



TMD Nutrition and You

THE TMJ ASSOCIATION, Ltd.
TMJA

Without proper nutrition you increase the risk of either gaining or losing weight or suffer nutritional deficiencies leading to other health problems. **This booklet is designed to help you maintain a healthy diet in spite of the pain and physical limitations that Temporomandibular Disorders imposes.**



FIRST, THE BACKGROUND ON TMD

Scientists now agree that Temporomandibular Disorders (TMD) are a complex and poorly understood set of conditions characterized by pain in the jaw joint and/or surrounding tissues and limitation in jaw movements. These problems can affect your ability to chew and swallow foods and limit how wide you can open your mouth.

There are genetic, hormonal, environmental and behavioral factors that may increase your risk for TMD. The immediate causes include a variety of conditions such as injury to the jaw, arthritis, muscle problems, autoimmune and connective tissue disease, developmental conditions, or movement disorders affecting the jaw. TMD also may occur following head and neck treatments for other conditions including tumors. In individuals who have had prior surgery, altered function may be due to scarring and alteration in remaining bone anatomy. In some cases, numbness and pain may persist if nerve damage has occurred.

Many patients diagnosed with TMD may also suffer one or more systemic conditions, often also characterized by pain, which include chronic fatigue, syndrome, chronic headache, endometriosis, fibromyalgia, interstitial cystitis, irritable bowel syndrome, low back pain, sleep disorders, and vulvodynia. Having more than one painful condition can further diminish ones appetite and affect food choices. Whatever your situation may be, it is clear that TMD alone can impact your quality of life and lead to poor nutrition if the jaw pain and oral disability seriously affects your diet.

In addition, TMD patients may experience dry mouth as a side effect of chronic pain medications and other drugs. The lack of saliva to bathe the oral tissues increases the risk for dental cavities, yeast infections, and broken teeth, and adds to the difficulties in chewing and swallowing. The mouth may also become more sensitive to pain and temperature and affect taste. To avoid these problems and manage your TMD symptoms you should:

- Brush and floss teeth after meals.
- Get regular dental check-ups and use dentist-prescribed fluoride for dental maintenance. High-risk patients, where jaw opening is restricted, may be prescribed oral antibacterial mouth rinses that reduce cavity-causing bacteria.
- Treat TMD symptoms of pain and limited jaw opening following principles of physical and rehabilitative medicine. Manage chronic pain by reducing inflammation and muscle-based pain whenever possible.
- Seek prescription salivary stimulants (sialogogues) if dry mouth is present.
- Consume small meals and non-sugar-based snacks. (Limit high sugar products between meals.)

HOW TO MANAGE YOUR DIET

Many TMD patients struggle to determine what to eat to maintain proper weight and ensure adequate protein, vitamin and mineral status. Your food choices vary depending on the amount of pain you're experiencing and your ability to open your mouth, chew and swallow. For those who are able to adequately open their mouths and have minimal pain, a soft or easy chew diet will work well. A soft diet is defined as foods that require minimal chewing. Here is a list of foods to include as well as to avoid in such as diet.



	SOFT DIET FOODS TO INCLUDE	SOFT DIET FOODS TO AVOID
Dairy/ Dairy Alternatives	Smooth yogurt, soft cheeses (feta cheese, ricotta cheese, cottage cheese), milk, custard, puddings, buttermilk, soymilk, almond milk, kefir, cheese sauce	Sliced hard cheese, yogurt containing chunks of fruit or seeds, coconut and nuts
Grains	Soft bread (no seeds, nuts or whole grain pieces), corn bread, muffins without seeds or nuts, soft tortillas, pancakes, stuffing/dressing, matzo balls, couscous, quinoa, pasta, dumplings, gnocchi, rice, mashed potatoes, polenta, grits, hot cereals, cold cereals (crisp rice, corn flakes)	Breads with seeds or nuts, pancakes and French toast without syrup, rice (Some may be able to tolerate well cooked rice, especially with gravy.)
Fruits	Canned fruits, (applesauce, peaches, pears, fruit cocktail), bananas, ripe melon, baked apples, fruit juice, fruit nectars and fruit smoothies	Fresh fruit with skins or seeds, whole grapes
Vegetables	Cooked carrots, squash, zucchini, spinach, kale or other greens, avocados, legumes, green beans, peas, vegetable soufflé, creamed corn, asparagus tips, beets, vegetable juice, cooked pumpkin	Lettuce, chopped tomatoes, fresh vegetables, such as carrots and celery
Protein Foods	Soft-cooked chicken or turkey with gravy, meatloaf, fish, deli meats, meatballs, slow cooked meats, tuna, chicken/tuna/egg/seafood salad (made without onion and celery), lox, eggs, tofu, fish sticks (battered, not crunchy), legumes, refried beans, baked beans, hummus, meat and pasta containing casseroles, quiche, refried beans, liverwurst, smooth nut butters	Fried eggs, fried meats with breading, hard-boiled eggs, nuts, and seeds
Soups	Cream-based soups, tomato soup, broth-based soups (Avoid stringy vegetables such as celery.)	Soup that contains celery, undercooked carrots, or rice (Some people can handle rice.)
Desserts	Soft cakes, cobblers and pies (without the crust), soft cookies without nuts or chunks dunked in milk to soften, ice cream (without nuts or chunks), frozen yogurt, sherbet, sorbet, gelato, milkshakes, cheesecake, puddings, custard, gelatin, nutritional drinks	Cakes, cookies, pies, and brownies that are hard and dry making them difficult to chew (Avoid baked goods that contains nuts, seeds, coconut, or pineapple.)

For people who are unable to tolerate a soft diet, a pureed diet may be better tolerated. Here are some examples of foods that can be included and avoided in a pureed diet.

	PUREED DIET FOODS TO INCLUDE	PUREED DIET FOODS TO AVOID
Dairy/ Dairy Alternatives	Smooth yogurt, soft cheeses (feta cheese, ricotta cheese, cottage cheese), milk, custard, puddings, buttermilk, soymilk, almond milk, kefir, cheese sauce	Sliced hard cheese, yogurt containing chunks of fruit or seeds, coconut or nuts, cottage cheese (unless pureed), feta cheese
Grains	Bread (without nuts or seeds) that has been soaked into a dissolvable consistency, pureed pasta, pureed pancakes, hot cereals, grits, soft polenta, mashed potatoes (thinned as needed)	Breads with or without nuts that have not been soaked, corn bread, stuffing/dressing, dry cereals, regular pasta/noodles, rice
Fruits	Applesauce, mashed ripe bananas, fruit juice, fruit nectar, seedless jam/jelly, pureed fruits (strained as necessary)	Canned fruit that has not been pureed, fresh fruits with skins and seeds, whole grapes
Vegetables	Mashed white or sweet potatoes, pureed carrots, beets, beans, peas, creamed corn, hummus, legume pastes, vegetable juice	Canned or fresh vegetables that have not been cooked or pureed into a pudding-like consistency
Protein Foods	Pureed meats, pureed/scrambled eggs, crustless quiche, egg custards, liverwurst, smooth patés, smooth soufflés, pureed nuts and seeds, yogurt-based smoothies	Fried meats, hard-boiled eggs, quiches and soufflés that contain crusts
Soups	Soups that are smooth (like tomato) or that have been put through the blender	Soups with chunks of meat, stringy vegetables, or contain rice or pasta that has not been pureed or strained
Desserts	Puddings, custards, dessert soups, gelatin, cakes moistened with sauce or milk, fondue, cookies dunked in milk to soften	Cakes, cookies, pies, and brownies that are hard and dry making them difficult to chew (Avoid baked goods that contain nuts, seeds, coconut, or pineapple.)

HELPFUL HINTS

Having a list of what foods to eat and what foods to avoid is a good starting place. However, there are many other issues that TMD sufferers cope with on a regular basis. Some of these are reflected in the questions and answers below.

Q: I'm down to 87 pounds and am concerned. I'm unable to eat because it is exhausting to eat and I don't have much of an appetite. What should I do to prevent further weight loss?

A: Weight loss is one of the most common problems for TMD patients. Due to the elimination of certain foods in your diet, your caloric intake may decrease, resulting in weight loss. Adding calories through higher calorie foods and eating more frequently can correct calorie deficiencies. Adding energy and protein supplements should be considered if weight loss continues or is excessive. Also, you may want to consider using shakes, smoothies, or nutritional supplement drinks to add extra calories. See *Tips for Adding Calories* section for more information.

You can use online food tracking systems to track your calorie, protein, and fat intake. A scale should be used on a regular basis to help you keep a record of your weight gain or loss.

According to the United States Department of Agriculture, most females need between 1800 and 2200 calories per day. It is recommended that men consume between 2000 and 3000 calories per day. Use the United States Department of Agriculture's nutrition website (<http://www.choosemyplate.gov/>) to find more online resources and tracking tools.



TIP**Here is a Recipe for a High Fiber Pudding:**

Combine equal parts applesauce, bran cereal (bran flakes or bran buds work well) and prune juice.

Mix the ingredients together and let sit for ½ hour. The final product should have the consistency of pudding when stirred.

Eat ½ cup daily and drink a large glass of water while eating the pudding.

Q: My problem is whatever I eat seems to turn into extra pounds. What can I do?

A: If you notice your weight trending up, then it is important to choose the lower fat varieties of foods. Choose low fat or fat free dairy foods and limit large quantities of cheese and sour cream. Choose low fat or fat free gravy. Choose lean meats such as chicken breasts, sirloin, fish and lean ground turkey. If supplementing with shakes or smoothies: Use low-fat or fat-free yogurt and ice cream. Choose lower fat over-the-counter supplements such as Slim Fast®, or Carnation Breakfast Essentials®. Include more fruits and vegetables and look for light juices to reduce the sugar content and overall calories found in these products. If you need to lose weight, consult your physician or dietician and create a weight loss plan. Then enlist the support of a registered dietitian to help with meal planning ideas. You can find a local dietitian by contacting the Academy of Nutrition and Dietetics at <http://www.eatright.org>. Here you will find a list of local dietitians who may be of help for meal planning and weight loss coaching.

Q: I used to enjoy salads. Now, salads and fresh produce are difficult to chew. As a result, I have become constipated. What foods should I be eating and which foods should I avoid?

A: There are many options to correct constipation. Dietary-wise, it is recommended to increase your fiber and drink more liquids. Stewed prunes, prune juice, and bran-based foods are helpful in stimulating a sluggish bowel. Ground flax seed can also be added to yogurt and pudding to increase fiber in the diet. Aim to eat a sizable breakfast in the morning and drink hot liquids with the meal to help stimulate the bowel. Make sure you are adequately hydrated. Most people need between six and eight cups of liquid per day. Warm liquids such as tea, coffee, and ciders often

provide a stimulant effect, which is helpful in relieving constipation. If dietary measures do not resolve the constipation, speak to your health care provider for medication options.

Q: I am not able to eat every type of food anymore and worry that I may become deficient in certain vitamins and minerals. Should I take vitamin supplements?

A: For people who may not be able to tolerate foods from all food groups on a daily basis, a multivitamin may be beneficial. Assess your need by answering the following questions.

- Do you eat at least two servings of fruit a day?
- Do you eat at least three servings of vegetables a day?
- Do you eat at least three different colors of fruits or vegetables per day?
- Do you drink or eat at least two servings of dairy foods a day?
- Can you eat breads, cereals, pasta, rice and potatoes? Do you consume at least four servings per day?
- Are you able to eat a variety of protein foods such as lean meats, chicken, turkey, pork, fish, eggs, cheese, nuts, and legumes?

If you answered no to more than three of these questions, then you would benefit from a standard multivitamin. If you answered no to two or less of these questions, then your diet is probably adequate and you do not need a multivitamin.

If you are in need of a multivitamin, look for one that meets the daily value for most nutrients. Women of childbearing years who are planning to become or who are pregnant should look





for a prenatal daily vitamin and mineral supplement. Women who have gone through menopause or people who are over 65 years of age may look for a senior formula as these formulas often contain less iron and more calcium and vitamin D.

Consider the size and shape of the vitamin pill. If you have difficulty taking pills, you may want to select a liquid form of a multivitamin. Ask your pharmacist for more information and options.

Q: I am pregnant and having a difficult time finding foods that work for me. How much of each food group do I need to support a healthy pregnancy?



A: Adequate weight gain during pregnancy is important to your baby's health. According to the American College of Obstetrics and Gynecology and the Institutes of Medicine, women of normal weight should aim to gain between 25 and 35 pounds during a term pregnancy. Women who are overweight should gain 15 to 20 pounds. Women who are obese should aim to gain between 11 and 20 pounds. Women who are underweight should strive to gain 28 to 40 pounds. To determine your weight category, calculate your body mass index (BMI) using this online tool: <http://www.nhlbisupport.com/bmi/>. Weight gain through pregnancy is variable, with the largest gains of one to three pounds per week in the 2nd and 3rd trimester. Your physician will help you track your weight gain. Pregnant women usually need to consume an extra 300 calories per day to allow for adequate weight gain.

If you are having a difficult time gaining weight, then you may need to increase your calories by 500 to 600 a day. (See the *Tips for Adding More Calories* section for ways to fortify the foods you



eat.) Some women may find it easiest to add smoothies or nutritious drinks to help meet their caloric goals. Adding snacks between meals such as cottage cheese and fruit, peanut butter spread over crackers, or a banana are quick and easy ways to add the additional calories needed.

For women who are breastfeeding, your calorie needs are still elevated. To prevent rapid weight loss and to allow your body to continue to lactate, you will need an additional 500 calories above your baseline daily calorie intake.

Q: I've stopped eating out at restaurants because I have a hard time finding foods that I can eat. Do you have suggestions?

A: Eating in a restaurant can be difficult, but still possible with a little planning. Choose a restaurant for which you can review the menu ahead of time. Many restaurants have their menus available online. Look for soups as a starter. Menus that have pasta offerings or rice and bean options will work well. Look for pasta dishes that have a red or white sauce. Ask the server to have the meats chopped fine or choose a meat sauce, and request vegetables cooked well done instead of al dente. Many TMJ patients tell us they ask the server to blend their food – including salads, soups, and pastas. After all, it's the same food. It is your right to ask for a dish to be modified to suit your needs. Have the chef hold or substitute ingredients that do not work for you. If you have been losing weight, then indulge in dessert! Look for ice cream, custards, or soft moist cakes as suitable options.

Q: I have a family to feed at home. How can I provide healthy balanced meals?

A: Making meals for your family can be accomplished with basic understanding of a balanced diet. A well balanced meal should contain food from the following food groups: a starch (pasta/



rice/potatoes/breads), a protein (meat/cheese/vegetarian options), a vegetable, a fruit and dairy. Once you have decided what to have, then you can modify the items that need to be softer for you. For example, if the menu includes potatoes, chicken and green beans for your family, then you could modify the items by making mashed potatoes and adjusting the consistency to make them thin enough for you. If the chicken is too hard to chew, then you can chop it into smaller pieces or puree it. Adding gravy, broth, or cream soup will help with consistency and flavor. Modify green beans by either cooking to a very soft mushy form or chop into very small pieces. If unable to tolerate the fruit or vegetable at the meal, you could substitute vegetable or fruit juice to meet your nutritional needs. Another way to meet the needs of your family, as well as meeting your needs, is to consider more casserole and crock pot meals. Both cooking mechanisms yield a softer product that can either be chopped fine or pureed based on your specific needs. To balance the meal, serve a low fat milk or dairy alternative to ensure adequate calcium intake. The bottom line is that you and your family need balance in choosing foods from all food groups.

Q: I am preparing for jaw surgery. What kinds of foods should I plan to have on hand when I get home for recovery?

A: During recovery, you may be limited in your ability to open your mouth and chew and swallow comfortably. This will require more of a liquid diet. Stock up on pureed soups, puddings, gelatins, custards, and ice cream or sherbet. If you tolerate dairy products, white or flavored milk is a good choice since they're rich in calories, protein and calcium. Consider flavoring milk with flavored syrups, Nesquick®, Ovaltine®, or Carnation Instant Breakfast® to help increase calories and protein. Using commercial nutritional beverages such as Boost®, Ensure®, Myoplex® or Muscle Milk® are sometimes necessary to meet calorie and nutrient

needs. You can also make homemade shakes using milk, ice cream, and smoothies using a variety of frozen fruits or bananas.

Once you are able to open your mouth, you can advance your diet to pastas and soft finely chopped meats, cooked vegetables, and soft canned fruits. See the **Soft Diet** section for more ideas in each food group. You may need to continue to supplement your diet with shakes or commercial beverages if you are not eating well. Use your weight as a guide. If you are actively losing weight during your recovery, it is important to supplement your meals with liquid calories either in the form of commercial beverages, shakes, or juices.

To save time and energy, make soups, casseroles, and custards ahead of time and freeze them in single serving portions. You can also do this with shakes and malts by making a large batch and freezing in single cup servings.



TIPS FOR ADDING CALORIES

Preventing weight loss is difficult if you are having trouble eating regular meals. Pain with chewing may reduce your overall calorie intake and food choices, which may result in weight loss. Wise food choices can maximize caloric intake. Here are some tips to help prevent weight loss: Aim to eat six small meals throughout the day. Each meal should consist of a minimum of 300 to 500 calories.



- Add healthy fats to increase your calories. One tablespoon of oil, butter, margarine, or nut butter contains about 100 calories.
- Add cheese to meals and consider using full fat dairy products during this time to promote weight gain. Choose whole milk, regular or Greek yogurt, full fat cottage cheese and cream cheese instead of their low-fat counterparts.
- Add gravy, broth, or cream soup to meats to increase calories.
- Choose high calorie drinks. Look for full fat milk, regular juices, and shakes or smoothies. Select diet drinks or calorie free beverages less often.
- Add cheese sauces, cream sauces, or oils to vegetables.
- Look for canned or frozen fruits in heavy syrup.
- Eat starchy vegetables such as regular potatoes, sweet potatoes, corn, and carrots instead of non-starchy vegetables (green beans, cucumbers, peppers, zucchini, and spinach).
- Eat avocados! Avocados are rich in healthy fats, protein, vitamins and minerals. Add to meals, soups and dips.
- Add eggs and eat more egg-based foods such as custard, quiche, and omelets.
- Try mayonnaise-based foods such as ham, chicken, tuna or egg salad. You can eat these types of protein-rich foods with or without bread depending on your tolerance to chewing.

OTHER HELPFUL TIPS

When dealing with jaw pain no matter the severity, keep these tips in mind.

- Practice good oral hygiene. Brush your teeth after every meal and rinse your mouth out with water. This is especially important to reduce plaque formation after eating starchy foods such as cereals, bananas, dried fruits, and any sugary foods.
- Try to maintain a balanced diet. Include all major food groups from grains, vegetables, fruits, milk and protein foods.
- Maintain pain management if pain is significant. Seek help from your primary care physician and/or a pain specialist.
- Eat fiber-rich foods with every meal to avoid constipation. Choose brown rice or whole grain pasta, bran-based cereals, fruits, vegetables, nut butters, and legumes daily for your meals.
- Hydrate well. An easy way to figure out if you are getting enough liquid each day is to take your weight in pounds and divide it by two. This number is the amount of hydration needed per day in ounces. If you are currently losing weight, then use your usual body weight to do this calculation. Remember that all decaffeinated liquids count towards your hydration needs.
- Monitor your weight every few days. If you are losing weight despite increasing your calories or because you are unable to eat enough during the day due to pain, then supplement with liquid calorie nutritional beverages. Speak to your physician or enlist the support of a registered dietitian for more ideas specific to your situation.





RESOURCES

The TMJ Association: <http://www.tmj.org>

The Academy of Nutrition and Dietetics: <http://www.eatright.org>

Department of Health and Human Services: http://www.hhs.gov/partnerships/letsmove/communities_on_the_move/healthy-eating/index.html

Pain Pathways Magazine, *Integrative Therapy: Pain & Nutrition*: <http://www.painpathways.org/nutrition-pain/>

Recipes: <http://www.muschealth.org/weight-loss-surgery/nutrition/recipe-corner.html>

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ABOUT THE TMJ ASSOCIATION

The mission of The TMJ Association, Ltd. (TMJA) is to improve the diagnosis, care and treatment of everyone affected by temporomandibular disorders through fostering research, education, and other activities with the ultimate goal of preventing TMJ problems.

The TMJA achieves its mission by promoting awareness of Temporomandibular Disorders among the public, research, and health care communities, connecting TMJ patients for one-on-one support, encouraging basic and clinical research, and safer and more effective methods of diagnosis and treatment, collecting and disseminating information on the advances of research and treatment, and advocating for patients' rights by communicating with elected officials, government agencies and others in policy making capacities at the national, regional and local level.

The TMJ Association, Ltd. (TMJA) is a 501(c)(3) nonprofit organization.

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