Growing Older with A Developmental Disability: Physical and Cognitive Changes And Their Implications

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THE AGING PROCESS

Why is old age a time of physical and men al decline?
Aging is an ongoing lifelong process that starts in the womb. There are three stages: 1) fetal growth, 2) maturation, and 3) senescence. **Senescence** refers to the physical and mental changes that occur in later life.

How long do people live?

The life **span** for human beings is approximately 120 years. Life span is the maximum length of time that humans could live if all illnesses and accidents could be avoided or could be successfully treated. There is no evidence that life span has increased over the centuries. **Life expectancy** is the average number of years an individual is actually likely to live. Life expectancy has increased because, even though we have not slowed senescence, we have reduced early death through medical advances, better access to health care, and improvements in public health. The life expectancy for males born in 1983 is 71 years compared to only 46 years for males born in 1900 (Schaie & Willis, 1991).

What is the life expectancy for people with mental retardation?

The life expectancy for people with mental retardation without Down syndrome who have mild to moderate levels of impairment approximates that of the general population. A recent study of New York State mortality data for 2,752 adults age 40 and older with mental retardation revealed their average age at death was 65 compared to age 70 for the general population. Heart disease, pneumonia, and cancer were the leading causes of death. Paralleling general population trends, males died earlier (age 63) than females (age 67). People with Down syndrome died on average ten years earlier (age 56) (Janicki, 1996)

Why is old age a time of physical and mental decline?

The research supports two general theories that help explain why we age. **Programmed theories** attribute aging to a biological timetable, possibly the same one that regulates childhood growth and development. Age-related deficits are theorized to result from internalized biological clocks which program changes in our genes, hormones, and immune system functions.

Error theories suggest that aging is caused by external or environmental factors that damage cells and organs until they can no longer function adequately. For example, various error theories suggest that we age because vital cell parts wear out or genetic mutations occur (National Institute on Aging, 1993).

Compared to the general population, we have relatively limited information on the age-related physical and mental changes that people with developmental disabilities experience. Most research has been based on small numbers of people who were not followed over a

long period of time. Much of the early research was conducted in large institutions and probably included unusually high percentages of people with severe levels of impairment and serious medical problems. Nonetheless, we have been able to identify similarities as well as distinct differences in how people with developmental disabilities age.

What health problems are adults with mental retardation (without Down syndrome) likely to develop as they grow older?

After age 50, people with mental retardation and people in the general population are more likely to develop chronic diseases including diabetes, arthritis, cancer, and respiratory ailments. Heart disease also is more prevalent among both groups, although angina (severe chest pain) may be less frequent among people with mental retardation. It is unclear, however, whether older people with mental retardation actually are less likely to experience this condition or whether it is less likely to be detected and reported. After age 70, constipation is a greater problem for people with and without mental retardation.

Obesity and osteoporosis (brittle bones) are two conditions that appear to be more prevalent among older individuals with mental retardation than among other older people. Osteoporosis is a particular concern because older people are more at risk of falling due to mobility and balance problems.

Certain age-related changes may occur earlier among adults with mental retardation. They may experience vision and hearing losses earlier. People who are unable to walk and who have a profound level of impairment are more likely to die earlier from respiratory infections (Machemer,Jr. & Overeyender, 1993; Schrojenstein Lantman, et al, 1997).

What mental changes occur, as adults with mental- retardation grow older?

Like the general population after age 50, people with mental retardation, who do not have Down syndrome, experience a gradual decline in overall intellectual capacity, a decrease in their speed of recall, and slower general cognitive functioning.

Mental illness is more prevalent among adults with mental retardation than it is in the general population. Possible contributing factors are limitations in expressive communication, deficits in information processing, and a lack of social acceptance. Depression is the most frequently diagnosed affective disorder among older people with mental retardation, and it can be triggered by situations that would be less stressful to the general population. Individuals with mild and moderate levels of impairment are more likely to develop anxiety disorders and phobias than are people with severe impairments (McNellis, 1997; Moss, 1997).

Often, it is difficult to identify mental health problems among older people with mental retardation. People with mental retardation are less able to describe and convey their feelings; symptoms of certain conditions such as depression may be expressed as physical complaints (e.g., headaches). Detection of mental health problems also varies by the degree

of access to the service system.

How are adults with Down syndrome affected by the aging process?

People with Down syndrome are susceptible to premature aging. Age related physical changes that generally begin after age 55 in the general population often occur among people with Down syndrome who are in their early forties.

At this age, individuals with Down syndrome are more likely to experience the early onset of hearing losses, vision problems including cataracts, and the premature aging of their immune system. They also are more susceptible to obstruction of their airways which causes **sleep apnea**, and 20 to 30% may develop **hypothyroidism** which reduces the production of thyroid hormones. As adults with Down syndrome grow older they are at greater risk for joint problems of the neck, knee, or hip and for bunions, any of which can pro-duce difficulty with walking and balance. They also are more likely to develop seizures (possibly related to Alzheimer's disease), tumors, and heart disease. Approximately 40% of people with Down syndrome are born with congenital heart problems that may become more severe in later life. However, they appear to be less susceptible to hypertension.

Individuals with Down syndrome may begin experiencing adaptive skill losses and intellectual decline at approximately 50 years of age, earlier than either the general population or other people with mental retardation (Adlin, 1993; Cohen, 1996).

What age-related changes are people with cerebral palsy likely to experience?

People with cerebral palsy are likely to experience the onset of several secondary conditions as they grow older. These include reduced mobility due to pain and/or weakness in the joints and muscles, and difficulty in eating and swallowing due to loss of control of the throat muscles. Individuals also report problems in breathing and muscle control, which make speaking more difficult. Adults experiencing ongoing bowel and bladder problems often report these problems increase as they grow older. As people with cerebral palsy age they also are at greater risk than the general population for osteoporosis, periodontal disease and pressure sores. Clinical management can help reduce some of these age-related secondary conditions. For example, a physiatrist and a physical therapist can implement conditioning programs to 1) improve stamina and the cardiovascular system, 2) reduce spasticity and muscle pain, and 3) strengthen muscles (Overeynder, Janicki & Turk, 1994; Turk & Machemer, Jr., 1993).

The Normal Aging Process and Unique Considerations for Adults with Developmental Disabilities

Genetics, environment, and lifestyle choices affect how all people age. How people with developmental disabilities age is additionally affected by the nature and severity of their

impairments, secondary conditions arising from the inter-action of the aging process with their developmental disability, coexisting medical conditions, and their medication usage. Therefore, caregivers need to understand 1) how the general aging process affects the body systems and 2) the differences that may occur among people with developmental disabilities.

The following pages contain detailed descriptions of the age-related physical and mental changes that people with developmental disabilities are likely to experience, based on the research to date. Information is provided that 1) describes the normal aging process that all individuals experience; 2) specifies unique characteristics exhibited by older adults with mental retardation (with and without Down syndrome) and older adults with cerebral palsy, the two most prevalent conditions resulting in a developmental disability; and 3) provides suggestions on how family, friends, and staff can support individuals when they experience these changes.

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VISION

Age-related Changes

- People lose the ability to see images clearly (visual acuity), as the lens of the eye becomes denser and cloudier.
- People are less able to focus on items close-up (presbyopia), as the lens becomes more rigid. People who are nearsighted will need bifocals.
- Blues, greens, and violets are harder to distinguish because the yellowing of the lens distorts color perception.
- People lose peripheral (side) vision as the retina changes.

- People find it more difficult to adapt to and see in the dark because the pupil becomes smaller with age.
- The eyes are less able to adapt to glare.
- Dry eyes (scratchy, irritated eyes) and blepharitis, (inflammation or infection of the eyelids) are eye diseases that are more likely to occur as people age and may impair vision.
- Age-related eye diseases such as macular degeneration (results in the loss of central vision), glaucoma (results in the loss of peripheral vision), keratoconus (the thinning of the cornea), and cataracts can seriously impair vision.
- Many older people develop diabetes, which causes a loss of visual acuity.

Considerations for People with Developmental Disabilities

- Adults with Down syndrome are at higher risk for vision problems and are more likely to experience age-related eye disorders earlier than other older adults.
- Blepharitis, keratoconus and cataracts are more common among adults with Down syndrome.
- Because many vision changes occur gradually, individuals may have difficulty recognizing or communicating the problem.

Suggestions for Carers

- Provide periodic eye exams.
- Watch for behaviors suggesting vision problems such as: squinting, confusion, rubbing the eye, shutting/covering one eye, tilting /thrusting the head, holding objects closer.
- Use bright (e.g., yellow, orange, red) and contrasting colors.
- Use contrasting colors or different textures at stairs and other places to accommodate declines in depth perception.
- Increase lighting levels and arrange lights to focus on individual tasks.
- Provide nightlights and large print books.
- Allow time for a person to adjust to changes in light.
- Reduce glare by using dull instead of highly polished finishes on furniture and floors.

HEARING

Age-related Changes

- High-pitched tones become harder to hear. The onset of this condition, called "presbycusis", often occurs when people are in their mid 50's. It worsens with age.
- Presbycusis results in the "Cocktail Party Effect". People find it harder to listen to one person's voice when there is a lot of background noise.

Considerations for People with Developmental Disabilities

- People with Down syndrome are generally more prone to hearing loss because of the presence of fluid in the middle ear and very small ear canals which can be blocked by relatively small amounts of cerumen (ear wax).
- Presbycusis is more prevalent among people with Down syndrome and often occurs among young adults.

Suggestions for Carers

- Be alert for signs of hearing loss such as boosting the television volume, speaking loudly, withdrawing from social situations.
- Periodically check for cerumen (wax) in the ears.
- Presbycusis may be correctable with a hearing aid.
- Look directly at the person when speaking. Speak clearly and slowly in deeper tones.
- Find a quiet place with minimum background noise for conversing.
- Allow the person time to sort out what he or she has heard.

TASTE AND SMELL

Age-related Changes

- Taste buds wither and reduce the sense of taste.
- The senses of sweet and sour taste are lost first. The sense of bitter taste remains the longest.
- The sense of smell may also be reduced.
- The thirst mechanism may decline causing dizziness from dehydration.

Suggestions for Carers

- Use more seasoning on foods but avoid salt.
- Recognize that change in taste may also be related to medication or to illness.
- Make sure that liquid intake is sufficient to prevent dehydration.
- Monitor individuals for odors on their clothing and body.
- Make sure smoke detectors are working.
- Check for spoiled food.

SKIN

Age-related Changes

- The skin becomes thinner and dryer and develops wrinkles.
- The loss of the layer of fat just below the skin decreases our ability to stay warm in cooler temperatures.
- The sweat glands lose their ability to keep us cool in hotter temperatures.
- Brown pigmentation (aging spots) increase.
- The skin loses its ability to feel pain and a light touch.

Considerations for People with Developmental Disabilities

- Dry skin is very common in adults with Down syndrome, especially if they have hypothyroidism.
- Fungal infections of the skin and nails are more prevalent among people with Down syndrome.
- People with cerebral palsy are more susceptible to pressure sores because of decreased mobility and the thinning of their skin. Suggestions for

Carers

- Thoroughly and gently rinse away soap to prevent dry and flaky skin.
- Thoroughly and gently dry the skin and apply moisturizing lotion after bathing.
- People who can't move by themselves should be frequently repositioned to prevent pressure sores.
- Regularly check skin for dryness, pressure sores, cuts, and burns.
- Be aware of sudden changes in air temperature that cause discomfort.
- Make sure hot and cold water faucets are easy to identify and easy to turn on and off because older people feel heat less quickly. Monitor bath water and heating pad temperatures to prevent burning.

MUSCLES AND BONES (MUSCULOSKELETAL SYSTEM)

Age-related Change

- Muscle mass decreases and muscles lose their strength and tone.
- Joints become less mobile.

- Bones become more porous and easier to break (osteoporosis). Women are at much greater risk for osteoporosis because of the loss of estrogen that occurs after menopause.
- The spinal cord shortens with age.
- People are more likely to develop arthritis.

Considerations for People with Developmental Disabilities

- Approximately 14% of people with Down syndrome have spinal column instability which may compress the spinal cord, possibly resulting in neck pain, poor posture and gait, loss of upper body strength, abnormal neurological reflexes, and changes in bowel and bladder discharge.
- Adults with Down syndrome are susceptible to problems with walking and balance because they are at greater risk for joint problems of the neck, knee, and hip and for developing bunions.
- Individuals with a long-term history of taking anti-seizure medication have a greater risk of developing osteoporosis.
- Nutritional deficits, limited muscle activity, and medication usage also place people with cerebral palsy at risk for developing osteoporosis.
- Individuals with cerebral palsy are likely to experience reduced mobility due to pain and/or weakness in the joints and muscles. This can result from long-term weight bearing on poorly developed joints and aggressive therapy regimens to encourage walking.

Suggestions for Carers

- Encourage independent movement and self-care activities.
- Promote regular exercise (weight bearing if possible).
- Implement safeguards such as stair railings, non-slip risers on stairs, and non-skid strips in bathtubs to prevent falls.
- Teach individuals to use mobility aids appropriately to reduce the risk of injury and falls.
- Provide seating that is comfortable but firm and not too deep.
- Strategies for reducing osteoporosis include increased calcium intake, weight bearing exercises, and hormone replacement therapy.

HEART AND BLOOD VESSELS (CARDIOVASCULAR SYSTEM)

Age-Related Changes

- The heart rate decreases because the heart muscles get weaker and don't contract as quickly.
- When the heart rate is elevated, it takes longer for it to return to normal.

- Two factors cause the arteries to harden (become less elastic): 1) agerelated calcification and 2) the build up of fat (cholesterol) on the artery walls, a condition called atherosclerosis.
- When arteries harden, the heart must pump faster in order to maintain the flow of blood and oxygen.

Considerations for People with Developmental Disabilities

- An estimated 30% to 60% of people with Down syndrome are born with heart problems (congenital heart disease), and young adults with no history of heart problems may develop heart valve dysfunction. Adults with these conditions may develop special needs as they grow older. However, adults with Down syndrome are at low risk for atherosclerosis.

Suggestions for Carers

- Undertake activities at an appropriate pace for the individual.
- Teach people how to conserve their energy.
- Watch for signs of fatigue, decreased endurance, dizziness, confusion, and distress.
- Allow enough time between position changes to prevent dizziness.
- Place heavy objects at waist level or below to eliminate lifting them over the head.
- Encourage moderate exercise on a regular basis.
- Encourage a reduction in cigarette smoking.
- Implement a diet that increases "good" cholesterol and reduces "bad" cholesterol.
- Provide routine blood pressure tests, and implement a low salt diet to reduce high blood pressure.
- Learn the signs and the symptoms of a heart attack.

LUNGS (PULMONARY SYSTEM)

Age-related Changes

- Our lungs become less elastic, which reduces the amount of oxygen taken in. However, the limiting factor is not our ability to take in oxygen, but the ability of the heart to circulate it.
  Our breathing becomes less efficient, and our tolerance for exercise decreases.

Considerations for People with Developmental Disabilities

- People with cerebral palsy may experience the onset or increase of problems in breathing and muscle control which can make speaking more difficult.

Suggestions for Carers

- Encourage people to stop smoking and to avoid second hand smoke. v Encourage deep breathing.
- Reduce the pace of activities and allow more frequent rest periods.
- Help individuals alleviate stress.
- Make sure that people are eating properly and drinking enough fluids.
- Provide immunizations for influenza, pneumonia, and other diseases that affect the lungs.
- Watch for signs of infection such as an increase in coughing, shortness of breath, colored sputum, and increased confusion.

DIGESTIVE (GASTROINTESTINAL) SYSTEM

Age-related Changes

- Total calorie needs decline with every decade.
- Indigestion and ulcers may increase because less gastric juice is being produced.
- The decrease in saliva production puts us at greater risk for gum (periodontal) disease.

Considerations for People with Developmental Disabilities

- Older people with developmental disabilities are at greater risk for severe problems from constipation. Long-term poor toileting habits may cause individuals to have expanded (distended) and poorly functioning bowels. People who are inactive or who take antidepressants, antipsychotic, anticonvulsant, or phenothiazine medications are more likely to develop constipation.
- People with cerebral palsy and with Down syndrome may experience difficulty with eating and swallowing due to a loss of control of their throat muscles. Individuals with a high degree of spasticity can be at risk of choking.
- Ongoing bowel and bladder problems that are experienced by many people with cerebral palsy will intensify with age. Decreased movement and reduced fluid and fiber intake make people with cerebral palsy especially prone to constipation.
- Individuals with cerebral palsy and individuals with Down syndrome are at greater risk for gum disease than the general population.

Suggestions for Carers

- Provide a balanced diet that includes high fiber foods and nutrient dense foods.
- Implement a regular schedule for using the toilet.
- Promote good oral hygiene and periodic dental exams.

- Periodically evaluate dentures for good fit and encourage good cleaning. Poor fitting dentures can cause soreness that limits a person's ability to properly chew food. People will avoid nutritious foods that require chewing.
- Refer people with incontinence problems and with swallowing problems for medical evaluations.

URINARY SYSTEM

Age-related Changes

- Bladder capacity and muscle tone decrease causing people to urinate more frequently. However, urinary incontinence (the involuntary loss of urine) is not a normal part of aging.
- The kidneys become less efficient in removing wastes from the blood. Between the ages of 20 and 90, the kidney filtration rate drops by nearly 50%.
- In men, enlargement of the prostate gland can restrict urinary flow.

Considerations for people with developmental disabilities

- Urinary incontinence may be more prevalent among people with Down syndrome. Predisposing factors include urinary tract infections, nervous system disorders, behavior issues, and variations in the body structure.
- For people with cerebral palsy, spasticity results in urinary retention and curvature of the spine (stenosis) can result in incontinence.

Suggestions for Carers

- Make sure that toilet facilities are nearby and can be quickly accessed.
- Provide regular reminders to use the toilet.
- Encourage a fluid intake of eight glasses each day unless restricted by doctor's orders.
- Evaluate incontinence problems. For example, increased frequency of urination may be a symptom of diabetes.
- Screen for prostate cancer and diabetes.

GLANDULAR (ENDOCRINE) SYSTEM

Age-related Changes

- The endocrine system's production of hormones (chemical messengers) decreases.
- The pancreas releases less insulin into the blood stream. This results in excess blood sugar and may lead to diabetes.
- Hormones that stimulate the immune system begin to decrease, although the decline is more gradual in males than in females.
- There is a decrease in the ability to respond to stress.
- It is more difficult to maintain body temperature.
- The body's processes (metabolism) become less efficient.
- Females experience the onset of menopause at approximately age 50 (around age 45 for females with Down syndrome), which triggers the reduction in hormone production and the stop of menstrual periods. Decreased estrogen production causes the vaginal walls to become thinner and drier. Signs of menopause include hot flashes, sleep difficulty, and emotional changes.
- Testosterone production decreases during "male menopause," and men may experience depression, anxiety, and fatigue.

Considerations for People with Developmental Disabilities

- People with Down syndrome may experience the premature aging of the immune system.
- Some studies suggest women with Down syndrome and women who have seizures may experience menopause earlier. The frequency of seizures also may change as women go through menopause.
- From 20% to 30% of people with Down syndrome may develop hypothyroidism (insufficient production of the thyroid hormones). Symptoms can include lethargy, functional decline, confusion, constipation, dry hair and skin, fatigue, and depression. If hypothyroidism is untreated, it can lead to hallucinations and to a coma.

Suggestions for Carers

- Teach individuals about the changes that take place when we age.
- Explain and provide gynecological exams to women.
- Explain and provide prostate exams to men who are 50 or older.
- Minimize physical, mental and emotional stress.
- Make sure individuals receive immunizations such as the Hepatitis B vaccine.
- Monitor the person's body temperature and his/her comfort.
- Oversee clothing choices to avoid hypothermia (getting too cold) or heat strokes (getting too hot).
- Encourage companionship, friendships, and social activities that are based on the individual's preferences.
- Recognize that all individuals have sexual feelings and help individuals to express these feelings appropriately.
- Provide education about HIV/ AIDS.

SLEEP PATTERNS

Age-related Changes

- There is a decrease in "sound" sleep.
- People are more likely to wake up during the night.
- The amount of time spent sleeping is reduced.

Considerations for People with Developmental Disabilities

- People with Down syndrome are more likely to develop sleep apnea (obstruction of the airway evidenced by loud snoring and pauses in breathing during sleep) because they have the following predisposing characteristics: unusually small upper airways, increased secretions, obesity, poor muscle tone, tongue weakness, and enlarged tonsils and adenoids resulting from frequent infections.
- Since people with Down syndrome have so many predisposing characteristics, the prevalence of sleep apnea is likely to increase as they age. Symptoms of sleep apnea include excessive daytime sleeping, behavioral disturbances, declining functional skills, and disrupted sleep patterns.

Suggestions for Carers

- Encourage a regular sleep routine.
- Reduce the intake of caffeine and fluids before bedtime.
- Discourage the use of sleeping pills. Instead, try methods to promote sleep including relaxation techniques and warm milk.
- Watch for signs of sleep apnea such as excessive daytime sleeping, behavioral disturbances, skill decline and disrupted sleep patterns.

PHARMACOLOGICAL CHANGES

- Changes in the liver, kidney and gastrointestinal systems affect the body's ability to absorb, distribute, and eliminate medications.
- The risk of side effects from medication increases with the number of drugs an individual takes (polypharmacy).

Suggestions for Carers

- Make sure that every physician knows about all the medications an individual is taking.
- Know what each medication does and what the possible side effects are. Start with a low dosage of a new medication and slowly increase it to the recommended dosage.

- Watch for unexplained and unusual symptoms.
- Check for drug to drug interactions and food to drug interactions.

BEHAVIORAL AND COGNITIVE CHANGES

Age-related Changes

- Intelligence, or the ability to learn, does not necessarily decline in old age. Loss of intellectual abilities tends to be more related to low motivation, health problems and social isolation than to age.
- Older people have more difficulty in processing and organizing new information. This also makes it more difficult to recall things.
- It is harder for older people to recall people, places and things than it is to recognize them because recognition is aided by what we see.
- Our personality is the same throughout our life. But, our personality traits are accentuated with age.
- The risk factors for mental illness appear to vary with age, but it is uncertain how they affect the prevalence of mental illness.

Considerations for People with Developmental Disabilities

- Small, insignificant increases in motor problems may be exhibited by adults without Down syndrome after age 50.
- Individuals without Down syndrome may experience a gradual decline in intellectual capacity and the speed of recall.
- Individuals with Down syndrome begin to show losses in cognitive and adaptive skills by age 50.
- The onset of Alzheimer's disease may occur at a younger age and may result in a more rapid decline among people with Down syndrome than in the general population.
- Mental illness is more prevalent among people with mental retardation than among the general population.
- Depression is the most frequently noted affective disorder among older people with mental retardation.
- People with mental retardation are more likely to become depressed from less stressful situations than the general population.
- Anxiety disorders and phobias are more common among people with mild and moderate levels of impairment.

Suggestions for Carers

- Establish routines in the activities of daily living.

- Use memory aids and familiar objects to help a person learn new tasks and remember old ones.
- Speak slowly, clearly and distinctly.
- Ask simple questions and give simple instructions.
- Provide environmental cues (e.g. changing the color of the walls and the flooring to differentiate areas).
- Refer individuals showing signs of Alzheimer's/ dementia for a thorough clinical evaluation to rule out treatable conditions that produce the same symptoms. These include: hypothyroidism; B-12 deficiency; brain tumor; stroke; kidney; liver and electrolyte disturbances; medication effects; depression; sensory changes; and sleep apnea.

PROMOTING GOOD HEALTH

- Encourage proper nutrition.
- Incorporate exercise into the daily routine and into residential activities. For example, make it a habit to exercise while TV commercials are on and to walk rather than drive to the store.
- Motivate people to exercise by relating exercise to their goals for achieving and maintaining good health.
- Begin a walking regimen with two minutes initially, building up to 15 after two-three months; add flexibility exercises and light weight training.
- " Disguise" exercise through walking in malls, museums, zoos, etc. Put up a basketball net; use lively, easy to follow exercise videos; utilize community fitness centers. People will continue to exercise if it is fun.
- Reinforce participation in activities by charting and posting the individual's progress.
- When hiring staff, try to recruit individuals who have a personal interest and commitment to fitness.
- Contact local resources such as your school district's adapted physical education programs, college physical education departments, and special recreation associations for help in establishing your exercise programs.

Physical Health Resources

The following material is available from the Institute on Disability and Human Development's RRTC Clearinghouse on Aging and Developmental Disabilities, 1640 W. Roosevelt Road, Chicago, IL 60608, (800) 996-8845 Voice; (800) 526-0844 Illinois Relay Access:

- *Promoting Health in Adults with Down Syndrome*. Chicoine, B., & McGuire, D. (1996). $3.00.
- *Aging with Developmental Disabilities: Changes in Vision*. Flax, M. E., & Luchterhand, C. (1996). $2.00; quantities of 100 available for $26.00.
- *Assistive Technology and You: A Guide for Families and Persons with Disabilities*. Hedman, G., Hooyenga, K., Politano, P., & Sposato, B. (1997). $10.00. McCracken Intervention Matrix: Guidelines for Careers to Help Older Adults with Mental Retardation Maintain Optimal Functioning. McCracken, A., & Lottman, T. (1997). $20.00.
- *Aging with Developmental Disabilities: Aging, Mental Retardation and Physical Fitness*. Rimmer, J. (1997). $2.00; quantities of 100 available for $26.00.
- *Hearing Changes i8n Aging People with Mental Retardation*, Bagley, M. & Mascia, J. (1999). $2.00; quantities of 100 available for $26.00.
- *Aging with Developmental Disabilities: Women's Health Issues*, Brown, A. & Murphy, L. (1999). $2.00; quantities of 100 available for $26.00.

The following materials are available free of charge from The Arc of the United States, 500 East Border Street, Suite 300, Arlington, TX 76010, (800) 433-5255:

- *Developmental Disabilities and Alzheimer's Disease... What You Should Know*.
- *Physical Fitness in People with Mental Retardation*.
- *Let's Talk About Health: What Every Women Should Know (Gynecological Exams, Health Checkups, Menopause, etc.)*. $28.00 This kit contains a video, audio tape, and booklet.

The following are examples of health care publications that are available free of charge from the American Association of Retired Persons (HARP). To order, write or fax HARP: 609 E. Street, NW, Washington DC 20049; FAX (202) 434-6466:

- *Chances Are... You Need a Mammogram* (D14502).
- *Taking Care of Yourself... Includes Breast Health Too* (D16335).
- *Have You Heard? Hearing Loss and Aging* (D12219).
- *Resource List for the Deaf and Hearing Impaired* (D14925).
- *Developing Fall Prevention Programs for Older Adults* (D15236).
- *Healthy Questions: How to Talk to and Select Physicians, Pharmacists, Dentists, and Vision Specialists* (D12094).
- *Staying Strong for Men Over 50* (D15296).
- *Action for a Healthier Life: A Guide for Mid-Life and Older Women* (D13474).
- *Healthy Eating for a Healthy Life* (D15565).
- *The Doable, Renewable Home (D12470)*.

Additional Resources:

Aging with Developmental Disabilities: A Guide For Families. Alfassa-White, R., & Bloom, P. (1996). Available in Spanish and English. The University of Miami/ Center on Aging and Developmental Disabilities, 1400 N.W. 10th Avenue, Suite 601, Miami, FL 33136. (305) 243-6397.

Age Pages (1995, October). A series of 50 publications that provide a quick, practical look at health topics of interest to older people. The Age Pages are free. Call National Institute on Aging Information Center at (800) 222-2225 Voice; (800)222-4225 TTY.

Resource Directory for Older People. National Institute on Aging (1996, March). National Institute on Aging. Call NIA Information Center at (800) 222-2225 Voice; (800)222-4225 TTY.

Active Living with Arthritis. Advil Forum on Health Education, 1500 Broadway, 25th Floor, New York, NY 10036.

Aging and Cerebral Palsy - Pathways to Successful Aging: The National Action Plan. Overeynder, J.C., Janicki, M. P., & Turk, M. A. (Eds.). (1994). New York State Developmental Disabilities Planning Council, 155 Washington Ave., Albany, NY 12210. (518) 432-8233 Voice; (518) 432-8245 TTY.

Cerebral Palsy and Aging: A Report to Adults with Cerebral Palsy and Their Families. Arcand, M. (1996). Wisconsin Council on Developmental Disabilities P.O. Box 7851, Madison, WI 53707. (608) 266-7826 (V) or (608) 266-6660 (TTY).

Alzheimer's Disease Education and Referral Center, National Institute on Aging, P.O. Box 8250, Silver Spring, MD 20907-8250. (800) 438-4380.

Alzheimer's Disease and Down Syndrome. National Down Syndrome Society. (800) 221-4602.

Practice Guidelines for the Clinical Assessment and Care Management of Alzheimer and Other Dementias Among Adults with Mental Retardation. Janicki, M. P., Heller, T., Seltzer, G. B., & Hogg, J. (1995). American Association on Mental Retardation, Attn: Alzheimer Disease Work Group, 444 North Capitol Street, N.W., Suite 846, Washington, DC 20001.

Diagnosis of Dementia in Individuals with Intellectual Disability. Aylward, E.H., Burt, D.B., Thorpe, L.U , Lai, F., & Dalton, A.J. (1995). American Association on Mental Retardation, Attn: Alzheimer Disease Work Group, 444 North Capitol Street, N.W., Suite 846, Washington, DC 20001.

Activities for Alzheimer's Patients: A Selected List of Resources (1992); Alzheimer's Association Publications Catalogue (1997). Benjamin B. Greenfield National Alzheimer's Library and Resource Center, Alzheimer's Association, 919 N. Michigan Ave., Chicago, IL 60611-1676. (800) 272-3900.

Health, Fitness, and Quality of Life for Older Adults with Developmental Disabilities. Hawkins, B. A. (1996). A chapter in *Older Adults with Developmental Disabilities and Leisure*, by Tedrick, T. (Ed.). The Haworth Press, 10 Alice Street, Binghamton, NY 12904.

Fitness and Rehabilitiation Programs for Special Populations. Rimmer, J. H. (1994). Brown and Benchmark Publishers. BRBK Select, 2460 Kerper Blvd., Dubuque, IA 52001. (800) 338-5578. $36.00.

" Don't Be Surprised, You Can Find a Healthy Lifestyle" (NADS 30 minute aerobic video and accompanying booklet). National Association for Down Syndrome, P.O. Box 4542, Oak Brook, IL 60522. $35.00.

Health Promotion for Older Persons with Developmental Disabilities: Depression. Teri, Linda (1997). Northwest Geriatric Center, University of Washington, Box 358123, Seattle, WA 98195. (206) 685-7478. $8.50.

Health Promotion for Older Persons with Developmental Disabilities: Osteoporosis. LaCroix, Andrea Z. (1997). Northwest Geriatric Center, University of Washington, Box 358123, Seattle, WA 98195; (206) 685-7478. $8.50.

Recovering After a Stroke. Agency for Health Care Policy and Research. (1995). AHCPR, P.O. Box 8547, Silver Spring, MD 20907; (800) 358-9295. Free.

Products to Help People with Impaired Vision: Consumer Catalog (request most current). The Lighthouse Inc, 36-20 Northern Boulevard, Long Island, NY 11101. (800) 829-0500.

To obtain copies of this publication contact:

Clearinghouse on Aging & Developmental Disabilities
RRTC on Aging with Mental Retardation (M/C 626)
The University of Illinois at Chicago
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Chicago, IL 60608-6904

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Outside Chicago: (800) 996-8845 (V); (800) 526-0844 (TTY); FAX: (312) 996-6942

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