

# Recommended Validation Procedures on Remote Microphone Hearing Assistive Technologies (FM Equipment)

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- 1) This document outlines validation procedures, as recommended by the Auditory Outreach audiologists. Wherein a conflict exists between this document and a document by a regulatory body such as the College of Speech and Hearing Health Professionals of BC (“College”) or the American Academy of Audiology, the regulatory document overrides this document.
- 2) **Verification** of equipment is the process of confirming that the instrument performs according to prescribed targets and manufacturer’s specifications. Verification of hearing aids (HA), cochlear implants (CI), and FM systems (FM) should be done by audiologists in a controlled, standardized (repeatable) setting. Following the initial verification procedure, on-going **validation** is recommended to confirm that the equipment is providing the desired outcome(s) and benefit in daily use. This document outlines procedures for **validation of FM systems** only.
- 3) As per the College’s recommendation, with appropriate training the following personnel can conduct validation of FM systems:
  - a. Teachers of the deaf and hard of hearing / hearing resource teachers
  - b. Classroom teachers
  - c. Educational assistants
  - d. Other school support personnel
  - e. Educational personnel

## Validation Procedure:

Procedures #1 and #2 described below are generally conducted once, soon after the FM fitting. Procedure #3 is to be conducted on an ongoing basis.

1. *Functional Listening Evaluation* (Johnson & Von Almen, 1993):
  - a. Refer to the document on “Functional Listening Evaluation” on the Auditory Outreach (AO) website
2. Questionnaires:
  - a. *Listening Inventory for Education (LIFE; Anderson & Smaldino, 1996)*
  - b. *Screening Instrument for Targeting Educational Risk (SIFTER; Anderson, 1989)*
  - c. *FM Listening Evaluation for Children (Fabry & Johnson, 2004)*
3. On an ongoing basis, implement one or more of the following:
  - a. Listening check with a stethoscope or in the case of cochlear implants, monitor earphones, to ensure consistent signal transmission from the FM transmitter to the receiver. A daily listening check is the quickest and easiest way to ensure reliable sound quality.

- b. Behavioral check conducted with the FM receiver worn by the student, the FM transmitter worn by the teacher, and the system turned on
  - i. *Ling 6-sound* Test: ask the student to repeat “ah – oo – ee – sh – s – mm”
    1. at a distance without visual cues: if the student correctly repeated all of the *Ling 6-sounds*, test is complete; otherwise proceed to step 2
    2. To ensure the student has the ability to discriminate the *Ling 6-sounds*, test at a close distance without visual cues and without FM. If the student is not able to discriminate these 6 sounds with the HA or CI alone, contact the student’s HA or CI audiologist.
    3. If the student is able to discriminate the *Ling 6-sounds* with HA or CI alone but not with FM, conduct FM troubleshooting.
  - ii. At a distance without visual cues, FM on, ask the student command questions, such as
    1. “Can you touch your head?”
    2. “Can you walk to the blackboard?”
    3. Any other question that requires an action from the student (more than a head nod)

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## REFERENCES

American Academy of Audiology Clinical Practice Guidelines: Remote Microphone Hearing Assistance Technologies for Children and Youth Birth-21 Years. 4.22.2008.

Anderson, K. (1989). *Screening instrument for targeting educational risk (S.I.F.T.E.R.)*. Tampa, FL: Educational Audiology Association.

Anderson, K., & Smaldino, J. (1996). *Listening inventory for education (L.I.F.E.): An efficacy tool*. Tampa, FL: Educational Audiology Association.

College of Speech and Hearing Health Professionals of British Columbia (2011): *Best Practices: Fitting of Remote Microphone Hearing Assistance Technology to Children in an Educational Setting*.

Fabry, D., & Johnson, C.D. (Eds) (2004). *ACCESS: Achieving Clear Communication Employing Sound Solutions – 2003: Proceedings of the First International Phonak FM Conference*.

Johnson, C. D., & Von Almen, P. (1993, April). *Assessing speech recognition using a functional listening paradigm*. Paper presented at the meeting of the American Academy of Audiology, Phoenix, AZ.