SASLHA
South African Speech-Language-Hearing Association

Adult Amplification Guidelines

1. Introduction

Purpose: These guidelines aim to standardize the approach to audiological care for adults in South Africa, emphasizing evidence-based practices and compliance with local regulations. They serve to enhance audiological service quality by providing detailed procedures for assessment, device selection, fitting, rehabilitation, and ongoing care.

Scope: The guidelines cover the full spectrum of adult amplification, including initial consultations, in-depth audiological assessments, tailored hearing aid selection, precise fitting protocols, comprehensive rehabilitation programs, and consistent follow-up care.

Target Audience: Audiologists and other hearing care professionals within South Africa.

Reference: World Health Organization. "Guidelines for Hearing Aids and Services for Developing Countries."

2. Assessment

Initial Consultation

- Detailed Patient History: Conduct an exhaustive interview to gather detailed medical, occupational, and audiological history. Focus on understanding the progression and impact of hearing loss, previous audiological care, and specific patient concerns and expectations.

- Lifestyle Evaluation:
  - *Application of the ICF Framework:* Utilize the ICF model to comprehensively assess the impact of hearing loss on the patient's daily activities and participation. This involves evaluating not only the body function impairments (such as the specific auditory deficits) but also the activity limitations (such as difficulties in communicating in noisy environments or over the phone) and participation restrictions (such as challenges in social interactions or workplace activities).
  - *Detailed Environmental Analysis:* Identify specific listening environments and situations that are challenging for the patient. This should include an analysis of physical, social, and attitudinal environments in which the patient operates. For example, assessing the acoustic characteristics of frequented spaces, the patient's role in social and family interactions, and societal attitudes towards hearing loss that might affect the patient's willingness to use hearing aids.
  - *Goal Setting with the Patient:* Based on the ICF assessment, collaborate with the patient to set clear, personalized goals that address both the improvement of functional hearing and the enhancement of participation in desired activities. Goals should be specific, measurable, attainable, relevant, and time-bound (SMART), and they should aim to mitigate the identified activity limitations and participation restrictions.
  - *Selection of Appropriate Amplification Solutions:* Choose amplification devices and features that align with the environments and activities identified as challenging. For instance, hearing aids with directional microphones may be recommended for patients who frequently find themselves in noisy environments, or wireless connectivity features could be beneficial for those who need to communicate over the phone or participate in video conferences frequently.

- *Continuous Re-evaluation:* Regularly re-assess the impact of the chosen amplification solutions on the patient's lifestyle, especially in terms of reducing the identified activity limitations and participation restrictions. This ongoing evaluation should be part of routine follow-up visits and should inform any necessary adjustments to the hearing aids or changes in rehabilitation strategies.

Reference: Kochkin, S. et al. (2010). "MarkeTrak VIII: The impact of the hearinghealthcare professional. World Health Organization. (2001). *International Classification of Functioning, Disability and Health (ICF)*. Geneva: World Health Organization.

Audiological Examination

- Comprehensive Testing: Perform otoscopy (perform cerumen management where needed), pure tone air and bone conduction testing, recorded speech in quiet and in noise testing, tympanometry, acoustic reflex testing, otoacoustic emission testing, upper comfort level testing, and additional tests like ABR if retrocochlear pathology is suspected.
- Speech-in-Noise Testing: Use standardized tests like QuickSIN or HINT to evaluate real-world hearing capabilities. The following tests have been adapted to the South African context:
  - √ Arthur Boothroyd Word Lists
  - √ NU-6
  - √ Frequency Specific Word Lists (Afr/Eng)
  - √ South African Sentence-in-Noise Test (Afr/Eng)
  - √ FVEWA

Reference: American Academy of Audiology (2023). "Audiologist's Guide to Hearing Aids, PSAPs, Hearables, and OTC Devices."

Communication Needs Assessment

- Utilizing the ICF Framework: Adopt the ICF framework to guide the assessment of communication needs. This framework aids in identifying not just the functional impairments (such as hearing loss), but also how these impairments affect the patient's communication activities and participation in various life situations. By categorizing the impacts into **Body Functions and Structures**, **Activities and Participation**, and **Environmental Factors**, audiologists can develop a comprehensive understanding of the barriers and facilitators affecting a patient's communication.
- Structured Interviews/Questionnaires: Employ structured tools like the Hearing Handicap Inventory for Adults (HHIA) alongside ICF-aligned assessments. The HHIA helps quantify the perceived impact of hearing loss on the patient's quality of life, focusing primarily on social and emotional effects. To complement this, use ICF-based interview guides to delve deeper into specific communication challenges and the contextual factors influencing these experiences.
- Detailed Communication Profile Development: Develop a detailed communication profile for each patient by assessing their ability to perform key communication activities in different environments. This should include specific situations where communication is vital, such as at work, in social settings, and during recreational activities. The assessment should also consider

how environmental and personal factors, such as background noise levels and the patient's coping strategies, affect their communication abilities.

- Goal Setting with an ICF Perspective: Collaborate with patients to set clear, targeted goals for improving communication based on the comprehensive assessment. These goals should be designed to address specific activity limitations and participation restrictions identified during the ICF-based assessment. Goals might include improving speech understanding in noisy environments, enhancing telecommunication abilities, or increasing ease of communication in intimate settings.
- Personalized Intervention Strategies: Design intervention strategies that not only focus on amplifying sound but also on optimizing the patient's communication across their typical environments. Consider the use of assistive listening devices, communication training, aural rehabilitation/auditory training and counselling to manage the perception of handicap and improve overall participation in social activities.

Reference: National Acoustic Laboratories (NAL). COSI documentation and other outcome measures.

Red Flags and Referrals before Hearing Aid Fitting

Red Flags Indicating Caution or Further Medical Evaluation

When conducting audiological assessments, certain findings should prompt caution and consideration for referral to a medical professional before proceeding with hearing aid fitting. These red flags include:

1. Sudden or Rapidly Progressive Hearing Loss: Any sudden hearing loss, especially within the last 90 days, should be urgently referred for medical evaluation to rule out underlying conditions such as infections, vascular issues, or neurological disorders.
2. Unilateral Hearing Loss or Asymmetrical Hearing Loss: Significant differences in hearing between ears, particularly if unexplained, warrant further investigation to rule out retrocochlear pathology such as acoustic neuroma.
3. Otalgia (Ear Pain) or Otorrhea (Ear Discharge): Persistent ear pain or discharge could indicate an active infection, cholesteatoma, or other middle ear pathology that requires medical intervention.
4. Vertigo or Significant Balance Issues: Symptoms of vertigo or severe balance disturbances may indicate vestibular disorders or other conditions affecting the inner ear or central nervous system and require referral to an otolaryngologist or neurologist.
5. Visible Abnormalities in the Ear: Any observed abnormalities during otoscopy, such as lesions, masses, or significant cerumen impaction, should be evaluated by a medical professional before proceeding with hearing aid fitting.
6. Facial Nerve Symptoms: Any signs of facial nerve dysfunction, such as weakness or asymmetry, suggest possible nerve pathology and necessitate further medical investigation.
7. Chronic Otitis Media or History of Ear Surgery: Patients with a history of chronic ear infections, perforations, or ear surgeries should be evaluated to ensure there are no ongoing issues that could affect hearing aid use.

Guidelines for Referral Before Hearing Aid Fitting

Based on the above red flags and professional guidelines, the following conditions necessitate referral to a medical professional before proceeding with hearing aid fitting:

1. Sudden Hearing Loss: Immediate referral to an otolaryngologist or audiologist for a comprehensive evaluation and possible medical treatment.
2. Asymmetrical Hearing Loss: Referral for imaging studies (e.g., MRI or CT scan) to rule out acoustic neuroma or other retrocochlear pathology.
3. Chronic Otalgia or Otorrhea: Referral to an otolaryngologist to address potential infections, tumours, or cholesteatoma.
4. Vertigo or Balance Disorders: Referral to a specialist in vestibular disorders, such as an otolaryngologist or neurologist, for comprehensive vestibular assessment.
5. Visible Abnormalities in the Ear: Referral to an otolaryngologist for further evaluation of any lesions, masses, or severe cerumen impaction observed during otoscopy.
6. Facial Nerve Dysfunction: Immediate referral to a neurologist or otolaryngologist for evaluation of possible nerve pathology.
7. History of Chronic Otitis Media or Ear Surgery: Referral to an otolaryngologist to ensure that the middle ear and surrounding structures are stable and that hearing aids can be safely used.

Reference: American Academy of Audiology. "Audiologist's Guide to Hearing Aids PSAPs Hearables and OTC Devices." World Health Organization. "Guidelines for Hearing Aids and Services for Developing Countries." Health Professions Council of South Africa. "Ethical Guidelines for Good Practice in the Healthcare Professions."

3. Hearing Aid Selection

- Tailored Device Selection: Guide patients through the selection process based on detailed audiological results and individual lifestyle needs. Discuss the advantages and limitations of various hearing aid styles (BTE, ITE, RIC), technologies (digital vs. analogue, Bluetooth capabilities), technology levels and pricing.

Reference: American Academy of Audiology (2023). "Audiologist's Guide to Hearing Aids, PSAPs, Hearables, and OTC Devices."

4. Fitting and Verification

Physical Fitting

- Precision in Earmold Fitting: Ensure that earmolds are custom made for comfort and optimal sound delivery. Discuss with patients the various materials and styles, focusing on their specific pros and cons, including acoustic feedback and occlusion effects.

Programming According to Prescriptive Formulas

- The use of NAL-NL2 and DSL v5.0 is recommended: These prescriptive formulas are designed to maximize speech intelligibility while keeping overall loudness comfortable.

Acoustic Verification and Fine-Tuning

- Implementation of Real Ear Measurements (REM): **Utilize REM to ensure that hearing aids are providing the correct amplification levels across all relevant frequencies as per prescriptive targets. Adjust based on patient-specific feedback during initial and follow-up fittings.**

- Schedule follow-up appointments: Reassess the patient's experience with the hearing aids. Gather subjective feedback and perform objective measurements to make any necessary adjustments.
  Encourage patients to provide detailed feedback about their listening experiences in various environments to inform any further fine-tuning needed.

Reference: Valente, M., Abrams, H. B., & Benson, D. G. (2018). "Guidelines for the Audiologic Management of Adult Hearing Impairment."

5. Rehabilitation and Counselling

- In-depth Patient Education Using the ICF Framework: Employ the ICF framework to structure patient education comprehensively. Focus on educating patients not only about the mechanical use and care of their hearing aids but also on understanding the broader impacts of hearing loss on their body functions, activities, and participation in various environments. This includes:
  - *Device Management*: Educate on the technical aspects of hearing aids, including battery management, device cleaning, storage and troubleshooting.
  - *Optimizing Use in Varied Environments*: Provide training on how to make adjustments to hearing aid settings and change programs in different listening environments, using the ICF to highlight how these adjustments help overcome specific participation restrictions and activity limitations.
- Personalized Auditory Training Aligned with ICF: Develop personalized auditory training programs that are aligned with the ICF components of activities and participation. These programs should aim to improve the patient's speech perception and communication abilities in environments that they find challenging, thereby directly addressing identified participation restrictions. Training could include:
  - *Targeted Exercises*: Specific exercises designed to enhance the ability to understand speech in noisy environments, focus on conversations in group settings, and manage acoustically complex situations.
  - *Activity-Based Training*: Incorporate realistic and patient-specific activities that mimic the patient's everyday listening situations. This practical approach helps patients apply the skills learned in training to real-world scenarios, enhancing their communicative participation and overall social integration.
  - *Environmental Awareness and Management*: Train patients to be aware of how environmental factors affect hearing aid performance and communication efficacy. Provide strategies for modifying environmental factors where possible to facilitate better communication.
- Integrating Environmental and Personal Factors: As part of the counselling process, consider the environmental and personal factors that might influence the effectiveness of the hearing aids and training. This includes addressing attitudes towards hearing loss within the patient's social

circle, accessibility issues in public settings, and the patient's own attitudes towards using hearing aids and participating in auditory training.

Reference: Sweetow, R. W., & Sabes, J. H. (2006). "The need for and development of an adaptive Listening and Communication Enhancement (LACE) Program."

6. Follow-Up Care

- Routine Adjustments: Establish a routine schedule for follow-up visits to reassess hearing aid performance, patient satisfaction, and any changes in hearing status. Utilize data logging features within hearing aids to inform necessary adjustments and ensure optimal device performance.

Reference: Kochkin, S., et al. (2010). "MarkeTrak VIII: The impact of the hearing healthcare professional."

7. Special Considerations

- Teleaudiology: Develop and integrate teleaudiology services to provide remote care, making audiological services more accessible, especially for patients in remote or underserved areas.
- Tinnitus Management: Offer integrated solutions within hearing aids for patients experiencing tinnitus, such as sound therapy features and tinnitus maskers.

Reference: Saunders, G. H., & Echt, K. V. (2021). "Guidelines for Audiologists to Implement Teleaudiology."

8. Legal and Ethical Considerations

- Regulations and Compliance: Keep updated with both national and international regulations, including those specific to OTC hearing aids and PSAPs.
- Ethical Selling and Advice: Maintain high ethical standards when recommending and selling hearing devices, particularly with emerging OTC options.

Reference: Health Professions Council of South Africa. "Ethical Guidelines for Good Practice in the Healthcare Professions."