



# Pharmacy Grand Rounds

200 First Street SW  
Rochester, Minnesota 55905  
<https://ce.mayo.edu/pharmacy-grandrounds-2025>

## From Sedation to Salvation: Ketamine for Pediatric Treatment Resistant Depression

**Session Date:** 08/12/2025

**Session Time:** 11:00 – 11:45 AM (CST)

### Target Audience

This continuing education (CE) session was planned to meet the needs of professional staff who deal with the selection and monitoring of medication(s) as part of their patient care duties, including pharmacists, RNs, APRNs, PAs, MDs.

### Activity Overview

Depression is associated with significant morbidity and can greatly impact the quality of life in children and adolescents. The 2022 American Academy of Child and Adolescent Psychiatry guidelines recommend cognitive behavioral therapy and selective serotonin reuptake inhibitors (SSRIs) as first-line treatments. However, a subset of patients do not respond to these therapies, a condition referred to as treatment-resistant depression (TRD), which presents a substantial challenge in pediatric mental health care. Ketamine, traditionally used as an anesthetic, has gained attention for its rapid antidepressant effects observed in adults and is being investigated as a potential treatment option for pediatric TRD. Although its use in children remains off-label, the supporting evidence base is growing. This presentation will review the pharmacology of ketamine, distinguish between its anesthetic and antidepressant mechanisms, and evaluate current literature regarding its efficacy, safety, and clinical considerations in pediatric TRD.

### Learning Objectives

At the conclusion of this knowledge-based CE session, participants should be able to:

1. Describe the prevalence of pediatric depression and define criteria for treatment-resistant depression.
2. Explain the pharmacology and key clinical considerations of ketamine use among pediatric patients.
3. Apply current literature to ketamine's role in treating pediatric TRD.

### Faculty Information

Kylie Juenger, PharmD  
PGY2 Pediatric Pharmacy Resident  
Mayo Clinic Hospital - Rochester, MN

Kylie received a Doctor of Pharmacy degree from the University of Iowa College of Pharmacy and is a current PGY2 pediatric pharmacy resident at Mayo Clinic Children's Hospital in Rochester. Her practice interests include pediatrics, critical care, and autoimmune disorders.



## Approved Provider Statement



JOINT ACCREDITATION™  
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, this activity is planned and implemented by Mayo Clinic College of Medicine and Science. Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

### Credit Statements

#### AMA

Mayo Clinic College of Medicine and Science designates this live activity for a maximum of 0.75 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

#### ACPE



**ACPE Universal Activity Number (UAN):** JA0000238-0000-25-035-L01-P

Mayo Clinic College of Medicine and Science designates this educational activity for a maximum of 0.75 ACPE Knowledge-based contact hours. Participants should claim only the credit commensurate with the extent of their participation in the activity

#### ANCC

Mayo Clinic College of Medicine and Science designates this activity for a maximum of 0.75 ANCC contact hours. Nurses should claim only the credit commensurate with the extent of their participation in the activity.

#### AAPA



Mayo Clinic College of Medicine and Science has been authorized by the American Academy of PAs (AAPA) to award AAPA Category 1 CME credit for activities planned in accordance with AAPA CME Criteria. This activity is designated for 0.75 AAPA Category 1 CME credits. PAs should only claim credit commensurate with the extent of their participation.

## Educational Format and CE Requirements

This CE session is available as a live presentation, including live webcast.

Participants must complete the following to record attendance and obtain CE credit:

1. Attend the entire session.
2. Text the session code to 507-200-3010 within 48 hours of the live presentation to record attendance.
  - a. This number is only used for receiving text messages related to tracking attendance
  - b. Employees are encouraged to create a contact in their mobile phone, as the same number is used to record attendance for every session
3. Complete the online evaluation for the respective session within 2 weeks of live presentation.

Pharmacist CE credit is electronically transferred to the National Association of Boards of Pharmacy CPE Monitor. To track CE, please go to [NABP CPE Monitor](#).

Non-pharmacist attendees can print out a record of attendance at [ce.mayo.edu](https://ce.mayo.edu) after completing the evaluation and claiming credit.

[Live Webcast](#) – Register from the Education SharePoint site

## Disclosure Summary

As a provider accredited by Joint Accreditation for Interprofessional Continuing Education, Mayo Clinic College of Medicine and Science must ensure balance, independence, objectivity and scientific rigor in its educational activities. All who are in a position to control the content are required to disclose all financial relationships with any ineligible company. Faculty will also identify any off-label and/or investigational use of pharmaceuticals or instruments discussed in their content for FDA compliance.

Listed below are individuals with control of the content of this program who have disclosed:

The faculty report the following relationships:

- Kylie Juenger, PharmD
  - Declares no financial relationship(s) pertinent to this session
  - Will discuss off-label use of ketamine for pediatric treatment-resistant depression.

Course Director and Planning Committee Members declare the following relevant financial relationship(s) pertinent to this session.

- No relevant financial relationship(s) with ineligible companies:
  - Jennifer Elmer, DNP, APRN, CCNS
  - Andrew Herber, PA-C
  - Sarah Jane Kotval, BSW, RSS Coordinator
  - Scott Nei, PharmD, BCPS, BCCCP, FCCM, FMSHP
  - Sara Thompson, PharmD, MEd, BCACP
- Relevant financial relationship(s) with ineligible companies:
  - Wayne Nicholson, MD, PharmD, BCPS - Intellectual Property - Anivive Lifesciences, Inc.

All relevant financial relationships have been mitigated.

For additional disclosure information regarding Mayo Clinic School of Continuous Professional Development accreditation review committee members visit [ce.mayo.edu](https://ce.mayo.edu), About Us, Disclosures - or - <https://ce.mayo.edu/content/disclosures>

## System and Technical Requirements

For participants viewing the webcast, sessions are delivered via Mayo Clinic intranet web browser and Adobe® PDF. For participants viewing outside the Mayo Clinic firewall, a VPN connection is required for remote access. Recommended web browser includes Google Chrome. This session is planned and coordinated by **the Department of Pharmacy, Mayo Clinic.**