

11.1 Principles of Assessment

Before using the information in this chapter, the *Guides* user should become familiar with Chapters 1 and 2 and the Glossary. Chapters 1 and 2 discuss the *Guides*' purpose, applications, and methods for performing and reporting impairment evaluations. The Glossary provides definitions of common terms used by many specialties in impairment evaluations.

Assistive devices *must not* be used during the determination of a hearing impairment rating. The use of such devices might give a false impression of a subject's sensitivity and distort the need to take hearing conservation or other indicated measures. As stated in Chapter 1, report measured hearing with and without an assistive device. However, only the measurement without the assistive device should be used to determine the impairment rating.

11.1a Interpretation of Symptoms and Signs

Begin the evaluation with an inquiry into specific symptoms and their severity, duration, and manner of onset. The history, physical examination, and diagnostic studies may enable identification of the diagnosis, a management plan, and prognosis. Since the ear, nose, throat, and related structures have distinct functions, disorders of each system will be covered separately in this chapter. Permanent impairments of each system with nonoverlapping functional losses are evaluated separately and then combined.

Some impairment classes refer to limitations in the ability to perform daily activities. When this information is subjective and possibly misinterpreted, it should not serve as the sole criterion upon which decisions about impairment are made. Rather, obtain objective data about the severity of the findings and the limitations and integrate the findings with the subjective data to estimate the degree of permanent impairment.

11.1b Description of Clinical Studies

Multiple and diverse tests are used to investigate the ear, nose, throat, and related structures. Some of these tests are discussed in the relevant organ system section and summarized in Table 11-10.

11.2 The Ear

The ear consists of the auricle, the external canal, the tympanic membrane, the ossicles, the middle ear, the eustachian tube, the mastoid, and the internal ear. The auditory and vestibular systems include the ear and central nervous system pathways.

The ear provides sensorineural input critical to the senses of hearing and balance. Hearing enables contact with environmental cues (eg, those that alert) and enables us to communicate socially. Balance contributes to maintenance of equilibrium in relation to the environment. Balance function is mediated by dynamically monitoring information about the position of the head, eyes, trunk, and joints at rest and with activity. Although hearing and balance disturbances can be objectively measured, other conditions, such as chronic otorrhea, otalgia, and tinnitus,² are subjective, should be noted, but cannot be measured independently of the individual's self-reports.

Permanent hearing impairment is a permanently reduced hearing sensitivity, outside the range of normal for the individual or based on population normal values.³ Hearing should be evaluated after maximum rehabilitation has been achieved and when the impairment is no longer accelerating beyond an age-appropriate rate.⁴ Evaluate hearing impairment based upon the individual's binaural hearing, determined from the pure-tone audiogram.

11.2a Criteria for Rating Impairment Due to Hearing Loss

Criteria for evaluating hearing impairment are established through hearing threshold testing, which serves as the most reproducible of the measures of hearing. Therefore, estimate an impairment percentage based on the severity of the hearing loss, which accounts for changes in the ability to perform activities of daily living. **Tinnitus** in the presence of unilateral or bilateral hearing impairment may impair speech discrimination. Therefore, add up to 5% for tinnitus in the presence of measurable hearing loss if the tinnitus impacts the ability to perform activities of daily living.

In the calculation of a hearing impairment rating, no correction for presbycusis should be made because: (1) the method below calculates the degree of hearing and assigns a rating, regardless of cause (eg, age, injury, or noise exposure); (2) age correction would result in a reduced binaural impairment score that would thus underestimate the true magnitude of the hearing impairment; and (3) estimation of the relative contributions of various causes of binaural hearing impairment is a clinical process (apportionment or allocation) that is separate from the calculation of binaural hearing impairment.

Hearing impairment is measured by evaluating hearing in each ear separately and both ears together, based on audiometric measurements. Hearing impairment is reported in each ear separately and both ears together.

Audiometric Measurements to Determine Hearing Impairment

In determining impairments, the following steps should be taken.

1. Test each ear separately with a pure-tone audiometer and record the hearing levels at 500, 1000, 2000, and 3000 Hz. It is necessary that the hearing level for each frequency be determined in every subject. The following rules apply for extreme values:
 - a. If the hearing level at a given frequency is greater than 100 dB or is beyond the range of the audiometer, the level should be taken as 100 dB.
 - b. If the hearing level for a given frequency has a negative value (eg, -5 dB), the level should be taken as 0 dB.
2. Add the four hearing levels (dB) for each ear separately. Hearing levels are determined according to ANSI Standard S3.6-1996.⁴
3. Consult Table 11-1 to determine the percentages of monaural hearing impairment for each ear.
4. Consult Table 11-2 to convert the monaural hearing impairment percentages to a binaural hearing impairment rating.
5. Consult Table 11-3 to determine the impairment of the whole person.

Table 11-1 Monaural Hearing Loss and Impairment*

DSHL†	%	DSHL†	%	DSHL†	%
100	0	190	33.8	285	69.3
		195	35.6	290	71.2
105	1.9	200	37.5	295	73.1
110	3.8			300	75.0
115	5.6	205	39.4		
120	7.5	210	41.2	305	76.9
		215	43.1	310	78.8
125	9.4	220	45.0	315	80.6
130	11.2			320	82.5
135	13.1	225	46.9		
140	15.0	230	48.8	325	84.4
		235	50.6	330	86.2
145	16.9	240	52.5	335	88.1
150	18.8			340	90.0
155	20.6	245	54.4		
160	22.5	250	56.2	345	91.9
		255	58.1	350	93.8
165	24.4	260	60.0	355	95.6
170	26.2			360	97.5
175	28.1	265	61.9	365	99.4
180	30.0	270	63.8	≥370	100.0
		275	65.6		
185	31.9	280	67.5		

*Audiometers are calibrated to ANSI Standard S3.6-1996 reference levels.⁴

†Decibel sum of the hearing threshold levels at 500, 1000, 2000, and 3000 Hz.

*The axes are the sum of hearing levels at 500, 1000, 2000, and 3000 Hz. The sum for the worse ear is read at the side; the sum for the better ear is read at the bottom. At the intersection of the row for the worse ear and the column for the better ear is the hearing impairment (%).

*The axes are the sum of hearing levels at 500, 1000, 2000, and 3000 Hz. The sum for the worse ear is read at the side; the sum for the better ear is read at the bottom. At the intersection of the row for the worse ear and the column for the better ear is the hearing impairment (%).

50.6
50.9 52.5
51.3 52.8 54.4

51.6 53.1 54.7
51.9 53.4 55.0
52.2 53.8 55.3
52.5 54.1 55.6
52.8 54.4 55.9

56.3
56.6 58.1
56.9 58.4 60.0
57.2 58.8 60.3 61.9
57.5 59.1 60.6 62.2 63.8

53.1 54.7 56.3
53.4 55.0 56.6
53.8 55.3 56.9
54.1 55.6 57.2
54.4 55.9 57.5

57.8 59.4 60.9 62.5 64.1
58.1 59.7 61.3 62.8 64.4
58.4 60.0 61.6 63.1 64.7
58.8 60.3 61.9 63.4 65.0
59.1 60.6 62.2 63.8 65.3

65.6
65.9 67.5
66.3 67.8 69.4
66.6 68.1 69.7 71.3
66.9 68.4 70.0 71.6 73.1

54.7 56.3 57.8
55.0 56.6 58.1
55.3 56.9 58.4
55.6 57.2 58.8
55.9 57.5 59.1

59.4 60.9 62.5 64.1 65.6
59.7 61.3 62.8 64.4 65.9
60.0 61.6 63.1 64.7 66.3
60.3 61.9 63.4 65.0 66.6
60.6 62.2 63.8 65.3 66.9

67.2 68.8 70.3 71.9 73.4
67.5 69.1 70.6 72.2 73.8
67.8 69.4 70.9 72.5 74.1
68.1 69.7 71.3 72.8 74.4
68.4 70.0 71.6 73.1 74.7

75.0
75.3 76.9
75.6 77.2 78.8
75.9 77.5 79.1 80.6
76.3 77.8 79.4 80.9 82.5

56.3 57.8 59.4
56.6 58.1 59.7
56.9 58.4 60.0
57.2 58.8 60.3
57.5 59.1 60.6

60.9 62.5 64.1 65.6 67.2
61.3 62.8 64.4 65.9 67.5
61.6 63.1 64.7 66.3 67.8
61.9 63.4 65.0 66.6 68.1
62.2 63.8 65.3 66.9 68.4

68.8 70.3 71.9 73.4 75.0
69.1 70.6 72.2 73.8 75.3
69.4 70.9 72.5 74.1 75.6
69.7 71.3 72.8 74.4 75.9
70.0 71.6 73.1 74.7 76.3

76.6 78.1 79.7 81.3 82.8
76.9 78.4 80.0 81.6 83.1
77.2 78.8 80.3 81.9 83.4
77.5 79.1 80.6 82.2 83.8
77.8 79.4 80.9 82.5 84.1

84.4
84.7 86.3
85.0 86.6 88.1
85.3 86.9 88.4 90.0
85.6 87.2 88.8 90.3 91.9

57.8 59.4 60.9
58.1 59.7 61.3
58.4 60.0 61.6
58.8 60.3 61.9
58.9 60.4 62.0

62.5 64.1 65.6 67.2 68.8
62.8 64.4 65.9 67.5 69.1
63.1 64.7 66.3 67.8 69.4
63.4 65.0 66.6 68.1 69.7
63.5 65.1 66.7 68.2 69.8

70.3 71.9 73.4 75.0 76.6
70.6 72.2 73.8 75.3 76.9
70.9 72.5 74.1 75.6 77.2
71.3 72.8 74.4 75.9 77.5
71.4 73.0 74.5 76.0 77.6

78.1 79.7 81.3 82.8 84.4
78.4 80.0 81.6 83.1 84.7
78.8 80.3 81.9 83.4 85.0
79.1 80.6 82.2 83.8 85.3
79.2 80.7 82.3 83.9 85.4

85.9 87.5 89.1 90.6 92.2
86.3 87.8 89.4 90.9 92.5
86.6 88.1 89.7 91.3 92.8
86.9 88.4 90.0 91.6 93.1
87.0 88.5 90.1 91.7 93.2

93.8
94.1 95.6
94.4 95.9 97.5
94.7 96.3 97.6 99.4
94.8 96.4 97.9 99.5 100

235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 ≥368

Evaluation of Monaural Hearing Impairment

If the average of the hearing levels at 500, 1000, 2000, and 3000 Hz is 25 dB or less, according to 1996 American National Standards Institute (ANSI) audiometric standards,⁴ no impairment rating is assigned since there is no change in the ability to hear everyday sounds under everyday listening conditions (Table 11-1). At the other extreme, if the average of the hearing levels at 500, 1000, 2000, and 3000 Hz is more than 91.7 dB, the binaural hearing impairment rating is 100% since the individual has lost the ability to perform an activity of daily living—the ability to hear everyday speech.¹

The data from which this formula¹ was developed indicate that the ability to hear everyday sounds under everyday listening conditions is not impaired when the average of the hearing levels at 500, 1000, 2000, and 3000 Hz is 25 dB or less. The 25-dB "fence" represents this finding; it is not a compensatory adjustment for presbycusis, the hearing loss that occurs with age.

This method of evaluating hearing impairment should be applied only to adults who have acquired language skills. Evidence suggests that language acquisition by children who do not have language skills may be delayed when the average hearing level is in the range of 15 to 25 dB.

According to the above standards for monaural hearing impairment, for every decibel that the average hearing level or loss for speech exceeds 25 dB, 1.5% of monaural impairment is assigned. Thus, with an average hearing level loss of 67 dB above 25 dB, monaural impairment is 100% (Table 11-1).

Evaluation of Binaural Hearing Impairment

Hearing impairment of both ears, referred to as bin-aural impairment, indicates a loss of hearing of greater than 25 dB in both ears at frequencies of 500, 1000, 2000, and/or 3000 Hz.

Binaural impairment is determined by the following formula:

$$\text{binaural hearing impairment (\%)} = \frac{[5 \times (\% \text{ hearing impairment better ear}) + (\% \text{ hearing impairment poorer ear})]}{6}$$

To calculate binaural impairment when only one ear exhibits hearing impairment, use the above formula, allowing 0% impairment for the unimpaired ear (the ear with the better hearing).

Table 11-3 Relationship of Binaural Hearing Impairment to Impairment of the Whole Person

% Binaural Hearing Impairment	% Impairment of the Whole Person	% Binaural Hearing Impairment	% Impairment of the Whole Person
0.0 - 1.7	0	50.0 - 53.1	18
1.8 - 4.2	1	53.2 - 55.7	19
4.3 - 7.4	2	55.8 - 58.8	20
7.5 - 9.9	3	58.9 - 61.4	21
10.0 - 13.1	4	61.5 - 64.5	22
13.2 - 15.9	5	64.6 - 67.1	23
16.0 - 18.8	6	67.2 - 70.0	24
18.9 - 21.4	7	70.1 - 72.8	25
21.5 - 24.5	8	72.9 - 75.9	26
24.6 - 27.1	9	76.0 - 78.5	27
27.2 - 30.0	10	78.6 - 81.7	28
30.1 - 32.8	11	81.8 - 84.2	29
32.9 - 35.9	12	84.3 - 87.4	30
36.0 - 38.5	13	87.5 - 89.9	31
38.6 - 41.7	14	90.0 - 93.1	32
41.8 - 44.2	15	93.2 - 95.7	33
44.3 - 47.4	16	95.8 - 98.8	34
47.5 - 49.9	17	98.9 - 100.0	35

Alternatively, use Table 11-2, which is derived from the formula given above, to calculate the value for binaural hearing impairment. Then apply the value for binaural hearing impairment to Table 11-3, which converts binaural hearing impairment to impairment of the whole person.

Example 11-1

5% Impairment Due to Hearing Loss

Subject: 70-year-old woman.

History: Chronic recurrent ear infections since teens. Occasional drainage from right ear. Right ear now dry but feels “like stuffed with cotton.” Has occasional tinnitus in right ear; not bothersome. No dizziness.

Current Symptoms: Difficulty hearing, especially in right ear, with no impact on activities of daily living. No recent drainage.

Physical Exam: Scarred, retracted right tympanic membrane. Left tympanic membrane is thickened and retracted. Pneumo-otoscopy shows motion of left tympanic membrane, but no motion on right.

Clinical Studies: Tympanograms: B pattern for right ear and C pattern for left ear. Speech discrimination score: 95% for right ear; 80% for left ear. Acoustic immittance: reveals normal external auditory canal volumes for both ears. Pure tone audiometry reveals the following threshold levels in decibels (dB):

	Right Ear (thousands)							Left Ear (thousands)						
Frequency, Hz	0.5	1	2	3	4	6	8	0.5	1	2	3	4	6	8
Air Conduction	40	55	60	70	80	95	NR	25	30	30	40	40	60	70
Bone Conduction	20	30	15	—	35	—	—	Not tested in left ear						

Diagnosis: Mixed (sensorineural + conductive) hearing impairment, right ear. Mild sensorineural hearing impairment, left ear.

Impairment Rating: 5% impairment of the whole person.

Comment: The decimal sum of hearing threshold levels (DSHL) for the right ear is 225 (40 + 55 + 60 + 70), and the DSHL for the left ear is 125 (25 + 30 + 30 + 40). Combine 225 (worse ear) and 125 (better ear) using Table 11-2 for a binaural hearing impairment rating (BI) of 15.6%. Use Table 11-3 to obtain the 5% whole person impairment rating.

Example 11-2

8% Impairment Due to Hearing Loss

Subject: 65-year-old woman.

History: Repeated ear infections for many years. Hearing loss in both ears and roaring, pulsing, rushing-water tinnitus in both ears. No history of dizziness. Tympanoplasty, left ear, 4 months ago.

Current Symptoms: Difficulty hearing in both ears, but hearing much improved in left ear since tympanoplasty. Still has tinnitus in both ears, which impacts some activities of daily living.

Physical Exam: Retracted right tympanic membrane.

Clinical Studies: Left tympanic membrane shows well-healed graft. Tympanograms: B pattern for right ear. Tympanometry was not performed for left ear due to recent otologic surgery. Speech discrimination scores: 80% for right ear; 85% for left ear. Pure tone audiometry reveals the following threshold levels in decibels (dB):

	Right Ear (thousands)							Left Ear (thousands)						
Frequency, Hz	0.5	1	2	3	4	6	8	0.5	1	2	3	4	6	8
Air Conduction	50	50	55	55	60	85	NR	25	30	40	40	40	60	85
Bone Conduction	15	35	35	—	20	—	—	0	5	25	—	15	—	—

Diagnosis: Mixed (sensorineural + conductive) hearing impairment, bilaterally.

Impairment Rating: 8% impairment of the whole person.

Comment: The DSHL for the right ear is 210 (50 + 50 + 55 + 55), and the DSHL for the left ear is 135 (25 + 30 + 40 + 40). Combine 210 (worse ear) and 135 (better ear) using Table 11-2 for a BI of 17.8%. Add 5% for the presence of tinnitus, giving a BI of 22.8%. Use Table 11-3 to obtain the 8% whole person impairment.

Example 11-3

8% Impairment Due to Hearing Loss

Subject: 64-year-old man.

History: Progressive hearing loss for 13 years. Worked in several noisy environments; used hearing protectors fairly regularly. Exposure to gunfire during 4 years of service in the Marines. General health good. No history of tinnitus or vertigo.

Current Symptoms: Difficulty with communication at home, in restaurants, driving a car, and in noisy environments.

Physical Exam: No abnormalities.

Clinical Studies: Audiologic tests: speech reception threshold of 20 dB. Pure tone audiometry reveals the following threshold levels in decibels (dB):

	Right Ear (thousands)							Left Ear (thousands)						
Frequency, Hz	0.5	1	2	3	4	6	8	0.5	1	2	3	4	6	8
	20	15	60	80	85	85	70	25	15	60	60	65	65	60

Diagnosis: Sensorineural hearing impairment, bilateral.

Impairment Rating: 8% impairment of the whole person.

Comment: The impairment calculated from this audiogram is based on the DSHL. The DSHL for the right ear is 175 (20 + 15 + 60 + 80), and the DSHL for the left ear is 160 (25 + 15 + 60 + 60). Combine 175 (worse ear) and 160 (better ear) using Table 11-2 for a binaural hearing impairment of 23.4%. Use Table 11-3 to obtain the 8% whole person impairment.

11.2b Equilibrium

Equilibrium, or orientation in space, is maintained by the visual, kinesthetic, and vestibular mechanisms. When impairments of equilibrium are predominantly due to or have effects on other organ systems, the impairment should be evaluated in the relevant organ system, eg, disorders of the nervous system (Chapter 13), cardiovascular system (Chapters 3 and 4), and visual system (Chapter 12).

Disturbances of equilibrium may be classified as follows: (1) **vertigo**, a sensation of rotation of the subject or of objects about the subject in any plane; (2) giddiness or lightheadedness, distinguished from vertigo by the absence of feelings of movement²; and (3) abnormalities of postural stability and/or standing balance with or without vertigo. Vertigo may be produced by disorders of the vestibular mechanism and its central nervous system components, including the cerebral cortex, cerebellum, and brain stem, and by eye movements.

Permanent impairment may result from any disorder causing vertigo or disorientation in space. Three regulatory systems—vestibular, ocular (visual), and kinesthetic (proprioceptive)—are related to the vestibulo-ocular reflex. The evaluation of impairments of equilibrium may include consideration of one or more of these mechanisms.^{5,6} This chapter addresses only disturbances in equilibrium due to vestibular disorders.

Clinical evaluations may include electronystagmography,² caloric irrigation, positional and rotatory tests, dynamic posturography, Romberg and tandem Romberg tests, and radiological brain imaging studies. The results of these laboratory tests should be correlated with validated clinical measures of balance and ambulation to determine the true state of equilibratory dysfunction. For other causes of disequilibrium, see the relevant chapter, such as the neurologic system (Chapter 13), for central nervous system disorders.

Vestibular System

Permanent impairment can result from defects of the vestibular (labyrinthine) mechanism and its central connections. The defects are evidenced by loss of equilibrium produced by disturbance or loss of vestibular function.

Complete loss of vestibular function may be unilateral or bilateral. When the loss is unilateral, adequate central nervous system compensation may or may not occur. With total bilateral loss of vestibular function, equilibrium is totally dependent on the kinesthetic and visual systems, which usually are unable to compensate fully for movement or ambulation. Depending on the ability to perform activities of daily living, the percentage of permanent impairment of the whole person may range from 0% to 95%.

Disturbances of vestibular function are evidenced by vertigo (vestibular dysequilibrium) as defined above. Lightheadedness and abnormalities of gait not associated with vertigo are not defined here as being disturbances of vestibular function.

Vertigo may be accompanied by varying degrees of nausea, vomiting, headache, immobility, ataxia, and nystagmus. Movement may increase the vertigo and the accompanying signs and symptoms. Peripheral vestibular (labyrinthine) disorders are often associated with hearing loss and tinnitus. Vestibular disorders may result in temporary or permanent impairments. Evaluation of vestibular impairment should be performed when the condition is stable and maximum adjustment has been achieved, which generally is considered to occur months after resolution of the disease or injury.^{5,6}

The classification in Table 11-4 has been developed for evaluation of those individuals with permanent disturbances of the vestibular mechanism. The impairment ratings reflect the severity of the permanent impairment and the ability of the individual to perform activities of daily living. Since vestibular disorders are dynamic, assessment of permanent impairment should be based on determination of the person's condition after it is stable. Although symptoms may be intermittent, the examiner needs to gauge functioning during episodes with exacerbations. Vestibular impairment as defined here is rated similarly in Chapter 13.

Table 11-4 Criteria for Rating Impairment Due to Vestibular Disorders

Class 1 0% Impairment of the Whole Person	Class 2 1%-10% Impairment of the Whole Person	Class 3 11%-30% Impairment of the Whole Person	Class 4 31%-60% Impairment of the Whole Person	Class 5 61%-95% Impairment of the Whole Person
Symptoms or signs of vestibular dysequilibrium present without supporting objective findings and activities of daily living can be performed without assistance	Symptoms or signs of vestibular dysequilibrium present with supporting objective findings and activities of daily living can be performed without assistance, except for complex activities (eg, riding a bicycle) or certain types of demanding activities related to the individual's work (eg, walking on girders or scaffolds)	Symptoms or signs of vestibular dysequilibrium present with supporting objective findings and activities of daily living cannot be performed without assistance, except for simple activities (eg, self-care, some household duties, walking, and riding in a motor vehicle operated by another person)	Symptoms or signs of vestibular dysequilibrium present with supporting objective findings and activities of daily living cannot be performed without assistance, except for self-care	Symptoms or signs of vestibular dysequilibrium present with supporting objective findings and activities of daily living cannot be performed without assistance, except for self-care not requiring ambulation and home confinement is necessary

Class 1 0% Impairment of the Whole Person
Symptoms or signs of vestibular dysequilibrium present without supporting objective findings and activities of daily living can be performed without assistance

Class 2 1%-10% Impairment of the Whole Person
Symptoms or signs of vestibular dysequilibrium present with supporting objective findings and activities of daily living can be performed without assistance, except for complex activities (eg, riding a bicycle) or certain types of demanding activities related to the subject's work (eg, walking on girders or scaffolds)

Example 11-4**0% Impairment Due to Floating Vestibular Otoconia****Subject:** 70-year-old man.

History: Retired physician; onset of **dizziness** last week when leaning head to right or to left side. Sensation of giddiness with positional change of body but not with turning of head when upright. No nausea or vomiting. Uses the Epley maneuver to reposition otoconia.

Current Symptoms: Asymptomatic; the dizziness has not recurred; no disruption of activities of daily living.

Clinical Studies: ENG study: normal. Dix-Hallpike test: positive, with head rotation to the left and to the right.

Diagnosis: Floating vestibular otoconia.

Impairment Rating: 0% impairment of the whole person.

Comment: Treatment to be repeated as necessary.

Example 11-5**1% to 10% Impairment Due to Labyrinthitis****Subject:** 50-year-old woman.

History: Sudden onset of severe vertigo, nausea, and vomiting. No history of upper respiratory infection, fever, cough, or chills. Confined to bed. Spontaneous nystagmus to left noted. Hearing normal; no tinnitus. Treated with vestibular suppressors. Gradual, slow recovery of ability to ambulate, but unable to walk in the dark for about 1 year.

Current Symptoms: Can perform activities of daily living without assistance. Slightly unsteady when fatigued. Does not tolerate rocking motion (sailboat) without visual fixation of horizon. Unable to ride bicycle, but can drive automobile at night.

Physical Exam: Normal.

Clinical Studies: ENG and caloric studies: no vestibular function of right ear. Other neuro-otologic findings: within normal limits. Audiogram: normal hearing bilaterally. Mastoid X-rays: normal. CT scans of temporal bones: normal.

Diagnosis: Labyrinthitis, probably viral, with total loss of vestibular function, right ear.

Impairment Rating: 10% impairment of the whole person.

Comment: Class 2 impairment, with moderate loss of function.

Class 3
11%-30% Impairment of the Whole Person

Symptoms or signs of vestibular dysequilibrium present with supporting objective findings

and

activities of daily living cannot be performed without assistance, except for simple activities (eg, self-care, some household duties, walking, and riding in a motor vehicle operated by another person)

Example 11-6

11% to 30% Impairment Due to Vestibular Disorders

Subject: 40-year-old woman.

History: Nurse; progressive hearing loss in left ear, increased difficulty with gait, some loss of balance with falling to the left, and slurred speech when fatigued for 3 months. History of hypertension, controlled with beta-blockers. Audiogram showed normal hearing in right ear, 80-dB sensorineural hearing loss in left ear. Tympanograms were type A bilaterally. Acoustic reflex was absent in left ear. Vestibular tests suggested marked left peripheral end-organ lesion. Changes in oculomotor testing suggested brainstem involvement on the left side. Other neuro-otologic tests showed minimal left facial nerve weakness. MRI studies showed large left cerebellopontine angle (CPA) mass involving the left internal auditory canal. At surgery, via the translabyrinthine route, a 4-cm tumor of the left CPA, with secondary brain stem compression, was removed.

Current Symptoms: Walks with broad-based gait with slight limp. Has fallen twice since surgery.

Physical Exam: Slight weakness in lower extremities and control motions of left upper and lower extremities. Left facial paralysis. Total hearing loss in left ear. Left cerebellar tremor, in the upper extremity more than in the lower. Ophthalmologic exam reveals exposure keratopathy without microbial keratitis, left eye.

Clinical Studies: Neuro-otologic and neurologic: total loss of hearing and of vestibular function, left ear. No evident tumor, but changes in brain stem area noted on MRI. Electroencephalogram: no evidence of epileptiform activity. Gait and

balance scores: abnormal for age. Left lateral canthoplasty with insertion of gold weights in left upper eyelid was performed, plus a cross-face sural nerve graft to the left face.

Diagnosis: Large left acoustic neuroma with postoperative total left auditory and vestibular impairments and left facial nerve paralysis.

Impairment Rating: 30% impairment due to vestibular disorders; combine with appropriate ratings for other impairments to determine whole person impairment (see Combined Values Chart, p. 604).

Comment: Preoperatively active. Exercises; walks with some difficulty; can perform self-care and limited household activities; unable to drive a car or to continue to work.

Class 4
31%-60% Impairment of the Whole Person

Symptoms or signs of vestibular dysequilibrium present with supporting objective findings

and

activities of daily living cannot be performed without assistance, except for self-care

Example 11-7

31% to 60% Impairment Due to Chronic Vestibular Disorder

Subject: 43-year-old woman.

History: Dizziness for the past 6 years. Has consulted many physicians. In the past has had gall bladder problems and recurrent renal infections. No history of trauma or surgery. No history of chronic drug ingestion, but currently taking an antidepressant. Nonsmoker.

Current Symptoms: Occasional double vision during past year. Cannot drive. Does self-care slowly because of dizziness. Denies hearing loss. Self-rated as moderately impaired. Requires assistance with daily tasks.

Physical Exam: Hearing within normal limits. Blood pressure is normal.

Clinical Studies: Posturography: abnormal. Exhibits 50% caloric weakness in right ear. No directional preponderance. Rotatory tests: normal. Dix-Hallpike test: normal. Oculomotor tests: normal. Responded poorly to habituation exercises.