

# SINCOPE

La sincope è una transitoria (breve durata) perdita di coscienza dovuta ad un ridotto apporto ematico cerebrale.

Si associa a collasso posturale e recupero spontaneo.

Si può verificare senza preavviso (improvvisa) o può essere preceduta da sintomi di svenimento (lipotimia o presincope)

## CAUSES OF SYNCOPE (Kapoor, Nejm 2000)

TABLE 1. CAUSES OF SYNCOPE.\*

| CAUSE                       | MEAN<br>PREVALENCE<br>(RANGE) |
|-----------------------------|-------------------------------|
|                             | percent†                      |
| ● Neurally mediated syncope |                               |
| Vasovagal attack            | 18 (8–37)                     |
| Situational syncope         | 5 (1–8)                       |
| Carotid-sinus syncope       | 1 (0–4)                       |
| ● Psychiatric disorders     | 2 (1–7)                       |
| ● Orthostatic hypotension   | 8 (4–10)                      |
| ● Medications‡              | 3 (1–7)                       |
| ● Neurologic disease        | 10 (3–32)                     |
| ● Cardiac syncope           |                               |
| Organic heart disease§      | 4 (1–8)                       |
| Arrhythmias                 | 14 (4–38)                     |
| ● Unknown                   | 34 (13–41)                    |

**TABLE 2. CLINICAL FEATURES SUGGESTIVE OF SPECIFIC CAUSES OF SYNCOPE.**

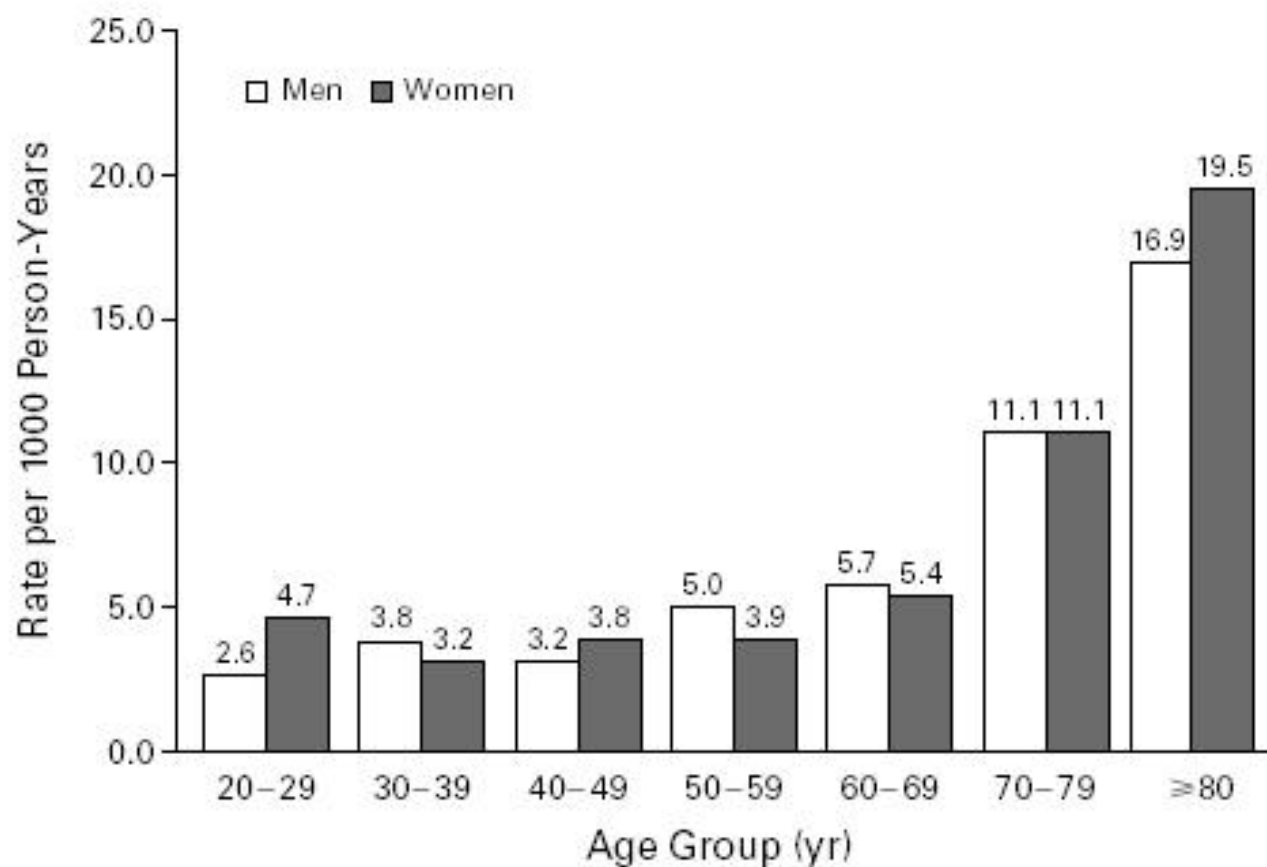
| SYMPTOM OR FINDING   | DIAGNOSIS TO BE CONSIDERED               |
|--|--|
| ● Episodes occur after sudden unexpected pain, fear, or unpleasant sight, sound, or smell                                | Vasovagal attack                         |
| ● Episodes occur after prolonged standing at attention   | Vasovagal attack                         |
| ● Episodes occur in a well-trained athlete without heart disease after exertion  | Vasovagal attack                         |
| ● Episodes occur during or immediately after micturition, cough, swallowing, or defecation                               | Situational syncope                      |
| ● Syncope is accompanied by throat or facial pain (glossopharyngeal or trigeminal neuralgia)                             | Neurally mediated syncope with neuralgia |
| ● Episodes occur with head rotation or pressure on carotid sinus (due to tumors, shaving, or tight collars, for example) | Carotid-sinus syncope                    |
| ● Episodes occur immediately on standing   | Orthostatic hypotension                  |
| ● Patient takes medications that may lead to a long QT interval or orthostasis and bradycardia                           | Drug-induced syncope                     |
| ● Syncope is associated with headaches   | Migraines, seizures                      |

(Kapoor, Nejm 2000)

# SYMPTOM OR FINDING

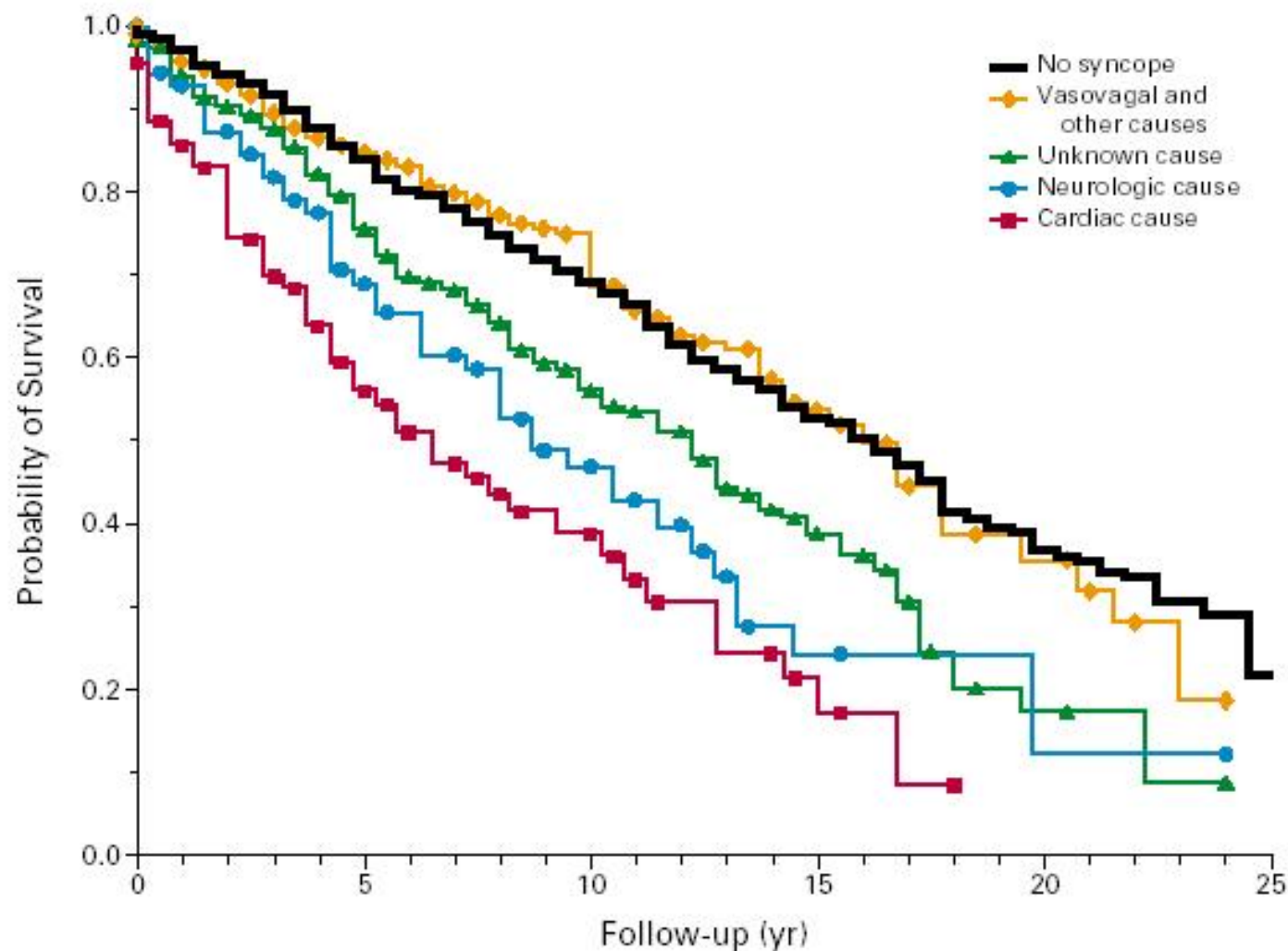
# DIAGNOSIS TO BE CONSIDERED

- Syncope is associated with vertigo, dysarthria, or diplopia  
Transient ischemic attack, subclavian steal, basilar migraine
- Episodes occur with arm exercise  
Subclavian steal
- Patient is confused after episode, or loss of consciousness lasts more than 5 minutes  
Seizure
- Differences are found in blood pressure or pulse between the two arms  
Subclavian steal or aortic dissection
- Syncope and murmur occur with changes of position (from sitting to lying, bending, turning over in bed)  
Atrial myxoma or thrombus
- Syncope occurs with exertion  
Aortic stenosis, pulmonary hypertension, mitral stenosis, hypertrophic cardiomyopathy, coronary artery disease
- Patient has a family history of sudden death  
Long-QT syndrome, the Brugada syndrome
- Patient has a brief loss of consciousness with no prodrome and has heart disease  
Arrhythmias
- Patient has frequent syncope with somatic symptoms but no heart disease  
Psychiatric illness



**Figure 1.** Incidence Rates of Syncope According to Age and Sex.

The incidence rates of syncope per 1000 person-years of follow-up increased with age among both men and women. The increase in the incidence rate was steeper starting at the age of 70 years. Syncope rates were similar among men and women.



**Figure 2.** Overall Survival of Participants with Syncope, According to Cause, and Participants without Syncope.

$P < 0.001$  for the comparison between participants with and those without syncope. The category "Vasovagal and other causes" includes vasovagal, orthostatic, medication-induced, and other, infrequent causes of syncope.

## **DIAGNOSI DIFFERENZIALE DELLA SINCOPE**

- Attacchi d' ansia e sdr da iperventilazione
- Crisi epilettiche
- Ipoglicemia
- Emorragia acuta
- Lipotimia isterica

**Nella diagnosi differenziale sono importanti da valutare i sintomi che precedono o seguono l'evento (aura, perdita feci o urine, recupero lento, etc.)**

# LIPOTIMIA

La LIPOTIMIA è un improvviso malessere associato a pallore, sudorazione fredda, respirazione sospirosa, annebbiamento visivo, ipoacusia ed acufeni, profonda astenia “che PRELUDE ad una completa anche se fugace perdita di coscienza”



Nel “DROP ATTACK” c’è classicamente  
la caduta a terra senza perdita di coscienza

# Alterazioni stato di coscienza

**COMA:** alterazione dello stato di coscienza per cui nessuno stimolo può riportare il paziente allo stato di veglia

**OTTUNDIMENTO, SOPORE, TORPORE:** il pz è in dormiveglia, con diminuzione dell'attenzione, ma conservata capacità di reagire o rispondere a stimoli verbali. La comprensione degli ordini è incompleta e parziale.

**STUPOR:** il spz riesce a raggiungere e a mantenere lo stato di veglia solo se è continuamente stimolato in modo vigoroso; appena lo stimolo cessa lo stato di veglia viene perso.

## **Definizione coscienza:**

***“Consapevolezza di sé e dell’ambiente che ci circonda”***

Il **coma** indica una compromissione diffusa e bilaterale degli emisferi cerebrali, od una alterazione, anche unilaterale, del sistema reticolare ascendente che attraversa tutto il tronco cerebrale ed ha un ruolo fondamentale nel mantenere lo stato di veglia. Lesioni emisferiche unilaterali non determinano stupore o coma, a meno che non interessino anche il diencefalo.

# COMA

Il COMA è una prolungata perdita della coscienza e delle attività della vita di relazione con conservazione delle funzioni della vita vegetativa

- Coma profondo
- Coma leggero o precoma
- Coma vigile

# CAUSE DEI COMA

**COMA NEUROLOGICO** (da lesioni distruttive o compressive dell'encefalo)

## **COMA TOSSICO**

- Coma tossici endogeni
- Coma tossici esogeni

## **COMA NEUROLOGICO (CEREBRALE)**

- Meningiti e meningo-encefaliti**
- Tumori cerebrali**
- Ictus ischemico**
- Emorragia cerebrale e subaracnoidea**
- Trombosi cerebrale**

## COMI TOSSICI ENDOGENI

- **COMA UREMICO** (acidosi, respiro di Cheyne-Stokes, odore urinoso dell'alito)
- **COMA EPATICO** (iperammoniemia, foetor hepaticus)
- **COMA DIABETICO CHETO-ACIDOSICO** (alito acetone, disidratazione, respiro di Kussmaul da acidosi metabolica)
- **COMA DIABETICO IPEROSMOLARE**
- **COMA IPEROSMOLARE NON DIABETICO** (gravigastroenteriti, colera, diabete insipido, grandi ustioni)
- **COMA DA ACIDOSI LATTICA** (iperlattacidemia da anossia tissutale-shock)
- **COMA IPOGLICEMICO**
- **COMA IPERCAPNICO**
- **COMA DISENDOCRINI** (ipofisi, tireotossicosi, ipercalcemia)

# COMA TOSSICI ESOGENI

- COMA ETILICO
- COMA BARBITURICO
- COMA DA BENZODIAZEPINE
- COMA DA OPPIACEI (miosi pupillare che regredisce con il collirio di naloxone)
- COMA DA OSSIDO DI CARBONIO
- COMA INCOMPLETO (arsenico, cocaina, piombo)



## Pupils in Comatose Patients

Pupillary size, equality, and light reactions help in assessing the cause of coma and in determining the region of the brain that is impaired. Remember that unrelated pupillary abnormalities, including miotic drops for glaucoma or mydriatic drops for a better view of the ocular fundi, may have preceded the coma.



### Small or Pinpoint Pupils

*Bilaterally small pupils* (1–2.5 mm) suggest (1) damage to the sympathetic pathways in the hypothalamus, or (2) metabolic encephalopathy (a diffuse failure of cerebral function that has many causes, including drugs). Light reactions are usually normal.

*Pinpoint pupils* (< 1 mm) suggest (1) a hemorrhage in the pons, or (2) the effects of morphine, heroin, or other narcotics. The light reactions may be seen with a magnifying glass.



### Midposition Fixed Pupils

Pupils that are in the *midposition* or *slightly dilated* (4–6 mm) and are *fixed to light* suggest structural damage in the midbrain.



### Large Pupils

*Bilaterally fixed and dilated pupils* may be due to severe anoxia and its sympathomimetic effects, as seen after cardiac arrest. They may also result from atropinelike agents, phenothiazines, or tricyclic antidepressants.

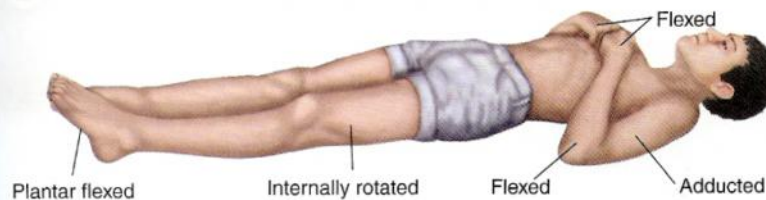
*Bilaterally large reactive pupils* may be due to cocaine, amphetamine, LSD, or other sympathetic nervous system agonists.



### One Large Pupil

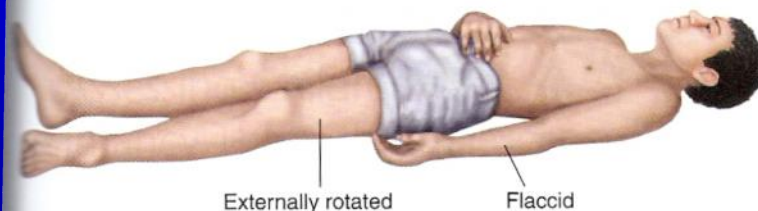
A pupil that is *fixed and dilated* warns of herniation of the temporal lobe, causing compression of the oculomotor nerve and midbrain.

## Abnormal Postures in Comatose Patients



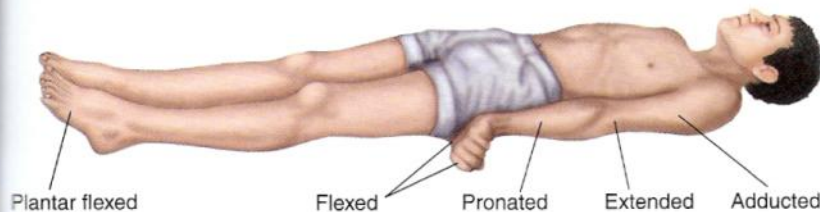
### Decorticate Rigidity (Abnormal Flexor Response)

In *decorticate rigidity*, the upper arms are flexed tight to the sides with elbows, wrists, and fingers flexed. The legs are extended and internally rotated. The feet are plantar flexed. This posture implies a destructive lesion of the corticospinal tracts within or very near the cerebral hemispheres. When unilateral, this is the posture of chronic spastic hemiplegia.



### Hemiplegia (Early)

Sudden unilateral brain damage involving the corticospinal tract may produce a *hemiplegia* (one-sided paralysis), which early in its course is flaccid. Spasticity will develop later. The paralyzed arm and leg are slack. They fall loosely and without tone when raised and dropped to the bed. Spontaneous movements or responses to noxious stimuli are limited to the opposite side. The leg may lie externally rotated. One side of the lower face may be paralyzed, and that cheek puffs out on expiration. Both eyes may be turned away from the paralyzed side.



### Decerebrate Rigidity (Abnormal Extensor Response)

In *decerebrate rigidity*, the jaws are clenched and the neck is extended. The arms are adducted and stiffly extended at the elbows, with forearms pronated, wrists and fingers flexed. The legs are stiffly *extended at the knees*, with the feet plantar flexed. This posture may occur spontaneously or only in response to external stimuli such as light, noise, or pain. It is caused by a lesion in the diencephalon, midbrain, or pons, although severe metabolic disorders such as hypoxia or hypoglycemia may also produce it.

# VERTIGINE

1. Sensazione illusoria o allucinatoria di un movimento del corpo o dell' ambiente circostante
2. E' una falsa sensazione di movimento rotatorio dell'ambiente e degli oggetti che circondano la persona, tale anche da determinare la caduta a terra.

# **TIPI DI VERTIGINE**

**VERTIGINE LABIRINTICA**

**90%**

**VERTIGINE DA COMPROMISSIONE DELLE VIE  
E DEI CENTRI NERVOSI DELL' EQUILIBRIO**

**10%**

## **ELEMENTI SOGGETTIVI DELLA VERTIGINE**

- Pallore, sudorazione, nausea, vomito, incapacità a svolgere la propria attività, necessità di chiudere gli occhi, di aggrapparsi per non cadere, andatura instabile, cadute a terra

## **ELEMENTI OBIETTIVI DELLA VERTIGINE**

- NISTAGMO (se lesione labirintica irritativa, scossa lenta verso l'orecchio malato; se lesione deficitaria, scossa lenta verso orecchio sano)
- DEVIAZIONE SEGMENTARIA DEGLI ARTI (errore con gli indici verso scossa lenta)
- SEGNO DI ROMBERG ( ad occhi chiusi, cade dal lato della scossa lenta)
- DEVIAZIONE DELLA MARCIA CIECA (devia dal lato della lesione quando avanza)

# VERTIGINI VESTIBOLARI

- VERTIGINE DI MENIERE
- LESIONE TRAUMATICA DEL LABIRINTO
- VERTIGINE POSTURALE
- DA TRATTAMENTI (streptomicina)
- OTITE PURULENTA
- LABIRINTITI VIRALI E NEURONITI VESTIBOLARI

# VERTIGINI CENTRALI

- LESIONI TUMORALI O VASCOLARI DEL CERVELLETTO
- SCLEROSI A PLACCHE
- SDR DI RAMSAY-HUNT (Herpes Zooster)
- ALTRE SINDROMI NEUROLOGICHE



TABLE  
7-3

## Dizziness and Vertigo<sup>33-38</sup>

"Dizziness" is a nonspecific term used by patients encompassing several disorders that clinicians must carefully sort out. A detailed history usually identifies the primary etiology. It is important to learn the specific meanings of the following terms or conditions:

- *Vertigo*—a spinning sensation accompanied by nystagmus and ataxia; usually from *peripheral vestibular dysfunction* (~40% of "dizzy" patients) but may be from a *central brainstem lesion* (~10%; causes include atherosclerosis, multiple sclerosis, vertebrobasilar migraine, or TIA)
- *Presyncope*—a near faint from "feeling faint or lightheaded"; causes include orthostatic hypotension, especially from medication, arrhythmias, and vasovagal attacks (~5%)
- *Dysequilibrium*—unsteadiness or imbalance when walking, especially in older patients (see p. 901); causes include fear of walking, visual loss, weakness from musculoskeletal problems, and peripheral neuropathy (up to 15%)
- *Psychiatric*—causes include anxiety, panic disorder, hyperventilation, depression, somatization disorder, alcohol, and substance abuse (~10%)
- *Multifactorial or unknown*—(up to 20%)

### Peripheral and Central Vertigo

|  | Onset  | Duration and Course  | Hearing  | Tinnitus             | Additional Features  |
|--|--|--|--|----------------------|--|
| <b>Peripheral Vertigo</b>                          |  |  |  |                      |  |
| ■ <i>Benign Positional Vertigo</i>                 | Sudden, on rolling onto affected side or tilting head up                           | Onset a few seconds to <1 minute<br>Lasts a few weeks, may recur | Not affected   | Absent               | Sometimes nausea, vomiting<br>Nystagmus  |
| ■ <i>Vestibular Neuritis (acute labyrinthitis)</i> | Sudden   | Onset hours to up to 2 weeks<br>May recur over 12–18 months      | Not affected   | Absent               | Nausea, vomiting, nystagmus  |
| ■ <i>Ménière's Disease</i>                         | Sudden   | Onset several hours to ≥1 day<br>Recurrent                       | Sensorineural hearing loss—recurs, eventually progresses | Present, fluctuating | Pressure or fullness in affected ear; nausea, vomiting, nystagmus                            |
| ■ <i>Drug Toxicity</i>                             | Insidious or acute—linked to loop diuretics, aminoglycosides, salicylates, alcohol | May or may not be reversible<br>Partial adaptation occurs        | May be impaired  | May be present       | Nausea, vomiting   |
| ■ <i>Acoustic Neuroma</i>                          | Insidious from CN VIII compression, vestibular branch                              | Variable   | Impaired, one side                                       | Present              | May involve CN V and VII   |
| <b>Central Vertigo</b>                             | Often sudden (see causes above)  | Variable but rarely continuous                                   | Not affected   | Absent               | Usually with other brainstem deficits—dysarthria, ataxia, crossed motor and sensory deficits |

# TABLE 7-6

## Nystagmus

Nystagmus is a rhythmic oscillation of the eyes, analogous to a tremor in other parts of the body. Its causes are multiple, including impairment of vision in early life, disorders of the labyrinth and the cerebellar system, and drug toxicity. Nystagmus occurs normally when a person watches a rapidly moving object (e.g., a passing train). Study the three characteristics of nystagmus described in this table so you can correctly identify the type of nystagmus. Then refer to textbooks of neurology for differential diagnoses.

### Direction of Gaze in Which Nystagmus Appears

Example: Nystagmus on Right Lateral Gaze

Nystagmus Present (Right Lateral Gaze)



Although nystagmus may be present in all directions of gaze, it may appear or become accentuated only on deviation of the eyes (e.g., to the side or upward). On extreme lateral gaze, the normal person may show a few beats resembling nystagmus. Avoid making assessments in such extreme positions, and observe for nystagmus only within the field of full binocular vision.

Nystagmus Not Present (Left Lateral Gaze)



### Direction of the Quick and Slow Components

Example: Left-Beating Nystagmus—a Quick Jerk to the Left in Each Eye, Then a Slow Drift to the Right



Nystagmus usually has both slow and fast movements, but is defined by its fast phase. For example, if the eyes jerk quickly to the patient's left and drift back slowly to the right, the patient is said to have left-beating nystagmus. Occasionally, nystagmus consists only of coarse oscillations without quick and slow components. It is then said to be pendular.

(table continues on page 724)

TABLE  
**17-6**

**Nystagmus** (continued)

**Plane of the Movements**

*Horizontal Nystagmus*



The movement of nystagmus may be in one or more planes (i.e., horizontal, vertical, rotary). It is the plane of the movement, not the direction of the gaze, that is variable.

*Vertical Nystagmus*



*Rotary Nystagmus*

