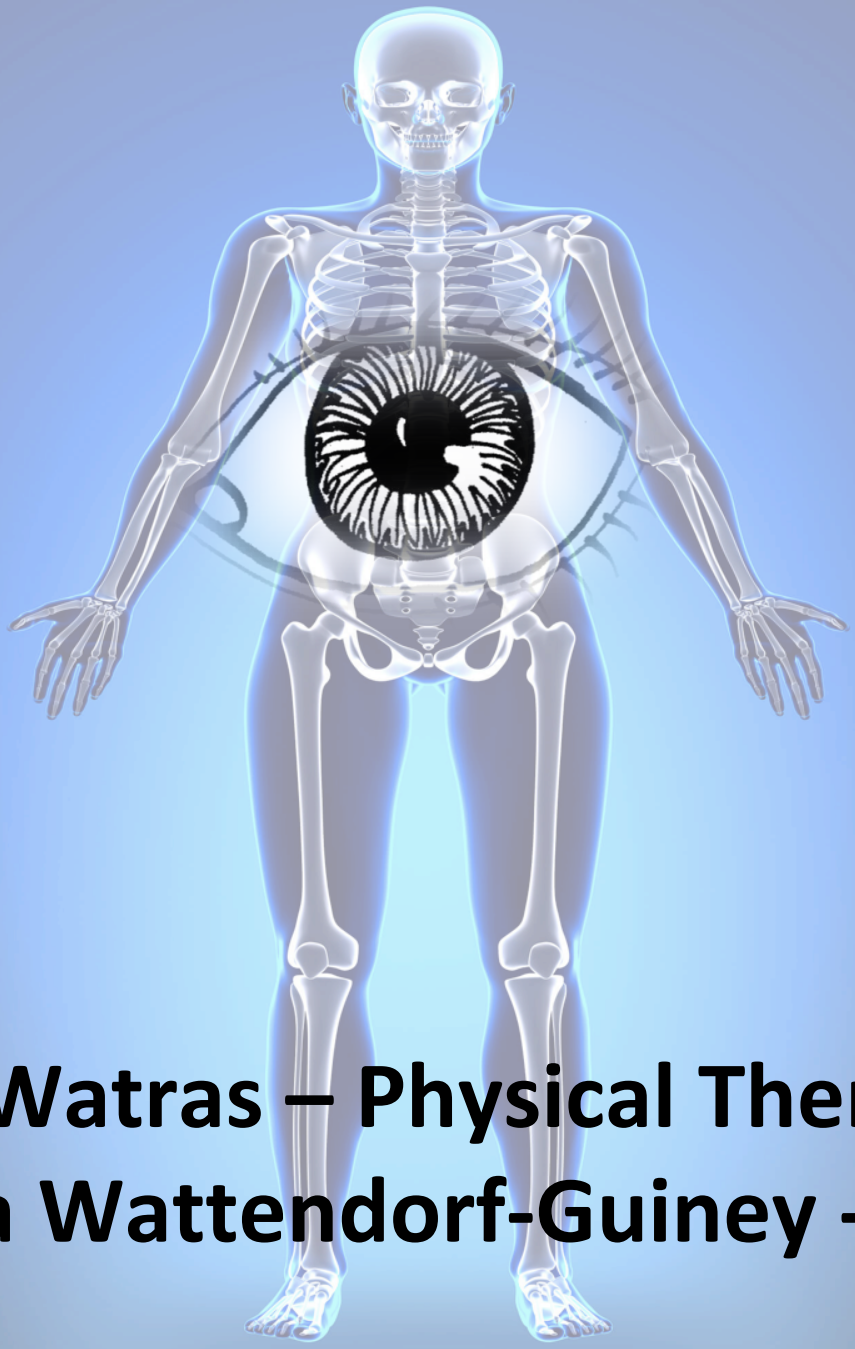


Lynn Watras – Physical Therapist

Georgia Wattendorf-Guiney - COMS

Importance of Collaboration between Physical Therapy (PT) & Orientation and Mobility (O & M) as individuals with Intellectual Disability (ID) & Vision Impairment (VI) age.

Inter– Disciplinary Approach best practice

- Occupational Therapist (OT)
- Physical Therapist (PT)
- Certified Orientation and Mobility Specialist (COMS)
- Recreation Therapist (RT)
- Speech & Language Pathologist (SLP)
- Adapted Physical Education Teacher (APE)

Physical Therapy
Orientation & Mobility

COMS and PT collaborate together for the following reasons:

- Maximum level of independence as clients age
- Limiting accidents caused by vision loss & mobility changes
- Enabling the individual to remain in the least restrictive environment
- Consultation
- Best Practice

O & M training and physical therapy are provided through :

residential based programs

center-based programs

community based

Itinerant programs

Our collaboration at WDC

- Each resident has an assigned O & M and PT
- O & M and PT are responsible for yearly assessments and direct treatment as indicated
- If a need for a consult outside of your discipline is identified, the appropriate clinician is contacted via email or phone
- All medical records are available for review on Meditech or in paper charts
- Consults are completed by the clinician individually or in collaboration with the requesting clinician
- Information and recommendations are shared
- If appropriate, direct treatment is performed as a co-treatment with each clinician providing specialized input

Community Collaboration

In order for consults to be effective in the community the following items need to be considered because it may take additional effort and time to gather information and access the multi disciplinary team.

- **Reports need to be obtained in a timely manner when consult is requested**
- **Making sure all releases are appropriately signed**
- **Assist in communicating with other clinicians when needed**
- **Be prepared to discuss the individuals challenges, status and needs.**
- **Be prepared to assist with assessments**
- **Be willing to follow through with training that may be provided.**
- **Be an advocate for those your support**

High Prevalence

- Statistics show that there is a high prevalence of visual diagnosis, vision impairment and legal blindness among adults with intellectual disability. Worldwide as many as 1 out of every 4 adults with Intellectual disability experiences vision problems. Vision impairment or blindness is often a hidden disability within this group of adults, especially when given individual communication and behavioral challenges.

Vision changes with age

Age Related Macular Degeneration (AMD)

Age-related macular degeneration (AMD) is a progressive retinal disease and the major cause of irreversible vision loss in the elderly.

AMD affects the macula, the part of the eye that allows you to see fine detail. AMD by itself does not lead to complete blindness.

Vision changes with age

www.mulqueenyeyecenters.com accessed on 2-28-18

Functional Implications of AMD

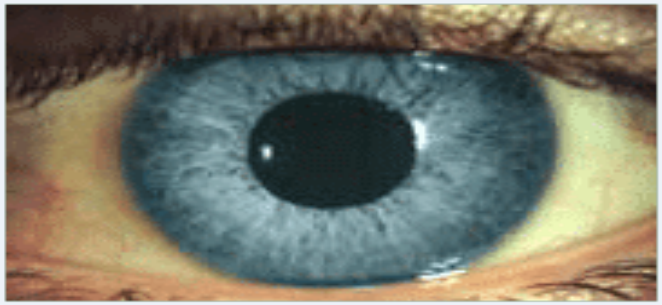
The loss of central vision in AMD can interfere with simple everyday activities such as:

- Ability to see faces
- Drive
- Read
- Write
- Do fine detailed work

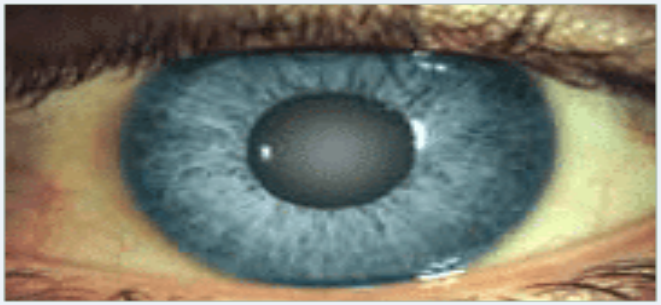
Cataracts

A clouding of the lens in the eye that affects vision. Most cataracts are related to aging. Cataracts are very common in older people. By age 80, more than half of all Americans either have a cataract or have had cataract surgery.

NORMAL EYE



EYE WITH CATARACT



https://www.mayoclinic.org
http://grandridgeeyeclinic.com
Accessed on 2-2-18

Functional Implications of Cataracts

- Clouded, blurred or dim vision
- Increasing difficulty with vision at night
- Sensitivity to light and glare
- Need for brighter lighting for reading and other activities
- Seeing a halo around lights
- Fading or yellowing of colors
- Can have double vision in a single eye

Glaucoma

Is a common eye disorder that causes damage to the optic nerve that carries information from the eye to the brain.

It is commonly age-related, with incidence increasing after the age of 40 years. The condition affects one in 15 people over the age of 70.

It is associated with higher-than-normal pressure inside the eye — a condition called ocular hypertension

it also can occur when intraocular pressure (IOP) is normal.

If untreated or uncontrolled, glaucoma first causes peripheral vision loss, tunnel vision and eventually can lead to blindness.

Glaucoma

National Eye Institute photo

http://www.visionaware.org
Accessed on 2/2/18

Functional Implications of Glaucoma

- Having difficulty adjusting to lighting changes (e.g. between indoors and outdoors)
- Experiencing occasional blurred vision
- Seeing a halo around lights
- Being particularly sensitive to glare and light
- Having difficulty identifying the edge of steps
- Being unable to differentiate between change of terrain.
- Tripping over or bumping into objects.

Diabetic Retinopathy

Is a medical condition in which damage occurs to the retina due to diabetes mellitus and is a leading cause of blindness.

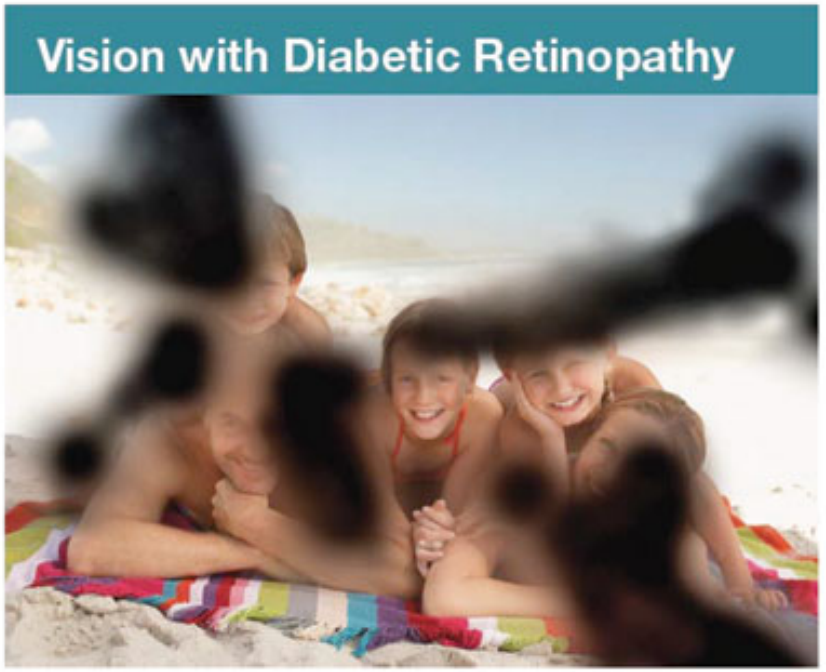
It damages blood vessels that nourish the retina at the back of the eye.

This progressively results in blurred vision.

Severe vision loss may be preventable if the DR is detected and treated early and appropriately.

It affects up to 80 percent of people who have had diabetes for 20 years or more

Diabetic Retinopathy



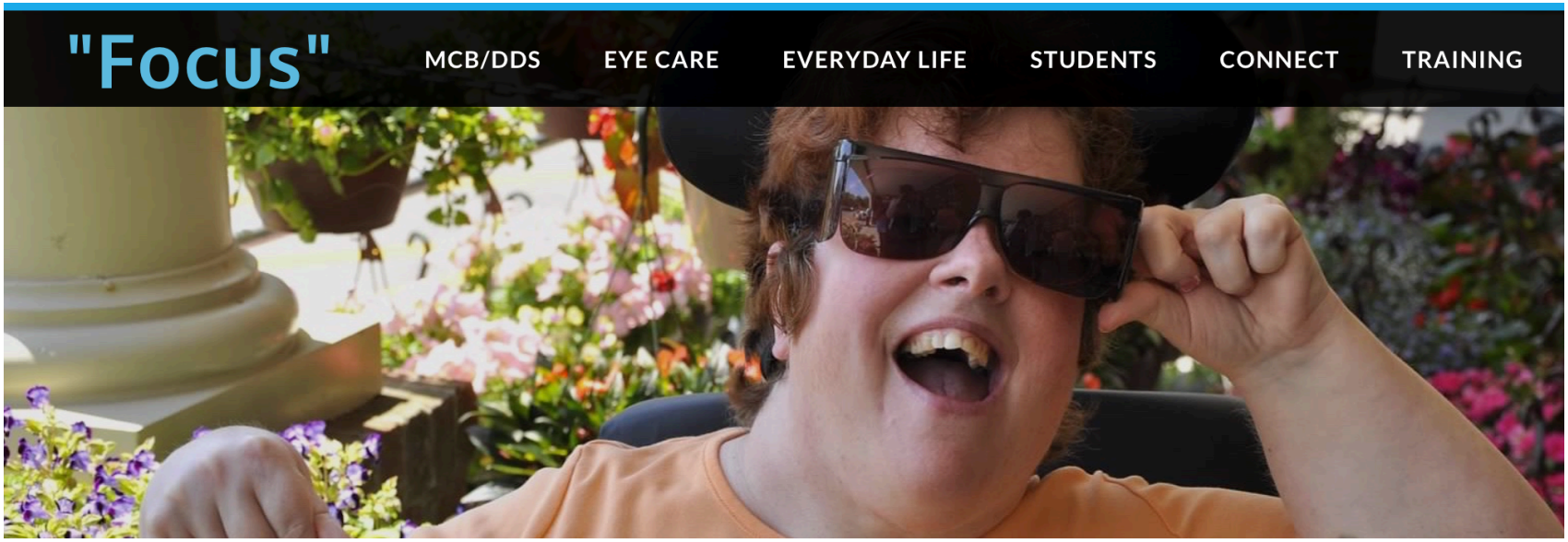
https://www.natural-health-news.com
Accessed on 2-2-18

Functional implications of DR include:

- Having difficulty with fine details (e.g. when reading or watching television)
- Having difficulty with outdoor travel
- Experiencing visual fluctuations from hour to hour or day to day
- Seeing images as rippled (e.g. straight lines appear bent)
- Experiencing blurred, hazy or double vision
- Losing some field of vision
- Having difficulty seeing at night or in low light
- Being particularly sensitive to glare and light
- Having difficulty focusing.

MCB/DDS Partnership Project

https://www.focusonvisionandvisionloss.org



"Focus" on Vision and Vision Loss

The “Focus" website is a resource of the MCB/DDS Partnership Project for Orientation & Mobility/Low Vision Services, a cooperative effort between the Massachusetts Commission for the Blind (MCB) and the Massachusetts Department of Developmental Services (DDS).

Physical Changes With Age

Accessed 2-2-18

Aging Looks Different for Everyone

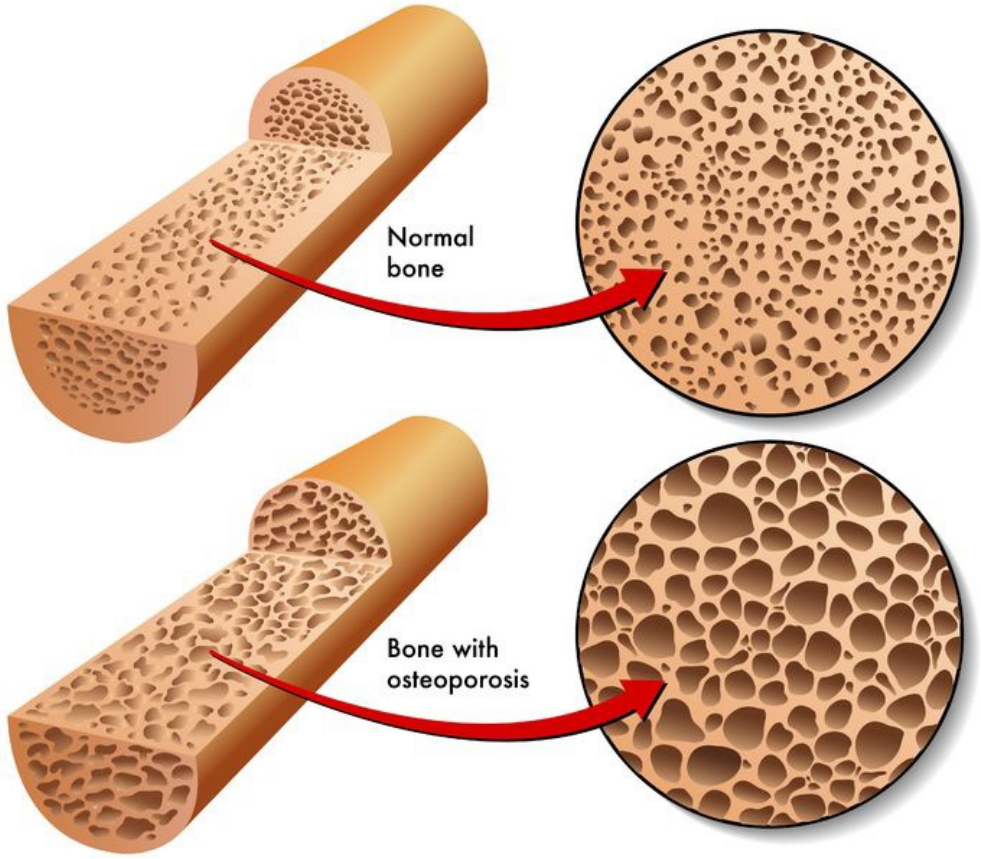
- No two individuals will age at the same rate or in the same way.
- Individuals who lead active lifestyles can sometimes combat or slow down the effects of aging.
- Generally the more severe an individuals disability the more likely the individual will experience earlier aging.
- Regardless of any pre-existing disabilities, the patterns of aging are similar for all persons as they age.

Bones

- Decreased bone mass or density
- Spinal column becomes more curved and compressed
- Use of psychotropic and anti-seizure medications has been shown to impact bone mineral density

Effects:

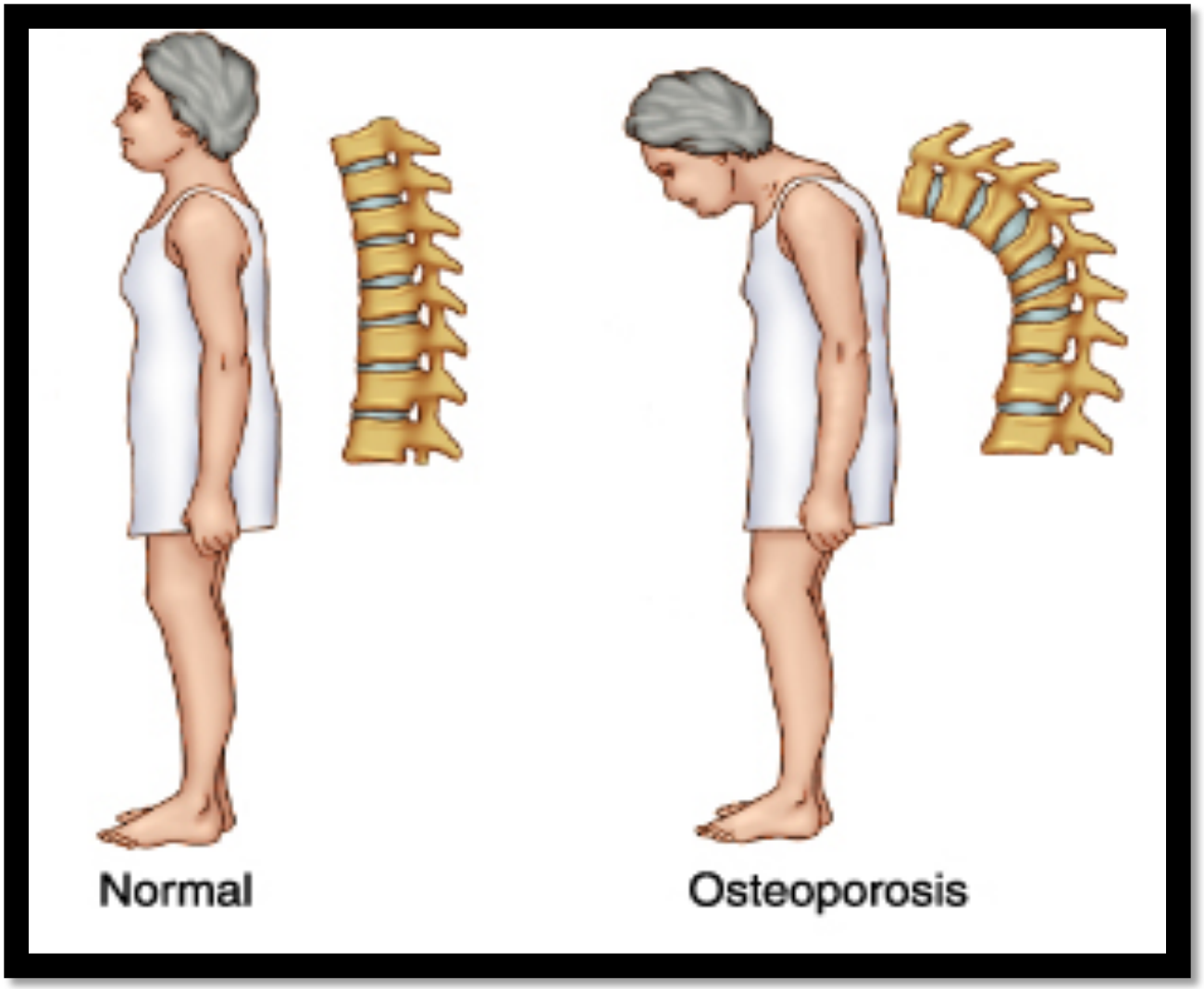
- Bones are more brittle and break more easily
- Compression fractures of vertebrae cause pain and reduce mobility



Normal bone vs Bone with Osteoporosis

- Thinner cortical bone
- Thinner inner matrix

- www.Inlifehealthcare.com Accessed on 2-2-18



Normal Spine vs Osteoporotic Spine

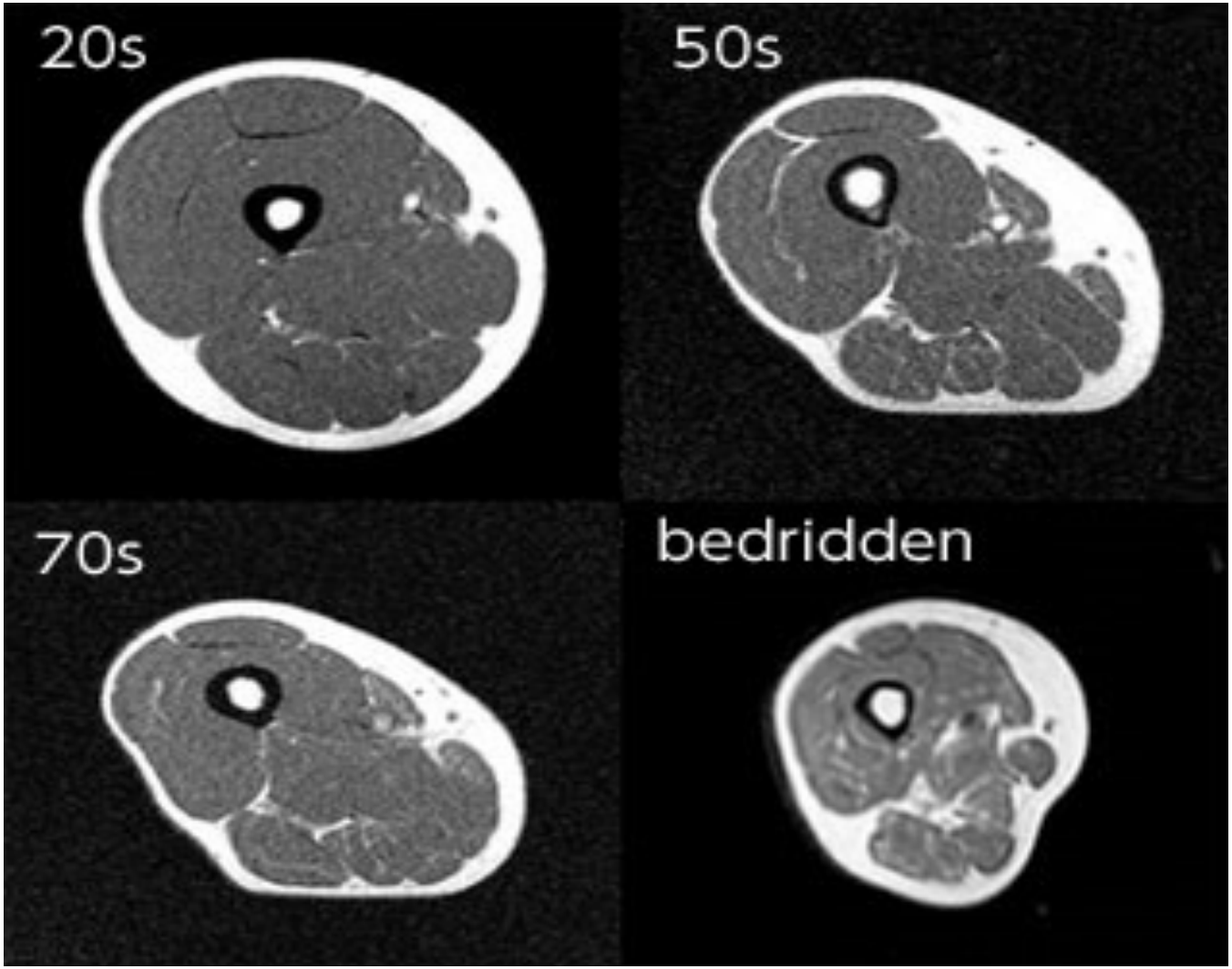
www.mdguidelines.com Accessed on 2-2-18

Muscles

- Decreased number of muscle fibers due to cells producing protein at a slower rate
- General muscle atrophy due to decrease size in muscle cells, fibers, and tissues
- Total loss of muscle bulk, power, and strength in major muscle groups

Effects:

- Contributes to fatigue, weakness, and reduced activity tolerance
- Increased risk of injury due to gait changes, instability, and loss of balance
- Clients who are unable to move on their own and do not stretch their muscles may get muscle contractures



Age Related Changes to Muscle

www.hamamatsu.com Accessed on 2-2-18

Joints

- Wear and tear of protective cartilage of joints that normally act as a shock absorber and gliding agent

Effects:

- Unprotected bone can become injured from frictional injuries
- Pain caused by damaged joints leads to altered gait and unsteady gait

Healthy Knee Joint vs Arthritic Knee Joint

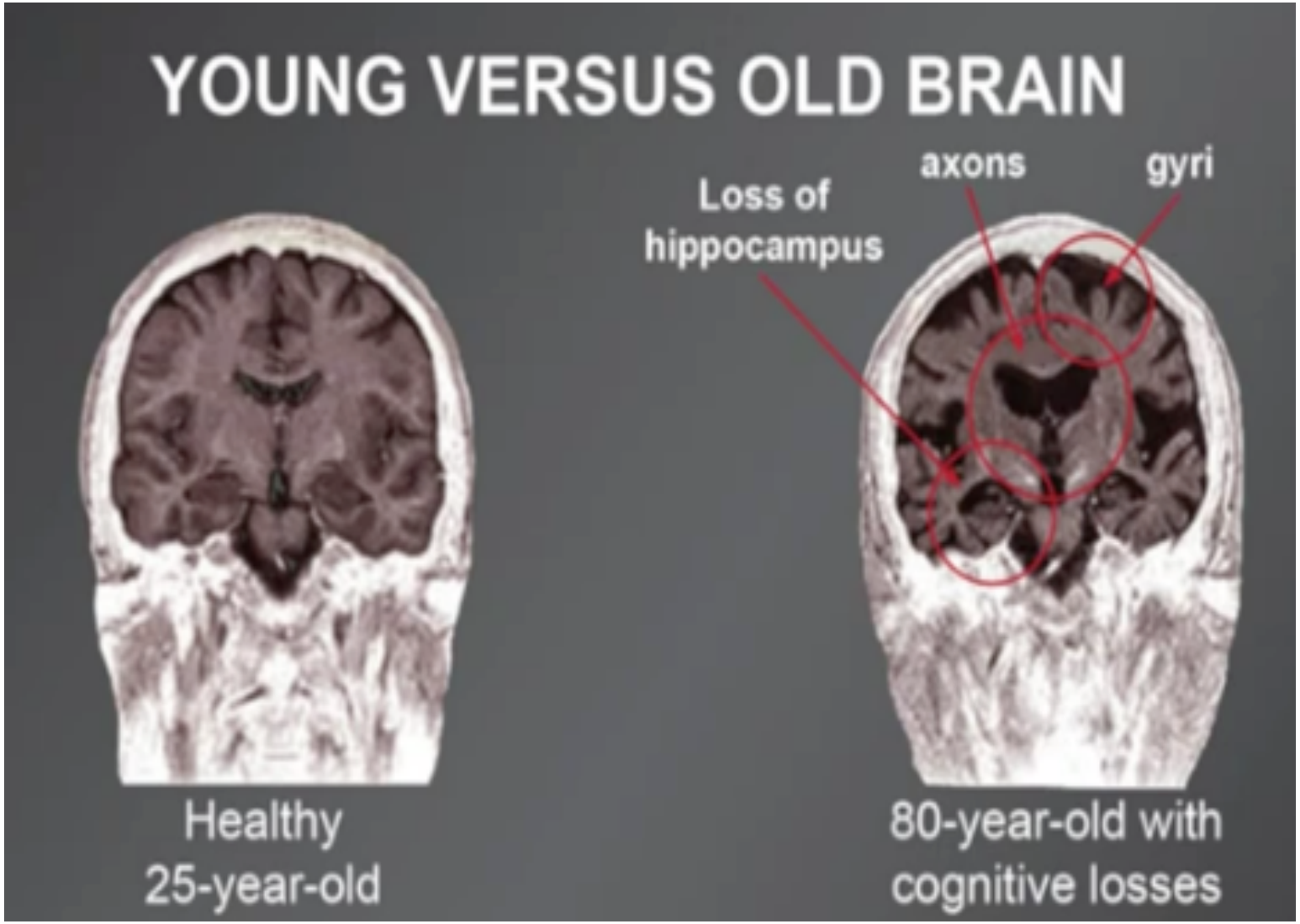
www.roberthowells.com.au **Accessed 2-2-18**

Brain

- Brain volume shrinks-decreased # of neurons which make up the brain and nervous system
- Myelin sheath begins to degrade
- Brain receptors don't fire as quickly

Effects:

- Decreased ability to process information quickly
- Decreased memory
- Less efficient at accessing knowledge and adding to it



www.isagenixhealth.net Accessed on 2-2-18

Necessary modifications due to VI and aging

- Traditional human guide
- Modified human guide
- Human guide with gait belt
- Walker
- Wheelchair

Traditional Human Guide Stance and Proper Grip

http://tech.aph.org
https://iris.peabody.vanderbilt.edu
Accessed on 2-2-18

Gait Belts

- Used to safely support a client while transferring or ambulating
- Belt is fastened around the smallest part of the client's waist unless there is a medical reason not to do so
- Staff person guarding the client stands to the side and a step behind the client
- Staff person holds the belt with their palm up at the client's low back
- Belt is not meant to stop a client from loosing their balance or falling-it is meant to assist in controlling their loss of balance or lessen the impact of a fall

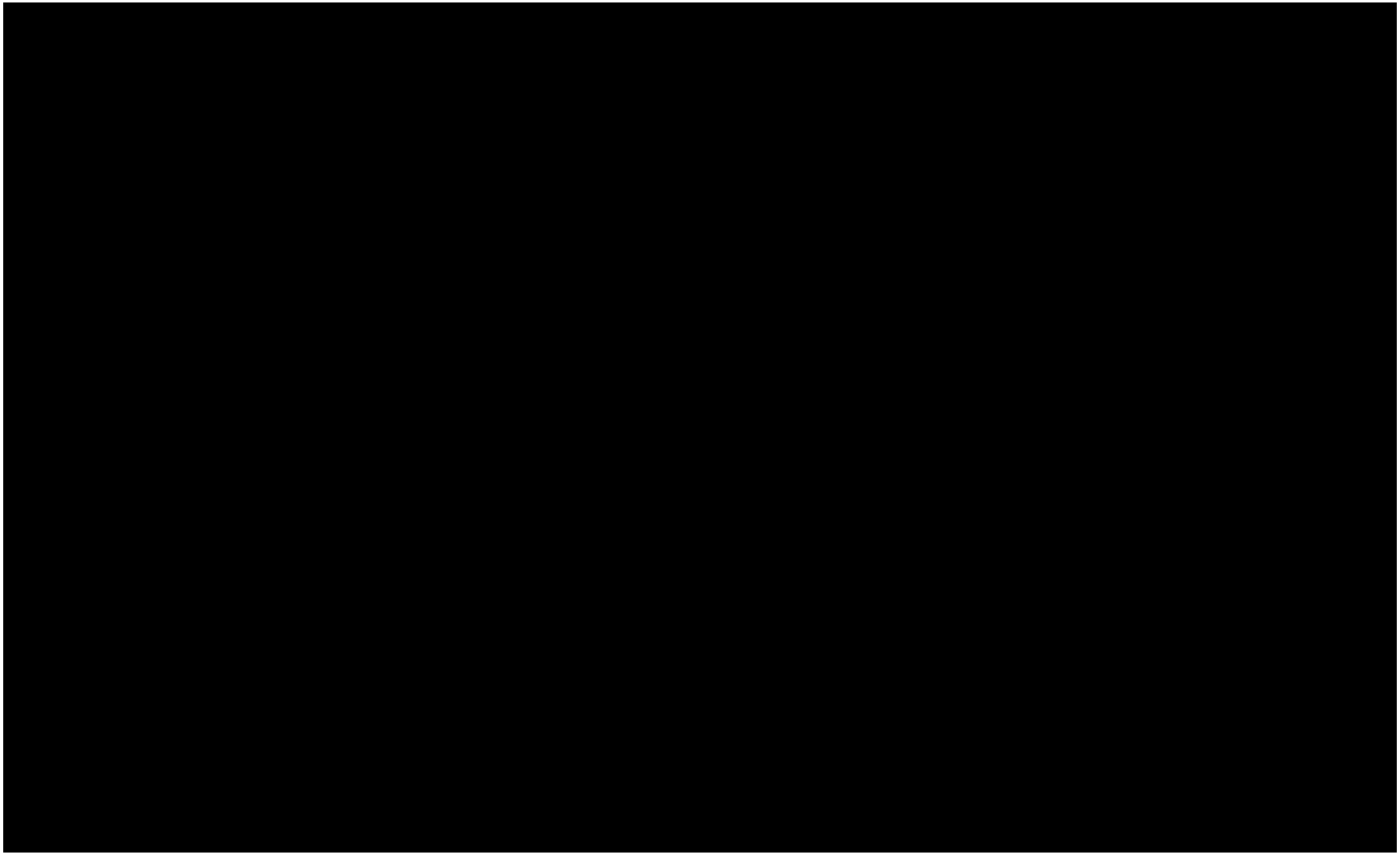
Gait Belt Types

www.meyerpt.com
www.mobility-aids.com
Accessed on 2-2-18

Staff Position While Guarding Client

www.maddak.com Accessed on 2-2-18

Human Guide with Gait Belt



Modified Human Guide with Gait Belt Grips

Modified Human Guide with Gait Belt Grips

Modified Human Guide with Two Assist

Rolling Walkers

- Rolling walkers can assist a client to maintain their balance while walking
- Rolling walkers may also assist clients in maintaining an upright posture while walking
- Client must keep the rolling walker close to them at all times
- Clients must be instructed in safe rolling walker use

Rolling Walker Types

www.southernmedsupply.com
www.dailycareinc.com
Accessed on 2-2-18

Ambulation with a Rifton Walker

Wheelchairs

- **May be necessary when it is determined that use of mobility equipment and guarding techniques cannot keep the client safe**
- **ATRC clinic is available for wheelchair adaptations and modifications as needed at WDC & for community dwelling DDS clients.**
- **Client may be able to walk short distances and use a wheelchair for longer distances**
- **Very important to maintain as much independence as possible and use wheelchair as indicated**

Case Study

Bryan

Medical History

- 63 years old
- Premature at 30 wks
- Profound Intellectual disability & blindness
- ROP - bulbi ptosis
- Seizure disorder
- Scoliosis
- Valium use due to short bowel syndrome
- Recent hospitalizations hypothermia, Brady Cardia
- Resident of WDC – residential
- O & M = consultation = PT

Bryan

- O & M has been involved with Bryan since 1983.
- 1983- 1985 (29-31 ys)-Bryan began working with O & M to improve trailing techniques, human guide, protective techniques and use of voice guide
- 1985-1994 (31-40 yo)-limited success with trailing due to behaviors led to the use of modified human guide 100% of the time
- 1994 Psychology granted permission for O & M to introduce more challenges in his O & M training.
- 1994-2001(40-47 yo) Bryan showed improvement to trailing and squaring off techniques
- 2001- (47 yo) Bryan explored the use of a push cane but preferred to use Human Guide and trailing techniques
- 2001-2014 (47-60 yo) Maintained ability to use modified human guide, upper protective techniques and trailing techniques

Modified Human Guide with Gait Belt 2 assist Technique One

2014 (60 yo)-sustained a fall and began to require assist of 2 persons and a gait belt for mobility (one person provided human guide while other person supported Bryan with the gait belt), wheelchair for long distances outdoors and van transport, PT services 2 x per week

Bryan (continued)

- 2015 (61 yo)-able to ambulate up to 300 feet with gait belt and assist of 2, PT services 3 x per week
- 2016 (62 yo)-able to ambulate 100-200 feet with gait belt and 2 assist, seen at ATRC clinic for wheelchair

Modified Human Guide with Gait Belt 2 assist Technique Two

2017 (63 yo)- hospitalized twice for hypothermia and bradycardia, ambulating 20 feet with gait belt and assist of 2 (both persons supporting Bryan with the gait belt and at his forearms), required new home for 24 hour nursing, no longer able to participate in stair training

Ambulation with Rifton Walker

2017-2018 (63 yo)- Rifton walker was introduced where Bryan is able to ambulate up to 300 feet while bearing weight through his bilateral forearms while protected by the walker, sling supports Bryan if his legs buckle

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