

# MS & NUTRITION





# INDEX

Introduction	5
About the Author	6
MS and Fatigue: Eating for Sustained Energy	8
Current Best Dietary Advice for MS	9
Body Weight and Fatigue	12
Dietary Guidelines for MS and Fatigue	13
Supplements to discuss with your healthcare team	20
Selected shopping tips for a healthier and varied MS diet	23
References	29



# INTRODUCTION

Although many different diets have been proposed to have a positive effect on MS, none have actually proven this to be true. It is thus suggested that these diets be approached with caution until such time as more data is available to substantiate claims.

It is best to be careful and avoid raising false hope, as the necessary long-term intervention studies are not available to support special and especially restrictive diets. Therefore these diets should be approached with caution as they are expensive and might be harmful.

There is, unfortunately, no magical remedy that can replace or outweigh the benefit of a healthy diet, good nutrition and a sensible

approach to eating. Following a healthy diet and lifestyle may be associated with less disability and symptoms in patients with MS. Some of the key dietary and lifestyle changes include a healthy and varied diet, obtaining (weight loss or gain if necessary) and maintaining a healthy body weight as well as daily physical activity.

The aim of this booklet is to provide you with some useful information and guidance on current best practice when it comes to dietary recommendations to improve your quality of life as an MS patient. Please note that this information does not replace the advice of your treating physician or health care professional.

# ABOUT THE AUTHOR

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Irene has authored several publications in lay media, books as well as textbooks.

The Division of Human Nutrition of Stellenbosch University established the Nutrition Information Centre (NICUS) in 1997 to act as a reliable and independent source of nutritional information in South Africa.

The Centre has amassed significant experience since its inception in the dissemination of scientifically independent and correct nutritional information to the scientific community, industry as well as the lay public at a national and international level.

NICUS is committed to the

provision of up-to-date, credible and authoritative information in order to promote a scientifically sound nutritional culture.

### OUR AIMS ARE TO:

- Provide and disseminate an accurate and balanced perspective in the field of food and nutrition
- Expose nutrition misinformation
- Communicate new advances and promote sound practices in the field of food and nutrition
- Provide a comprehensive information service, to the public and media
- Advise health professionals on matters relating to nutrition and nutritional support
- Create a collaborative and supportive environment for research

## MS AND FATIGUE: EATING FOR SUSTAINED ENERGY



Try to avoid restrictive diets such as gluten or dairy free diets. Restrictive diets may lead to inadequate nutritional intake which may contribute to fatigue. It is advised to work with your healthcare team should you suspect an allergy or any intolerance to avoid unnecessary dietary restrictions and possibly associated expense.

**Symptoms of MS may affect what foods you may eat as well as how food is prepared.**

## CURRENT BEST DIETARY ADVICE FOR MS

A diet with fewer processed foods, less sugar and salt is ideal, but unless required for a medical reason, there is absolutely no need to eliminate or avoid any food group from your diet. Aim to consume a diet high in vegetables and fruit, legumes and wholegrain cereals in order to maintain a healthy body weight and to ensure optimal nutritional intake.

The current recommendation for MS is a diet lower in saturated fats (fatty meat, fried food, confectionary, full cream dairy products) and high in

monounsaturated fats (canola oil, olives and olive oil, nuts, seeds, avocados) and polyunsaturated fats (flaxseed oil, fish and fish oil).

It is important to increase your intake of Omega-3 fatty acids and an easy way to do this is to replace red meat with oily fish at least two to three times a week. Examples of oily fish are snoek, tuna, sardines, pilchards, mackerel, herring, butterfish, trout and salmon. One could also increase omega-3 fatty acid intake using a supplement. Fish oil is the best source of



EPA and DHA. Alternatively one tablespoon of flaxseed provides approximately 7 g ALA (omega-3) acid and 2 g LA (omega-6) – which may negatively affect the conversion of omega 3 (ALA) to EPA and DHA. Always discuss supplementation with a qualified health professional.

Vegetables and fruit are very important to ensure adequate intake of vitamins, minerals and antioxidants. Consuming a diet rich in a variety of plant foods provides a mixture of phytochemicals, “non-nutritive” substances in plants that possess health protective benefits.

Fruits and vegetables contain an abundance of anti-oxidants that have been associated with protection from and treatment of chronic diseases. It is important to note that the intake of fruit and vegetables cannot be used to replace supplements recommended by your health care professional. Try to eat at least 5-6 portions of fruit and vegetables per day. Pure fruit and vegetable juices can also be used to decrease the bulk of the diet or according to personal preference. Approximately half a glass of fruit juice or vegetable juice is equal to one portion of



fruit or vegetable. Eat at least one yellow-orange and one dark green vegetable daily.

Using preprepared fruits and vegetables make it more convenient. Despite many people believing that fresh fruits and vegetables are healthier than frozen or canned foods this is not necessarily the case. Certain canned and frozen fruits, vegetables and legumes can be eaten as part of the daily recommendation and add a

greater variety to your diet. A wider variety of fruits and vegetables can significantly increase the overall nutritional content of your diet. Healthy options include frozen vegetables, low salt and canned vegetables and fruit canned in water or own juices.

Canned vegetables and legumes in soups or stews provide similar nutritional value to fresh ingredients and are sometimes a less expensive and more convenient option.

# BODY WEIGHT AND FATIGUE

It is recommended to obtain and maintain a healthy body weight by eating a varied diet and leading a healthy lifestyle. Being both underweight or overweight will affect your quality of life and the management of MS symptoms.

Leading a sedentary lifestyle with little or no physical activity, unhealthy diets and certain medications (including steroids and antidepressants) may lead to an increase weight and possibly obesity.

Being underweight is largely as a result of poor appetite and reduced food intake.

Difficulty in swallowing and poor appetite can often be corrected by an adjustment in diet. Consulting with your health care professional is advised in this case.

A decrease in mobility, little or no physical activity and fatigue can make simple daily tasks challenging.

People experiencing these difficulties are encouraged to consult with a registered dietitian that will help them to improve their diets.



# DIETARY GUIDELINES FOR MS AND FATIGUE

Your lifestyle choices are very important when it comes to MS and all foods can be enjoyed as part of a healthy diet.



MEAL FREQUENCY AND SUSTAINED ENERGY	REDUCE / AVOID INTAKE OF
<b>MEAL FREQUENCY</b> <ul style="list-style-type: none"> <li>• Smaller more frequent meals - 5-6 instead of three large main meals.</li> <li>• Meals should be appetizing in appearance and taste and provide enough energy and protein.</li> </ul> <b>SUSTAINED ENERGY</b> <ul style="list-style-type: none"> <li>• Proteins with all meals or snacks, - meat, fish, poultry, eggs, milk, cheese, yoghurt, nuts, dried beans, peas, and lentils.</li> <li>• Choose Low Glycemic (GI) index carbohydrates more often.</li> <li>• Foods that is high in complex carbohydrates such as whole grain or brown bread, maize meal, samp, rice, cereals, fruits and starchy vegetables (potato and pumpkin provide a healthy supply of fibre, minerals, and vitamins.</li> </ul>	<ul style="list-style-type: none"> <li>• Do not skip meals or breakfast</li> <li>• Carbonated beverages</li> <li>• Hard / tough meats</li> <li>• Bland food</li> <li>• Avoid gas forming foods and drinks (e.g. peas, lentils, cabbage, cauliflower, broccoli, onion, nuts, cucumber, beans and bran, garlic, beer) if you feel bloated.</li> </ul>

HEALTHY FATS	REDUCE / AVOID INTAKE OF
<b>HEALTHY FATS</b> <ul style="list-style-type: none"> <li>• Choose healthy fats: Most of the fat in the diet should come from foods that are sources of polyunsaturated and/or monounsaturated fats such as fish, nuts, and vegetable oils.</li> <li>• Choose a variety of liquid plant oils such as sun flower oil, grape seed, corn oil, sesame oil, salad dressings and soft margarines made from these oils to add taste and palatability to meals where necessary.</li> <li>• Replace saturated fatty acids with monounsaturated plant oils where possible. Choose olive oil or canola oil or high oleic sunflower oil (1 portion = 5 ml margarine or 5 ml oil) to add variety, taste and palatability to meals. Opt for avocado and / or peanut butter on sandwiches instead of saturated fat sources such as hard cheeses, processed meat or butter.</li> </ul>	<ul style="list-style-type: none"> <li>• Too much sweets, confectionary or desserts. These may cause an initial spurt in blood glucose with energy peaks followed by lows. Simple carbohydrates from sugar, cake, cold drinks, sweets, cookies, and sugar-sweetened desserts and drinks (including alcohol) are very high in energy, but low in nutrients.</li> <li>• Fatty / fried foods</li> <li>• Saturated fat: Choose only lean meat cuts and chicken without the skin. Limit portions to about 60-90 g per day.</li> </ul>



HEALTHY FATS AND LACK OF APPETITE	REDUCE / AVOID INTAKE OF
<p><b>HEALTHY FATS</b></p> <ul style="list-style-type: none"> <li>• Eat oily fish or low fat white fish instead of red meat, chicken or pork twice a week. Tinned fish is ready-prepared and more affordable than fresh fish.</li> <li>• Choose leaner meat cuts such as fillet and remove all visible fat before cooking.</li> </ul> <p><b>LACK OF APPETITE? TRY</b></p> <ul style="list-style-type: none"> <li>• Commercially available high energy and protein drinks (balanced in terms of micro- and macronutrients) may be used effectively to meet the increased requirements.</li> <li>• Household ingredients, such as sugar, vegetable oil, nuts, peanut butter, eggs and dry milk powder can be used in porridge, soups, gravies, casseroles or milk based drinks to increase the protein and energy content without adding to the bulk of the meal.</li> </ul>	<ul style="list-style-type: none"> <li>• Always read product labels. In order to claim that a product is “free of trans fat”, the content of trans fat must be less than or equal to 0.01g of trans fat per 100g of the end product consumed.</li> <li>• Avoid alcohol and caffeine, since both may have a dehydrating effect. Drinks that contain a lot of caffeine, such as tea, coffee and cola can have a pick-me-up effect initially, but too much caffeine can dehydrate you.</li> <li>• Avoid supplements with glamorous multi-claims which cannot be substantiated when scrutinized.</li> </ul>

LACK OF APPETITE AND SAVVY SNACKS AND OR QUICK MEALS	REDUCE / AVOID INTAKE OF
<p><b>LACK OF APPETITE? TRY</b></p> <ul style="list-style-type: none"> <li>• Liquidise cooked or raw vegetables to decrease the bulk.</li> <li>• Make smoothies with yogurt milk and fruit</li> <li>• Experiment with foods.</li> </ul> <p><b>SAVVY SNACKS AND OR QUICK MEALS</b></p> <ul style="list-style-type: none"> <li>• Choose nutritious snacks such as fruit, dried fruit or canned fruit, yogurt, cheese, chocolate, meal replacement drinks, vegetable juices and low fat breakfast cereals</li> <li>• Milk and yogurt or drinking yogurt is an excellent source of energy and vitamins and minerals. Drink at least 500ml per day. Dairy products are a good protein source. Cultured dairy products like yogurt are easier to digest than milk.</li> <li>• High-fibre, low-fat breakfast cereal or a cereal bar with low-fat milk or yoghurt, plus a piece of fruit (there's no faster food than a piece of fruit!).</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid single nutrient supplements</li> <li>• Avoid supplements containing botanicals or herbs other than essential vitamins and minerals.</li> </ul>

SAVVY SNACKS AND OR QUICK MEALS	REDUCE / AVOID INTAKE OF
<p><b>SAVVY SNACKS AND OR QUICK MEALS</b></p> <ul style="list-style-type: none"> <li>• Fruit &amp; seed bread or bread with lots of whole kernels, crushed wheat and oats/oatbran because these have a low GI for sustained energy.</li> <li>• Whole wheat crackers with cheese or cottage cheese.</li> <li>• Homemade rusks made with whole meal flour, nuts, seeds and oil.</li> <li>• Stock ready –made frozen meals.</li> <li>• Enjoy takeaway foods like pizzas, hamburgers, seafood and chicken in the right portion size and with the right accompaniments. Opt for grilled and not fried. Choose salad or vegetables as a side. Limit toppings that are high in fat and energy like bacon, salami, cheese, regular mayonnaise, salad dressings, and sauces. Pick steamed or baked items over fried ones. Drink water or fat-free milk instead of cold drinks.</li> </ul>	

DRINK ENOUGH FLUIDS	REDUCE / AVOID INTAKE OF
<p><b>DRINK ENOUGH FLUIDS</b></p> <ul style="list-style-type: none"> <li>• Drink at least 6-8 glasses of fluid per day.</li> <li>• Even mild dehydration may cause fatigue: Drink extra liquids between meals.</li> <li>• Take your daily oral medications with full glasses of water.</li> </ul>	



# SUPPLEMENTS TO DISCUSS WITH YOUR HEALTHCARE TEAM

There is insufficient evidence to make specific recommendations for MS patients when it comes to supplementations. The need for supplementation will differ from person to person and will depend on the patients individual diet and lifestyle.

Regular blood tests are a good way to detect serum levels of vitamins and minerals and can be used to prevent or correct any deficiencies.

Vitamin D supplementation in MS patients and those at elevated risk is still under debate and varies between countries and physicians.

The following supplements have been linked to MS

Nutrient	Food Sources
<b>Long chain Omega 3</b> (EPA and DHA)	Oily fish such as snoek, tuna, sardines, pilchards, mackerel, herring, butterfish, trout and salmon. Flaxseeds
<b>Probiotics</b>	Yogurt, fermented milk such as maas and buttermilk, kefir, tempeh and kombucha.
<b>Vitamin D</b>	Food sources of vitamin D include milk, fortified soy and rice beverages, fortified juices, fatty fish, such as salmon, and eggs.
<b>Vitamin A</b> (in conjunction with Vit D supplements)	The highest sources of vitamin A are liver, dairy products and fish. Carotenoids (plant sources) are found in high quantities in dark green and yellow, orange and red vegetables and fruit.
<b>Vitamin B12</b>	The best food sources are eggs, milk, cheese, milk products, meat, fish, shellfish and poultry. Some soy and rice drinks as well as soy based meat substitutes are fortified with vitamin B12.

Nutrient	Food Sources
<b>Magnesium</b>	The best food sources are beans and nuts, whole grains such as brown rice and whole wheat bread and green leafy vegetables.
<b>Calcium</b> (emphasis on bone health)	Dairy products (milk, yogurt and cheese), fortified soy and rice beverages, fortified juices, tofu with added calcium and canned fish with the bones.
<b>Zinc</b>	Good food sources of zinc are meat, seafood, dried beans, peas, and lentils, and wholegrains.
<b>Selenium</b>	Good food sources of selenium are Brazil nuts, seafood, fish and shellfish, liver and kidney.

**It is always better to obtain these nutrients from a well-balanced diet and follow your health care professionals advice.**



## SHOPPING TIPS FOR A HEALTHIER AND VARIED MS DIET

**Read labels:** Learn how to read and understand food labels to make healthier choices. Nutrients that should be limited include saturated fat, trans fatty acids, sugar and salt.

Fat intake should be limited, especially saturated- and trans fats found in *animal fats, full cream dairy products, chocolate, coconut, hard margarine, full cream products, baked goods ( e.g. pies and cookies) and palm oils (e.g. coffee*

*creamers and artificial cream*). It is important to choose products with little or no trans-fat. If the product says that it is 'Trans-Fat Free', this means that there is less than 1 g of trans-fat per 100 g of the total fat in the product.

Determine how much fat is in the food, for example, compare the amount of fat in 100 g of different brands of food.

In general, aim to purchase only food with  $\leq 3$  g fat per 100 g of the food item. Remember that some foods that may not taste fatty can be high in hidden fat – thus always check food labels.

Foods that have less than 0,3 g of salt per 100 g are low in salt and a better choice for you. Look for the Heart Mark (📍) to identify foods that are lower in salt content. Some products appear to have less salt than they do: 'low sodium' 120 mg sodium for each 100 g, whereas 'virtually free from sodium' actually means there can be up to 5 mg sodium for each 100 g.

Some foods will say “no added sugar” but will still be high in natural sugar (e.g. fruit sugar). These options are not ideal.

All sugar should be taken into consideration when planning the overall meal plan. Added sugar is defined as sugar, honey, molasses, colored sugar, fruit juice concentrate, deflavoured and/or deionised fruit juice and concentrates thereof, high fructose corn syrup or any other syrup.

The claim 'no added sugar' can only be used if none of the above are added to the product.

## Vegetables and fruit

**LOAD YOUR TROLLEY WITH THESE HEALTHY CHOICES**  
Buy a variety of any fresh, frozen, canned vegetables and fruit.  
The more the better.

- Fresh herbs (e.g. parsley, basil, cilantro, coriander)
- Green leafy vegetables: fresh and/or frozen
- When buying canned fruits, choose brands that are canned in juice rather than syrup.
- Buy fresh vegetables and fruit that are in season.
- Buy frozen vegetables and berries to ensure adequate intake, a variety and some reduced prepping time.
- Check the label to see how much salt is in canned vegetables and soups. Look for lower-salt options.
- Dried fruit and 100% fruit or vegetables juice (limit portions if overweight)



## Starches: Breads, cereals, rice, pastas and legumes

### LOAD YOUR TROLLEY WITH THESE HEALTHY CHOICES

- Low GI Breads and rolls (brown/whole wheat), brown pita, , rye bread, pumpernickel bread, seed loaf
- Brown rice, pastas, WHOLE GRAINS - wheat, oats, barley, millet, rye, bulgur buckwheat, millet, quinoa, sago, semolina, tapioca, samp
- Oats and low fat whole wheat breakfast cereals ( $\leq 3$  g fat per 100 g)
- Whole wheat crackers
- Popcorn
- Potatoes, sweet potatoes, corn, pumpkin, butternut, peas
- All kinds of dried legumes e.g.: pearl barley, green split peas, kidney beans, whole lentils, butter beans.
- Canned beans, lentils and chickpeas

## Pulses, meat, fish, chicken, and eggs and dairy

Try to include more plant protein sources, eggs, dairy and fatty fish (e.g. snoek, sardines, pilchards, mackerel, and salm) and less red meat.

### LOAD YOUR TROLLEY WITH THESE HEALTHY CHOICES

- All kinds of dried legumes e.g.: pearl barley, green split peas, kidney beans, whole lentils, butter beans.
- Canned beans, lentils and chickpeas
- Any type of fish especially moderate to fatty fish (e.g. Snoek, tuna, mackerel, cob, anchovies, haddock, salmon, trout, and sardines).
- Fresh chicken eggs
- Unprocessed chicken, turkey, ostrich or game. Chicken livers
- Low fat milk, Maas or low fat buttermilk, low fat yogurt and low fat or fat free cottage cheese. Kefir
- Buy plain yogurt and add fruit and seeds for flavor.
- The following cheeses can be used in moderate amounts: Ricotta, Mozzarella, Feta, soft goat's cheese, low fat cheese and low fat cheese spread.

## Fats, spreads, oils, nuts and flavorings

### LOAD SMALL AMOUNTS OF THESE HEALTHY FATS IN YOUR TROLLEY

- Canola margarine and -oil. Olive oil, olives, un salted nuts and avocado. Poli-unsaturated margarine and sunflower oil.
- Nuts: almonds, cashews, walnuts, peanuts, pecans, pistachios (roasted and unsalted)
- Seeds: sunflower seeds, sesame seeds, whole or ground flaxseeds
- Avoid salt containing spices.
- Lemon juice
- Garlic
- Vinegar
- Herbs (fresh and dried)
- Ginger
- Turmeric
- Cinnamon
- CHILIES
- Curry

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**MERCK**

The information provided herein is intended to support and not replace the advice of your Healthcare Professional. Always seek the advice of your treating Healthcare Professional if you have any questions regarding your individual treatment plan. Report adverse events to [drug.safety.southeastafrica@merckgroup.com](mailto:drug.safety.southeastafrica@merckgroup.com).  
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