**Table S1 Criteria for Classifying Family Members as Affected with COME/ROM for the University of Minnesota Study**

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| --- | --- |
| **Data source** | **Abnormal (evidence of ROM/COME history)\*** |
| Ear exam |  Retraction Perforation Atrophy Drainage Tympanosclerosis Tympanostomy tube Cholesteatoma Monomer |
| Tympanogram | **Age >10 yrs** (a) Y1 ≤0.3 or >1.7 mmho (b) TW2 ≥180 daPa (b) Resonant frequency <630 Hz or >1400 Hz Abnormal van Huyse pattern at 630 or 1400 Hz |
|  | **Age ≤10 yrs** (c) Y1 ≤0.3 or ≥1.1 mmho TW2 ≥150 daPa Resonant frequency <710 Hz or >1400 Hz Abnormal van Huyse pattern at 710 or 1400 Hz |
| Self-reported historyMedical record  | **Adult** Had tympanostomy tubes ≥3 OM episodes in a year or 6 episodes before age 6 History of perforation, otorrhea, tympanosclerosis, mastoidectomy, cholesteatoma, tympanoplasty.**Child**Had tympanostomy tubes ≥3 OM episodes in a year or 6 episodes before age 6 Tympanostomy tubes Otorrhea OME => 2 months Perforation Tympanosclerosis Mastoidectomy Cholesteatoma Tympanoplasty => 3 OM episodes in a year or 6 episodes by age 6 |

 \* A data source was considered abnormal if ≥1 finding was present.

 (a): <5th or 95th percentile ranges for adults [[1](#_ENREF_1)]

 (b): Y1 = static admittance, TW2 = tympanometric width.

 (c): <5th or >95th percentile ranges for children [[2](#_ENREF_2),[3](#_ENREF_3),[4](#_ENREF_4)]

**Reference**

1. Margolis RH, Goycoolea HG (1993) Multifrequency tympanometry in normal adults. Ear Hear 14: 408-413.

2. Koebsell KA, Margolis RH (1986) Tympanometric gradient measured from normal preschool children. Audiology 25: 149-157.

3. Margolis RH, Heller JW (1987) Screening tympanometry: criteria for medical referral. Audiology 26: 197-208.

4. Margolis RH, Hunter LL, Rykken JR, Giebink GS (1993) Effects of otitis media on extended high-frequency hearing in children. Ann Otol Rhinol Laryngol 102: 1-5.