Symptomatic, or symptom-relieving treatments, used to be the only recognized class of therapies available for people with MS. Now, however, there is another type of treatment available. Immunologic therapies are those medications that impact the root cause of the disease and help prevent it from getting worse. The decision about using symptomatic and immunologic treatments is generally not an "either/or" proposition. Many patients will be on an immunologic treatment for their course of MS and on symptomatic therapies for day-to-day management of MS symptoms. The choices regarding which medications and therapies to consider can be explored with a physician and other health care providers. The treatments described in this handbook are currently available in the US. The staff of the Rocky Mountain MS Center encourages patients to contact their physicians for more details about any treatments mentioned here.

Symptomatic Therapies

The broadest spectrum of treatments available today are those used for symptomatic therapy (i.e., relieving the symptoms related to MS, without taking away the root cause of the problems). Some MS patients have resisted using symptomatic therapies thinking that they were not valid if they could not "cure" the MS. It is important to note that symptomatic therapies can clearly have a role in allowing patients to participate more fully in their daily routines. The ultimate goal of any symptomatic treatment is to ease the difficulties that arise with MS. Some symptomatic treatments, for example, may help to reduce pain, spasticity (muscle tightness and cramping), bladder problems, depression, sexual dysfunction, uncomfortable sensory symptoms, and fatigue. These therapies are not always completely effective at eliminating symptoms, however, and may have some undesirable side effects (such as drowsiness, weakness, dry mouth, moodiness, or weight gain - depending on the medications used). The important point with any symptomatic intervention is that the benefits should be weighed against the negative side effects to determine whether
to continue a particular therapy regimen. Some people prefer not to use symptomatic treatments that may help relieve one symptom, yet make others worse.

Symptomatic therapies are not just medications, but may include physical, occupational, and speech therapy; psychological supports; education; and stress management/biofeedback therapy. The commonly used symptomatic treatments will be detailed in the upcoming chapters. Multiple sclerosis is a highly variable disease and no two people will have the same symptoms, the same disease course, or the same treatment needs. Patients should discuss the treatment options available with their physicians, the ultimate goal being to maximize quality of life and individual potential.

**Immunologic Therapies**

A poll of Rocky Mountain MS Center patients indicated that what people with MS most wanted was "the cure". The cure for MS has been sought for decades, and researchers are striving to make this goal a reality. Theoretically, if the cure for MS could be identified, it would actually consist of three different processes:

- Stop the progression of the disease and the destruction of the myelin and axons
- Repair the damage already done to the central nervous system
- Treat any remaining symptoms

Ultimately, the aim would be to prevent the disease from ever starting.

To address the first goal, new immunologic therapies have advanced to the forefront in the treatment of MS. Immunologic, or disease-modifying therapies, are very different from symptomatic therapies in that they don't generally relieve current symptoms. Instead, the purpose is to slow the demyelination process and prevent exacerbations, thereby slowing the progression of the disease. Interferon beta 1b, marketed by Berlex Laboratories under the name Betaseron®,
was the first drug to be approved for the treatment of MS in twenty years. It was approved by the Food and Drug Administration (FDA) in September 1993. Since that time, AVONEX® by Biogen and Copaxone® by Teva Marion Partners have also received FDA approval. These medications, originally tested for use by people with mild to moderate, relapsing-remitting MS, have been shown to reduce the number and severity of exacerbations. At this time, all three medications, as well as another beta interferon called Rebif®, are given by self-injection (shot).* There has not yet been a study that verifies that any one of the three is superior to the others, and each has side effects that should be considered for each person. Additional agents are also being researched, and it is hoped that there will soon be more medications available which will be shown to be even more effective at slowing the progression of MS.

Chemotherapies such as methotrexate, a medication that has been used for years in the treatment of cancer and rheumatoid arthritis, has been studied for its effect on slowing the progression of disease in people with progressive forms of MS. The results of the study were favorable, and many neurologists are using methotrexate for those patients with advanced or progressive MS. Other chemotherapies such as Cytoxan® and Novantrone® are used for progressive MS or MS, which is not responding to other treatments. Novantrone® by Immunex was approved by the FDA in 2000 for use in people with certain types of worsening MS. A chemotherapy agent, Novantrone® is given in a once-every-three-month IV infusion. It was shown to slow progression in people with secondary progressive, progressive relapsing, and worsening relapsing-remitting MS. Methylprednisolone, also known as Solu-Medrol®, is an intravenous corticosteroid and is considered to be the best intervention for an acute attack of MS. Solu-Medrol® is used to shorten the length and improve the overall outcome of an exacerbation. It and other steroids are often used in combination with previously mentioned treatments to help augment the treatment effect.

When considering an immunologic treatment, patients and physicians must think about the side effects in a different light. Immunologic treatments must be weighed for the long-term
benefits, as well as the short and long-term side effects. Because of the preventative nature of these medications, and the slow, often gradual process of MS, patients and their families don’t always find it easy to evaluate whether or not these treatments are making a difference. Sometimes that evaluation is described as “waiting for something not to happen”. Maintaining close communication with and monitoring by an MS health care provider can help address these concerns. While the potential side-effects, costs, and benefits of the current immunologic treatments may make these medications unsuitable for some MS patients, these revolutionary therapies make it important for patients to discuss with their physician the pros and cons of instituting an immunologic therapy. There is no need to wait for the treatment that is "just around the corner". Instead, you should consider what is currently available for your needs.

*Rebif® is a form of beta interferon available in Europe and Canada. At press time, it was not yet available in the US.