Psychiatry and Psychology at Mayo Clinic

The Department of Psychiatry and Psychology plays an essential role in Mayo Clinic’s mission of inspiring hope and contributing to health and well being by providing the best care to every patient through integrated clinical practice, education, and research. Doctors from every medical specialty work together to care for patients at Mayo Clinic, the first and largest integrated not-for-profit group practice in the world.

At Mayo Clinic’s campuses in Rochester, Minnesota; Jacksonville, Florida; and Phoenix/Scottsdale, Arizona; and across the upper Midwest in Mayo Clinic Health System, there are 3,700 physicians and scientists, including approximately 150 psychiatrists and psychologists, working toward common goals. These clinicians and researchers are supported by nearly 50,000 allied health staff, including several hundred who support the Department of Psychiatry and Psychology.

We invite you to learn more about our flagship programs at Mayo Clinic in Rochester, Minnesota—Mayo Clinic Psychiatric Hospital, Mayo Clinic Depression Center, Pain Rehabilitation Center, and Addiction Treatment Center—along with our many other areas of excellence. Through these comprehensive, multidisciplinary programs, thousands of people with mental, addictive, and emotional disorders of all types find answers each year.

Everything we do in the Department of Psychiatry and Psychology—patient care, education, and research—is guided by one primary value, is the same value that has guided Mayo Clinic for more than a century:

“The needs of the patient come first.”

Mark A. Frye, MD
Chair

Teresa A. Rummans, MD
Vice Chair

Bruce Sutor, MD
Clinical Practice Chair

Marin Veldic, MD
Clinical Practice Vice Chair
Mayo Clinic Inpatient Psychiatric Units

Inpatient units in the Department of Psychiatry and Psychology are located in the Generose Building at Mayo Clinic Hospital Rochester, Saint Marys Campus. These units evaluate and treat adults, adolescents, and children with a broad range of acute psychiatric conditions.

In the hospital, psychiatrists work in integrated teams with nursing, social work, physical and occupational therapy, and medical/surgical specialists to provide comprehensive, coordinated care tailored to the needs of each patient.

With Mayo Clinic clinicians from other departments available for consultations as needed, Mayo Clinic psychiatric units are well-suited to treat complex, challenging cases.

Psychiatric Acute Care Unit
This unit stabilizes and treats adults experiencing significant mental health crises, such as those who are acutely suicidal, severely depressed, manic or psychotic. After being evaluated, patients receive individualized care, which may include the full range of somatic treatments, education about coping strategies, relapse prevention, stress management, and recreational therapy.

Medical and Geriatric Psychiatry Unit
The Medical and Geriatric Psychiatry Unit can care for adults ages 18-64 with both medical and psychiatric conditions. The unit also provides care for those 65 and older who need hospitalization for psychiatric issues—most commonly late-life mood and cognitive disorders. Treatment may include medications, physical therapy, recreational therapy, occupational therapy, individual and group based education on depression, anxiety, aging related issues and similar topics.

Mood Disorders Unit
The Mood Disorders Unit treats adults ages 18-64 whose depression or bipolar illness is significantly affecting their functioning or safety. A multidisciplinary team reviews each patient’s situation and recommends treatments which may include medications, group psychotherapies, and occupational therapies. When needed, pharmacogenomics testing and electroconvulsive therapy (ECT) are also available.

Child, Adolescent, and Family Treatment Unit
In this unit, children and adolescents receive treatment for a wide variety of conditions, such as mood disorders, anxiety, psychosis, self-injurious behavior and suicidal ideation. Treatment involves evidence-based psychosocial intervention and medication management. The focus of this unit is on wellness and improved functioning with a family-based and multidisciplinary treatment approach. Services are provided by psychiatrists, nurse practitioners and physician assistants, psychologists, social workers, nurses, dietitians, and occupational, physical, music, and recreational therapists.

Adult Transitions Program
The Adult Transitions Program is a hospital-based outpatient program for those who need treatment after being in the hospital or Emergency Department. It is also for anyone having difficulty managing present psychiatric symptoms. It is a 3-hour program delivered Mondays through Fridays and the average length of stay is three weeks. Group-based treatments include self-assessment, Dialectical Behavioral Therapy skills, recovery skills, and occupational therapy.

Patients can also receive individual therapy sessions when needed.

Pediatric Transitions Program
PTP is designed for youth ages 14 to 18 who are experiencing behavioral and/or emotional difficulties, conflict with authority figures and family members, school or social difficulties, or struggles that are not well managed through outpatient therapy.

PTP is a daily, half-day intensive outpatient group-therapy-based program that can serve as a “step-up” or “step-down” level of care. The goals of this unique program include:

1) providing education and skills to youth who need more intensive support and assistance with regulating their mood and behavior beyond traditional outpatient therapy

2) helping youth successfully remain at home and participate in school and other activities or transition back to these settings after a psychiatric hospitalization.

Held Monday through Friday afternoons 1:00-4:30, the program’s half-day schedule allows youth being discharged from a higher level of care to progress towards reintegration with their family, friends, and school. This intensive outpatient format provides participants with opportunities to spend their mornings engaging in and practicing real-life skills in their daily environment. During the afternoon, providers help participants process their experiences in a safe, supportive, and structured environment. This program includes daily structured group therapeutic activities designed to help participants develop skills required to address their individual mental health needs. Participants also receive individual and family therapy.

To make a referral or request a phone consultation, please call 507-293-2557.
Quick Facts

- The Mayo Clinic inpatient psychiatric units are integrated into the largest medical/surgical center in the world
- Mayo Clinic psychiatrists are leaders in the clinical care of the medically ill patient from childhood through geriatrics
- Dedicated psychiatric hospitalists provide expert care to the most complex psychiatric and medical comorbidities
- The Mayo Clinic inpatient psychiatric units have ready access to all of the medical and surgical expertise that is part of Mayo Clinic.
- Psychiatrists throughout the hospital practice are clinical educators and researchers highlighted by the extensive portfolio of Continuing Professionalism Courses including:
  - Aeschi West - Suicide Assessment and Treatment
  - Approaches to Pediatric Depression and Related Disorders
  - Translational Review of Mood Disorders and Addiction
  - Psychiatry in the Medical Setting
  - Psychiatry Clinical Reviews
  - Depression and Bipolar Disorder on Stage: Science of Healing and Stories of Hope

Research

The Department of Psychiatry and Psychology continues to highlight research teams in our annual 2018-2019 Departmental Research Report. We want to highlight the value, importance, and productivity of research teams within our department. These research teams can also be found across the Mayo Clinic sites which include Minnesota, Florida, and Arizona, and involve the many hospitals that comprise the Mayo Clinic Health System. For example, the Neuropsychology, Aging, and Cognition Research Team has scientific investigators across all three campuses. Research teams within our department include an array of health care professionals and focus on the evaluation and treatment of a range of mental health problems and their impact on patients and their families. The Mayo Clinic Depression Center Research Team, which includes psychiatrists, psychologists, nurses, and social workers conducting clinically relevant research in treatment-resistant depression and bipolar disorder, is an example of a highly productive multidisciplinary clinical research team. Additionally, many investigators in our department are engaged in research projects with other departments or centers of excellence across our academic medical center. For example our department has investigators in The Mayo Clinic Comprehensive Cancer Center, The Bariatric Surgery Center of Excellence, and The Alzheimer’s Disease Research Center. Finally, we encourage the participation of research with other academic centers, collaborations, and multisite studies. The University of Minnesota, the Karolinska Institute in Sweden, and the National Network of Depression Centers are outstanding examples of collaborative multicenter research projects.

Meeting the needs of diverse, underserved populations and addressing health disparities is a priority of our department’s clinical, educational, and research programs. In addition, many people with mental health issues struggle to get needed medical, psychiatric, and psychological care. To address these problems, our department has numerous clinical, academic, and research projects focused on meeting the needs of underserved populations, developing creative mental health treatment delivery systems, and tailoring interventions for underserved populations.
Mayo Clinic Depression Center

ADULT AND PEDIATRIC SERVICES

Mayo Clinic Depression Center offers comprehensive, evidence-based evaluation and treatment for people with depression or bipolar disorder across the age spectrum. Programs in the center range from intensive inpatient treatment to outpatient consultations with care provided by an integrated team of Mayo Clinic psychiatrists, psychologists, nurse practitioners, social workers, and other specialists with expertise in mood disorders.

Treatment in Mayo Clinic Depression Center, which is tailored to the needs of each patient, is based on an initial evaluation that may include self-rating scales, neuroimaging, genotyping, neuroendocrine and neurophysiological assessments, and other measures. A range of treatment options is potentially available,

- Pharmacotherapy
- Behavioral activation
- Interpersonal and Social Rhythm Therapy (IPSRT)
- Cognitive behavioral therapy
- Acceptance and commitment therapy
- Mindfulness
- Dialectic behavioral therapy
- Occupational therapy
- Recreational therapy
- Electroconvulsive therapy (ECT)
- Transcranial magnetic stimulation (TMS)
- Ketamine infusions
- Participation in a clinical trial

The center also works closely with other areas in the Department of Psychiatry and Psychology and across Mayo Clinic to treat patients who have mood disorders associated with chronic pain, addictions, pregnancy or the postpartum period, obesity (pursuing bariatric surgery), Parkinson’s disease (pursuing deep brain stimulation), and other diseases.

Adult Mood Clinic
Outpatient evaluation and treatment for adults with treatment-resistant depression or bipolar disorder is available in the Mood Clinic. After an initial assessment, a roadmap of treatment recommendations for referring physicians and mental health providers will be developed. Depending on a patient’s needs, she or he may be referred to the Mood Disorders Unit, the 2-week Mood Program, or John E. Herman Home and Treatment Facility.

Adult Mood Program
In this program, adults with a primary depressive or bipolar disorder undergo 2 weeks of full-day, group-based outpatient therapy. The Mood Program uses Interpersonal Social Rhythm Therapy and adjunctive therapies, such as mindfulness techniques, physical movement experiences, behavioral activation, and psychoeducation, to help patients manage interpersonal issues and factors linked to their mood symptoms.

Adult Mood Disorders Unit
This 16-bed hospital-based inpatient unit provides treatment for adults whose depression or bipolar illness is significantly affecting their quality of life, function, or safety. Individualized intensive treatment includes cognitive behavioral therapy, medications, family and group therapy, relaxation activities, and when appropriate ECT, TMS, and ketamine infusion.

John E. Herman Home and Treatment Facility
The Mayo Clinic John E. Herman Home and Treatment Facility is a residential treatment program for adults with serious mental illness. The program is organized around functional and vocational recovery. Treatments include group and individual psychotherapy based on cognitive and behavioral principles, medication management, vocational program, and milieu-based activities to help residents engage in productive and value-driven life.

Quick Facts
- Over 800 patients are evaluated annually with treatment resistant depression and bipolar disorder
- One of the largest bipolar biobanks in the world with rich clinical descriptive phenotyping setting the stage for future genomic research
Pediatric Mood Clinic

The Pediatric Mood Clinic is staffed by an expert team of child & adolescent psychiatrists, psychologists, social workers, and nurses. The clinic provides team-based care focused on diagnostic clarification and treatment recommendations regarding childhood mood disorder (e.g., depression, bipolar, cyclothymia, and dysthymic disorder).

This clinic is focused on teasing out and providing diagnostic clarification of mood disorders and other psychological difficulties through comprehensive and focused psychological evaluations. Treatment recommendations are offered to assist with ongoing psychiatric, academic, and social interventions.

Outpatient Treatment:

- Adolescent Mood Management Group an 8-week evidence-based intervention for teens 14-18 living at home.

Child and Adolescent Integrated Mood Program (CAIMP)

The Child and Adolescent Integrated Mood Program (CAIMP) is a family-focused 2-week intensive day program for youth 10-18 with mood and co-occurring disorders provided by a multidisciplinary care team. Youth with mood disorders (e.g., depression, bipolar, and cyclothymia) and their caregivers attend the program from 8am-4pm, Monday through Friday. CAIMP is provided to youth in developmentally similar cohorts. Youth attend individual, group, and family therapy sessions. Caregivers work in groups with their child as well as parent-only groups to further develop their communication, problem-solving and coping skills, and implement strategies to support wellness activities and improve family functioning.

Treatment includes:

- Cognitive behavioral treatment
- Mindfulness
- Interpersonal therapy

Research

Depression is a significant public health problem, in this country and across the globe. Effective treatment can be challenging to identify for the individual, and relapse is common after depression treatment. Therefore, effective individualized long-lasting treatments are needed for depression. The main focus of the Mayo Clinic Depression Center is to conduct clinically relevant research in treatment-resistant depression and bipolar disorder in adults, adolescents, and children. Our current research projects aim to build on our comprehensive and multidisciplinary depression treatment programs. Mayo Clinic Depression Center is a Center of Excellence for the National Network of Depression Centers, a network of 21 leading clinical and academic Centers of Excellence in the U.S. working to transform the field of depressive illness and related mood disorders.
To assist people with noncancer-related chronic pain regain function and improve their quality of life, the Pain Rehabilitation Center at Mayo Clinic offers adult and pediatric outpatient programs.

These programs treat patients with a broad range of pain types, as well as those with medical and psychiatric complications. These may include chronic fatigue and nausea, cyclic vomiting, and autonomic disorders, such as postural orthostatic tachycardia syndrome (POTS).

Patients benefit from a team-based, interdisciplinary approach to treatment. Physicians specializing in pain medicine and addiction work with a diverse team of psychologists, clinical nurse specialists, registered nurses, physical, occupational, and recreational therapists, clinical counselors, and chemical wellness counselors, and other providers.

The center’s programs use an array of treatment strategies, including skill-focused classes, physical and occupational therapy, stress management and relaxation techniques, and biofeedback. A goal for every patient in the adult and pediatric 3-week programs is the discontinuation of opioids for the treatment of noncancer-related pain.

**Adult 3-Week Program**

For adults whose chronic pain is causing significant declines in quality of life and functional abilities, the center offers a 3-week intensive hospital-based outpatient program. This group-based program gives patients new skills and techniques for pain management and physical reconditioning. In the months after completion, patients may attend a daylong aftercare program that reinforces skills and helps maintain progress.

**Adult 2-Day Program**

This 2-day program is for adults whose chronic pain is affecting their daily functioning and mood at home or at work. Patients are given an overview of pain management skills that help them learn which aspects of their pain they can control.

**Pediatric 3-Week Program**

Adolescents learn to address challenges caused by any type of chronic pain or symptom that interferes with daily life. These patients have generally missed a significant amount of school because of their symptoms. The goal of this 3-week intensive hospital-based outpatient program is to have the patient back to school full-time at the end of the treatment period. As an adolescent’s chronic pain and symptoms also affect his or her family, this program includes daily parent involvement that focuses on successfully parenting a child with chronic conditions and reducing impact on the family.

**Pediatric 2-Day Program**

The 2-day program for adolescents is designed to treat chronic pain and other chronic symptoms in those who have missed less than 30 days of school. These patients are struggling with significant symptoms but are still attempting to stay involved in school and other activities. This program helps teens and their parents learn cognitive behavioral skills to better manage symptoms and remain active.
Research

The Pain Rehabilitation Center Programs at Mayo Clinic Rochester, Arizona, and Florida continue to evaluate functional outcomes from each of our comprehensive programs. The adult programs are investigating tapering opioid medication use and program outcomes, as well as patient weight and bariatric surgery status, related to program success. Drs. Gilliam, Morrison, and Sperry are examining how aspects of pain catastrophizing are affecting patient success along with patient perceptions of the pain rehabilitation program. Dr. Sletten is investigating other medical conditions commonly associated with chronic pain, as well as the health care economics of pain rehabilitation programs. Our team is also examining outcomes of brief 1- or 2-day programs, as well as trials of interventions tailored to meet the needs of the young adult populations.

For our novel and innovative pediatric program, we continue to be interested in the short- and long-term impact of our pain rehabilitation programs. Drs. Harbeck-Weber, Sim and Ale are examining treatment mediating factors, such as parenting, mood, and pain catastrophizing. Additionally, Dr. Sim is investigating the frequency of disordered eating in our patients. The pediatric PRC team is also examining the quality of life of parents with a child with chronic pain and the neurocognitive functioning of patients with postural orthostatic tachycardia syndrome. Finally, we are also examining the outcomes of our two day pediatric pain

Quick Facts

- **Comprehensive care.** With nearly 700 patients treated annually, Mayo Clinic has one of the largest adult and pediatric comprehensive pain rehabilitation programs in the country.

- **Team approach.** Interdisciplinary treatment teams help patients with complex persistent pain and related symptoms regain functioning, no matter their age or pain site.

- **Positive outcomes.** Longitudinal data shows that most patients maintain the progress made during their programs and experience significant decreases in pain severity and substantial improvements in physical functioning and mood.

- **Tapering of opioids.** The center is one of the most skilled and experienced at tapering opioid analgesics, including high-dose opioids, and resolving medical complications due to polypharmacy. About 98% of adults and teens are successfully tapered off all opioids over their 3-week programs.

- **Continuing support.** Family support and education, aftercare support groups, and support for individuals struggling with addiction help ensure rehabilitation gains are sustained.

Completion rates

- Adult 3-week program: **85%**
- Pediatric 3-week program: **91%**

**PRC Diagnostic Categories**

- Generalized Pain: 33%
- Fibromyalgia: 17%
- Low Back Pain: 25%
- Other: 17%

**PRC Participant Outcomes % Improvement**

- 5 Minute Walk: 20%
- Pain Severity: 27%
- Repeated Sit to Stand: 30%
- Depressive Sxs: 53%
- Quality of Life: 87%
Addiction Treatment Center

Since 1972, Mayo Clinic has been treating people with alcohol, illegal drug, and prescription medication problems. Addiction treatment programs at Mayo Clinic take an individualized holistic approach within a respectful, professional environment. Patients are treated by multidisciplinary care teams that include addiction psychiatrists, licensed alcohol and drug counselors, licensed clinical social workers, registered nurses, and other specialists. This team approach ensures each patient receives comprehensive treatment that addresses his or her alcohol or other substance use, emotional health, and spiritual well-being.

Intensive Addiction Program
Mayo Clinic’s Intensive Addiction Program offers a 30-day residing program for adults age 18 and older for treatment of alcohol and drug use problems— including illegal drugs, opioids, and other prescription medication. It also provides treatment of co-occurring mental health disorders.

Treatment interventions include evidence-based medications, educational sessions, relapse prevention strategy training, group-based therapy, recreational therapy, mindfulness and mind-body techniques, and other treatment modalities. This program provides a supportive community for establishing abstinence in a respectful environment, while allowing considerable independence. All patients have single, private rooms with individual bathrooms and wireless Internet access.

Outpatient Addiction Program
The Outpatient Addiction Program offers half-day outpatient adult addiction treatment for 20 days, Monday through Friday. Treatment programming includes a combination of individual counseling, group psychotherapy, and educational and relapse prevention group sessions. The program is designed for patients with sufficient relapse prevention skills to establish abstinence while living independently in the community. After completing the Outpatient Addiction Program, patients may enter one of Mayo Clinic’s continuing care programs.

Extended Outpatient Program
The Extended Outpatient Program is a step-down program for those who have completed a primary treatment program to establish abstinence, generally in a residential setting. The focus is further integration of recovery skills into daily sober living along with relapse prevention. The program consists of half-day outpatient addiction services for 20 days, Monday through Friday.

Recovery Maintenance Program
The Recovery Maintenance Program is a step-down program for those who have completed all previous treatment stages. The focus is further support in early recovery, along with relapse prevention. The program consists of half-day outpatient addiction services once per week for up to 12 weeks.

Health Professional Recovery Program
The Health Professional Recovery Programs provide weekly process groups combined with individual sessions for licensed health professionals monitored during their substance use disorder recovery by the Minnesota Health Professional Services Program. The focus is on relapse prevention and strengthening sober support during early recovery among health professional peers. The program consists of once per week group sessions for up to 1-3 years.

“I’ve never been treated by doctors with so much respect, and I’ve never felt so optimistic about my disease before. It is manageable! No other place in the world would do this for a patient.”

— Mayo Clinic addiction treatment patient
“This is a healing place.”
— Mayo Clinic addiction treatment patient

BY THE NUMBERS

Patient-to-counselor ratio:
4 to 1 small group sizes

Substance of choice

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Alcohol</td>
<td>91%</td>
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<tr>
<td>Cannabis</td>
<td>20%</td>
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<tr>
<td>Other</td>
<td>38%</td>
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</tbody>
</table>

Comorbid mental health diagnoses

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>53%</td>
</tr>
<tr>
<td>Depression</td>
<td>55%</td>
</tr>
</tbody>
</table>

Demographics

Average age: 44
Age range: 18-85 years old
Males/females: 70% males, 30% females

Research

Mayo Clinic psychiatrists, working in collaboration with colleagues in other areas at Mayo, are involved in a wide range of research related to addiction. As appropriate, patients have opportunities to participate in studies.

Areas of research include:

- The role of genomics and pharmacogenomics in alcoholism and its treatment outcomes
- Discovery of biomarkers of alcoholism treatment response
- The impact of sex and gender-specific differences on alcoholism and comorbid mood disorders
- The impact of anxiety and comorbid mood disorders on craving and alcoholism treatment outcomes
- Alcoholism treatment in subjects with end-stage liver disease
- Alcoholism and sleep disorders
Areas of Excellence

In addition to its four flagship programs at Mayo Clinic in Rochester, Minnesota—Mayo Clinic Psychiatry Hospital, Mayo Clinic Depression Center, Pain Rehabilitation Center, and Addiction Treatment Center—the Department of Psychiatry and Psychology offers comprehensive multidisciplinary psychiatric assessment for adults, adolescents, and children in:

Child & Adolescent Attention Deficit Hyperactivity Disorder Clinic
- Medication management
- Individual and group-based treatment
  - Parenting groups
  - Social skills groups
  - Parent-child interaction therapy
  - Strengths-oriented family therapy
  - Child behavior maintenance group

Child Anxiety Disorder Clinic
- Ages 18 and below
- OCD, GAD, social phobia, panic disorder, separation anxiety disorder
- Evidence-based treatment including:
  - Exposure-based cognitive behavioral therapy in group and individual formats
  - Medication management
  - Full parental involvement
  - 5-Day intensive OCD outpatient treatment

Adult Consultative Programs
- Dedicated multidisciplinary programs for cancer distress, functional neurologic spells, chronic subjective dizziness, functional GI disorders, obesity
- Comprehensive assessment and brief courses of psychiatric and psychological care for medically-ill patients
- Targeting psychological and behavioral factors in somatic symptoms

Neurocognitive Assessment and Treatment Program
- Largest psychological assessment laboratory in the US
- Largest faculty of board-certified psychologists in the US
- Healthy Action to Benefit Independence and Thinking (HABIT), a mild cognitive impairment/early-stage dementia treatment program
- Rehabilitative services for traumatic brain injury
- Multi-specialty Development Pediatrics program specializing in assessment of autism spectrum disorder
- Multi-disciplinary Traumatic Brain Injury program
- Pre-post surgical evaluations (DBS, proton beam)
- Multi-disciplinary Craniofacial Clinic program
Integrated Behavioral Health

An innovative health care delivery model that integrates Primary Care and the Department of Psychiatry and Psychology. Behavioral health specialists work alongside primary care, family medicine, and pediatric teams. The goal of this program is to provide cost-effective, accessible, evidence-based behavioral health care services. Services include:

- Diagnostic assessment
- Acute medication management
- Evidence-based psychotherapy for the range of mental health problems
- Adult and pediatric care coordination
- Connecting with social service resources need
- Assistance with referrals to the “right-step” level of behavioral health care within Mayo Clinic and the community
Integrated Care

Collaboration with other Mayo Clinic specialties

Mayo Clinic psychiatrists and psychologists become part of the care team for Mayo patients whose psychiatric disorders exist along side other diseases. Areas at Mayo Clinic with which the department works closely include:

- Transplant Center
- Consultation-Liaison Psychiatry Service
- Bariatric Surgery
- Behavioral Neurology
- Cancer Center
- Center for Sleep Medicine
- Children’s Center
- Endocrinology
- Employee and Community Health
- Executive Health Program
- Family Medicine
- Gastroenterology
- General Internal Medicine
- Neurology
- Neurosurgery
- Nicotine Dependence Center
- Physical Medicine and Rehabilitation
- Transgender and Intersex Specialty Care Clinic
- Wellness Center
- Women’s Health

“I left feeling ‘heard’ and look forward to implementing an action plan back home”

— Mayo Clinic Depression Center patient
Education

Training Programs

Patient care at Mayo Clinic is supported by advanced programs in medical education and research. More than 3,000 residents, fellows, and students are training today across Mayo Clinic’s three campuses.

Mayo Clinic School of Graduate Medical Education offers these psychiatry- and psychology-related training programs:

Residencies

- Adult Psychiatry Residency
- Child and Adolescent Psychiatry Residency

Fellowships

- Geriatric Psychiatry Fellowship
- Psychosomatic Medicine Fellowship
- Sleep Medicine Fellowship
- Addiction Psychiatry Fellowship
- Medical Psychology Fellowship, with specialty practice programs in:
  - Clinical Child Psychology
  - Clinical Health Psychology
  - Clinical Neuropsychology

Mayo School of Continuous Professional Development

The Department of Psychiatry and Psychology at Mayo Clinic provides the highest quality continuing medical education for clinicians to translate into care of their patients. Our educational offerings are built around master educators/clinicians providing relevant and evidence-based CME for attendees to use in their individual practices.

All of our programs are based on key principles. First, our education should be engaging, highly interactive, and relevant to your individual practice. Education provided should be case-based and draw on principles gained from clinical research and our practice. Our courses utilize a combination of intense case-based sessions along with brief and highly focused larger lectures. Each course is unique, but our intent and philosophy is to bring learners and master educators/clinicians together to improve patient care.

For more detailed information regarding each of the courses, please go to our Psych CME webpage or Facebook for more details.

http://www.mayo.edu/cme/psychiatry-and-psychology
Bipolarbiobank will enable studies of genetic risk, treatment response

To identify and confirm genetic risk factors for bipolar disorder and study pharmacogenomic predictors of treatment response, Mayo Clinic is working to populate the Bipolar Disorder Biobank with biological samples and clinical data from over 2,400 adults with bipolar I and II. Research enabled by the biobank may lead to early intervention for at-risk patients, as well as individualized treatment with fewer side effects.

Co-principal investigators of the Bipolar Disorder Biobank are Mark A. Frye, MD, chair of the Department of Psychiatry and Psychology at Mayo Clinic in Rochester, Minnesota; and Joanna M. Biernacka, PhD, a statistical geneticist in the Department of Health Sciences Research at Mayo Clinic in Rochester, Minnesota. Collaborators include Mayo Clinic’s campuses in Arizona and Florida; Mayo Clinic Health System locations; the University of Minnesota in Minneapolis, Minnesota; Lindner Center of Hope in Cincinnati, Ohio; and Universidad Autónoma de Nuevo Leon, Monterrey.

Novel Study to Explore Biological Biomarkers of Ketamine Response

Multiple trials have shown the rapid and robust antidepressant effects of IV ketamine for patients with treatment-resistant depression (TRD). Investigators at Mayo Clinic have reported a rapid reduction of depression and suicidal ideation with serial (up to 4 infusions) IV ketamine in patients with TRD. In a follow-up study, Mayo investigators reported patients with TRD who remitted during acute-phase ketamine treatment experiencing further depressive symptom improvement during continuation-phase treatment.

Given ketamine’s risk for abuse and possibility of non-response, biomarker development will assist clinicians in decision making about prescribing ketamine. In a related study, Mayo Clinic investigators will conduct novel comparative biomarker study which will employ state of the art brain imaging and metabolomics to better understand the neurobiology of ketamine-associated treatment remission and development of glutamatergic biological markers associated with response to facilitate future precision medicine initiatives in TRD.

Transcranial Magnetic Stimulation

Drs. Simon Kung and Paul Croarkin direct the clinical transcranial magnetic stimulation (TMS) service. Patients who have not responded to antidepressant medications and psychotherapy often benefit from TMS. Treatment with TMS is covered by some insurance plans. There are also opportunities for research participation in which new types of TMS are provided at no cost. For example, there is one ongoing study of synchronized TMS and TMS study for bipolar depression.

Mayo Clinic also has spearheaded some of the first international studies of TMS for adolescents with depression. Currently there is a large effectiveness study testing 4 different types of TMS for adolescents ages 12-18.
Psychiatrists contribute to care of Parkinson patients considering DBS

While patients with Parkinson’s disease already experience high rates of mood, sleep, and anxiety disorders, they’re at risk for additional adverse psychiatric effects when treated with deep brain stimulation (DBS).

At Mayo Clinic, psychiatrists are uniquely involved in helping determine whether a patient with Parkinson’s disease is a candidate for DBS. This includes:

- Identifying any psychiatric conditions that should be addressed before DBS
- Determining which patients may not be able to tolerate or adhere to DBS treatments or required follow-up educating and informing patients of potential psychiatric complications
- Mayo Clinic is also beginning to track patients’ Parkinson’s disease symptoms and moods to see if and how they are affected by DBS.

Innovative technology measures neurotransmitters in real-time

The DBS program at Mayo Clinic, led by Kendall H. Lee, MD, PhD, has developed the Wireless Instantaneous Neurotransmitter Concentration System (WINCS) to detect and measure levels of neurotransmitters released in the brain. WINCS is miniaturized, wireless, and computer-controlled.

The ability to measure brain chemicals may help researchers understand how DBS devices can modulate neuropsychiatric diseases, such as depression and alcoholism. Future applications of DBS may include treating eating disorders, pain, obsessive-compulsive disorders, and other psychiatric disorders.
Highlights (cont.)

Translational Neuroscience Laboratory

Our Translational Neuroscience Laboratory provides the space and expertise for members of the Department of Psychiatry & Psychology to conduct cutting-edge research in translational neuroscience, genomic psychiatry, biomarker discovery, and psychosomatic medicine using the latest cellular, molecular, and genetic technologies. Biomarker discovery has already had an immense impact upon the prevention and treatment of disease but remains in its relative infancy in psychiatry. Our research combines multiple scientific approaches to bring new insight into the causes of psychiatric illness and factors mediating individual treatment outcomes. Our ‘bench to bedside’ and ‘bedside to bench’ framework is helping us to better understand the interplay between genetic and environmental risk factors so that we can provide more targeted treatments for our patients.

Recent research projects have focused on defining the role of genetic and environmental factors in depression, bipolar disorder, and alcoholism. The physiological effect of stress inflammation and metabolic dysfunction in the development of mental illness and their impact on treatment response is an area of intense study, and integrates the laboratory with the broader clinic. The primary goal of our research is to individualize patient care, develop new interventions, and tailor currently available treatments in ways not possible previously. In addition to this, an important aspect of our work is the training and development of researchers and faculty in psychiatry and psychology who are interested in developing their skills in preclinical and bench-top research.

Ketamine Clinic

Ketamine is traditionally an anesthetic agent that has novel, rapid-acting antidepressant and antisuicidal properties. At Mayo Clinic, patients who have struggled with treatment-resistant depressive disorder may be eligible to receive sub-anesthetic dosed ketamine intravenously to treat depression. Patients undergo an acute phase where IV infusions are given twice weekly for up to 3 weeks. If patients achieve remission, they are eligible to receive 1 infusion per week for 4 weeks (continuation phase). If remission remains, there is an optimization and maintenance phase where infusion frequency is individualized to the patient’s needs.
Refer a Patient

The Department of Psychiatry and Psychology welcomes patient referrals to all its programs and for comprehensive outpatient psychiatric evaluations at Mayo Clinic in Rochester, Minnesota.

You may refer a patient in several ways:

Daytime
During business hours—8 am to 5 pm, Monday through Friday—contact the Psychiatry and Psychology Appointment Office at 507-266-5100.

Evenings and weekends
After business hours or for non-psychiatry-related referrals, contact the Referring Physician Office at 800-533-1564.

Emergencies
For emergency referrals, contact the Emergency Department at 507-255-2910.

Web address
http://www.mayoclinic.org/psychiatry-psychology/