

Figure 1. Canalith repositioning maneuver for right-sided benign paroxysmal positional vertigo. A, With the patient sitting up and the head turned 45 degrees to the right, the patient is positioned rapidly in the head-hanging position, B. This constitutes the Dix-Hallpike maneuver, and vertigo and nystagmus develop usually within seconds. After all nystagmus has subsided, the head is turned 90 degrees toward the unaffected left ear, as in C. Additional turns of 60 degrees are done clockwise in D and E. Canalith debris is thereby moved toward the common crus and eventually into the utricle as depicted in semicircular canal diagrams. Finally, the patient is moved up from E to the sitting position (F). The maneuver is then repeated until positioning from A results in no further nystagmus. (With permission from Barrow Neurological Institute.)

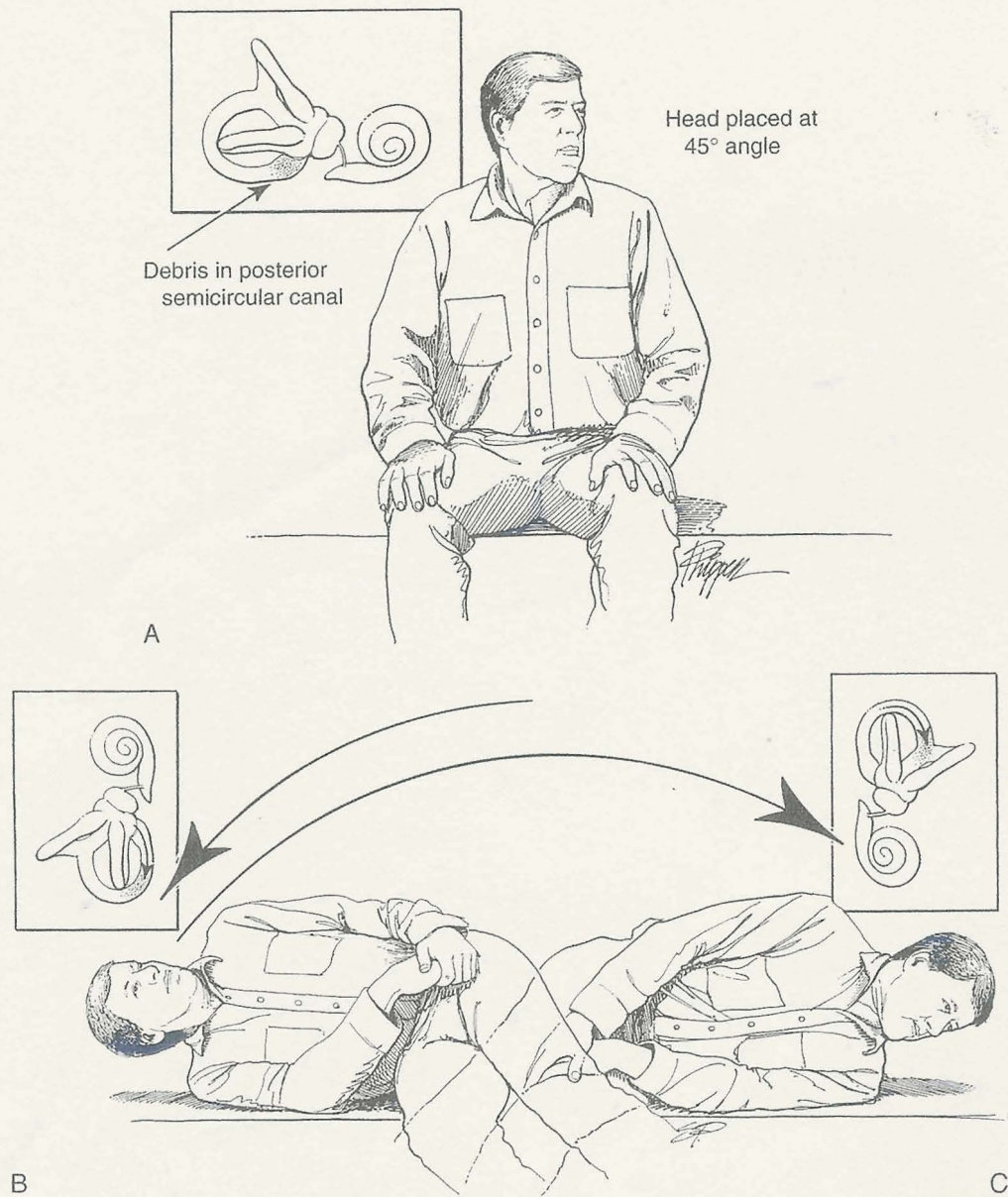


Figure 2. Liberator maneuver of Semont for right-sided benign paroxysmal vertigo. *A*, The head is turned 45 degrees away from the affected ear (yaw plane). *B*, The patient is then taken to the side without turning the head. This will produce vertigo and nystagmus. After 1 minute in position *B*, the patient moves to position *C* rapidly without turning the head. Subsequently the patient may sit up. Canalith debris is moved from the posterior canal to the utricle as illustrated. (With permission from Barrow Neurological Institute.)

and is characteristic of acute peripheral vestibular nystagmus.

THERAPY. In the acute situation, vestibular suppressants are often helpful in easing the vertigo and nausea (Table 2). Once nausea has subsided, the vestibular suppressants should be used more sparingly or eliminated because these medications may delay or limit CNS adaptation to the acute vestibular loss. Initially, patients should begin moving their heads from side to side, extending the activity each day until they are capable of undergoing a full battery of vestibular exercises such as those outlined in Table 3. Eventually, the patient can adapt to unilateral vestibular loss and make a complete or nearly complete recovery. Vestibular rehabilitation is effective in accelerating adaptation by repeated exposure to head motion. Studies in primates and humans indicate that vestibular exercises can accelerate the

recovery from a unilateral vestibular loss and improve overall balance function.

Bilateral Peripheral Vestibular Loss. Symmetrical bilateral loss of vestibular function does not usually manifest with prominent complaints of vertigo. Patients more commonly report dysequilibrium that is more prominent during head motion. In severe peripheral vestibular loss the vestibulo-ocular reflex can result in blurring or bouncing of vision (oscillopsia) during head motion. Bilateral vestibular loss is not easily detected at bedside, so quantitative vestibular testing by electronystagmography or rotary chair testing is often necessary to confirm the diagnosis. The most well-recognized cause of bilateral peripheral loss is aminoglycoside (especially gentamicin) ototoxicity. Some patients with end-stage renal disease on hemodialysis or peritoneal dialysis develop vestibulotoxicity because gentamicin levels are