Rehabilitation professionals are trained to assist patients to recover and cope with functional limitations after a stroke. However, there are limited resources and medical education geared toward preparing rehabilitation professionals to integrate nutritional care into stroke care. Experts suggest that all rehabilitation professionals should be trained in evidence-based nutritional approaches for patients after a stroke.1,2 The purpose of this document is to educate rehabilitation professionals on best nutritional practices poststroke.

Why is nutrition important poststroke?
As many as 40% of patients with stroke experience a recurrent stroke.3 The recurrent stroke risk is even higher in patients with coronary heart disease.4 Fortunately, diet is one of several modifiable risk factors for secondary stroke prevention.1,2 Dietary changes manage stroke risk factors, such as high blood pressure and high blood cholesterol, resulting in a 19% reduction in recurrent stroke risk.5 When combined with exercise, dietary changes significantly improve stroke risk factors.6

Who should address nutrition poststroke?
The entire stroke care team has the opportunity to help clients adjust their diet and reduce the risk of secondary stroke. Rehabilitation professionals should recommend that patients make an appointment to see a registered dietitian for meal planning, specific dietary advice, and assessment of dietary compliance. Rehabilitation professionals can help clients implement recommendations into daily life through activities. For example, a client may work on reading and communicating nutritional needs in speech therapy, moving through the grocery store in physical therapy, cooking healthy meals in occupational therapy, and processing the changes to their diet in counseling. To empower rehabilitation teams to address nutrition poststroke, all practitioners should have a general knowledge of recommended nutrition guidelines poststroke.

What sound and evidence-based nutritional suggestions can I give to my patients poststroke?
The Dietary Guidelines for Americans published by the U.S. Department of Health and Human Services and the U.S. Department of Agriculture Dietary Guidelines for Americans7 focus on eating fiber-rich foods (fruits, vegetables, and whole grains) as well as low-fat or non-fat dairy products, and minimizing salt, alcohol, saturated fat, and cholesterol-rich foods. These recommendations mainly stem from the Dietary Approaches to Stop Hypertension diet that has been associated with a reduced risk of stroke in 2 prospective cohorts with over 74,000 people.8 Vegetables and fruits are also rich in potassium, which is important for stroke prevention and cardiovascular health9 and fiber, which can decrease stroke risk. The recommendations (table 1) can be easily integrated into the stroke recovery plan and can reduce risk factors for stroke such as obesity, hypertension, and hypercholesterolemia.

Patients may have specific questions about the nature and role of dietary fiber and information in the sections below will allow you to build your understanding and assist you to provide clear and brief answers.

What are the benefits of a high-fiber diet poststroke?
High fiber intake has been reported to prevent stroke in 4 population studies that examined over half a million people

<table>
<thead>
<tr>
<th>Nutrition suggestions (<a href="http://www.stroke.org">www.stroke.org</a>)</th>
<th>Recommended servings/day</th>
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<tbody>
<tr>
<td>Fruits and vegetables</td>
<td>5-7 servings/day</td>
</tr>
<tr>
<td>Low-fat or non-fat dairy products</td>
<td>2-3 servings/day</td>
</tr>
<tr>
<td>Whole grains</td>
<td>2-4 small servings/day</td>
</tr>
<tr>
<td>Lean protein</td>
<td>2 small servings/day</td>
</tr>
<tr>
<td>Limit salt intake</td>
<td>Less than 1500 mg/day</td>
</tr>
<tr>
<td>Reduce alcohol intake</td>
<td>Less than 1 drink/day for women</td>
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<tr>
<td></td>
<td>Less than 2 drinks/day for men</td>
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</table>
Benefits of a high-fiber diet include reduction in blood cholesterol and glucose concentrations\textsuperscript{10} and arterial stiffness,\textsuperscript{13} which are thought to be the underlying mechanisms for the reduction in stroke risk. Fiber is found in whole plant-based foods such as whole fruits and vegetables and whole grains which are also rich in antioxidants and vitamins important for cardiovascular health. Additionally, the risk factors for stroke such as obesity, diabetes, and cardiovascular disease, can also be managed by a high-fiber diet.\textsuperscript{10}

What is dietary fiber and where is it found?

Dietary fiber is a type of carbohydrate that is primarily obtained from plant foods and is not digestible by human digestive enzymes.\textsuperscript{14,15} Fiber is broken down by colonic bacterial enzymes into molecules that can then be absorbed in the colon.\textsuperscript{15} Dietary fiber can be considered a marker for nutrient-rich plant-based whole foods such as whole grains, fruits, and vegetables.\textsuperscript{15}

What does whole in whole grains and whole-grain foods mean?

The word whole refers to grains or whole-grain foods when they consist of all edible parts of the grain after removal of inedible parts such as the hull and husk.\textsuperscript{17} Refinement of grains to produce refined flour and refined grain products leads to loss of nutrients and fiber content and hence it is considered beneficial to eat whole grains or whole-grain foods. Table 2 lists general dietary suggestions that you can provide to help your patients understand general evidence-based dietary principles they can follow to prevent a secondary stroke.

How can high cholesterol and triglyceride concentrations be reduced?

It is recommended to reduce saturated fat intake, predominantly found in animal foods such as meat fat and full-fat dairy products, as well as in coconut and palm oil, trans fatty acids, found in fried food products (especially if the oil used for frying is used more than once), and hidden in biscuits, cakes, savory snacks, and other processed foods containing fat.

Raised triglyceride blood concentrations can be lowered by limiting sugar intake (eg, soda, fruit juices, and desserts) and consuming oily fish 2-3 servings per week or by talking to a dietitian about alternate sources of omega-3 fatty acids. Oily fish with lowest mercury levels include Atlantic mackerel, salmon, sardine, and black sea bass (table 3).

Additionally, consumption of unsalted nuts (eg, walnuts and almonds), a high-fiber diet, and 5 portions of fruits and vegetables per day can aid in improving cholesterol profile and increasing the body’s antioxidant defenses.

What resources can I refer my patient to?

There are number of online resources for dietary recommendations available for the general population, as well as websites that offer nutritional recommendations to persons poststroke primarily focused on preventing a second stroke. See table 3.
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References
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