RADIATION

POTENTIAL IMPACT TO EAR (cont)

Sec #	Therapeutic Agent(s)	Potential Late Effects	Risk Factors	Highest Risk Factors	Periodic Evaluation	Health Counseling/ Further Considerations
67	**≥ 30 Gy to:** **Cranial** **Ear/Infratemporal** **Nasopharyngeal** **Waldeyer's Ring** **TBI*** *TBI is included for dose calculation purposes only; this section is not applicable to patients who received TBI alone.	**Ototoxicity** Sensorineural hearing loss Tinnitus	**Host Factors** Younger age at treatment CNS tumor **Treatment Factors** Higher radiation dose Conventional (non-conformal) radiation **Medical Conditions** CSF shunting	**Treatment Factors** Radiation administered prior to platinum chemotherapy Combined with other ototoxic agents such as: - Cisplatin - Carboplatin in myeloablative doses - Aminoglycosides	**HISTORY** **Hearing difficulties (with/without background noise)** **Tinnitus** **Vertigo** Yearly **PHYSICAL** **Otoscopic exam** Yearly **SCREENING** **Complete audiological evaluation** Yearly after completion of therapy for 5 years [for patients <10 years old, continue yearly until age 10], then every 5 years If hearing loss is detected, test at least yearly or as recommended by audiologist If clinical suspicion of hearing loss at any time, test as clinically indicated If audiogram is inconclusive or unevaluable, refer to audiologist for consideration of electrophysiologic testing e.g., otoacoustic emissions [OAEs] **Info Link** • A "complete audiological evaluation" includes pure tone air and bone conduction, speech audiometry, and tympanometry for both ears. • Frequency-specific auditory brainstem response (ABR) can be performed if the above is inconclusive.	**Health Links** **Hearing Loss** **Educational Issues** **Considerations for Further Testing and Intervention** Audiology consultation for patients with hearing loss. Otolaryngology consultation for patients with chronic infection, cerumen impaction, or other anatomical problems exacerbating or contributing to hearing loss. Speech and language therapy for children with hearing loss. Refer patients with auditory deficits to school liaison in community or cancer center (psychologist, social worker, school counselor) to facilitate provision of educational resources. Consider specialized evaluation for specific needs and/or preferential classroom seating, FM amplification system, and other educational assistance as indicated. **SYSTEM = Auditory** **SCORE = 1**

- This section is only applicable to patients who:
  1) Received radiation to any of the specified fields at ≥ 30 Gy
     OR
  2) Received a combination of radiation to any of the specified fields ***and*** TBI, the sum of which is ≥ 30 Gy
- See dose calculation rules on page 56 for patients who received: (a) radiation to more than one of the specified fields, or (b) more than one planned course of treatment to the same field.
- See "Patient-Specific Guideline Identification Tool" in Appendix I to determine specific screening guidelines by section number for individual patients.

SECTION 67 REFERENCES

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