



The Aging Population - WC Costs, Emerging Risks, What's Next?

April 18, 2023

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Your Presenter

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 - ✓Bachelor of Science, Industrial Engineering (University of Wisconsin)
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The evolution of the workforce

- ✓ In 2000, 32% of those > 55 worked
- ✓ In 2020, the working population over 55 grew to 39%
- ✓ Comorbidities are starting to influence injury occurrence and healing
- ✓ CDC study of Ohio construction workers 2007-2017 shows a higher number of claims, per the table below:

Number of Claims by Age Range					
Age Range	18-24	25-34	35-44	45-54	55-64
# of Claims	679	2,570	3,004	2,746	1,148



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The cost implications

- ✓ Average costs incurred for injured workers > 45 are 75% higher than those < 45 per Aon Benchmarking data
- ✓ Outcomes deteriorate significantly with the aging population
- ✓ Those with comorbidities, and specifically diabetics, having a 116% greater risk of an OSHA recordable
- ✓ Even at lower ages, aging plays a role - Indemnity costs were 43% higher for 35-44-year-olds than those between 25-35 years
- ✓ CDC study of Ohio construction workers 2007-2017 shows higher claims costs, per the table below:



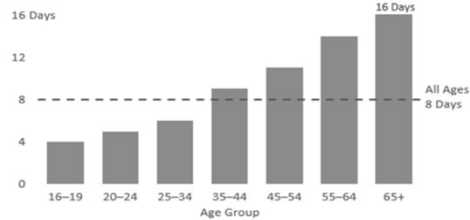
Number of Claims by Age Range					
Age Range	18-24	25-34	35-44	45-54	55-64
Average Cost	\$3,492	\$11,811	\$20,359	\$25,932	\$25,572

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Median Days Away From Work (DAFW) by Age Group, All Injuries



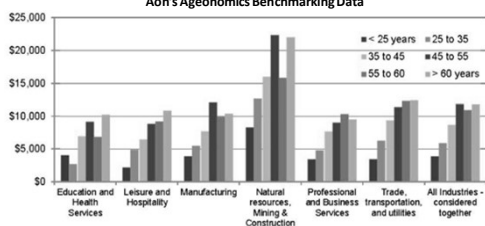
Days lost per injury with at least one day away from work
Source: US Bureau of Labor Statistics, Survey of Occupational Injuries and Illnesses, 2019

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WC Claims by Industry and Age Group
Aon's Ageonomics Benchmarking Data



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Injury Trends by Age Range



	16-24	25-44	45-64	65+	All Ages
Overexertion	23%	32%	33%	24%	31%
Falls, Slips, and Trips	19%	22%	33%	48%	28%
Contact with Objects/Equipment	38%	29%	20%	17%	26%
All Other	20%	17%	13%	11%	16%
Total	100%	100%	100%	100%	100%

Source: US Bureau of Labor Statistics, Survey of Occupational Injuries and Illnesses, 2019

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STF Prevention—Aging Factors

Balance Impacts: Postural Sway

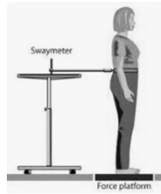
Postural Sway

"Postural sway is the subconscious maintenance of posture through movements around our center of gravity," says Ali Cost, MSO T, OTR-L, an occupational therapist and director of education for Foundation Training.

- We all sway when standing to keep balance
- Aging can increase postural sway due to decline in muscle and neurological function
- Inner ear issues can contribute to postural sway

Actionable Implications

- ✓ Postural sway—
 - ☐ Balance exercises: inner ear issues
 - ☐ Is it sway or inner ear issues?
- ✓ Reduction in visual acuity—Lighting, visual cues, aisleway striping
- ✓ Unable to feel extremities and balance impairment—Balance aids/railings
- ✓ Depth perception impairment from aging and bifocals can impact walking, curbs, and stairway use



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Ergonomic Risks to the Aging

Physiologic Changes:

- Increase in BMI can show in knees, impacting "safe" lifting postures
- Prevalence of arthritis can lead to pain and reduction in gripping forces
- Sarcopenia is the age-related reduction in skeletal muscle mass
- Strength annually 3.6% in men and 2.8% in women
- Even those with lean muscle mass lost strength
- Exercise may help reduce the strength reductions
- Do balance concerns trigger awkward lifting and carrying postures?
- Loss of leg/knee strength cause older workers to avoid "safe" lifting postures

Actionable Implications

- ✓ Lifting aids
- ✓ Use of carts and conveyors—no carrying! Think of wait staff
- ✓ Gripping/grasping—look at tooling; explore automation of especially difficult tasks
- ✓ Overexertions? Does carrying or lifting impact STFs? Are overexertions and STFs complimentary variables?



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Aging Injury Impact: Hearing Loss

The evolution of hearing loss:

- ✓ Generally, occurs with age-related cochlea degeneration
- ✓ Hearing threshold declines on average one decibel after age 50
- ✓ Average person has 25 dB age-related hearing loss at or around age 75
- ✓ Exposure to noise accelerates hearing loss
 - Damage to hearing possible at 80-95 dBA
 - Hearing loss can start to occur after one hour at 95dBA
- ✓ Ototoxicants and Hearing Loss
 - Exposure to solvents and metals, in combination with noise is believed to cause hearing loss to occur more quickly
 - Metals are cadmium and lead
 - Solvents are in the alkylbenzene family: styrene, trichloroethylene, toluene, xylene, and benzenes
 - Metals and solvents are believed to accelerate cochlear damage



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Aging Injury Impact: Hearing Loss and Health Impacts

Hearing loss is problematic due to probable link to health issues:

- ✓ According to NIH, brain scans are showing that hearing loss is contributing to a faster rate of atrophy in the brain
- ✓ Cardiometabolic diseases and biologic aging is linked to hearing loss
 - May be confounding—chicken or egg argument
- ✓ Medications may make workers more susceptible to hearing loss
- ✓ Hearing loss can impact balance through inner ear disturbances
 - Another age-related link to slips, trips, and falls!
- ✓ Increased isolation, due to inability to hear
 - Avoiding contact/communication—skipping shopping and meals
 - Skipping workouts
 - Avoiding doctor appointments



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Aging Injury Impact: Sensitizers

A sensitizer is a substance causing an allergic reaction in normal tissue after repeated exposures; a chemical with the potential to become an allergen

- ✓ Examples
 - Poison ivy, poison oak, cedar, pet dander, bee stings
 - Work-related: dermatitis, latex, multiple chemical sensitivity, flours
- ✓ Metals—Lithuania study—nickel, chromium, palladium, gold, cobalt, titanium
 - One third of those exposed to nickel became sensitized
 - Gold exposure led to face dermatitis and oral discomfort
- ✓ Chemicals—isocyanates, acid anhydrides
- ✓ Industries frequently having sensitizers
 - Painting, plating, adhesive application
 - Bakeries, flour production, spice manufacturing/application
 - Housekeeping and cleaning
 - Clothing—fire retardant, dyes
- ✓ Physical impacts
 - Anaphylactic shock—chemical sensitizer and multiple chemical sensitivity
 - Dermatitis
 - "Occupational" asthma



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Aging Injury Impact: Temperature Extremes



Studies show higher risks to older adults exposed to excessively hot AND cold temperatures

- ✓ Higher mortality of older adults for both hypo- and hyperthermia
- ✓ Hot temperature extremes
 - Lower sweating rates during heat exposure
 - Lifetime UV and environmental exposures can reduce sweat gland effectiveness
 - Higher blood flow with older adults and from medications can accelerate stress
 - Response to heat stress is reduced
 - Reduced cardiac output can further delay response, including sweat production
- ✓ Cold temperature extremes
 - Reduction in ability to restrict blood flow so cold flow spreads more quickly
 - Inability to feel toes/extremities due to diabetes, back, and other chronic issues
 - Sarcopenia (age-related muscle mass) also plays a role in abnormal blood flow
 - Metabolic heat production occurs less in older adults
 - These impact can prevent the recognition of frostbite or other cold stresses
 - Bonus! Larger body mass and weight gain can help in maintaining body heat!

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Summary

The aging population provides employers with experience and a good work ethic

- The aging population may continue to increase in the workplace since they are a large segment of the population
- Retirement delays due to fear of inflation impacts (fixed incomes) and increased medical costs
- Slips, trips, and falls are the #1 cause of injury to the aging
- Ergonomic injuries
 - Loss of strength
 - Balance and fear of falling lead to awkward lift and carry postures
 - Unable to perform "safe" lifts due to physiologic changes, including arthritis and chronic knee pain
- IH risks create additional risks through noise and sensitizer exposure
- Exposure to heat and cold
 - Difficulty in feeling or recognizing risk: asking for help
 - Chronic bladder concerns – lack of hydration
 - Susceptibility to frostbite from repeated exposures



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Thank You

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