The Mayo Comprehensive Pain Rehabilitation Center was founded in 1974 to provide rehabilitation services to patients with chronic non-cancer pain. It was among the first pain rehabilitation programs established in the US and the world and is now one of the largest pain rehabilitation programs in the nation.

The Pain Rehabilitation Center (PRC) is an intensive 17-day outpatient program focused on providing multidisciplinary rehabilitative therapy to patients with chronic pain. The rehabilitation program is focused on functional restoration. A cognitive-behavioral model serves as the basis for treatment and incorporates physical reconditioning, biofeedback and relaxation training, stress management, chemical health education, activity moderation, and cognitive restructuring to decrease pain catastrophizing and pain anxiety. Throughout the three-week program, various types of treatment and therapies are presented to help each patient achieve individualized goals in returning to an active and fulfilling life.

The program essentially focuses on helping people learn aspects of their pain and life they can control when a cure for the pain is not possible. The concepts taught at PRC include learning to differentiate acute, chronic and terminal pain, minimization of pain behaviors, relaxation, minimizing the use of analgesic pharmacotherapies (including narcotics as well as over-the-counter drugs), daily exercise, moderation, stress management techniques and coping with the emotional aspects of chronic pain. The core team of health-care professionals who care for patients in the PRC include physicians, psychologists, nurses, physical therapists, occupational therapists, counselors, biofeedback therapists and pharmacists.

**Goals**

The primary goal of the Pain Rehabilitation Center is to restore functioning and improve quality of life for persons suffering with chronic pain. The program emphasizes the discontinuation of opioid medication for the treatment of chronic non-cancer pain and the return to a fulfilling lifestyle.

Other important goals include:

- Return to regular daily activities
- Increase physical strength, stamina and flexibility
- Reduce use of pain medications
- Minimize pain behaviors
- Learn stress management techniques
- Return to gainful employment
- Resume leisure and recreational activities
- Improve interpersonal relationships
- Reduce reliance on health-care professionals, with improved ability to self-manage chronic pain
Chronic Pain and Rehabilitation

Chronic pain refers to pain that does not improve with time. It may affect a specific part of the body, as in low-back pain, headaches or facial pain. It can also involve many regions of the body at once, as in fibromyalgia, osteoarthritis, or peripheral neuropathies. No longer is the pain just a symptom of a disease, illness or injury; it becomes an illness unto itself. Regardless of the location or cause of chronic pain, many patients develop difficulty functioning in daily activities. Some also experience occupational disability, depression, drug-related complications and diminished quality of life.

All too often, specific forms of pain treatment, such as medications, injections or surgery, do little to relieve the chronic pain itself, or the long-term suffering and disability that can develop. Patients, their families and their doctors can become discouraged and frustrated. The PRC offers hope and specific assistance in reversing the downward course of this illness.

Treatment Disciplines

The Pain Rehabilitation Center provides many types of treatments and therapies in an integrated program to help each patient achieve individualized rehabilitation goals. The following are the core components of the multidisciplinary program:

Medication Management

The role of analgesic medications in treating chronic pain is complex and sometimes controversial. Often long-term use of analgesic medications do little to relieve chronic pain and may cause debilitating side effects that limit one’s functioning and mobility even greater. When used appropriately, some medications can help to reduce pain with limited side effects for some people. Often other conditions can accompany chronic pain, such as depression and insomnia. Appropriate medication use can help manage these conditions.

The PRC has a conservative approach to the management of medications. The PRC team works with each patient individually to eliminate or reduce the use of analgesic medications as appropriate. Medications are gradually reduced through structured tapers tailored for individual patients. Factors such as medication efficacy, safety, drug interactions, and practical issues such as costs are taken into consideration when making medication adjustments. Medication reduction has been found to be a successful component of the program. A recent review of patients attending PRC found that at discharge, only 3.4% of patients were taking opioid medication, a significant decrease from admission data indicating 60.8% of patients using daily opioids. Immediately and six months following completion of the PRC program, it was found that patients with severe and disabling pain at admission experienced significant improvement in physical and emotional functioning with decreased pain severity despite tapering these medications. We also find that patients who have tapered these medications experience the same improved functioning as patients who completed rehabilitation but did not take opioid analgesic medications.
Chemical Health Education
Group classes equip patients with medication information on the benefits and risks associated with the various classes of medications used in chronic pain conditions, as well as how to live with and manage chronic pain without the use of analgesic and other problematic substance use. Patients are encouraged to make informed decisions on evidence based medication use for both prescription products and dietary and herbal remedies.

The PRC offers groups on the following topics related to chemical health:

- prescription medications and hidden addictions
- medical aspects of chemical use
- alternative and complementary medicine and chronic pain
- pharmacologic interventions

Education and Group Sessions
Group sessions are an integral part of the PRC program. When chronic pain intrudes on life, many find themselves overwhelmed by intense, often negative, emotions including panic, fear, grief and anger. Like the pain that causes them, these emotions affect the body, sapping energy and intensifying pain. As a result more time may be spent alone and less time with friends and family.

Group sessions are designed to help patients recognize and deal with negative changes and emotions, improve relationships and become more effective at managing their pain. Group sessions are a combination of informal discussions about how lives have been affected by chronic pain and formal lectures on how to effectively deal with pain. Many people find talking with others whose lives and family have been negatively affected by chronic pain to be helpful – particularly when they also support making positive changes to lead a new life.

Group sessions are structured and will focus on a particular theme, pattern of behavior, or area of learning, such as:

- Stress Management
- Anger Management
- Assertive Communication
- Perfectionism and Unrealistic Expectations
- Cycle of Chronic Pain
- Planning for a Difficult Day with You in Control
- Personal Responsibility
- Relationships and Chronic Pain
Stress Management and Relaxation

Stress and pain have a pronounced effect on each other. When a person is in pain, the typical stress of daily life can become much more difficult, often turning common hassles into major obstacles. Stress can also impact pain. The physical reactions to stress such as increased muscle tension can significantly intensify pain. In short, pain causes stress and stress intensifies pain.

Stress management training provided in the PRC program utilizes coping strategies to break the pain-stress cycle. Taking control of stressful situations can modify the body’s ‘fight or flight’ response to stress. Coping strategies are numerous and the stress management classes provide a comprehensive overview of these strategies.

One of the most common coping strategies for managing stress is relaxation. Relaxation reduces muscle tension, reduces anxiety, increases self control and allows a person to feel refreshed and rejuvenated. The program presents a number of different forms of relaxation and encourages daily practice.

Physical Therapy

Physical therapy involves instructing patients in strengthening, stretching, and aerobic conditioning. The physical therapists also provide education on proper body mechanics, lifting techniques, proper posture, benefits of aerobic exercise and discussions of pain behaviors. While at the program, patients participate in range of motion exercises each morning and join physical therapy staff later in the day for individualized programs including strength training, stretches and aerobic conditioning. Most people have had some physical therapy before coming to the PRC, usually focused on the site of pain, which has resulted in little to no improvement in functioning. The PRC physical therapy focuses on increasing stamina and functioning, as well as teaching more efficient ways of moving the bodies, so daily tasks become easier and patients will simply be able to do more despite their pain. The exercises are designed to help decrease fear of movement that can be more debilitating than the pain itself.

Occupational and Recreational Therapy

In the PRC program, the goal of occupational therapy is to create a balance between work, self-care, and leisure activities. Recreational therapy focuses on social and leisure activities that have been diminished due to chronic pain. For many patients, pain is controlling the choice of activities done during the day. Many have given up things they once enjoyed or changed daily routines due to the intense pain. In occupational therapy, the focus is on learning techniques that increase the control a person has over activities of daily living, as well as helping to increase independence when performing activities.

Some of the concepts taught include balance of daily activities, moderation (over-doing vs under-doing), duration and pacing in completion of tasks, time management, activity modification, body mechanics and computer ergonomics. Hands-on application of these concepts is provided through activities addressing home management tasks, child-care activities, driving, shopping, yard work, garage activities, leisure activities and vocational involvement.
At times, it is helpful to have specific recommendations in creating a plan that will promote a successful return to work or volunteer activities outside of the home. Occupational therapy staff are available to assist with return to work issues on an as needed, individual basis.

**Biofeedback**
Biofeedback is a treatment that provides information about how physiological processes in the body can be negatively affected by chronic pain. A computerized instrument is used to measure and increase a patient’s awareness of predominantly involuntary physiologic processes such as breathing rate and muscle tension. Biofeedback then aids the patient in learning how to increase control over these processes and strengthens the ability to maintain control while engaged in daily activities.

**Sleep Hygiene**
Chronic pain has a significant impact on sleep. Sometimes managing pain by spending time in bed or on the couch taking naps can lead to insomnia. Worry about difficulty falling asleep or doing too much activity before bed can also make insomnia worse. Because sleep plays an important role in how one manages daily activities, chronic pain and overall mood, the program emphasizes assessment and education of sleep hygiene techniques. Sleep hygiene sessions are designed to promote sleep efficiency, leading to a more restful night and an active day.

**Lifestyle Management**
The PRC strongly believes that decisions and habits related to one’s lifestyle are key in managing chronic pain and anxiety. Current information, assessment, and individual consultations with experts are offered to participants to promote healthy lifestyle changes in many areas, including nutrition, tobacco cessation, and sleep. Additionally, pastoral care and vocational counseling can be arranged to further improve the overall quality of life and functioning. The PRC also recognizes that the use of complementary and alternative therapies for treatment of chronic anxiety, pain, and sleeping problems has become more popular in recent years. Those therapies that have been carefully researched and proven to be helpful, including biofeedback, meditation, and specific relaxation techniques, are an important part of the PRC program. Additional therapies are explained and discussed with an emphasis on the steps to consider in making safe and effective choices in this area.
**Aftercare Planning**

The PRC assists patients in planning for care after dismissing from the program. Our goal is for every patient to continue with the strategies learned during the time at PRC as they return to the home environment. A nurse care coordinator can aid the patient in creating an individual plan for aftercare, utilizing a local primary physician or psychological care with a cognitive behavioral therapist, as well as review of the tools learned in the program. Occupational therapists will review recommendations for return to work or volunteer work. Physical therapists will help design an independent exercise program to use daily in the home environment.

A formal PRC Aftercare Program is also offered. The PRC Aftercare Program is a day-long, group-based outpatient program focused on assisting former PRC 3-week program patients with individual goals in returning to an active and fulfilling life, to reinforce gains made previously in the program, and to assist with further rehabilitative progress. Within groups, patients review the tools learned in the program as well as develop an individualized plan for ongoing management. The Aftercare Program is offered several times per month to accommodate scheduling, and is held from 8:00 a.m. to 3:00 p.m.

**Family Program**

Chronic pain affects the whole family, not just the person who is in pain. Those affected might include a spouse, partner, sibling, parent, children or others involved in a caring relationship. Often activities of daily life may be altered for the person in pain, resulting in additional responsibilities for others. Problems can arise including increased financial strain, miscommunication, resentment, confusion and isolation. Often family and friends feel helpless about how to respond to their loved one with chronic pain.

The PRC Family Program offers education and support for family or significant others to gain a better understanding of chronic pain and helpful ways to respond in assisting loved ones in managing more effectively. Session topics include learning the difference between acute and chronic pain, the elimination of pain behaviors, the use of moderation, self-care, minimal use of pain medications, stress management, relaxation, and effective communication. Also discussed is the benefit of using a neutral response to pain behaviors instead of an overly care-taking or punitive response.

Family members and significant others are strongly encouraged to attend the PRC Family Program while their loved one is participating in the PRC Program. The PRC Family Program is a comprehensive 2-day program offered every Thursday and Friday from 8:00 a.m. to 5:00 p.m. The schedule includes sessions for the family and their loved one to attend together as well as sessions for the family members only.
**Patient Descriptions**

Approximately 420 patients are admitted to the PRC program every year. More females (69%) than males (31%) enter the program. The average patient age is 46 years, with the range being 18 years to 84 years (although there is not a set age limit for admission to the program). A separate 3-week Pediatric Pain Rehabilitation Center program is offered for adolescents and their families.

Patients come from across the United States and the world. Nearly half (49%) of the patients in the program travel from the Midwest area (Minnesota, Iowa and Wisconsin). International patients account for 2% of the patients admitted to PRC. Typically, patients have suffered from pain for almost 10 years, with a range from 3 month to 65 years. The majority (85%) of patients admitted to PRC complete the program.

**Common Pain Conditions**

PRC is fairly unique in that patients who come to the program have many types of chronic pain. As with other rehabilitation programs, chronic back pain and fibromyalgia are the most common diagnosis, each occurring in 24% of the patients. Other frequent diagnoses are generalized pain or pain in multiple sites (14%), chronic headache/migraines (10%), abdominal pain (9%) and neck pain (5%). The remaining patients have various pain sites including upper or lower extremities (including Complex Regional Pain Syndrome), chestwall, jaw, pelvic area, shoulders, hands, joints, knees, mouth, foot and face pain. Patients may also have pain resulting from a disease, such as peripheral neuropathy or endometriosis. Nearly any site of chronic pain can be addressed in the program.

Additionally, some patients have no identifiable cause for the pain they are experiencing, which can make the pain even more frustrating. Some patients with non-pain conditions that have experienced significant decline in functioning are also admitted to the program, including patients with chronic fatigue syndrome or postural tachycardia syndrome (POTS). The PRC staff work with all types of chronic pain problems, individualizing treatment to the specific needs of each patient.

**Treatment Outcomes**

Comprehensive pain management programs similar to the Mayo Clinic Pain Rehabilitation Center program are consistently shown to be the most beneficial and cost-effective for persons with chronic pain in comparison to medications, surgeries, or implantable devices (Gatchel and Okifuji, 2006). The Mayo PRC conducts ongoing treatment research to better understand how to help people with chronic pain and determine the level of improvement our patients achieve (Townsend et al, 2008). The treatment outcomes for the Mayo PRC are discussed below.

**Patient Satisfaction**

Upon completion of the 3-week program, information regarding the usefulness of the program is gathered from the patients. When asked if they would recommend the program to a friend, 94% indicated they “definitely would recommend” or “probably would recommend” PRC. The majority (91%) rated the care they received while in PRC as “excellent” or “very good.” In addition, the majority of patients (91%) indicated they “strongly agreed” or “agreed” with the statement that PRC was beneficial in helping the patient learn how to live well in spite of chronic pain. Ninety-five percent “strongly agreed” or “agreed” that physical therapy helped to increase their strength, endurance and flexibility.
**Medication**

Medication reduction was found to be a successful component of the program. At discharge, 3.4% of patients continued taking opioid medication, a significant decrease from admissions data indicating that 60.8% of patients used opioids daily. Furthermore, of those who tapered opioid medication, 91% remained opioid-free 6 months following discharge from the program. For non-opioid medication, 46% of patients were taking nonsteroidal anti-inflammatory drugs (NSAIDs) at admission, compared to 23% taking NSAIDs at discharge. Furthermore, 17% of patients were taking muscle relaxants, compared to 3% of patients were taking these drugs at discharge. The data indicate that patients with severe and disabling pain at admission experience significant improvement in physical and emotional functioning and decreased pain severity despite tapering these medications.

**Depression**

At admission, 80% of patients report some symptoms of depression. Depression scores on the Center for Epidemiological Studies - Depression scale (CES-D) indicate that 79% of patients experienced a decrease in depressive symptoms upon completion of the program, which is maintained 6 months following discharge. Furthermore, 54% of patients reported major depression at admission; however, only 20% continued to experience major depression 6 months following discharge. This improvement in mood is often associated with patients’ increased perception of control over their lives and pain and improved quality of life.

**Physical Therapy**

In the physical therapy component of the program, patients are assessed for aerobic activity levels (activities such as walking or riding a bike) as well as strength training as they work to improve their overall physical strength and endurance. Based on differences between admission and discharge performance, 75% of patients completing the program had at least a 50% gain in aerobic activity level. Given the sedentary lifestyle many chronic pain patients had developed prior to treatment, this difference is significant and underscores why physical therapy is such an important part of patients’ progress when they return home.

**Pain Severity**

In rehabilitation, pain reduction is not a program goal, and there are no medical or surgical procedures to specifically reduce pain. However, because patients learn coping strategies for managing pain while improving their quality of life, 73% of the patients completing the program report a reduction in pain severity at dismissal from the PRC, which is maintained 6 months following discharge.

**Pain Catastrophizing**

Pain catastrophizing, an extremely negative way of thinking about actual or anticipated pain experiences, is often associated with disability, greater use of pain medication and greater use of health care services. At program completion, pain catastrophizing decreased for 75% of patients as measured by the Pain Catastrophizing Scale. At admission, 42% of patients reported clinically significant levels of pain catastrophizing; only 7% of patients continued to report catastrophizing 6 months following discharge. This decrease in pain-related thoughts is evidence of improvement of patients’ coping and pain management skills.
Reported Functioning

The Multidimensional Pain Inventory (MPI) is used to assess function before and after the program. Pain interference in daily life decreased for 87% of the patients. Seventy-eight percent of patients reported increases in general activity levels, and nearly 86% reported improved physical and social functioning. In addition, 74% of patients reported an improvement in the perception of their overall health and 84% noted increased feelings of control over pain and life events. Nearly 81% of the patients reported an increase in energy or vitality on the SF-36 Health Survey upon completion of the program. More importantly, patients continued to report improvement in activity levels, pain interference, perceived control over pain, physical and social functioning, and energy 6 months following discharge.

References


Making the Decision to Participate in the PRC Program

Pain rehabilitation is a challenging process which requires a serious commitment. As you consider admission to the Pain Rehabilitation Center, please ask yourself these questions:

• Is my life focused on pain and what I am not able to do, rather than what I am able to do in spite of the pain?

• Are my doctors telling me there is nothing further they can do to relieve the pain? Do they tell me that I need to learn to get on with my life?

• Am I truly concerned about the long-term effects of taking pain medications?

• Is my family’s well-being affected because of my chronic pain?

• Is my recovery from injury or illness taking much longer than my doctors or I expected?

• Am I not able to commit to social events with family or friends because my pain may be higher that day?

If you answered yes to one or more of these questions, PRC may be appropriate.
Information for Patients

Insurance
After completing the initial evaluation to determine if you are a candidate for the program, a representative from Mayo Clinic’s Patient Financial Services will contact your insurance carrier, as many health insurance plans require approval prior to admission to the PRC. Upon receiving insurance approval, you will be contacted to confirm your admission date. Patient Financial Services will also contact you if full approval for the program cannot be obtained. In this situation, a pre-service deposit will be required prior to entering the program. If you have questions about your benefits or the status of your approval, please contact the phone number on your insurance card. If you need further assistance, a financial representative is available to speak with you about insurance issues at 507-266-9753.

Admission Assessment
Patients spend the first 2 days of the 17-day PRC program completing assessments and evaluations with the various disciplines. These assessments are vital to ensure a patient’s program is designed for each individual patient’s needs.

Parking
A patient/visitor parking ramp is available on the Mayo Clinic Hospital, Saint Marys Campus adjacent to the Generose Building. The daily charge is modest, and weekly passes can be purchased at a discount from the parking attendant. Many hotels and motels provide shuttle bus service to Mayo Clinic Hospital, Saint Marys Campus.

Lodging
Patients make their own arrangements for lodging. A brochure is available at the Pain Rehabilitation Center front desk, or patients can visit the Mayo Clinic lodging website at http://www.mayoclinic.org/travel-rst/lodging.html for a list of options in the area. Mayo Clinic staff are available to assist with general questions about accommodations, but arrangements are the responsibility of the patient.

Meals
Meals are not provided as part of the program. Patients are responsible for bringing or purchasing lunch, and an hour will be provided for lunch each day. A hot, cold and vegetarian choice will be available for purchase or patients may also bring their own lunch (a full kitchen is available for use). The Mayo Clinic Hospital, Saint Marys Campus patient cafeteria and the Generose Express also have many items available for purchase.

What to Bring
We ask each person to bring a personal CD-player for relaxation activities which will be provided for use in their hotel room in the evenings. Patients should also arrive at the PRC with all medications taken on a regular basis. A nurse case manager and pharmacist will review medications and make a plan for continued use. Clothing should be comfortable and casual, so that it can be worn for exercise and for the more active portions of the day. Due to variable Minnesota weather, many patients choose layered clothing for comfort. Tennis shoes or good walking shoes are recommended.
For More Information

Please visit our website at:
www.mayoclinic.org/pain-rehabilitation-center-rst/