Ten Indispensable Principles for Dispensing to Elders

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Demography of Aging

- By 2040, 20% of the population will be 65+ years.
- By 2030, the proportion of those 65+ will be comparable to those under the age of 17 years (22% vs. 21%).
- Those 85+ are the fastest growing subgroup of the older population.

Hearing Loss and Older Adults

- Incidence and severity of hearing loss increases as one ages.
- Hearing loss is third most common chronic condition reported by the elderly.
- Almost half of the population over the age of 65 years has some degree of hearing impairment.

Hearing and the Elderly

Dubno, Dirks, and Morgan (1984)

Purpose: To assess speech recognition differences between young and elderly listeners with normal hearing and mild SNHL.

Results: Elderly subjects performed worse than their younger counterparts on low predictability items in noise regardless of their degree of hearing loss.

Due to the detrimental effects of SNHL and age on communication, elderly individuals and individuals with hearing loss may be compromised socially or emotionally.

Hearing Loss and Psychosocial Function

- Fatigue
- Irritability
- Tension (stress)
- Avoidance
- Withdrawal
- Depression
- Negativism
- Isolation
- Rejection
- Loneliness
- Anger
- Fear
- Frustration

Hearing Loss and Psychosocial Function

Weinstein and Ventry (1982)

Purpose: To evaluate the relationship of hearing loss and social isolation in the elderly.

Results: The poorer the individual performed on audiologic measures the greater the subjective ratings of isolation.

Hearing Loss and Psychosocial Status

Sherer and Frisnia (1998)

Purpose: Evaluated the impact of minimal degrees of hearing loss on subjective well being in 40 elders.

Results: Individuals with hearing loss felt less independent, more limited by their hearing loss, and had less emotional satisfaction than normal hearers.

Research has demonstrated that psychosocial difficulties can lead to reductions in Quality of Life and Physical Health Status

(oncology literature)

A review of literature suggests that persons with SNHL exhibit a higher incidence of health related difficulties, such as arrhythmia's, ischemic heart disease, hypertension, and osteoarthritis.

Hearing Loss and Physical Health Status

- Those with uncorrected hearing deficits are at increased risk for mortality.
- Presbycusis is associated with increased incidence of health-related diseases.
- The greater the degree of hearing impairment, the greater the prevalence of health-related dysfunctions.

Hearing Loss and Physical Health

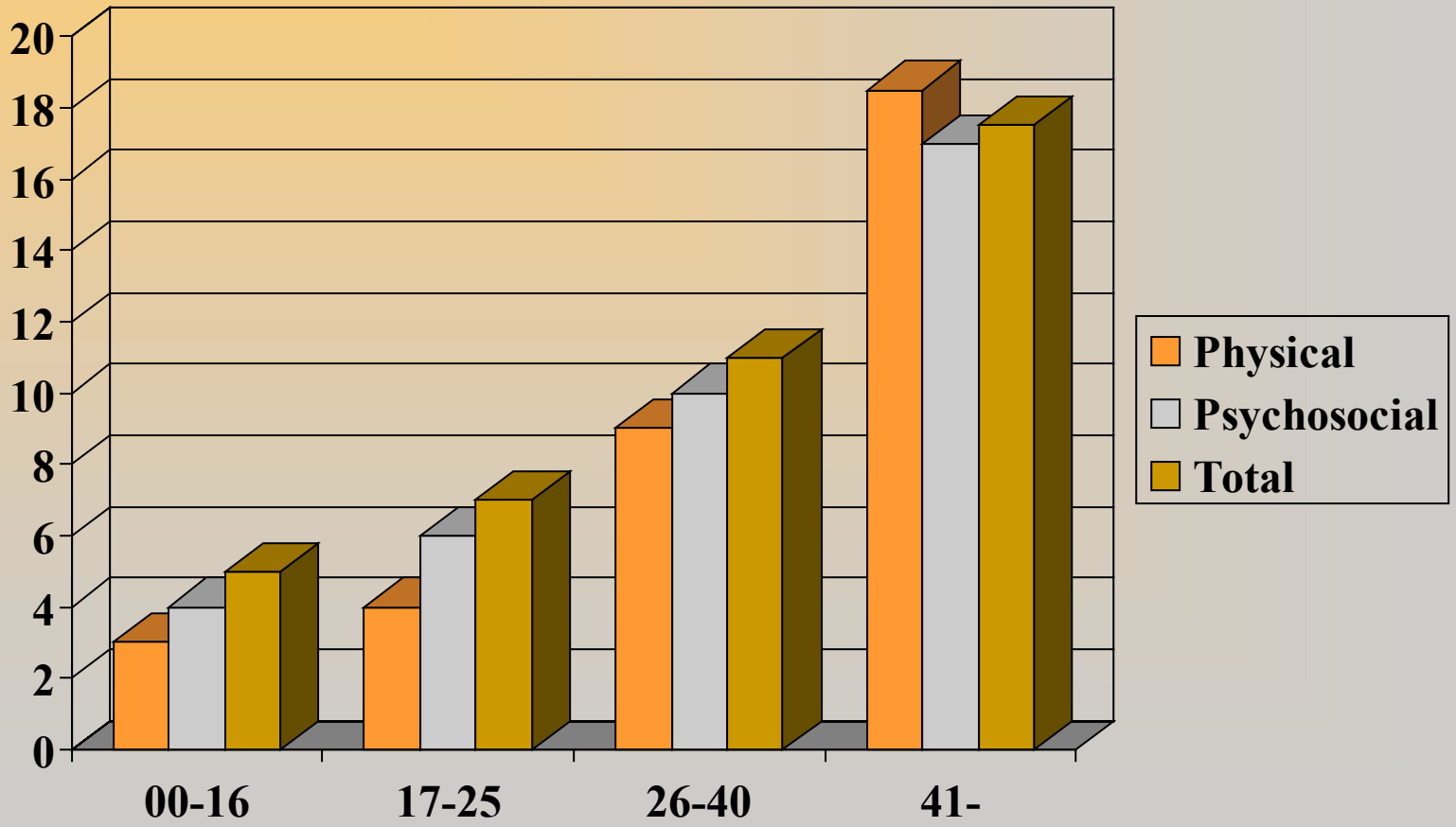
Bess et al (1989)

Purpose: Examined the relationship between hearing loss and physical health status in 153 elderly patients (referred from primary care practices).

Results: Psychosocial, physical, and overall QOL scores declined as degree of SNHL increased. Every 10 dB of HL equated to a 2.9 change in SIP scores.

Hearing Loss and Psychosocial/Physical Health

Bess et al (1989)



Hearing Aid Use in the Elderly

- Approximately 20% of the population with HL actually use hearing aids.
- 68% of this group is over the age of 65 years.
- Those 85+ years are the biggest consumers of amplification.

An Ideal Hearing Aid Fitting Protocol for the Elderly

- Pre-fitting/ Pre-selection.
- Selection.
- Fitting.
- Post-fitting.
- Verification.

Pre-Fitting/ Pre-Selection Stage

- Auditory Status.
- Sociological Variables.
- Psychological Variables.
- Environmental Factors.
- Physical Factors.

(1) Auditory Status

- Comprehensive audiometric evaluation.
- APD screening.
- Test for binaural interference.
- LDL testing.
- Self-assessment scales: to assess the impact of HL on limitations on activity (disability) and participation (handicap). These tests may be more predictive of those choosing to pursue amplification.

Incidence of APD in the Aging Population

- Studies suggest that the incidence of APD ranges from 10 to 90% (Kricos et al, 1987;Stach et al, 1990; Cooper & Gates, 1991).
- Incidence of APD may be higher in individuals with concomitant hearing impairment (Kricos et al, 1987; Jerger et al, 1989).

Common Tests for APD in this Population

- Performance intensity function with PB words.
- Compare SSI test and PI-PB functions or maxima.
- Dichotic listening tasks: SSW test, dichotic digits, and DSI.

(2) Psychological Variables

- Motivational level of the patient and significant other.
  - Wants.
  - Beliefs.
  - Rewards.
  - Costs.
- Personality Factors.
- Locus of Control.

Personality Factors

Cox and Alexander (1999)

Purpose: Examined the effect of personality and hearing aid benefit via the APHAB.

Results: Extroverted individuals reported more problems unaided and greater hearing aid benefit in EC, RV, and BN. Higher anxiety reflected more problems in EC. Locus of control (control by powerful others) correlated with more problems in AV.

(3) Sociological Variables

- Lifestyle.
- Familial Support.
- Financial Situation.

HA Benefit and Cost

Newman et al (1993)

Purpose: Examined the relationship between subjective hearing aid benefit and cost in two groups of HA users: insured and uninsured (n=52).

Results: No statistically significant differences between the two groups of users on the HHIE at all three time periods: unaided, three-weeks post HA fit, and 6-months post HA fitting.

(4) Environmental Factors

- Home situation.
- Work situation.
- Other situations.

(5) Physical Factors

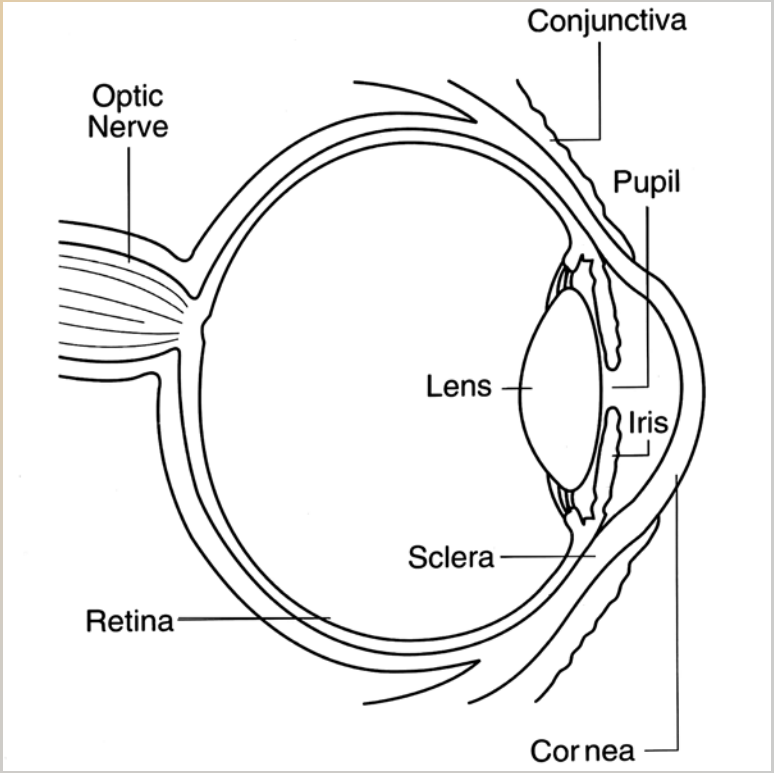
- Visual Status.
- Manual Dexterity.
- Otologic Factors.
- Mental Status.
- Overall Health Status.

Major Factors that Affect AR Delivery in Elders

- Vision Impairments
- Memory
- Learning
- Physical Changes

Vision

- Normal age-related changes in the eye
- Result from structural changes
  - Lens
  - Pupil
  - Retina
  - Visual field
- National Eye Institute
  - www.nei.nih.gov



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Most Common Visual Impairments in Elderly

- Presbyopia (normal aging)
- Cataracts
- Glaucoma
- Age-Related Macular Degeneration
- Diabetic Retinopathy

Presbyopia

- Diminished ability to focus on objects that are near
- Begins in the 40s
- Caused by natural changes in lens
- Corrected by glasses

Glaucoma

- More than 3 million people
- Leading cause of blindness in US
- Higher risk if 60+
- Increased intraocular pressure leading to damage to the optic nerve

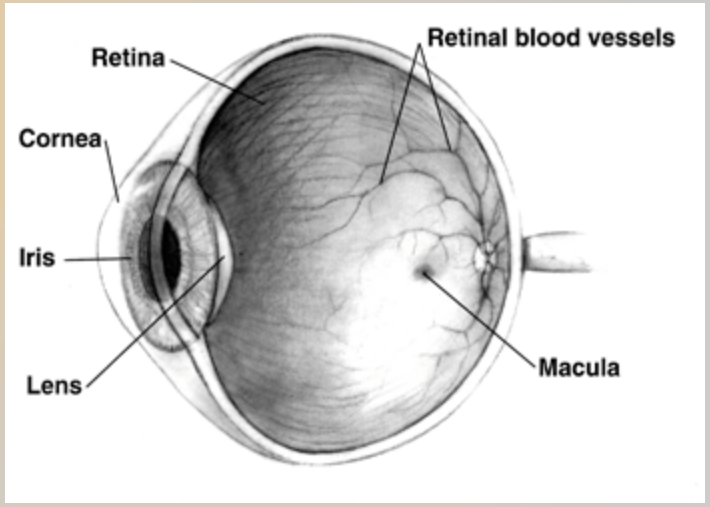
Ref# EDS02 NEI, NIH

Symptoms of Glaucoma

- No vision impairments
- No pain
- Loss of peripheral vision
- Field of vision narrows as the disease progresses

Age-Related Macular Degeneration (ARMD)

- Common cause of vision loss in 60+, but rarely leads to blindness
- Two kinds: wet and dry ARMD
- 90% of ARMD is of the dry type
- Loss in central vision



http://www.nei.nih.gov/health/maculardegen/armd_facts.htm

Symptoms of Dry ARMD

- No pain
- Gradual
- Blurred vision
- Harder to recognize faces until very close
- May see spots in central field

Ref # EDS05 NEI, NIH

Symptoms of Wet ARMD

- Rapid loss in central vision
- Blurred vision, straight lines appear wavy
- Harder to recognize faces until very close
- May see blind spots in central field

Ref # EDS05 NEI, NIH

Diabetic Retinopathy

- A common cause of blindness in diabetics
- About 40-45% of diabetics suffer from this (11 million diabetics)
- Caused by changes in blood vessels in retina

Ref # EDS04 NEI, NIH

Symptoms of Cataracts

- Blurred vision
- Problems with light
- Colors seem to fade or become weaker
- Poor vision at nighttime

Cataracts

- Age-related cataracts is the most common type
- More than 50% of Americans 65+
- Clouding of the lens

Ref# EDS03 NEI, NIH

Symptoms of Diabetic Retinopathy

- Loss of central vision from macular edema
- Blind spots
- No pain
- Most symptoms do not appear until the disease has progressed

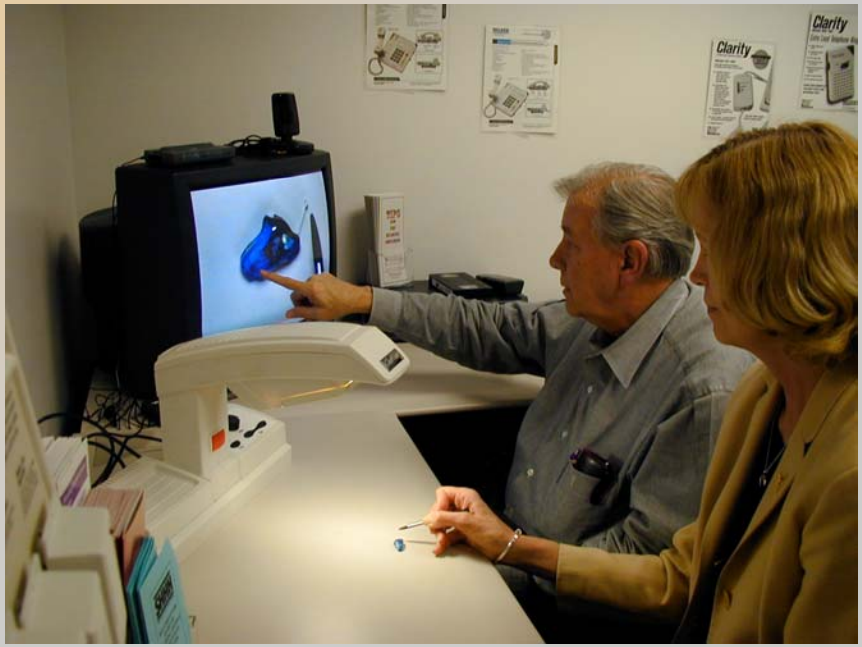
Service Delivery for Elderly AR Patients Utilizing Visual Aids

- Magnification
- Lighting
- Written Materials
- Touch

Magnification

- Hand held magnifiers

- Closed-circuit magnification system



Lighting

- Use of incandescent lighting
- Use of task or hobby lamps
- Use of sheers on windows with direct sunlight to reduce glare
- Use of table cloths on reflective furniture to reduce glare

Written Materials for Elderly Patients

- Common vocabulary and defined health care terms
- Use of bullets, mnemonics, and summarized points
- At least size 16 font with 3 point line space between lines of text
- Use of both capitalized and lower-case letters
- Use of a clear font (Arial, Times New Roman)
- Matte paper
- Color contrasts

Tactile Training during AR

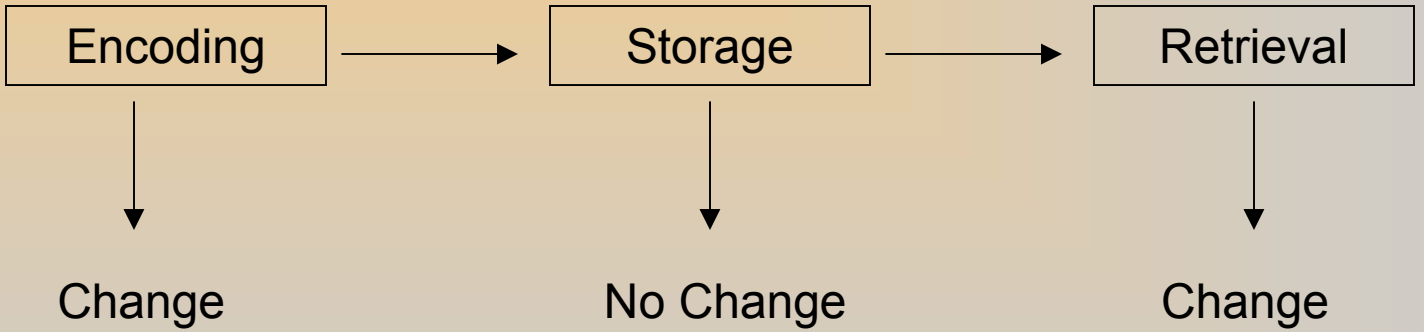
- During hearing orientations, especially
- Help the patient feel the hearing aid component while you are talking about it (volume wheel, t-coil, battery door)
- Practice
- Encouragement
- Patience

Problems Associated with Visual Deficits in AR for the Elderly

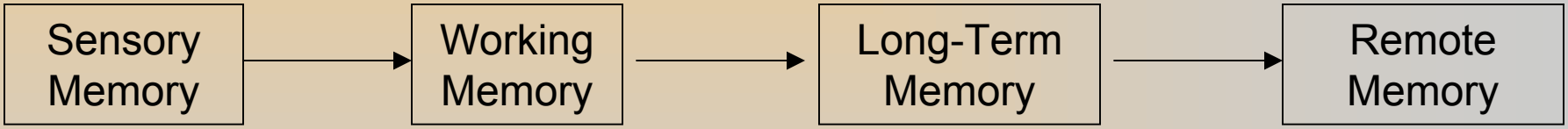
- Hearing aid orientation
- Speechreading
- Written materials
- Mobility within the office

Memory

- Process of storing and retrieving information



The Memory Process



Normal Memory Changes

- Encoding and Retrieval
- Speed is slower
- Attention- distractions, concentration
- Cues-needs cues
- Episodic Memory

Unchanged Memory in Elders

- Semantic Memory
- Immediate memory-phone number
- Storage
- How soon they forget

Learning

- Memory is a main component in learning
- Myth: Can’t teach old dogs new tricks
- Reality: Elders are able to learn but may have special needs to accomplish learning

Problems Associated with Memory and Learning in AR with Elders

- Diagnostics
- Hearing aid orientation
- Communication training
- Auditory training
- Counseling

Interventions for Memory and Learning

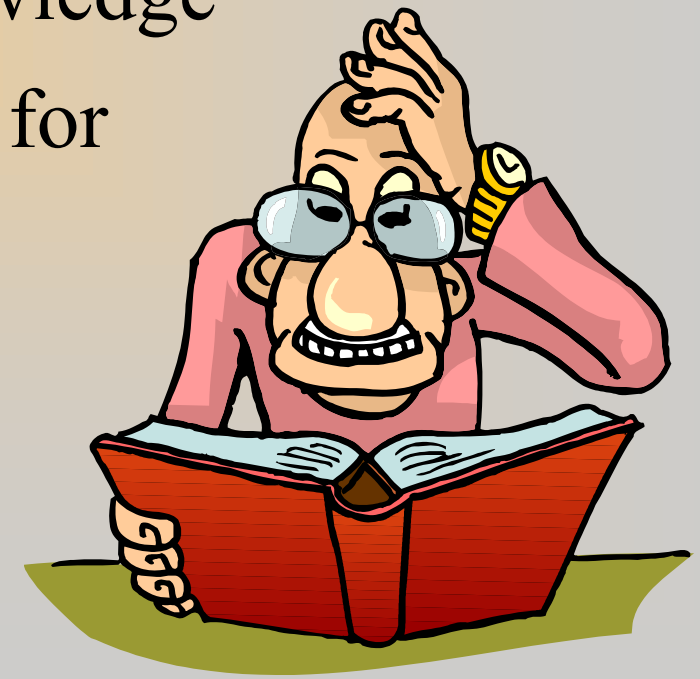
- Compensate for visual and hearing deficits
- Make sure patient is comfortable
- Reduce distractions
- Use multiple modalities
- Present information slowly
- Allow more time for instruction

Interventions for Memory and Learning

- Request demonstration/practice of information covered, if applicable
- Offer reinforcement for correct practice/demonstration
- Provide cues to help patient remember
- Review/summarize instructions
- Review in follow-up appointments

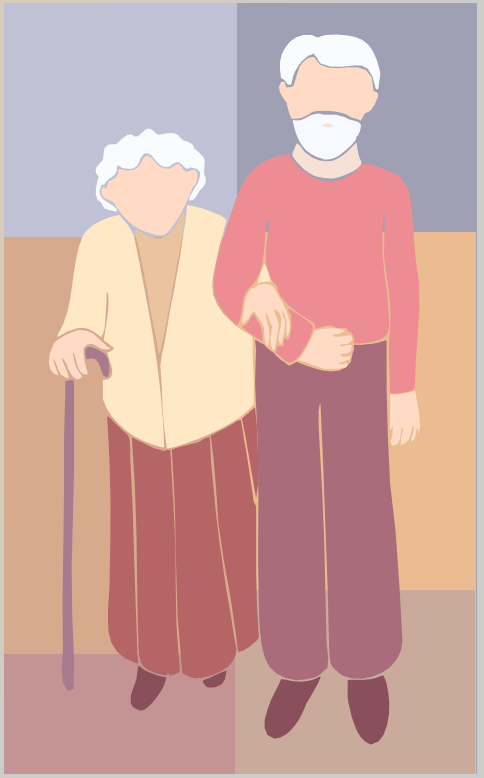
Interventions for Memory and Learning

- Build on preexisting knowledge
- Provide written materials for review and reference



Physical Conditions

- Dexterity
- Feeling in extremities
- Temperature control
- Pain associated with chronic conditions



Interventions for Physical Conditions

- Make sure patient is comfortable during appointment
- Provide breaks for longer appointments or sessions
- Friendly furniture
- Optimize hearing aid controls

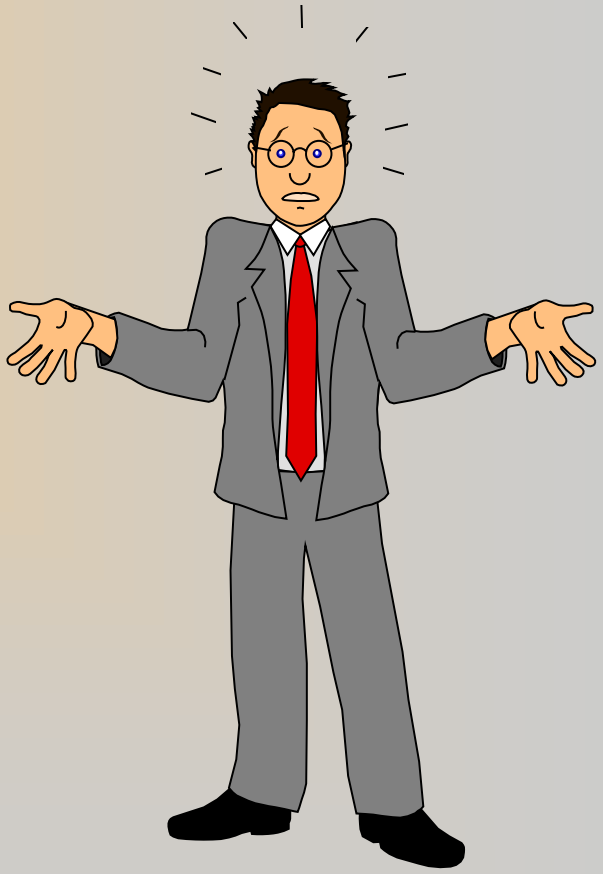
Post-Fitting AR Support Programs for Elders

The Importance of Post-Fitting Support

- Much to learn about hearing loss and hearing aids

Why is AR Support so important?

- **Lack of knowledge of sources of communication difficulty**



Why are hearing aids not enough?

- Usually cannot restore completely normal communication function
- Negative self-image
- Requires period of adjustment and learning of new skills

- Learned stress reaction to communication
- Increased likelihood of central auditory problems in the elderly
- Lack of knowledge of sources of communication difficulty and compensation strategies

Patient Education

- Individual
- Group

Maximizing Patient Education: Think of their agenda, compared to yours

Audiologist

- Anatomy of the ear
- Skills to use hearing aids
- "Wear those hearing aids!"
- Focus is on doing

Hearing Aid User

- Why am I having these problems?
- Skills to maintain a "normal" life
- "What will people think?"
- Focus is on feeling

Montgomery's WATCH (Brief Auditory Rehabilitation)

- **W - Watch the talker's mouth, not his eyes**
- **A - Ask specific questions**
- **T - Talk about your hearing loss**
- **C - Change the situation**
- **H - Healthcare knowledge**

Group or Individual?

Brickley et al. (*Brit J Audiol*, 1996)

- Group participants:
  - were more positive about their hearing aids
  - required fewer follow-up appointments
  - reported more benefit in various listening situations
  - had higher self-rated hearing aid performance

Group versus Individual

Brickley et al., continued

- Attendance rates were poorer for group participants
- No difference between group and individual attendees in hours of hearing aid use and satisfaction

Group versus Individual

Brickley et al. concluded that group programs make efficient use of staff time, cost less than the individual program, and could be even more cost effective if attendance rates could be improved

Group versus Individual

Taylor & Jurma (*Hng Journ, 1999*)

- Group participants reported:
  - significantly lower handicap perception scores
  - higher perception of audiologist effectiveness
- Authors highlighted benefits of group participants affiliating with others who live with hearing loss

Group versus Individual

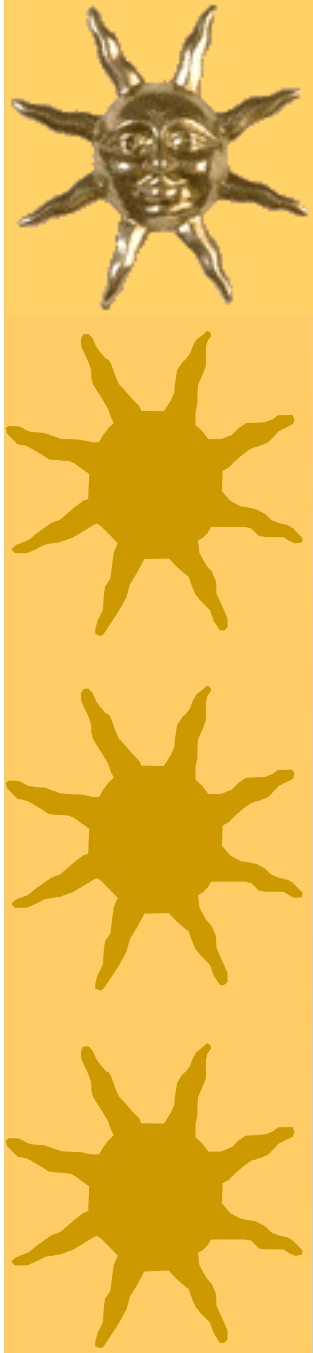
Personal observations:

- ☺ Groups are fun!
- ☺ Groups are effective
- ☺ Groups are helpful to families and friends
- ☺ Participants perceive benefits of helping others
- ☺ There is considerable variability among patients in terms of the ideal format

Participation is a problem!

Poor attendance due to:

- Too busy?
- No perceived value?
- Don't like support groups?
- Scheduling problems?
- Others?



Audiologic Rehabilitation Into the 21st Century

Collaborative Problem-Solving with

Hearing- Impaired Elders

Hints for Successful LWHL Groups

- **Inform group of goals & purpose of group**
- **Distribute guidelines for group participation**
- **Strive for balanced group**
- **Establish ground rules**

Hints for Successful Facilitation

- Cultivate desirable skills
- Use questions & suggestions, rather than giving advice
- Draw out the group, rather than “tell” the group
- BE PREPARED

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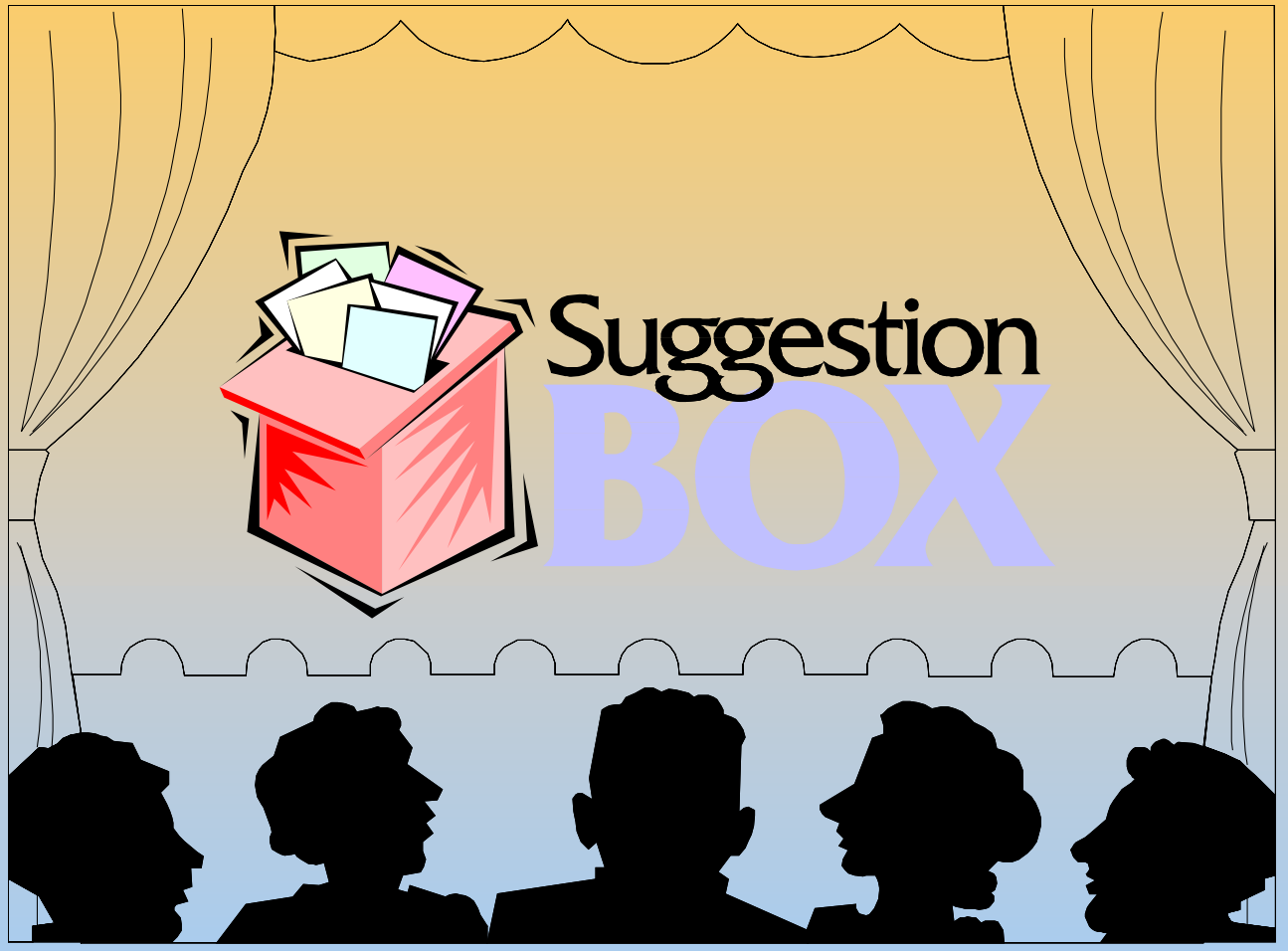
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