

In This Chapter

- Tracing Physical Aging
- Sensory-Motor Changes
- Neurocognitive Disorders (NCDs)
- Options and Services for the Frail Elderly

Tracing Physical Aging

1. Chronic disease is often normal aging “at the extreme”
2. ADL impairments include difficulty performing everyday tasks that are required for living independently
3. Lifespan has a defined limit

Tracing Physical Aging

- **Normal aging changes:** Universal and progressive signs of physical deterioration that occur with age
- **Age-related changes:** Universal and genetically programmed into DNA but differ according to time of onset

Two Types of ADL Problems

- **Instrumental ADLs**

- Difficulties performing everyday household tasks (cooking, cleaning)
- Common in advanced old age

- **Basic ADLs**

- Difficulties performing essential self-care activities (eating, getting to the toilet)
- Relatively rare until the old-old years
- Require full-time help or nursing home care

Percentages of people needing assistance with instrumental ADLs and basic ADLs

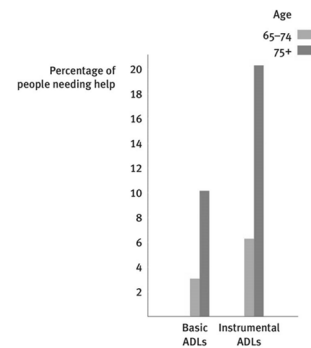


Figure 14.2
Belsky, *Experiencing The Lifespan*, 4e © 2016 Worth Publishers

Can We Live to 1,000?

- **Life-extension strategy: Undernutrition without malnutrition**

- Calorie restriction enhances glucose metabolism to cardiac function
- Near future maximum lifespan is currently unrealistic
 - Complex causes of aging from genetic timers to random insults
 - Evolutionary expiration date set below 100 years

What affects the physical aging path?

- Socioeconomic status
- Ethnicity
- Gender
- Age

Let's take a closer look at each.

Socioeconomic Status, Aging, and Disease

- **Socioeconomic and health gap are related**
 - Universally, affluent people living longer and enjoying better health
 - Relationship between income and illness begins in middle age
- **Accelerated aging process begins at beginning of life (fetal programming hypothesis)**
 - Diet, illness, and life stresses can lead accelerated aging
- **Poverty-illness relationship is bidirectional**
 - Childhood illness can lead to poverty
 - Poverty can lead to poor health-related choices in later life

Ethnicity, Aging, and Disease

- Despite poverty, Hispanic Americans seem to fare better against physical aging than low-income Whites.
- African Americans are more susceptible to illness and premature death than any other ethnic group.



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Gender, Age, and Disease

- **Women**
 - Survive longer due to less life stressors, support from family and friends, their second X chromosome
 - Rank higher on sickness indicators
 - Are more prone to illnesses that cause problems with ADLs but are not fatal
- **Men**
 - Are twice as likely to die from a heart attack earlier in life
 - Outlived by women in every developed world nation by at least 4 years

Life expectancy and healthy life years at 65

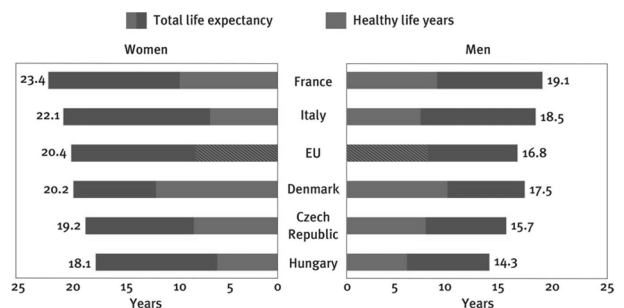


Figure 14.4
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Interventions: Taking A Holistic Lifespan Disease-prevention Approach

- **Strategies to increase healthy-life years and biological life limits**
 1. Focus on children: Preventing premature births, eliminating child poverty, improving education
 2. Focus on communities: Making cities senior-citizen friendly, promoting healthy nutrition and exercise, supporting nurturing social relationships

LEARN THE TERMS

- Normal aging changes
- Chronic disease
- ADL (activities of daily living problems)
- Instrumental ADL problems
- Basic ADL problems
- Socioeconomic health gap
- Healthy-life years

Sensory-Motor Changes

- Vision
- Hearing
- Motor abilities

Our Windows on the World: Vision

- **Signs of normal aging**
 - Presbyopia
 - Poorer dark vision
 - More troubles with glare



Figure 14.5a
Society: Experiencing The Lifespan, 4e © 2016 Worth Publishers
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What an 85-year-old might see

The Main Cause: The Lens

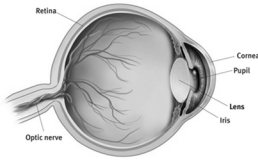


Figure 14.4
Blind Spot: Exploring The Senses, 4e © 2014 Worth Publishers

- Lens not able to bend and gets cloudier
- Several conditions may occur
 - Cataracts
 - Macular degeneration
 - Glaucoma
 - Diabetic retinopathy

Interventions: Clarifying Sight

Use strong indirect lighting.

Avoid fluorescent lighting that produce glare, especially on bare floors.

Use adjustable lighting and larger numerals on appliances, and provide non-reflective surfaces.

Use low-vision aids such as magnifiers.

Investigate low-vision clinic for rehabilitation resources.

Our Bridge to Others: Hearing

- **Hearing loss**
 - Is common and causes as many barriers as vision loss
 - May be more problematic than vision problems because they limit the ability to connect with the human world through language.
- Occurs in one in three older adults
- Is more likely in men
- Can have environmental cause

Presbycusis

- **Presbycusis is characteristic age-related, permanent hearing loss**
 - Caused by atrophy of inner ear hearing receptors
- **Selective problems**
 - Hearing higher-pitched tones
 - Overpowering background noise
- **Traditional hearing aids that magnify all sounds**
 - May not help much and are difficult to manage

The Human Ear

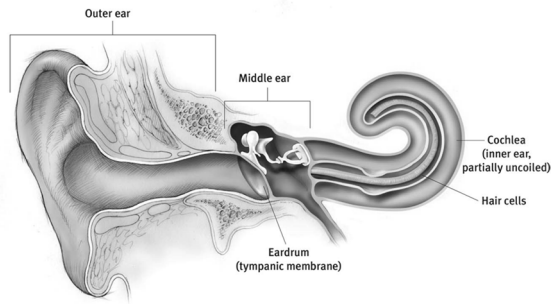


Figure 14.7
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Interventions: Amplifying Hearing

Avoid high-noise environments

Install carpeting in the house

Replace noisy appliances

Face the person when speaking

Avoid elderspeak

Motor Performances

- Primary motor ability change is slowness
- Problems with *reaction time* or decline in the ability to respond quickly to sensory input
- Changes in skeletal structures affect motor abilities:
 - Osteoarthritis
 - Osteoporosis



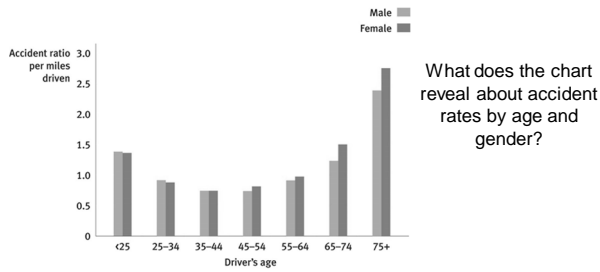
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Interventions: Managing Motor Problems

- **Vision**
 - Use appropriate lighting and appliances
 - Avoid driving at night and in rain
- **Hearing**
 - Reduce background noise
 - Face person and speak directly; avoid elderspeak
- **Motor abilities**
 - Use caution in speed oriented situations
 - Locate appropriate exercise programs
 - Install assistive devices

Driving in Old Age

- Vision, hearing, and reaction-time problems converge to make driving more dangerous especially in the old-old years.



Driving in Old Age: Issues and Solutions

- **Problem: Giving up one's car means loss of independence**
 - Car-oriented society
 - Impairs getting to doctor or store
 - Can cause nursing home entry
- **Potential solutions**
 - Requiring yearly license renewals along with vision tests
 - Changing driving conditions
 - Constructing less care-dependent communities

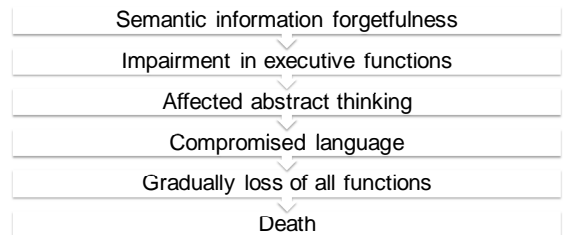


Neurocognitive Disorders (NCDs)

- **Major NCD commonly called dementia**
 - Is general label for any illness that produces serious, progressive, usually irreversible cognitive decline
 - Chronic disease that involves total erosion of personhood
 - Typically, dementia is an illness in advanced old age, not young-old
 - Can be seen in younger adults who experience brain injury or illnesses such as AIDS

The Dimensions of These Disorders

- Deterioration progresses at different rates from person to person and varies depending on the specific disease



Neurocognitive Disorders' Two Main Causes

Vascular neurocognitive disorder (Vascular dementia)

- Caused by multiple small strokes
- Involves impairments in the vascular system (blood flow in body)
- Blood flow that feeds brain

Neurocognitive disorder due to Alzheimer's disease

- Age-related dementia characterized by neural atrophy and abnormal by-products, such as senile plaques and neurofibrillary tangles.
- Neurons decay and wither away, and are replaced by neurofibrillary tangles and senile plaques
- Genetically linked (Genetic marker (APOE-4))

Targeting the Beginnings: The Quest to Nip Alzheimer's in the Bud

▪ Major focus is on amyloid protein

- Fatty substance that is the basic constituent of the senile plaques.
- Cannot be dissolved
- No cure and no proven effective treatment

▪ Key lies in early detection and halting early neural decay

▪ Recommended prevention

- Healthy diet
- Physical exercise, particularly treatments or running wheels
- Mental exercise, such as brain-stimulation games

Current Way of Diagnosing Alzheimer's

1. Look for a history of steady mental deterioration
2. Rule out other physical and psychological causes
3. Explore person's performance on a battery of neuropsychological tests

Interventions: Dealing with These Devastating Disorders

• Improving the environment is key

- Using external aids and making life predictable and safe
 - Use note cards to jog memory
 - Focus on safety
 - Lock and put buzzers on doors
 - Remove toxic substances and deactivate dangerous appliances
- Providing caring and loving support
 - Rely on faith
 - Relish the time left

Caregivers and Dementia

- **Caregiver issues**
 - Witnessing loved one deteriorate to an unfamiliar person
 - Experiencing abuse, either physically or verbally
 - Feeling stress, depression, embarrassment or guilt
 - Reversing parent-child roles

Caregivers and Dementia

- **Caregiver coping strategies**
 - Getting involved with support group
 - Looking into nursing homes and other options
 - Resisting personalization of insulting comments
 - Respecting person's humanity
 - Using this trauma as a redemption sequence

LEARN THE TERMS

- Presbyopia
- Lens
- Presbycusis
- Elderspeak
- Reaction time
- Osteoporosis
- Major neurocognitive disorder (NCD)
- Vascular neurocognitive disorder
- Neurocognitive disorder due to Alzheimer's disease
- Neurofibrillary tangles
- Senile plaques

Options and Services for the Frail Elderly

- **Global elder-care scene**
 - Family care model fraying in some collectivist countries
 - Turning to Western models in many countries
 - Scandinavian countries offer positive models for elder care
 - Family members still take primary responsibility for elder care
 - However, government often provides home health services allowing people to stay in their homes
 - Money provided to help remodel home
 - Presence of multigenerational villages

Alternatives to Institutions in the United States

- Continuing-care
- Assisted-living facility
- Day-care programs
- Home health services



Nursing Home Care

- **Nursing homes or long-term care facilities**
 - Designed for people with basic ADL impairments
 - Provides 24-care intensive care
 - Serves mainly very old and female residents
 - Entry often occurs after trauma
 - People without families are most at risk of entry
 - Primarily funded through Medicaid in U.S.

Evaluating Nursing Homes

- **Nursing home system is often misunderstood and misrepresented**
- Myths include
 - Often viewed as “dumping ground”
 - Abuse is widespread
 - Residents are poorly care for until they die
- Movement to change nursing home culture
 - Person-centered
 - Attentive to resident's individual years

However

Nursing homes can vary dramatically in quality.

Research shows 1 in 4 nursing homes provide substandard care.

Nursing Home Providers

- **Certified nurse assistant or aide**
 - Font-line care provider in a nursing home, who helps elderly residents with basic ADL problems
 - Like child-care workers, these health-care providers have very low wages
 - Facilities are often understaffed
 - Research suggests that most get a true sense of satisfaction with their work

LEARN THE TERMS

- Medicare
- Alternatives to institutionalization
- Continuing-care retirement community
- Assisted-living facility
- Day-care program
- Home health services
- Nursing home/long-term-care facility
- Certified nurse assistant or aide