

## **Treatment Protocol for Meniere's Disease**

Although the exact cause is unknown, Meniere's disease seems to involve a problem maintaining proper fluid balance within the inner ear. Initially, one ear is involved. However, after several years, the other ear may be involved. Meniere's disease symptoms are episodic vertigo, hearing loss, ear fullness, and low frequency tinnitus. Vertigo is a sensation of abnormal environmental motion. It is usually rapid rotational motion. Vertigo is the most incapacitating symptom associated with Meniere's. It may be associated with nausea and vomiting. None or all of the other symptoms may be present with the vertigo. Treatments available for this disease are focused on attempts to decrease the severity and frequency of episodic vertigo. Episodes may still occur. However if the problem is no longer incapacitating, treatment is considered a success.

Initial recommendations are to follow a low salt diet. This is very restrictive. You must avoid using a salt shaker. Salt should not be added to your food for cooking. You must read food labels and be careful with restaurant food. Only 1.5 grams of sodium is allowed per day. Sugar intake should also be limited.

After this dietary modification, the next treatment option is to take a diuretic/water pill. The low salt diet and diuretic theoretically help maintain normal fluid balance within the inner ear. Diazide and Diamox are the two most common diuretics used for Meniere's disease. Side effects include increased urination and tingling of the hands. Over the counter Lipoflavanoid is sometimes used. It is a multivitamin/supplement that is taken three times a day. If patients are having multiple episodes of vertigo per week, a short course of prednisone may be helpful. Brand name Ativan is prescribed to take as needed for vertigo. Carry some with you at all times. Placing one tablet underneath the tongue immediately at the onset of vertigo will decrease the length and severity of the vertigo. Promethazine may also be used as needed for associated nausea and vomiting.

If the above medical treatment is not decreasing the frequency of vertigo, surgical procedures may be recommended. At this time, the most common procedure is application of middle ear corticosteroids or gentamycin. This is an office procedure. The liquid medication is placed through the eardrum into the middle ear space with the expectation of being absorbed into the inner ear. Steroid solution may be therapeutic but not destructive to the inner ear. For this reason, steroid treatment may be tried before gentamycin. If steroid treatment is not helpful, gentamycin is applied. Gentamycin is toxic to the inner ear balance organ. By destroying additional balance function in the diseased ear, it serves to improve or resolve episodic vertigo. Gentamycin is over 80% effective at improving episodic vertigo. Gentamycin treatment may be associated with hearing loss or prolonged dysequilibrium. With either of these medications, 1 to 3 applications may be needed.

There are two other non destructive options that may be offered. The Meniett device creates a repeated pulse of air that theoretically improves inner ear fluid dynamics. It requires placement of a tube in the eardrum. After that, patients wear an ear piece to deliver the pulses several times a day. Effectiveness may be only 50% but there are no risks. An endolymphatic sac shunt procedure is an option. It requires general anesthesia. There are varying opinions on the level of effectiveness. Some have claimed a 75% improvement regarding episodic vertigo. A catheter is placed in a portion of the inner ear and theoretically helps with inner ear fluid problems.

Two remaining procedures are available for those with frequent incapacitating vertigo despite all the other interventions. These include a labyrinthectomy and vestibular nerve section. A labyrinthectomy consists of drilling away the diseased inner ear. The nerve section serves to cut the balance nerves going to the diseased ear. Both procedures should be at least 90% effective.

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