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FOOD, DRINK, SUPPLEMENTS

Certain foods and/or nutrients can help manage some vestibular symptoms.

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Dietary Considerations for Secondary Endolymphatic Hydrops, Ménière's Disease, and Vestibular Migraine

By Vestibular Disorders Association (VeDA) with updates by Dr. Jessica Lieffers, PhD, RD

Many people with Ménière's disease (also called primary idiopathic endolymphatic hydrops), secondary endolymphatic hydrops, or vestibular migraine find that certain diet modifications help manage their condition. However, others with these vestibular disorders may find diet modifications are not helpful. Each person is different, so you will need to discover what works best for you. Peer-reviewed research on diet and vestibular disorders is very limited. Therefore, more studies are needed before definitive conclusions can be made on relations between diet and vestibular disorders. Further research is also needed to develop more specific dietary recommendations for people with vestibular disorders.

Even if food does not trigger your symptoms, it is important for everyone with vestibular disorders to follow a healthy diet for overall health and well-being. Following a healthy diet also helps reduce the risk of other chronic diseases like heart disease, type 2 diabetes, hypertension and improves overall well-being. Following national nutrition recommendations, such as the Dietary Guidelines for Americans or Canada's Food Guide, is a good starting point. National nutrition guidelines usually recommend eating a variety of foods from all food groups and choosing options low in sodium, added sugars, and saturated fats. Other healthy dietary patterns that may be helpful for people with vestibular disorders to follow are the Mediterranean diet, the Dietary Approaches to Stop Hypertension (DASH) diet, and the Mediterranean-DASH Diet Intervention for Neurodegenerative Delay (MIND) diet. Additionally, limiting alcohol and caffeine intake may help decrease vestibular symptoms for some people.

Some people with vestibular disorders are also interested in trying elimination diets. An elimination diet consists of two phases: the elimination phase (all foods suspected of being possible triggers are eliminated in an attempt to relieve symptoms) and the re-introduction phase (careful re-introduction of foods once symptoms are resolved). Elimination diets should only be done under the supervision of a physician and/or a registered dietitian to avoid nutrient deficiencies, ensure appropriate energy (calorie) intake, and prevent eating disorders. Following elimination diets for long periods of time could make your

vestibular symptoms worse. The Academy of Nutrition and Dietetics also recommends that elimination diets should only be followed for a short period of time (4-8 weeks).

If you have any questions or concerns about dietary strategies, including supplement use, for managing a vestibular disorder, please consult your physician or a registered dietitian. They can help you develop a personalized plan tailored to your unique needs (including both your vestibular disorder and any other health concerns) to ensure that you are meeting all nutritional requirements. They can also work with you to help you identify whether foods impact your vestibular symptoms. Please also consult a licensed healthcare provider (e.g., physician, registered dietitian, pharmacist) before taking any additional herbs, vitamins, or supplements. These products could worsen your vestibular symptoms or interact with your medications.

DIETARY CONSIDERATIONS

- **Sodium**
- **Sugar**
- **Caffeine**
- **Suppliements**
- **Alcohol**
- **Specific Migraine Triggers**
- **Medications**
- **Nicotine**

MÉNIÈRE'S DISEASE AND SECONDARY ENDOLYMPHATIC HYDROPS

Inner ear fluid balance
In people with Ménière's disease and secondary endolymphatic hydrops, fluid (endolymph) is thought to build up in the inner ear, which can cause numerous symptoms, such as pressure or fullness in the ears, tinnitus (ringing in the ears), hearing loss, dizziness, vertigo, and imbalance. Diet, and specifically sodium (salt) intake, is thought to be one factor that affects inner ear fluid (endolymph) levels in people with Ménière's disease and secondary endolymphatic hydrops. More specifically, large amounts of salt in the diet can affect the blood electrolyte concentration, which is thought to be a factor that can impact the inner ear fluid (endolymph). In fact, the clinical practice guideline for Ménière's disease published in 2020 lists diet changes as the 'least aggressive' treatment for this disease. These guidelines also recommend that clinicians educate people with Ménière's Disease on diet changes for disease management.

Dietary goals
Although diet changes may not be helpful for everyone with Ménière's Disease, they are an important strategy to try to obtain symptom relief. Many of the strategies below that are listed for Ménière's Disease are general principles for healthy eating, which may be helpful for individuals to follow when living with other vestibular disorders.

1) Limiting dietary salt/sodium
Sodium intake is recommended to be limited for people with Ménière's disease because it is thought to increase inner ear fluid (endolymph) levels. Although sodium reduction has long been thought to be beneficial for the management of Ménière's disease, a recent Cochrane Review found no randomized controlled trials exist on this topic. More research in this area is still needed.

Because of the lack of research and guidelines on low sodium diets for people with Ménière's disease, the clinical practice guidelines for Ménière's disease published in 2020 lists the American Heart Association recommendations for a low sodium diet.

The American Heart Association recommendations suggest the ideal amount of sodium to consume each day is 1500mg. They also recommend no more than 2300mg of sodium each day. Most people in North America consume an average of 3400mg of sodium per day, which is above the maximum recommendation suggested by the American Heart Association. Following the American Heart Association guidelines for sodium may also be helpful to prevent high blood pressure.

Before trying a low sodium diet, it is always best to ask your physician about what amount of sodium is ideal for your unique situation, especially since there are some conditions for which a low sodium diet may be contraindicated (e.g., postural orthostatic tachycardia syndrome or POTS).

Difference between salt and sodium
Salt and sodium are not identical; table salt (sodium chloride) is made up of 40% sodium and 60% chloride. 1 tsp of table salt is equal to about 2300mg of sodium. Sea salt, Kosher salt, pickling salt, Himalayan salt, and rock salt all have the same amount of sodium as table salt.

Salt in the foods we eat
Salt is everywhere in the foods we eat. Salt has numerous roles in foods, which is perhaps why it is so prevalent in our food supply. Some roles of salt in our food include a flavor and texture enhancer, preservative, binder, color aid, and for fermentation control. According to the American Heart Association, about 15% of the sodium we eat occurs naturally in foods and beverages, about 11% of sodium is added while cooking or eating (e.g., using a salt shaker at the table), and 70% of sodium we eat comes from the processed foods and foods eaten at restaurants. Salt is commonly added to processed foods to increase shelf life and palatability.

Foods that are naturally low in sodium include water, fresh fruits and vegetables, unprocessed grains, and most fresh meats, poultry, and fish. Some frozen or canned food items (e.g., vegetables, beans) are available without added salt.

Foods that contain large amounts of sodium include many convenience foods, such as frozen meals, items from restaurant take-out menus, and foods with monosodium glutamate (MSG). Also, processed meats such as ham, hot dogs, and bacon, many canned meats and vegetables, seasoning mixes, pickles, pickled banana peppers, commercial salsa, olives, and condiments such as soy sauce, teriyaki sauce, ketchup, barbecue sauce, and mustard are also high in sodium. Canned and dehydrated soup, cereal, vegetable juices, cheese, salad dressings, sauces (e.g., tomato sauce), chips, commercial baked goods (e.g., crackers, bread, pretzels, tortillas), and salted nuts may also be important contributors of sodium in our diets.

Strategies for Reducing Sodium Intake
Many strategies can be used to help decrease dietary sodium intakes. Of note, some people find that it is difficult to adapt to a reduced-sodium diet because salt is so often used to make foods taste better. One strategy is to reduce salt gradually if you are having difficulties adjusting to the change. A registered dietitian can also provide you with personalized strategies to decrease your sodium intake.

Reading Labels for Sodium Content: Reading labels, especially on packaged, canned and jarred foods, is important for people limiting sodium in their diets. This strategy is important because some foods that are high in sodium do not taste salty.

Ingredient lists with the words 'sodium,' 'soda,' 'brine,' 'baking powder,' 'soy sauce,' and/or 'salt' indicate the presence of sodium. It is important to compare various brands and products to find those with the least sodium, as there can be a large variation. When comparing brands, keep in mind that serving sizes on packages and containers for similar products can vary and may not represent the amount you eat. Keep in mind also that eating large amounts of foods with smaller amounts of sodium can also add up to a large amount of sodium in your overall day.

To make label reading easier, the FDA (US Food and Drug Administration) has established definitions for salt/sodium content in food labeling to help consumers identify reduced sodium foods. The definitions are as follows:

- **Sodium/salt-free**: Less than 5 mg of sodium per serving
- **Very low sodium**: 35 mg of sodium or less per serving
- **Low sodium**: 140 mg of sodium or less per serving
- **Light in sodium or lightly salted**: At least 50% less sodium than the regular product
- **Reduced sodium**: At least 25% less sodium than the regular product
- **No-Salt-Added or Unsalted**: No salt is added during processing, but these products may not be salt/sodium-free unless stated

Another strategy when reading labels for sodium content is to use the % Daily Value (% DV). Foods with a 5% DV or less/serving are generally considered a low source of sodium, while foods with a 20% DV or higher/serving are generally considered a high source of sodium.

Strategies for Reducing Sodium Intake at Home: When cooking at home, it's important to be selective about ingredients, including seasonings, and to look for hidden sources of sodium in packaged, canned and jarred foods. For those accustomed to using salt in cooking and at the table, foods may initially taste bland when you reduce the sodium content. However, introducing herbs and spices can enhance flavor and make meals more palatable.
Some strategies to reduce sodium intake at home include:

- Rinsing canned vegetables and beans to reduce sodium.
- Cooking foods without adding salt, such as not adding salt to pasta water.
- Using spices and herbs to flavor your food. (Be cautious: Some mixed seasoning may contain added sodium.)

If you find it difficult to adjust to a reduced-sodium diet, you can decrease salt gradually in cooking and/or at the table.

Commercial salt substitutes may be an option for some people to reduce salt intake. These substitutes sometimes contain mixtures of herbs and spices. However, some salt substitutes can taste bitter and often include potassium, which can complicate certain medical conditions, particularly those involving the kidneys. Therefore, these products should not be used without first consulting a physician.

Strategies for Reducing Sodium Intake When Dining Out: In restaurants, batter-fried foods tend to be salty, as are combination dishes such as soups or pasta with sauce. To reduce sodium intake, consider:

- Select plain foods from the menu, such as grilled or roasted entrees, baked potatoes, and salads dressed with oil and vinegar.
- Request gravies, sauces, and salad dressings to be served on the side or for dishes to be prepared without added salt.
- Substitute a side salad or fresh fruit in place of fries or other salty items.
- Asking for no salt to be added when cooking vegetable side dishes.

Be cautious of words like "smoked" or "blackened," as these foods are generally high in sodium. Many large chain restaurants provide their nutrition information online; checking this information before your visit can help you make better choices.

Medications
Antacids and other medications sometimes contain sodium. A pharmacist can provide information and guidance regarding the sodium content of medications.

The 2020 clinical practice guidelines on Ménière's Disease also list other dietary recommendations that may help people manage this condition. These recommendations include:

Limit caffeine and alcohol intake
Although there are no randomized controlled trials on the impact of caffeine and alcohol on Ménière's Disease, they are thought to cause blood vessel constriction, which can lower blood flow to the inner ear and potentially increase symptoms. The diuretic properties of caffeine also cause excessive loss of body fluids. Foods and beverages that often contain caffeine include coffee, some soft drinks (e.g., cola), energy drinks, chocolate, and caffeinated teas (e.g., black tea, green tea).

Eat well-balanced meals throughout the day
Balanced meals should contain vegetables and/or fruit, whole grains, and protein foods. An easy way to think about balanced meals is to have 1/2 of your plate as vegetables and/or fruit, 1/4 of your plate as grain products (half of the grain products in a day should be whole grain), and 1/4 of your plate as a protein food (e.g., meat, fish, eggs, nuts, seeds, tofu). About the same amount of food should be eaten at each meal. Additionally, it is important to have breakfast soon after rising and avoid skipping meals. Snacks, if needed, should also be consumed at regular times each day.

Drink plenty of water throughout the day and avoid high-sugar beverages
High sugar beverages include soft drinks, fruit juices, including 100% fruit juice, fruit drinks, sports drinks, energy drinks, lemonade, and sugar sweetened coffee and tea drinks. Extra fluids should be consumed before and during exercise and in hot weather. Water intake should be spaced out throughout the day and not consumed all at once.

Identify and manage any allergies
People with Ménière's disease are more likely to report allergies compared to the general population. The 2020 Ménière's disease clinical practice guidelines mention that some studies have found relationships between this disease and allergies, although research is limited. Controlling allergies (including food allergies) has been suggested to be a strategy that may help to manage this disease in some individuals.

Keep a diary or journal of food triggers
Some individuals may have one food trigger for their vestibular symptoms, some may have many food triggers, and others may have none. Keeping a diary or journal may help you identify triggers for your unique situation.

In addition to the recommendations in the 2020 clinical practice guidelines on Ménière's Disease, some health providers recommend limiting meals or snacks with high sugar content, as this may increase vestibular symptoms in some people. Limiting added sugars is also recommended for overall health. The most recent version of the Dietary Guidelines for Americans recommends that all individuals aged 2 years or older consume no more than 10% of their calories as added sugars (approximately 12 teaspoons of sugar on a 2000kcal/day diet). Many people eat too many added sugars; the average adult in the United States consumes 17 teaspoons of sugar each day. Too many added sugars can also increase your risk of obesity, heart disease, and diabetes.

Added sugars include those sugars added at the table or during cooking, and those added to foods during manufacturing. Added sugars also include those found in honey and syrups, and sugars from concentrated vegetable or fruit juices. Added sugars do not include sugars naturally found in fruits, vegetables and milk.

Sugars are added to foods for numerous reasons, including palatability, texture, crystallization, browning, caramelization, moisture absorption, fermentation, leavening, and preservation. Foods high in added sugars include candy, cakes, pastries, cookies, and sugar-sweetened beverages such as regular soda, sports drinks, energy drinks, and fruit drinks. These foods are also often high in calories and low in nutrients needed for good health. Fruit juices (including 100% fruit juices) are also very high in sugars and should be limited. Added sugars can also appear in various other foods including pasta sauce, BBQ sauce, salad dressings, ketchup, some peanut butters, some breakfast cereals, some flavored yogurts, and some granola/granola bars.

Tips for lowering overall added sugar consumption include cutting the amount of sugar in recipes in half, substituting fresh fruit for sweetened baked goods, using fresh fruit or berries to sweeten dishes, reading labels, and possibly using sugar substitutes.

Reading labels for added sugar content: On packaged-food labels, ingredients that end in "ose" are added sugars (e.g., dextrose, glucose, fructose, and sucrose). High-fructose corn syrup, honey, malt syrup, maple syrup, agave, and molasses are also sugars. If one of the first three ingredients listed on the label is a sugar, the sugar content of that product will likely be high, but it is always good to check the actual added sugar amount (listed in grams) on the label.

Sugar substitutes
Sugar substitutes can be classified into three categories: artificial sweeteners, sugar alcohols, and plant and fruit-based sweeteners. Foods and beverages with words such as "diet" or "keto" often contain sugar substitutes. Sugar substitutes do not provide any essential nutrients, and it is important to ensure that foods containing these components do not replace nutritious foods. In general, it is best to limit consumption of sugar substitutes by staying under the acceptable daily intake (ADI) level. The ADI is "is the amount of a substance considered safe to consume each day over the course of a person's lifetime." As well, foods containing sugar substitutes may not be a nutritious choice.

Currently, very limited research is available on sugar substitutes and vestibular disorders, but for some people, some sugar substitutes could worsen symptoms. A physician or registered dietitian can provide personalized advice about whether sugar substitutes are appropriate for you.

Artificial Sweeteners: Several artificial sweeteners, including saccharin (Sweet'N Low), aspartame (Equal, Nutrasweet), acesulfame potassium (Ace K), neotame, advantame, and sucralose (Splenda), have been approved by the FDA. Artificial sweeteners do not contain any calories, but their chemical composition may include sodium (e.g., sodium saccharide). Some artificial sweeteners are not always suitable for use in cooking or baking. Individuals with phenylketonuria (PKU) should avoid foods containing aspartame. Aspartame may also trigger vestibular symptoms (e.g., vestibular migraine) in some people.

Sugar Alcohols: Sugar alcohols (e.g., sorbitol, xylitol, lactitol, maltitol, erythritol) are lower in calories compared to sugar and are sometimes used in highly processed foods (e.g., candies, chocolates, frozen dessert bars). For some people, sugar alcohols can cause gastrointestinal discomfort (e.g., bloating, diarrhea, gas).

Plant and Fruit-Based Sweeteners: Plant and fruit-based sweeteners (e.g., Stevia, Monk fruit) are newer sweeteners that are appearing on the market.

VESTIBULAR MIGRAINES

For people with vestibular migraines, foods and drinks consumed can be both a trigger and can provide symptom relief. Like other vestibular disorders, more research is needed on the relationship between diet and vestibular migraine before more definitive recommendations can be made.

Vestibular migraine has numerous triggers, including stress, hormones (e.g., menstrual cycle), sleep, weather, lighting, dehydration, fasting/meal skipping, and foods and drinks consumed. It is important to note that migraine triggers can interact with each other and can vary, both between individuals and within the same person. For example, in an individual, a specific factor might trigger a migraine one day but not on another day, due to the presence or absence of other migraine triggers. This complexity makes understanding and studying migraine triggers challenging. A diary can be a helpful strategy for some people to identify potential triggers (including food triggers).

For some people, foods and drinks consumed can be a trigger for vestibular migraine. Avoiding food triggers may help control vestibular migraines for some people. Each person with migraines will also have different food triggers; you will need to determine if foods trigger your symptoms, and if so, which ones. You will also need to determine the amount of the food that may trigger your symptoms. Additionally, certain foods might trigger a migraine on one day but not another depending on your situation on a specific day (e.g., exposure to other food and non-food migraine triggers). Identifying individual food triggers for vestibular migraine may require some detective work.

Several different foods and drinks are thought to be possible migraine triggers. Some of these foods are high in tyramine, which is formed from the breakdown of tyrosine, an amino acid. Not all people with migraines are affected by these triggers. You could have one food trigger, several food triggers, or no food triggers. Some examples of food-related migraine triggers are listed below.

- Alcohol
- Caffeinated drinks: Tea, coffee, cola, energy drinks
- Some dairy products: Ripened cheeses (such as cheddar, Stilton, Brie, and Camembert), sour cream, yogurt, buttermilk
- Some fruits: Figs, avocados, raisins, red plums, passion fruit, papaya, bananas, and citrus fruit
- Some vegetables: Pea pods and pods of broad beans (e.g., lima and navy beans), onions
- Some meat and poultry products: Processed meats (e.g., bacon, sausage, ham, salami, pepperoni, bologna, hot dogs), chicken livers, smoked meats
- Nuts and peanut butter
- Fermented and pickled foods: olives, pickles, other pickled vegetables, pickled herring
- Foods made with meat tenderizer, soy sauce, vinegar (except white vinegar), or yeast extract
- Fresh bread and baked goods containing yeast
- Chocolate, cocoa, carob
- Aspartame
- Foods containing monosodium glutamate (MSG)
- Fasting, irregular eating patterns

Elimination diets (as described above) may be another strategy to help identify potential migraine triggers. As mentioned previously, these diets should only be done under the supervision of a physician and/or registered dietitian and are not meant to be followed long term (i.e., more than 4-8 weeks).

Various types of diets, such as the Dietary Approaches to Stop Hypertension (DASH), Mediterranean diet, low glycemic index diets, and diets high in omega-3 fatty acids could be beneficial for people with migraines to follow. However, studies are limited, and more research is needed before specific recommendations can be made. It is essential to consult a physician or registered dietitian before making any dietary changes for managing vestibular migraine. These healthcare professionals can help determine what is best for your unique situation, considering your vestibular disorder and other health conditions. They will also ensure that any special diets are followed properly to maintain appropriate energy intake, avoid nutrient deficiencies, and manage any potential side effects.

NOTES:

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