

Acute Agitation

EVIDENCE REPOSITORIES

Evidence repositories are collections of best available resources and evidence (clinical guidelines, peer reviewed literature, systematic reviews, etc.), collated by our knowledge synthesis team and content advisors. This evidence repository is not intended to be an exhaustive list of resources for a topic, but rather a curated list of current, evidence-based resources, based on expert consensus of relevance and usability for a general emergency department setting. We search databases (Cochrane Library, PubMed, TRIP Database) and web search engines (Google, Google Scholar) to locate evidence. Additionally, hospital websites are browsed for guidance documents, such as clinical practice guidelines (CPG) for healthcare professionals.

Every effort is made to identify resources that are open access (i.e. publicly available, free of charge, not requiring a subscription).

More information about the creation of our evidence repositories can be found at <https://pubmed.ncbi.nlm.nih.gov/28537762/>

CONTENT TEAM

Thank you to the following content experts and Knowledge Synthesis team who led the development of this evidence repository.

Thomas Chun, MD

Brown University
Professor in Pediatrics and Emergency Medicine
Providence, Rhode Island

Selene Etches, MD

Assistant Professor, Department of Psychiatry
Dalhousie University
Halifax, Nova Scotia

Susan Duffy, MD

Brown University
Professor in Pediatrics and Emergency Medicine
Providence, Rhode Island

Marc Vasquez, MHA/MBA, PMP

EIIC Knowledge Broker Baylor College of Medicine

Acute Agitation

TREKK developed resources for healthcare providers and parents & families can be found [here](#).

Clinical Guidelines

1. Hilt R, Barclay R. [Primary care principles for child mental health](#). Partnership Access Line. 2023.
2. J. Lavelle M, M. M'Farrej M, J. Esposito M, et al. [Emergency department clinical pathway for evaluation/treatment of children with behavioral health concerns](#). Children's Hospital of Philadelphia. 2022.
3. Malas N. [Management of pediatric agitation and aggression: Lessons learned from the national consensus pediatric beta guidelines](#). The Western Journal of Emergency Medicine. 2019;20(2).
4. Feuer V, Prager LM. [Implementing clinical pathways for acute behavioral health issues in pediatric medical settings](#). Journal of the American Academy of Child & Adolescent Psychiatry. 2017;56(10, Supplement):S57-S8.
5. McCaskill ME, Durheim E. [Managing adolescent behavioural and mental health problems in the emergency department](#). J Paediatr Child Health. 2016;52(2):241-5.
6. Hilt RJ, Woodward TA. [Agitation treatment for pediatric emergency patients](#). J Am Acad Child Adolesc Psychiatry. 2008;47(2):132-8.
7. Allen MH, Currier GW, Carpenter D, et al. [The expert consensus guideline series. Treatment of behavioral emergencies 2005](#). J Psychiatr Pract. 2005;11 Suppl 1:5-108; quiz 10-2.

Overviews

1. Chun TH, Mace SE, Katz ER. [Executive summary: Evaluation and management of children and adolescents with acute mental health or behavioral problems. Part I: Common clinical challenges of patients with mental health and/or behavioral emergencies](#). Pediatrics. 2016;138(3).
2. Chun TH, Katz ER, Duffy SJ, et al. [Challenges of managing pediatric mental health crises in the emergency department](#). Child Adolesc Psychiatr Clin N Am. 2015;24(1):21-40.

Systematic Reviews

1. Rudolf F, Hollenbach K, Carstairs KL, et al. [A retrospective review of antipsychotic medications administered to psychiatric patients in a tertiary care pediatric emergency department](#). J Pediatr Pharmacol Ther. 2019;24(3):234-7.
2. Feuer V, Rucker J, Saggi BM, et al. [Best practices in managing child and adolescent behavioral health emergencies](#). Pediatr Emerg Med Pract. 2018;15(1):1-28
3. Arens AM, Shah K, Al-Abri S, et al. [Safety and effectiveness of physostigmine: A 10-year retrospective review](#). Clin Toxicol (Phila). 2018;56(2):101-7.
4. Sarkar S. [Psychiatric polypharmacy, etiology and potential consequences](#). Current Psychopharmacology. 2017.
5. Asogwa K, Okudo J, Idowu J. [The use and effectiveness of pro re nata psychotropic medications in children and adolescents: A systematic review](#). Indian J Psychiatry. 2017;59(3):264-74.
6. Marzullo LR. [Pharmacologic management of the agitated child](#). Pediatr Emerg Care. 2014;30(4):269-75; quiz 76-8.
7. Adimando AJ, Poncin YB, Baum CR. [Pharmacological management of the agitated pediatric patient](#). Pediatr Emerg Care. 2010;26(11):856-60; quiz 61-3.

Acute Agitation

8. Keith S. [Advances in psychotropic formulations](#). Prog Neuropsychopharmacol Biol Psychiatry. 2006;30(6):996-1008.
9. Gilligan J, Lee B. [The psychopharmacologic treatment of violent youth](#). Ann N Y Acad Sci. 2004;1036:356-81.
10. Yildiz A, Sachs GS, Turgay A. [Pharmacological management of agitation in emergency settings](#). Emerg Med J. 2003;20(4):339-46.
11. Bhana N, Foster RH, Olney R, et al. [Olanzapine: An updated review of its use in the management of schizophrenia](#). Drugs. 2001;61(1):111-61.

Key Studies

1. Olalekan K, Bevan A, Whitney A. [Switching to clonidine transdermal patches in four paediatric cases: Strategies benefits and challenges](#). Archives of Disease in Childhood. 2020;105(9):e4-e5.
2. Jackson CEA, Armstrong E. [An audit of anti-psychotic use on a general adult intensive care unit](#). Journal of the Intensive Care Society. 2020.
3. Cole JB, Klein LR, Strobel AM, et al. [The use, safety, and efficacy of olanzapine in a level I pediatric trauma center emergency department over a 10-year period](#). Pediatr Emerg Care. 2020;36(2):70-6.
4. Bregstein JS, Wagh AM, Tsze DS. [Intranasal lorazepam for treatment of severe agitation in a pediatric behavioral health patient in the emergency department](#). Ann Emerg Med. 2020;75(1):86-9.
5. Sanchez AR, Sterris J, Shoemaker EZ. [Pediatric patients with behavioral emergencies: Who's coming in and what happens while they're here?](#) The Western Journal of Emergency Medicine. 2019;20(2).
6. Peltzer-Jones J, Nordstrom K, Currier G, et al. [A research agenda for assessment and management of psychosis in emergency department patients](#). The Western Journal of Emergency Medicine. 2019;20(2).
7. Lebin JA, Akhavan AR, Hippe DS, et al. [Psychiatric outcomes of patients with severe agitation following administration of prehospital ketamine](#). Acad Emerg Med. 2019;26(8):889-96.
8. Buttera M, Clavenna A, Maselli E, et al. [Drug use in adolescents attending the emergency department for mental health problems](#). Archives of Disease in Childhood. 2019;104(6):e25-e.
9. Sarah K. Scharber, Jon B. Cole, Lauren R. Klein, et al. [Factors associated with intubation and capnographically proven apnea in patients treated with intramuscular ketamine for prehospital agitation](#). Academic Emergency Medicine. 2018;25.
10. San L, Estrada G, Oudovenko N, et al. [Placid study: A randomized trial comparing the efficacy and safety of inhaled loxapine versus intramuscular aripiprazole in acutely agitated patients with schizophrenia or bipolar disorder](#). Eur Neuropsychopharmacol. 2018;28(6):710-8.
11. Le L, Bostwick JR, Andreasen A, et al. [Neuroleptic prescribing and monitoring practices in pediatric inpatient medical and psychiatric settings](#). Hosp Pediatr. 2018;8(7):410-8.
12. Kendrick JG, Goldman RD, Carr RR. [Pharmacologic management of agitation and aggression in a pediatric emergency department - a retrospective cohort study](#). J Pediatr Pharmacol Ther. 2018;23(6):455-9.
13. Parsch CS, Boonstra A, Teubner D, et al. [Ketamine reduces the need for intubation in patients with acute severe mental illness and agitation requiring transport to definitive care: An observational study](#). Emerg Med Australas. 2017;29(3):291-6.
14. Hollis GJ, Keene TM, Ardlie RM, et al. [Prehospital ketamine use by paramedics in the Australian capital territory: A 12 month retrospective analysis](#). Emerg Med Australas. 2017;29(1):89-95.

Acute Agitation

15. Scaggs TR, Glass DM, Hutchcraft MG, et al. [Prehospital ketamine is a safe and effective treatment for excited delirium in a community hospital based EMS system.](#) Prehosp Disaster Med. 2016;31(5):563-9.
16. Samuels A, Rollhaus E, Lerea Y. [Factors associated with agitation in a pediatric emergency room.](#) Journal of the American Academy of Child & Adolescent Psychiatry. 2016;55(10, Supplement):S177.
17. Safavi P, Hasanpour-Dehkordi A, AmirAhmadi M. [Comparison of risperidone and aripiprazole in the treatment of preschool children with disruptive behavior disorder and attention deficit-hyperactivity disorder: A randomized clinical trial.](#) J Adv Pharm Technol Res. 2016;7(2):43-7.
18. Malas N, Eter MK, Figueroa N. [Piloting a comprehensive, family-centered resource for the management of pediatric agitation and aggression in pediatric emergency and inpatient psychiatry.](#) Journal of the American Academy of Child & Adolescent Psychiatry. 2016;55(10):S206.
19. Loebel A, Brams M, Goldman RS, et al. [Lurasidone for the treatment of irritability associated with autistic disorder.](#) J Autism Dev Disord. 2016;46(4):1153-63.
20. Cole JB, Moore JC, Nystrom PC, et al. [A prospective study of ketamine versus haloperidol for severe prehospital agitation.](#) Clin Toxicol (Phila). 2016;54(7):556-62.
21. Hopper AB, Vilke GM, Castillo EM, et al. [Ketamine use for acute agitation in the emergency department.](#) J Emerg Med. 2015;48(6):712-9.
22. Pratts M, Citrome L, Grant W, et al. [A single-dose, randomized, double-blind, placebo-controlled trial of sublingual asenapine for acute agitation.](#) Acta Psychiatr Scand. 2014;130(1):61-8.
23. Basgul SS. [Aripiprazole use in children and adolescents: A public hospital child psychiatry outpatient department's experience.](#) Klinik Psikofarmakoloji Bülteni-Bulletin of Clinical Psychopharmacology. 2014;24(1):31-8.
24. Tsujino N, Nemoto T, Morita K, et al. [Long-term efficacy and tolerability of perospirone for young help-seeking people at clinical high risk: A preliminary open trial.](#) Clin Psychopharmacol Neurosci. 2013;11(3):132-6.
25. Kopec KT, Lavelle J, Osterhoudt KC, et al. [A novel agent for agitated delirium: A case series of ketamine utilization in the emergency department \(ED\) Clinical Toxicology.](#) 2013;51(8).
26. Kim EY, Chang SM, Shim JC, et al. [Long-term effectiveness of flexibly dosed paliperidone extended-release: Comparison among patients with schizophrenia switching from risperidone and other antipsychotic agents.](#) Curr Med Res Opin. 2013;29(10):1231-40.
27. Jayanthi CR, Divyashree M, Sushma M. [Adverse drug reactions in psychiatry outpatients: Clinical spectrum, causality and avoidability.](#) Journal of Chemical and Pharmaceutical Research. 2013;5(8):128-35.
28. Chan EW, Taylor DM, Knott JC, et al. [Intravenous droperidol or olanzapine as an adjunct to midazolam for the acutely agitated patient: A multicenter, randomized, double-blind, placebo-controlled clinical trial.](#) Ann Emerg Med. 2013;61(1):72-81.
29. Watt KM, Walgos J, Cheifetz IM, et al. [Dexmedetomidine for transport of a spontaneously breathing combative child.](#) Pediatrics. 2012;130(3):e690-4.
30. Le Cong M, Gynther B, Hunter E, et al. [Ketamine sedation for patients with acute agitation and psychiatric illness requiring aeromedical retrieval.](#) Emerg Med J. 2012;29(4):335-7.
31. Hibbs NT, Kirby SE, Seitz CS. [Comparison of the safety and efficacy of ketamine versus olanzapine for sedation of violent agitated patients in a community emergency department.](#) Annals of Emergency

Acute Agitation

- Medicine. 2012;60(4, Supplement):S147.
32. Bildik T, Ozbaran NB, Kose S, et al. [Effectiveness and tolerability of aripiprazole in a real-world outpatient population of youth](#). Klinik Psikofarmakoloji Bülteni-Bulletin of Clinical Psychopharmacology. 2012;22(3):225-34.
 33. Singh J, Robb A, Vijapurkar U, et al. [A randomized, double-blind study of paliperidone extended-release in treatment of acute schizophrenia in adolescents](#). Biol Psychiatry. 2011;70(12):1179-87.
 34. Marcus RN, Owen R, Manos G, et al. [Safety and tolerability of aripiprazole for irritability in pediatric patients with autistic disorder: A 52-week, open-label, multicenter study](#). J Clin Psychiatry. 2011;72(9):1270-6.
 35. Lin CH, Lin SH, Jang FL. [Adjunctive low-dose aripiprazole with standard-dose sertraline in treating fresh major depressive disorder: A randomized, double-blind, controlled study](#). J Clin Psychopharmacol. 2011;31(5):563-8.
 36. Allen MH, Debanné M, Lazignac C, et al. [Effect of nicotine replacement therapy on agitation in smokers with schizophrenia: A double-blind, randomized, placebo-controlled study](#). Am J Psychiatry. 2011;168(4):395-9.
 37. Szwak K, Sacchetti A. [Droperidol use in pediatric emergency department patients](#). Pediatr Emerg Care. 2010;26(4):248-50.
 38. Pavuluri MN, Henry DB, Findling RL, et al. [Double-blind randomized trial of risperidone versus divalproex in pediatric bipolar disorder](#). Bipolar Disord. 2010;12(6):593-605.
 39. Lim HK, Kim JJ, Pae CU, et al. [Comparison of risperidone orodispersible tablet and intramuscular haloperidol in the treatment of acute psychotic agitation: A randomized open, prospective study](#). Neuropsychobiology. 2010;62(2):81-6.
 40. Kronenberg S, Apter A, Carmel M, et al. [Pharmacogenetics of acute treatment of depression and anxiety in children and adolescents](#). European Neuropsychopharmacology. 2009;19:S693.
 41. Jangro WC, Preval H, Southard R, et al. [Conventional intramuscular sedatives versus ziprasidone for severe agitation in adolescents: Case-control study](#). Child Adolesc Psychiatry Ment Health. 2009;3(1):9.
 42. Desai G, Babu GN, Rajkumar RP, et al. [More questions than answers! Clinical dilemmas in psychopharmacology in pregnancy and lactation](#). Indian J Psychiatry. 2009;51(1):26-33.
 43. Bastiaens L. [A non-randomized, open study with aripiprazole and ziprasidone for the treatment of aggressive behavior in youth in a community clinic](#). Community Ment Health J. 2009;45(1):73-7.
 44. Wilhelm S, Schacht A, Wagner T. [Use of antipsychotics and benzodiazepines in patients with psychiatric emergencies: Results of an observational trial](#). BMC Psychiatry. 2008;8:61.
 45. Villari V, Rocca P, Fonzo V, et al. [Oral risperidone, olanzapine and quetiapine versus haloperidol in psychotic agitation](#). Prog Neuropsychopharmacol Biol Psychiatry. 2008;32(2):405-13.
 46. Akhondzadeh S, Tajdar H, Mohammadi MR, et al. [A double-blind placebo controlled trial of piracetam added to risperidone in patients with autistic disorder](#). Child Psychiatry Hum Dev. 2008;39(3):237-45.
 47. Taylor D, Atkinson J, Fischetti C, et al. [A prospective 6-month analysis of the naturalistic use of aripiprazole - factors predicting favourable outcome](#). Acta Psychiatr Scand. 2007;116(6):461-6.
 48. Svenson JE, Abernathy MK. [Ketamine for prehospital use: New look at an old drug](#). Am J Emerg Med. 2007;25(8):977-80.

Acute Agitation

49. Vesper FH, Vesper BD, McMullan JT, et al. [Risperidone versus haloperidol, in combination with lorazepam, in the treatment of acute agitation and psychosis: A pilot, randomized, double-blind, placebo-controlled trial.](#) J Psychiatr Pract. 2006;12(2):103-8.
50. Saxena K, Chang K, Steiner H. [Treatment of aggression with risperidone in children and adolescents with bipolar disorder: A case series.](#) Bipolar Disord. 2006;8(4):405-10.
51. Lewin MR, Montauk L, Shalit M, et al. [An unusual case of subterfuge in the emergency department: Covert administration of antipsychotic and anxiolytic medications to control an agitated patient.](#) Ann Emerg Med. 2006;47(1):75-8.
52. Knott JC, Taylor DM, Castle DJ. [Randomized clinical trial comparing intravenous midazolam and droperidol for sedation of the acutely agitated patient in the emergency department.](#) Ann Emerg Med. 2006;47(1):61-7.
53. Gualtieri CT, Johnson LG. [Antidepressant side effects in children and adolescents.](#) J Child Adolesc Psychopharmacol. 2006;16(1-2):147-57.
54. Currier GW, Trenton AJ, Walsh PG, et al. [A pilot, open-label safety study of quetiapine for treatment of moderate psychotic agitation in the emergency setting.](#) J Psychiatr Pract. 2006;12(4):223-8.
55. Preval H, Klotz SG, Southard R, et al. [Rapid-acting IM ziprasidone in a psychiatric emergency service: A naturalistic study.](#) Gen Hosp Psychiatry. 2005;27(2):140-4.
56. Martel M, Sterzinger A, Miner J, et al. [Management of acute undifferentiated agitation in the emergency department: A randomized double-blind trial of droperidol, ziprasidone, and midazolam.](#) Acad Emerg Med. 2005;12(12):1167-72.
57. Wagner KD, Berard R, Stein MB, et al. [A multicenter, randomized, double-blind, placebo-controlled trial of paroxetine in children and adolescents with social anxiety disorder.](#) Arch Gen Psychiatry. 2004;61(11):1153-62.
58. March J, Silva S, Petrycki S, et al. [Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for adolescents with depression study \(TADS\) randomized controlled trial.](#) Jama. 2004;292(7):807-20.
59. Armstrong J, Little M, Murray L. [Emergency department presentations of naltrexone-accelerated detoxification.](#) Acad Emerg Med. 2003;10(8):860-6.
60. McGlone R, Fleet T, Durham S, et al. [A comparison of intramuscular ketamine with high dose intramuscular midazolam with and without intranasal flumazenil in children before suturing.](#) Emerg Med J. 2001;18(1):34-8.
61. Hick JL, Mahoney BD, Lappe M. [Prehospital sedation with intramuscular droperidol: A one-year pilot.](#) Prehosp Emerg Care. 2001;5(4):391-4.
62. Hameer O, Collin K, Ensom MH, et al. [Evaluation of droperidol in the acutely agitated child or adolescent.](#) Can J Psychiatry. 2001;46(9):864-5.