulting in increased health care utilization and costs, decreased productivity, and absenteeism. Healy (2001) suggests that the changing demographic makeup of the American workforce with increasing numbers of aging workers “…presents an opportunity for the nurse to be a leader in health promotion and health maintenance of this employee population, which will
simultaneously address employer productivity needs” as well as concerns about hiring and retaining older workers.

The OEHN should work to promote health and wellness in the older employee by focusing programs on common problems and issues related to aging such as prevention of chronic disease, weight control, fitness promotion, immunizations, and early detection of disease. Specific examples of health promotion efforts for the aging worker include providing flu and pneumonia vaccines to protect the older worker as flu vaccines are recommended annually for those 50 years and older and pneumonia vaccines should be administered to those 65 years and older (Morbidity Mortality Weekly Report, 2009). Early detection of cancer through screening programs such as mammography (recommended for women 40 years and older) and colorectal occult blood tests (recommended for men and women 50 years and older) are other examples of health promotion efforts aimed at the aging worker (CDC, 2008b).

The OEHN has a unique opportunity to champion health promotion and protection as well as disease and injury prevention in the aging worker – a benefit to the employee and employer (Healy, 2001). Reaching older adults while they are still in the workforce and successfully engaging them in ongoing and sustained health promotion activities could make a major impact on the future of our aging population and future health care expenditures (Institute for Health Research Policy, 2009).
**Educator**

The role of educator allows the OEHN to provide instruction and give information to the aging worker on a variety of age-specific topics such as safety, injury/illness prevention, wellness, health promotion, chronic disease, and medications. The OEHN can help to educate the aging worker on the differences between normal age-related changes as opposed to pathological conditions and findings (Mangino, 2000). The education provided by the OEHN may occur informally, as spontaneous answers to questions from older workers, or more formally through planned training and/or education sessions (Alspaugh, n.d.).

In addition to providing education to the older worker, the OEHN can also provide training to management regarding issues surrounding the aging worker. Such issues include direct and indirect cost (workers’ compensation, insurance, and absences), health and safety issues, and the cost/benefit of employing older workers. The OEHN is in a unique position to assist management as it navigates the issues associated with an aging workforce and develops hiring and retention strategies for older workers. Providing education to administration about the potential risk/benefits of older workers and enlisting the support of top management is imperative to the success of safety and health initiatives directed toward the aging workforce.

**Collaborator**

To address safety and wellness issues associated with the aging workforce, the OEHN may employ a collaborative team approach to improving the health and safety of the aging workforce (Healy 2001). Despite the individual
knowledge and talents occupational safety and health professionals possess, the collective experiences and expertise of a multidisciplinary team make the collaborative approach to assessing safety and identifying hazards very effective. Through collective efforts within the workplace and community, the OEHN strives to ensure a safe and healthy work environment.

Within the workplace, the OEHN works as a member of the interdisciplinary team with other health and safety professionals, management, employees, and human resources personnel to assess risk, identify hazards, plan and implement injury/illness prevention programs, and enhance productivity. Within the community, the OEHN collaborates with health care providers, vendors, and local resources (such as the American Heart Association, the American Cancer Society, the Red Cross, the American Lung Association, AARP) to provide programs and interventions for the aging worker.

The OEHN may enlist assistance from occupational safety and health specialists such as the industrial hygienist (IH), safety specialist (SS), ergonomist, toxicologist, and epidemiologist to identify hazards or evaluate reports of workplace injury/illness. The use of joint walk-through surveys and safety evaluations with members of the multidisciplinary team allows for the exchange of ideas, affords the opportunity to draw from collective past experiences, and utilizes the knowledge of many as opposed to the knowledge of any one individual. Once workplace hazards are identified, the OEHN may work with some or all of the team members to determine and implement a plan of correction. The OEHN may also collaborate with on-site or contractual occupational
medicine physicians, physical and/or occupational therapists, and case management specialists to assure assessment and treatment of ill or injured employees (Wachs, 2005).

The OEHN is the most likely member of the occupational health and safety team to be found in the workplace. Other members of the team are often hired on retainer or as consultants. This collaborative team and multidisciplinary approach help ensure the effective safeguarding of workers from workplace hazards.

Using the knowledge and expertise of a team of occupational safety and health professionals will help identify and eliminate hazards in the aging workforce. With respect to older workers, the OEHN and other members of the occupational safety and health team must be aware of injury and illness trends with older workers and understand the normal cognitive and physical changes associated with aging. Older workers often sustain injuries that are more severe than those suffered by younger workers (Rogers & Wiatrowski, 2005). In addition, older workers are also more susceptible to cumulative trauma disorders (CTD) such as injuries to necks, backs, shoulders, wrists, and knees (Team Safety, Inc., 2004). To prevent workplace CTD injuries in older workers, the OEHN might call upon the expertise of an IH or SS to evaluate the work processes and work environments to identify hazards. Once identified, the OEHN might consult with an IH, SS, management, occupational medicine, and the aging employee to develop solutions to the identified workplace hazard or work process.
In addition, the OEHN might draw upon the knowledge and expertise of an ergonomist to advise about changes to the work process, work equipment, and employee work postures to help reduce the frequency and severity of CTDs. The ergonomist, in conjunction with other team members, might develop and implement an ergonomic stretching program and provide ergonomic education and safety training to older workers to prevent future injuries. Part of the success of such a prevention program relies heavily on management acceptance and support. Collaborating with upper management to support such a program and having the management team lead by example and participate in the stretching program is imperative to program success. In addition, the OEHN might work in collaboration with an occupational health physician or other community health care provider to evaluate and treat aging workers sustaining workplace injuries/illnesses. Participation in the joint walk-through by the physician will provide for a better understanding of the particular job requirements and how specific functions of the job impact worker capability to meet the job demand. Adjustments to these functions can help mitigate the health problems. The aging worker is an equally important member of this collaborative team. Contributions from the older worker include input about safety and health concerns, solutions to workplace hazards, as well as active participation in wellness initiatives - such as the ergonomic stretching program.

According to Rogers (2003), “multidisciplinary collaboration is key to development and implementation of a successful workplace surveillance and hazard control program.” The multidisciplinary team has a combined goal of
protecting the workforce, young and aging, by identifying and evaluating hazardous conditions and workplace practices, developing hazard control strategies, and evaluating strategy effectiveness. Representatives from the core occupational and environmental health disciplines bring a unique perspective, knowledge, skill set, and expertise from their respective discipline to the safety team with the common goal of workplace safety and health.

In summary, the changing demographics of the American workforce create many challenges and opportunities. The OEHN is in a unique position to assist both the older worker and the employer. As clinician/practitioner, the OEHN works to ensure the health and safety of the older worker by understanding the physiologic and cognitive changes associated with aging and the impact of these changes on the work process. As leader, the OEHN must understand specific issues related to the aging worker and assist management as older workers become more prevalent in the workforce. The OEHN as health promotion specialist works to educate and inspire older workers to improve their health status consequently improving productivity and decreasing health care expenditures for the worker and the employer. As educator, the OEHN is in a unique position to provide education to individual workers, groups of employees as well as member of management. As collaborator, the OEHN works as a member of an interdisciplinary team, working in partnership with other professionals within the workplace and in the community to ensure a safe and healthy workplace. Ultimately, the occupational health nurse “…is positioned to
promote and enhance the health and vitality of the older American worker” (Mangino, 2000).
CHAPTER VII
RECOMMENDATIONS AND CONCLUSIONS

With the aging of the U.S. workforce, many issues will arise in the practice of occupational health. The struggle between benefits and liabilities is one in which the OEHN has the opportunity to impact both the employer and employee. The OEHN is in a unique position to help employees navigate aging and working while at the same time assisting administration with the challenges of preparing for and managing an aging workforce. Specifically, the OEHN can strive to ensure the health and safety of the aging worker through such means as hazard identification, injury/illness prevention, health promotion initiatives, and education/training of both employee and employer. The OEHN can work with top executives and managers to plan now for the changing demographics of the U.S. workforce - in particular the aging worker. Lastly, OEHNs can contribute to future research initiatives investigating the aging worker and related topics.

Hazard Identification

The workforce is aging and older employees make up a large portion of the U.S. workforce. As older employees remain in the workforce, it is imperative that OEHNs work with employees and employers to identify workplace hazards and look for ways by which to decrease occupational injury and illness. Specifically, the OEHN should conduct worksite walkthrough surveys to observe obvious or overt hazards in the work environment paying particular attention to the work and work processes of the older worker. In addition to observation, the OEHN must consult with aging workers – using their knowledge and expertise of
the work process to identify potential hazards and to develop solutions.

Silverstein (2008) suggests that workplace strategies to reduce injury and illness in the workplace should “…build upon the strengths and protect against the vulnerabilities of workers as they age” with the ultimate goal of keeping the aging worker healthy and on the job. The OEHN can play an important part in the realization of this goal.

**Health Promotion**

Older workers remaining in the workforce have an increased likelihood of suffering from one or more chronic medical conditions (CDC, 2009b). Often these conditions can be prevented or detected early in the disease process with timely screening and detection. For this reason, it is imperative that the OEHN work to promote health and wellness in the workplace to keep the aging worker at work. “Helping people stay healthy and optimize health is the prime goal of health promotion initiatives and services” (Rogers, 2003, p.375). Health promotion initiatives for the older worker might include onsite immunization programs for flu and pneumonia vaccines – immunizations recommended specifically for aging adults. Screening programs for breast and colon cancer, hypertension, and total blood cholesterol should be included in a health promotion program tailored to meet the needs of the aging workforce. The potential benefits of age appropriate diet and exercise warrant the formulation of programs specifically geared toward older workers. Such programs might include information on fat, cholesterol, and caloric intake as well as adequate calcium intake for the older adult. Injury prevention strategies such as use of vehicle
safety belts, smoke detectors, and fall prevention strategies are also appropriate interventions and topics for health promotion strategies aimed at the aging worker (Rogers, 2003). The OEHN can be instrumental in developing and initiating a health and wellness program that addresses the specific needs of the aging worker by tailoring interventions to the needs of this population (Shultz & Adams, 2007).

**Education and Training**

The OEHN should play a pivotal role in developing education and training initiatives designed specifically for the aging worker. According to Rogers (2003), “new programs will need to be developed to maximize worker health and keep the employee at work.” The OEHN can establish educational opportunities and programs specific for the aging worker on such topics as eldercare, family care support, retirement planning/benefits, financial planning, Social Security, and information on community resources for the aging adult. In addition, the OEHN should educate the aging worker about normal physiologic and cognitive changes associated with age, risk factors for disease, as well as signs and symptoms of pathological and chronic conditions.

**Collaboration with Management**

The business community is not properly preparing or planning ahead for future changes in the workforce (Lockwood, 2003). According to the AARP (2000), only a small number of companies develop and implement policies or programs that fully utilize older workers and realize their assets and skills. Similarly, in a 2003 Older Workers Survey, less than 30% of respondents indicated making policy or practice changes in recruitment, retention, and
management strategies in response to the inevitable increasing age of the workforce (Collison, 2003). This lack of preparedness with regard to the aging workforce offers the OEHN a multitude of opportunities for collaboration with management to prepare and plan for the changes the aging worker will bring to the workplace. The OEHN can work with corporations to embrace the attributes of the aging worker. In addition, the OEHN can assist business in developing plans to address issues associated with aging such as physical and cognitive changes, injury prevention, health promotion, safety, education and training, and psychosocial support.

**Future Research**

The aging workforce also provides opportunities for continued and future research and study. Recommendations for possible future research include studies to determine age-related differences in employee outcomes, such as fatalities, disability, lost work days, and modified duty days after occupational illness or injuries. As previously discussed, the differences between younger and older workers with respect to severity, frequency, and types of work injuries are well documented. Understanding the differences in outcomes between younger and older workers can influence the practice of the OEHN.

Much of the existing research and literature categorizes the aging worker as being between the ages of 40-55. However, workforce trends indicate that participation workers over the age of 55 and even beyond retirement age will increase. To prepare for the future trend of employing older workers, additional longitudinal research about the 55 year old and beyond worker is needed. This
research will help to form policy, develop workplace strategies, create age appropriate training methods, and address physiological and cognitive changes of aging (Popkin, 2008).

Additional opportunities for research include documenting work and working conditions that older workers find troublesome or result in injuries/illness. As well as detailing the areas in which older workers are vulnerable, it is important to examine ways in which the older worker may be more resilient than their younger counterparts (Shultz & Adams, 2007).

**Conclusion**

Older workers are remaining in the work force because of increasing longevity, a financial need to work, the ability to work beyond normal retirement age, the desire to remain socially active, and the need to remain physically and cognitively stimulated. “As a result of complex interactions between lifestyle choices, socioeconomic variables, and financial needs, people are working later into life; age 65 is no longer considered the cut-off age for retiring...”(Popkin et al., 2008). This aging of the U.S. workforce provides employers with an invaluable resource. The older worker not only offers experience and knowledge, good work performance, and work attitude but also possesses positive traits such as loyalty, motivation, stability, and grounded work ethic (Lockwood, 2003; AARP, 2000). At the same time, employers must contend with issues associated with the aging worker specifically age-related illness, injuries, psychosocial considerations, and health care costs.
As the worker ages, changes in cognitive and physical capabilities must be addressed by both the worker and the employer. Normal changes with aging include visual disturbances, hearing loss, diminished mobility and muscle strength, altered sleep patterns, declines in information processing, as well as delayed reaction times. It is imperative for aging workers and their employers to be cognizant of these normal changes associated with aging and to understand how they affect the worker at home and on the job.

To accommodate the effects of aging, strategies such as injury and illness prevention, hazard identification, ergonomics, education and training, and health and wellness initiatives are employed in the workplace. The OEHN collaborates with a multidisciplinary team that includes employees, employers, and other occupational health professionals to keep older workers safe and on the job. In addition, the OEHN utilizes the roles of practitioner/clinician, leader, health promotion specialist, educator and collaborator to meet the health and safety needs of the older worker. Therefore, the OEHN is in a unique position to address the opportunities and challenges presented by the aging U.S. labor force. The OEHN can assist older workers as they navigate work and the aging process. In addition, the OEHN works with management administration to prepare for and manage an aging workforce. Ensuring the health and safety of older workers allows for the protection of the knowledge and expertise that the older worker possesses - thus allowing this valuable asset to continue to contribute in the workplace.
REFERENCES


