medications for treating depression take weeks to months to achieve their full effects and may not be efficacious for all subjects at any safe dose. For example, most antidepressants require an average of 6 weeks to begin to have an effect on depressive symptoms. Some patients do not respond to antidepressant medications at all, and for others, only some types seem to work to ameliorate symptoms. In the meantime, individuals continue to suffer from depression, have a risk of self-harm, and experience a negative impact in their personal and professional lives. *See, e.g.,* Burcusa and Iacono, Clin. Psychol. Rev. Vol. 27, No. 8, pp. 959-985 (2007). Providing rapid-onset and sustained antidepressant effects would have a substantial impact on public health.

SUMMARY

The details of one or more examples are set forth in the description below. Other features, objects, and advantages of the disclosure will be apparent from the description and from the claims.

Some examples provide a method for treating suicidality in a subject in need thereof, comprising intranasally administering a therapeutically effective amount of racemic ketamine, or a pharmaceutically acceptable salt thereof, to the subject.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidality in a subject in need thereof.

Some examples provide a method for treating suicidal ideation in a subject in need thereof, comprising intranasally administering a therapeutically effective amount of racemic ketamine, or a pharmaceutically acceptable salt thereof, to the subject.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidal ideation in a subject in need thereof.

Some examples provide a method for treating major depressive disorder in a subject in need thereof, comprising intranasally administering a therapeutically effective amount of racemic ketamine, or a pharmaceutically acceptable salt thereof, to the subject.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament treating major depressive disorder in a subject in need thereof.

Some examples provide a method for reducing one or more side effects of ketamine in a subject in need thereof, the method comprising intranasally administering a therapeutically effective amount of racemic ketamine, or a pharmaceutically acceptable salt thereof, to the subject.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for reducing one or more side effects of ketamine in a subject in need thereof, wherein the racemic ketamine is to be administered intranasally.

In some examples, the subject has been previously diagnosed with and/or is currently suffering from, post-traumatic stress disorder. In some examples, the subject

has been previously diagnosed with and/or is currently suffering from, major depressive disorder.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidality in a subject in need thereof, wherein the use comprises: determining if the subject has one or more of: (i) a MADRS Total Score of at least 20 units; (ii) a MADRS Item 10 Score of 4, 5, or 6 units; (iii) a CGIS-SI/B score of 4 or 5 units; (iv) a S-STS CMCM score of at least 15 units; (v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and (vi) a C-SSRS score of at least 2; wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and wherein intranasal administration of the racemic ketamine exhibits one or more of: an AUC0-t of norketamine that is at least 1.5 times higher than the AUC0-t of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; an AUC0-inf of norketamine that is at least 1.5 times higher than the AUC0-inf of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and a Cmax of norketamine that is at least 2 times higher than the Cmax of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidal ideation in a subject in need thereof, wherein the use comprises: determining if the subject has one or more of: (i) a MADRS Total Score of at least 20 units; (ii) a MADRS Item 10 Score of 4, 5, or 6 units; (iii) a CGIS-SI/B score of 4 or 5 units; (iv) a S-STS CMCM score of at least 15 units; (v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and (vi) a C-SSRS score of at least 2; wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and wherein intranasal administration of the racemic ketamine exhibits one or more of: an AUC0-t of norketamine that is at least 1.5 times higher than the AUC0-t of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; an AUC0-inf of norketamine that is at least 1.5 times higher than the AUC0-inf of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and a Cmax of norketamine that is at least 2 times higher than the Cmax of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating major depressive disorder in a subject in need thereof, wherein the use comprises: determining if the subject has one or more of: (i) a MADRS Total Score of at least 20 units; (ii) a MADRS Item 10 Score of 4, 5, or 6 units; (iii) a CGIS-SI/B score of 4 or 5 units; (iv) a S-STS CMCM score of at least 15 units; (v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and (vi) a C-SSRS score of at least 2; wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and wherein intranasal administration of the racemic ketamine exhibits one or more of: an AUC0-t of norketamine that is at least 1.5 times higher than the

AUC0-t of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; an AUC0-inf of norketamine that is at least 1.5 times higher than the AUC0-inf of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and a Cmax of norketamine that is at least 2 times higher than the Cmax of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidality in a subject in need thereof, wherein the use comprises: determining if the subject has one or more of: (i) a MADRS Total Score of at least 20 units; (ii) a MADRS Item 10 Score of 4, 5, or 6 units; (iii) a CGIS-SI/B score of 4 or 5 units; (iv) a S-STS CMCM score of at least 15 units; (v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and (vi) a C-SSRS score of at least 2; wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and wherein intranasal administration of the racemic ketamine exhibits one or more of: an AUC0-t of hydroxynorketamine that is at least 1.5 times higher than the AUC0-t of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; an AUC0-inf of hydroxynorketamine that is at least 1.2 times higher than the AUC0-inf of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and a Cmax of hydroxynorketamine that is at least 2 times higher than the Cmax of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidal ideation in a subject in need thereof, wherein the use comprises: determining if the subject has one or more of: (i) a MADRS Total Score of at least 20 units; (ii) a MADRS Item 10 Score of 4, 5, or 6 units; (iii) a CGIS-SI/B score of 4 or 5 units; (iv) a S-STS CMCM score of at least 15 units; (v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and (vi) a C-SSRS score of at least 2; wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and wherein intranasal administration of the racemic ketamine exhibits one or more of: an AUC0-t of hydroxynorketamine that is at least 1.5 times higher than the AUC0-t of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; an AUC0-inf of hydroxynorketamine that is at least 1.2 times higher than the AUC0-inf of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and a Cmax of hydroxynorketamine that is at least 2 times higher than the Cmax of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

In one aspect, the present disclosure refers to use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating major depressive disorder in a subject in need thereof, wherein the use comprises: determining if the subject has one or more of: (i) a MADRS Total Score of at least 20 units; (ii) a MADRS Item 10 Score of 4, 5, or 6 units; (iii) a CGIS-SI/B score of 4 or 5 units; (iv) a S-STS CMCM score of at least 15 units; (v) a S-STS CMCM Risk of Suicide at Within

the Next 7 Days score of at least 5 units; and (vi) a C-SSRS score of at least 2; wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and wherein intranasal administration of the racemic ketamine exhibits one or more of: an AUC0-t of hydroxynorketamine that is at least 1.5 times higher than the AUC0-t of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; an AUC0-inf of hydroxynorketamine that is at least 1.2 times higher than the AUC0-inf of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and a Cmax of hydroxynorketamine that is at least 2 times higher than the Cmax of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

DESCRIPTION OF THE FIGURES

Abbreviations

N: Number of observations; SD: Standard Deviation; Min: Minimum; Max: Maximum; IN: Intranasal.

FIGS. 1A-1C are tables describing pharmacokinetic parameters for ketamine on Day 1 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 1A**), 75 mg racemic ketamine (**FIG. 1B**), or 90 mg racemic ketamine (**FIG. 1C**).

FIGS. 2A-2C are tables describing pharmacokinetic parameters for ketamine on Day 4 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 2A**), 75 mg racemic ketamine (**FIG. 2B**), or 90 mg racemic ketamine (**FIG. 2C**).

FIGS. 3A-3C are tables describing pharmacokinetic parameters for ketamine on Day 8 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 3A**), 75 mg racemic ketamine (**FIG. 3B**), or 90 mg racemic ketamine (**FIG. 3C**).

FIGS. 4A-4C are tables describing pharmacokinetic parameters for norketamine on Day 1 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 4A**), 75 mg racemic ketamine (**FIG. 4B**), or 90 mg racemic ketamine (**FIG. 4C**).

FIGS. 5A-5C are tables describing pharmacokinetic parameters for norketamine on Day 4 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 5A**), 75 mg racemic ketamine (**FIG. 5B**), or 90 mg racemic ketamine (**FIG. 5C**).

FIGS. 6A-6C are tables describing pharmacokinetic parameters for norketamine on Day 8 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 6A**), 75 mg racemic ketamine (**FIG. 6B**), or 90 mg racemic ketamine (**FIG. 6C**).

FIGS. 7A-7C are tables describing pharmacokinetic parameters for hydroxynorketamine on Day 1 in Part A of the study described in Example 1 for 30 mg racemic ketamine (**FIG. 7A**), 75 mg racemic ketamine (**FIG. 7B**), or 90 mg racemic ketamine (**FIG. 7C**).

WHAT IS CLAIMED IS:

1. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidality in a subject in need thereof.

2. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidal ideation in a subject in need thereof.

3. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament treating major depressive disorder in a subject in need thereof.

4. The use of any one of claims 1-3, wherein one or more additional therapies consisting of typical antipsychotics, atypical antipsychotics, antidepressants, electroconvulsive therapy, transcranial magnetic stimulation, benzodiazepines, mood stabilizers, and pramipexole is to be further administered.

5. The use of any one of claims 1-4, wherein the subject has previously been administered one or more additional therapies consisting of typical antipsychotics, atypical antipsychotics, antidepressants, electroconvulsive therapy, transcranial magnetic stimulation, benzodiazepines, mood stabilizers, and pramipexole; wherein the subject was not responsive to the previous one or more therapies.

6. The use of claim 4 or 5, wherein the typical antipsychotic is chlorpromazine, chlorprothixene, levomepromazine, mesoridazine, periciazine, promazine, loxapine, molindone, perphenazine, thiothixene, droperidol, flupentixol, fluphenazine, haloperidol, pimozide, prochlorperazine, thioproperazine, trifluoperazine, or zuclopenthixol.

7. The use of claim 5 or 6, wherein the atypical antipsychotic is aripiprazole, risperidone, olanzapine, quetiapine, asenapine, paliperidone, ziprasidone, or lurasidone.

8. The use of claim 4 or 5, wherein the antidepressant consists of atypical antidepressants, selective serotonin reuptake inhibitors, selective serotonin and norepinephrine reuptake inhibitors, monoamine oxidase inhibitors, and selective norepinephrine reuptake inhibitors.

9. The use of claim 8, wherein the atypical antidepressant is mirtazapine, mianserin, bupropion, trazodone, nefazodone, tianeptine, opipramol, agomelatine, vilazodone, or vortioxetine.

10. The use of claim 8, wherein the selective serotonin reuptake inhibitor is citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, or sertraline.

11. The use of claim 8, wherein the selective serotonin and norepinephrine reuptake inhibitor is atomoxetine, desvenlafaxine, duloxetine, levomilnacipran, milnacipran, sibutramine, tramadol, or venlafaxine.

12. The use of claim 8, wherein the monoamine oxidase inhibitor is moclobemide, rasagiline, selegiline, or safinamide.

13. The use of claim 8, wherein the selective norepinephrine reuptake inhibitor is reboxetine.

14. The use of claim 4 or 5, wherein the benzodiazepine is alprazolam, bromazepam, chlordiazepoxide, clonazepam, clorazepate, diazepam, flurazepam, lorazepam, oxazepam, temazepam, or triazolam.

15. The use of claim 4 or 5, wherein the mood stabilizer is lithium, valproic acid, lamotrigine, or carbamazepine.

16. The use of claim 4 or 5, wherein the one or more therapies are electroconvulsive therapy or transcranial magnetic stimulation.

17. The use of any one of claims 4-16, wherein the use further comprises decreasing the duration of hospitalization of the subject relative to administration of an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

18. The use of any one of claims 4-17, wherein the suicidality of the subject resolves faster relative to administration of an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

19. The use of any one of claims 4-18, wherein the recurrence of suicidality in the subject decreases relative to administration of an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

20. The use of any one of claims 4-16, wherein the depression of the subject resolves faster relative to administration of an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

21. The use of any one of claims 4-20, wherein the dose of the one or more therapies to be administered in combination with the intranasal racemic ketamine, or a pharmaceutically acceptable salt thereof, is reduced relative to the dose of the one or more therapies for administration to the subject prior to treatment with the intranasal racemic ketamine, or a pharmaceutically acceptable salt thereof.

22. The use of any one of claims 17-21, wherein the one or more therapies is a selective serotonin reuptake inhibitor, a selective serotonin and norepinephrine reuptake inhibitor, or a selective norepinephrine reuptake inhibitor.

23. The use of any one of claims 17-22, wherein the one or more therapies is sertraline.

24. The use of any one of claims 17-22, wherein the one or more additional therapies is venlafaxine.

25. The use of any one of claims 4-24, wherein the subject does not experience a clinically significant weight gain relative to the administration of the one or more additional therapies in the absence of intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

26. The use of any one of claims 1-25, wherein the magnitude of one or more side effects of the intranasal racemic ketamine, or a pharmaceutically acceptable salt thereof, are reduced relative to an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

27. The use of any one of claims 1-26, wherein the subject exhibits reduction in one or more side effects as compared to an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

28. The use of any one of claims 1-27, wherein one or more side effects of the one or more additional therapies are reduced relative to an equivalent dose of the one or more additional therapies in the absence of intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

29. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for reducing one or more side effects of ketamine in a subject in need thereof, wherein the racemic ketamine is to be administered intranasally.

30. The use of claim 29, wherein the one or more side effects are reduced relative to the one or more side effects observed after intranasal administration of an equivalent dose of (S)-ketamine, or a pharmaceutically acceptable salt thereof.

31. The use of claim 29, wherein the one or more side effects are reduced relative to the one or more side effects observed after administration of an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof

32. The use of any one of claims 29-31 wherein the one or more side effects comprise cognitive impairment, motor impairment, vertigo, nausea, vomiting, sweating, increased blood pressure, ulcerative cystitis, or interstitial cystitis.

33. The use of claim 32, wherein the cognitive impairment comprises one or more of psychotomimetic effects, dizziness, dysgeusia, sedation, dissociation, euphoria, changes in hearing, changes in vision, and hallucinations.

34. The use of claim 33, wherein the cognitive impairment comprises sedation.

35. The use of claim 33 or 34, wherein the cognitive impairment is sedation.

36. The use of any one of claims 32-35, wherein the motor impairment comprises tremors, issues with balance, or dystonic movements.

37. The use of claims 1, 2, 4-19, or 21-36, wherein the Columbia-Suicide Severity Rating Scale (CSSRS) score is greater than 3 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

38. The use of claims 1, 2, 4-19, or 21-37, wherein the CSSRS score is 6 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

39. The use of claims 1, 2, 4-19, or 21-37, wherein the CSSRS score is 7 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

40. The use of claims 1, 2, 4-19, or 21-39, wherein the CSSRS score is to be determined about 1 hour to about 24 hours prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

41. The use of claims 1, 2, 4-19, or 21-40, wherein the CSSRS decreases by 1 to 7 units after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

42. The use of claims 1, 2, 4-19, or 21-41, wherein the CSSRS decreases by 1 to 5 units after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

43. The use of claim 41 or 42, wherein a first CSSRS score is to be determined about 1 hour to about 12 hours prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof; and a second CSSRS score is to be determined about 1 hour to about 12 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

44. The use of claim 43, wherein the first CSSRS score from the subject is to be determined about 4 hours to about 8 hours prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

45. The use of any claim 43 or 44, wherein the second CSSRS score from the subject is to be determined about 4 hours to about 8 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

46. The use of any one of claims 1-45, wherein the Modified Observer's Assessment of Alertness and Sedation (MOAA/S) score of the subject is 4 or 5, prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

47. The use of any one of claims 1-46, wherein the MOAA/S score of the subject is 5, prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

48. The use of any one of claims 1-47, wherein the MOAA/S score of the subject is to be determined about 1 hour to about 24 hours prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

49. The use of any one of claims 1-48, wherein the MOAA/S score of the subject is 5, about 10 minutes to about 2 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

50. The use of claim 49, wherein the MOAA/S score of the subject is 1 to 4 units higher about 10 minutes to about 2 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, than a subject administered an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

51. The use of claim 49, wherein the MOAA/S score of the subject is 1 to 4 units higher after about 10 minutes to about 2 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, than a subject administered an equivalent dose of (S)-ketamine, or a pharmaceutically acceptable salt thereof.

52. The use of claim 50, wherein the rate of increase in the MOAA/S score is greater than the rate of increase in the MOAA/S score in a subject administered an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

53. The use of claim 51, wherein the rate of increase in the MOAA/S score is greater than the rate of increase in the MOAA/S score in a subject administered an equivalent dose of (S)-ketamine, or a pharmaceutically acceptable salt thereof.

54. The use of claim 49, wherein the MOAA/S score of the subject is 2 to 4 units higher about 10 minutes to about 2 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, than a subject administered an equivalent dose of (S)-ketamine, or a pharmaceutically acceptable salt thereof, and 2 to 4 units higher about 10 minutes to about 2 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, than a subject administered an equivalent dose of intravenous racemic ketamine, or a pharmaceutically acceptable salt thereof.

55. The use of any one of claims 1-54, wherein the Bowdle Visual Analog Scale score is about 0 to about 50, about 45 minutes to about 24 hours prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

56. The use of any one of claims 1-55, wherein the Bowdle Visual Analog Scale score is about 0 to about 50, about 45 minutes to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

57. The use of any one of claims 1-56, wherein the Bowdle Visual Analog Scale score is reduced by about 10 to about 1300, about 45 minutes to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

58. The use of claim 56 or 57, wherein the Bowdle Visual Analog Scale score is to be determined about 1 hour to about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

59. The use of any one of claims 1-58, wherein the Clinician Administered Dissociative States Scale score is about 0 to about 10, about 45 minutes to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

60. The use of claim 59, wherein the Clinician Administered Dissociative States Scale score is reduced by about 1 to about 92, about 45 minutes to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

61. The use of claim 60, wherein the Clinician Administered Dissociative States Scale score is to be determined about 1 hour to about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

62. The use of any one of claims 1-51, wherein the Profile of Mood States score of the subject is substantially the same from about 1 hour to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

63. The use of any one of claims 1-62, wherein the Profile of Mood States score of the subject is substantially the same about 1 hour to about 12 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

64. The use of any one of claims 1-63, wherein the Profile of Mood States score of the subject is substantially the same from about 1 hour to about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

65. The use of any one of claims 1-54, wherein the Choice Reaction Time Test score of the subject is substantially the same from about 1 hour to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

66. The use of any one of claims 1-54, wherein the Choice Reaction Time Test score of the subject is substantially the same from about 1 hour to about 12 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

67. The use of any one of claims 1-66, wherein the Choice Reaction Time Test score of the subject is substantially the same from about 1 hour to about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

68. The use of any one of claims 1-67, wherein the Sternberg Short-Term Memory score of the subject is substantially the same from about 1 hour to about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

69. The use of any one of claims 1-68, wherein the Sternberg Short-Term Memory score of the subject is substantially the same from about 1 hour to about 12 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

70. The use of claim any one of claims 1-69, wherein the Sternberg Short-Term Memory score of the subject is substantially the same from about 1 hour to about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof, as prior to the administration.

71. The use of any one of claims 1-70, wherein the subject has a score of 1 or 0 on the Subject-Rated Assessment of Intranasal Irritation after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

72. The use of any one of claims 1-49 or 58-71, wherein no clinically meaningful sedation is observed in the subject within about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

73. The use of claim 72, wherein no clinically meaningful sedation is observed in the subject at about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

74. The use of claim 72, wherein no clinically meaningful sedation is observed in the subject at about 1 hour after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

75. The use of any one of claims 1-49 or 58-74, wherein no clinically meaningful dissociation is observed in the subject within about 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

76. The use of claim 75, wherein no clinically meaningful dissociation is observed in the subject at about 4 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

77. The use of claim 75, wherein no clinically meaningful dissociation is observed in the subject at about 1 hour after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

78. The use of any one of claims 1-77, wherein the subject has been previously diagnosed with one or more of: suicidality, suicidal ideation, major depressive disorder, treatment-resistant depression, and post-traumatic stress disorder.

79. The use of any one of claims 1-78, wherein the subject is currently suffering from one or more of: suicidality, suicidal ideation, major depressive disorder, treatment-resistant depression, and post-traumatic stress disorder.

80. The use of claim 77 or 78, wherein the treatment-resistant depression is Stage I to Stage IV.

81. The use of claim 77 or 78, wherein the treatment resistant depression is Stage V.

82. The use of claim 77 or 78, wherein the Massachusetts General Hospital Staging Method to Classify Treatment Resistant Depression score of the subject is from 2 and 10, prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

83. The use of claim 77 or 78, wherein the Antidepressant Treatment History Form score of the subject is 1 to 4, prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

84. The use of claim 77 or 78, wherein the subject exhibits one or more of the following characteristics: unwanted upsetting memories, nightmares, flashbacks, emotional distress after exposure to traumatic reminders, or physical reactivity after exposure to traumatic reminders; and one or more of trauma-related thoughts or feelings and trauma-related external reminders, prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

85. The use of claim 84, wherein the subject exhibits two or more of the following characteristics: inability to recall key features of a traumatic event, overly negative thoughts and assumptions about oneself or the world, exaggerated blame of self or others for causing a traumatic event, negative affect, decreased interest in activities, feeling isolated, and difficulty experiencing positive affect.

86. The use of claim 84 or 85, wherein the subject exhibits one or more of the following characteristics: irritability or aggression, risky or destructive behavior, hypervigilance, heightened startle reaction, difficulty concentrating, and difficulty sleeping.

87. The use of any one of claims 84-86, wherein the characteristics are present for more than about 1 month, create distress and/or functional impairment in social or occupational situations, and are not due to medication or substance abuse.

88. The use of any one of claims 1-87, wherein about 30 mg to about 90 mg of racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered to the subject.

89. The use of any one of claims 1-88, wherein about 30 mg to about 60 mg of racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered to the subject.

90. The use of any one of claims 1-89, wherein about 60 mg to about 90 mg of racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered to the subject.

91. The use of any one of claims 1-90, wherein about 30 mg, about 60 mg, about 75 mg, or about 90 mg of racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered to the subject, preferably about 60 mg per dose.

92. The use of any one of claims 1-91, wherein the t½ for ketamine is about 2 hours to about 9 hours following intranasal administration of racemic ketamine.

93. The use of any one of claims 1-92, wherein the t½ for ketamine is about 4 hours to about 7 hours following intranasal administration of racemic ketamine.

94. The use of any one of claims 1-93, wherein the t½ for 6-hydroxynorketamine is about 5.5 hours to about 21.5 hours following intranasal administration of racemic ketamine.

95. The use of any one of claims 1-94, wherein the t½ for 6-hydroxynorketamine is about 10 hours to about 12 hours following intranasal administration of racemic ketamine.

96. The use of any one of claims 1-95, wherein the t½ for norketamine is about 4.5 hours to about 12.5 hours following intranasal administration of racemic ketamine.

97. The use of any one of claims 1-96, wherein the t½ for norketamine is about 7 hours to about 8 hours following intranasal administration of racemic ketamine.

98. The use of any one of claims 1-97, wherein racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered from about once per day to about once per month.

99. The use of any one of claims 1-98, wherein racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered from about once per day to about once every two weeks.

100. The use of any one of claims 1-99, wherein racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered from about once per day to about once per week.

101. The use of any one of claims 1-100, wherein racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered from about once per week to about twice per week.

102. The use of any one of claims 1-101, wherein racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered twice per week.

103. The use of any one of claims 1-102, wherein racemic ketamine, or a pharmaceutically acceptable salt thereof, is to be intranasally administered once per day, once every other day, three times per week, twice per week, or once per week.

104. The use of any one of claims 1-103, wherein the T_{max} of the ketamine is from about 20 minutes to about 120 minutes following intranasal administration of racemic ketamine.

105. The use of any one of claims 1-104, wherein the T_{max} of the ketamine is from about 30 minutes to about 90 minutes following intranasal administration of racemic ketamine.

106. The use of any one of claims 1-105, wherein the T_{max} of 6-hydroxynorketamine is from about 45 minutes to about 8 hours following intranasal administration of racemic ketamine.

107. The use of any one of claims 1-106, wherein the T_{max} of norketamine is from about 45 minutes to about 360 minutes following intranasal administration of racemic ketamine.

108. The use of any one of claims 1-107, wherein the C_{max} of ketamine is from about 15 ng/mL to about 225 ng/mL following intranasal administration of racemic ketamine.

109. The use of any one of claims 1-108, wherein the C_{max} of ketamine is from about 70 ng/mL to about 205 ng/mL following intranasal administration of racemic ketamine.

110. The use of any one of claims 1-109, wherein the C_{max} of 6-hydroxynorketamine is from about 15 ng/mL to about 275 ng/mL following intranasal administration of racemic ketamine.

111. The use of any one of claims 1-110, wherein the C_{max} of 6-hydroxynorketamine is from about 80 ng/mL to about 265 ng/mL following intranasal administration of racemic ketamine.

112. The use of any one of claims 1-111, wherein the C_{max} of norketamine is from about 40 ng/mL to about 375 ng/mL following intranasal administration of racemic ketamine.

113. The use of any one of claims 1-112, wherein the C_{max} of norketamine is from about 160 ng/mL to about 195 ng/mL following intranasal administration of racemic ketamine.

114. The use of any one of claims 1-113, wherein the AUC_{0-t} for 6-hydroxynorketamine is from about 300 ng*h/mL to about 3,100 ng*h/mL following intranasal administration of racemic ketamine.

115. The use of any one of claims 1-114, wherein the AUC_{0-t} for 6-hydroxynorketamine is from about 850 ng*h/mL to about 950 ng*h/mL following intranasal administration of racemic ketamine.

116. The use of any one of claims 1-115, wherein the AUC_{0-t} for norketamine is from about 250 ng*h/mL to about 2,200 ng*h/mL following intranasal administration of racemic ketamine.

117. The use of any one of claims 1-116, wherein the AUC_{0-t} for norketamine is from about 900 ng*h/mL to about 1,550 ng*h/mL following intranasal administration of racemic ketamine.

118. The use of any one of claims 1-117, wherein the $AUC_{0\text{-}inf}$ for 6-hydroxynorketamine is from about 375 ng*h/mL to about 3,700 ng*h/mL following intranasal administration of racemic ketamine.

119. The use of any one of claims 1-118, wherein the $AUC_{0\text{-}inf}$ for 6-hydroxynorketamine is from about 1,200 ng*h/mL to about 1,400 ng*h/mL following intranasal administration of racemic ketamine.

120. The use of any one of claims 1-119 wherein the $AUC_{0\text{-}inf}$ for norketamine is from about 250 ng*h/mL to about 875 ng*h/mL following intranasal administration of racemic ketamine.

121. The use of any one of claims 1-120, wherein the $AUC_{0\text{-}inf}$ for norketamine is from about 450 ng*h/mL to about 675 ng*h/mL following intranasal administration of racemic ketamine.

122. The use of claim 33, wherein the cognitive impairment comprises dissociation.

123. The use of claim 33 or 34, wherein the cognitive impairment is dissociation.

124. The use of any one of claims 1-123, wherein intranasal administration of the racemic ketamine exhibits one or more of:

an $AUC_{0\text{-}t}$ of norketamine that is at least 1.5 times higher than the $AUC_{0\text{-}t}$ of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an $AUC_{0\text{-}inf}$ of norketamine that is at least 1.5 times higher than the $AUC_{0\text{-}inf}$ of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of norketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

125. The use of any one of claims 1-124, wherein intranasal administration of the racemic ketamine exhibits an AUC_{0-t} of norketamine that is about 1.7 to about 2.5 times higher than the AUC_{0-t} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

126. The use of any one of claims 1-125, wherein intranasal administration of the racemic ketamine exhibits an AUC_{0-t} of norketamine that is about 1.9 to about 2.3 times higher than the AUC_{0-t} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

127. The use of any one of claims 1-126, wherein intranasal administration of the racemic ketamine exhibits an AUC_{0-inf} of norketamine that is about 1.5 to about 2.5 times higher than the AUC_{0-inf} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

128. The use of any one of claims 1-127, wherein intranasal administration of the racemic ketamine exhibits an AUC_{0-t} of norketamine that is about 1.8 to about 2.2 times higher than the AUC_{0-inf} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

129. The use of any one of claims 1-128, wherein intranasal administration of the racemic ketamine exhibits a C_{max} of norketamine that is about 2.2 to about 3.5 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

130. The use of any one of claims 1-129, wherein intranasal administration of the racemic ketamine exhibits a C_{max} of norketamine that is about 2.4 to about 3.2 times

higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

131. The use of any one of claims 1-130, wherein intranasal administration of the racemic ketamine exhibits a T_{max} of norketamine that is about 80% to about 125% of the T_{max} of norketamine exhibited by an intravenous administration of an equivalent dose of racemic ketamine.

132. The use of any one of claims 1-131, wherein intranasal administration of the racemic ketamine exhibits a T_{max} of norketamine that is about 90% to about 110% of the T_{max} of norketamine exhibited by an intravenous administration of an equivalent dose of racemic ketamine.

133. The use of any one of claims 1-132, wherein one or more of the AUC_{0-t}, AUC_{0-inf}, C_{max}, and T_{max} of norketamine is to be determined following one dose of racemic ketamine.

134. The use of any one of claims 1-132, wherein one or more of the AUC_{0-t}, AUC_{0-inf}, C_{max}, and T_{max} of norketamine is to be determined following two doses of racemic ketamine.

135. The use of any one of claims 1-132, wherein one or more of the AUC_{0-t}, AUC_{0-inf}, C_{max}, and T_{max} of norketamine is to be determined following three doses of racemic ketamine.

136. The use of any one of claims 1-135, wherein intranasal administration of the racemic ketamine exhibits one or more of:

an AUC_{0-t} of hydroxynorketamine that is at least 1.5 times higher than the AUC_{0-t} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an $AUC_{0\text{-}inf}$ of hydroxynorketamine that is at least 1.2 times higher than the $AUC_{0\text{-}inf}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of hydroxynorketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

137. The use of any one of claims 1-136, wherein intranasal administration of the racemic ketamine exhibits an $AUC_{0\text{-}t}$ of hydroxynorketamine that is about 1.7 to about 2.5 times higher than the $AUC_{0\text{-}t}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

138. The use of any one of claims 1-137, wherein intranasal administration of the racemic ketamine exhibits an $AUC_{0\text{-}t}$ of hydroxynorketamine that is about 1.9 to about 2.3 times higher than the $AUC_{0\text{-}t}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

139. The use of any one of claims 1-138, wherein intranasal administration of the racemic ketamine exhibits an $AUC_{0\text{-}inf}$ of hydroxynorketamine that is about 1.5 to about 2.5 times higher than the $AUC_{0\text{-}inf}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

140. The use of any one of claims 1-139, wherein intranasal administration of the racemic ketamine exhibits an $AUC_{0\text{-}t}$ of hydroxynorketamine that is about 1.7 to about 2.1 times higher than the $AUC_{0\text{-}inf}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

141. The use of any one of claims 1-140, wherein intranasal administration of the racemic ketamine exhibits a C_{max} of hydroxynorketamine that is about 2.2 to about 3.2

times higher than the C_{max} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

142. The use of any one of claims 1-141, wherein intranasal administration of the racemic ketamine exhibits a C_{max} of hydroxynorketamine that is about 2.4 to about 2.8 times higher than the C_{max} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

143. The use of any one of claims 1-142, wherein intranasal administration of the racemic ketamine exhibits a T_{max} of hydroxynorketamine that is about 80% to about 125% of the T_{max} of hydroxynorketamine exhibited by an intravenous administration of an equivalent dose of racemic ketamine.

144. The use of any one of claims 1-143, wherein intranasal administration of the racemic ketamine exhibits a T_{max} of hydroxynorketamine that is about 90% to about 110% of the T_{max} of hydroxynorketamine exhibited by an intravenous administration of an equivalent dose of racemic ketamine.

145. The use of any one of claims 1-144, wherein one or more of the $AUC_{0\text{-}t}$, $AUC_{0\text{-}inf}$, C_{max}, and T_{max} of hydroxynorketamine is to be determined following one dose of racemic ketamine.

146. The use of any one of claims 1-144, wherein one or more of the $AUC_{0\text{-}t}$, $AUC_{0\text{-}inf}$, C_{max}, and T_{max} of hydroxynorketamine is to be determined following two doses of racemic ketamine.

147. The use of any one of claims 1-144, wherein one or more of the $AUC_{0\text{-}t}$, $AUC_{0\text{-}inf}$, C_{max}, and T_{max} of hydroxynorketamine is to be determined following three doses of racemic ketamine.

148. The use of any one of claims 1-147, wherein the Montgomery-Asberg Depression Rating Scale (MADRS) Total Score of the subject is from 20-60 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

149. The use of any one of claims 1-148, wherein the MADRS Total Score of the subject is from 30-60 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

150. The use of any one of claims 1-149, wherein the MADRS Total Score of the subject is reduced by at least 50% 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

151. The use of any one of claims 1-150, wherein the MADRS Total Score of the subject is less than or equal to 15 units 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

152. The use of any one of claims 1-151, wherein the MADRS Total Score of the subject is less than or equal to 12 units 48 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

153. The use of any one of claims 1-152, wherein the MADRS Item 10 Score of the subject is 4, 5, or 6 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

154. The use of any one of claims 1-153, wherein the MADRS Item 10 Score of the subject is 5 or 6 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

155. The use of any one of claims 1-154, wherein the MADRS Item 10 Score of the subject is reduced by at least 1 unit 4 hours administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

156. The use of any one of claims 1-155, wherein the Clinical Global Impression of Severity for Suicide Ideation and Behavior (CGIS-SI/B) score of the subject is 4 or 5 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

157. The use of any one of claims 1-156, wherein the CGIS-SI/B score of the subject is 1 or 2 units 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

158. The use of any one of claims 1-157, wherein the Sheehan – Suicidality Tracking Scale (S-STS) Clinically Meaningful Change Measure (CMCM) score of the subject is from 15-52 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

159. The use of any one of claims 1-158, wherein the S-STS CMCM score of the subject is from 20-52 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

160. The use of any one of claims 1-159, wherein the -STS CMCM score of the subject is reduced by at least 50% 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

161. The use of any one of claims 1-160, wherein the -STS CMCM score of the subject is from 1-3 units 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

162. The use of any one of claims 1-161, wherein the Sheehan – Suicidality Tracking Scale (S-STS) Clinically Meaningful Change Measure (CMCM) Risk of Suicide at Within the Next 7 Days score of the subject is from 5 to 10 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

163. The use of any one of claims 1-162, wherein the S-STS CMCM Risk of Suicide at Within the Next 7 Days score of the subject is reduced by at least 50% 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

164. The use of any one of claims 1-163, wherein the S-STS CMCM Risk of Suicide at Within the Next 7 Days score of the subject is from 0-2 units 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

165. The use of any one of claims 1-163, wherein the S-STS CMCM Risk of Suicide at Within the Next 7 Days score of the subject is 0 or 1 unit 96 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

166. The use of any one of claims 1-165, wherein the Modified Observer's Assessment of Alertness/Sedation (MOAA/S) score of the subject is 5 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

167. The use of any one of claims 1-166, wherein the MOAA/S score of the subject is 4 or 5 units from 15 minutes to 6 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

168. The use of any one of claims 1-167, wherein the Clinician Administered Dissociative States Scale (CADSS) score of the subject is zero units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

169. The use of any one of claims 1-168, wherein the CADSS score of the subject is zero units from 1 hour to 6 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

170. The use of any one of claims 1-169, wherein the C-SSRS score of the subject is from 2 units to 9 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

171. The use of any one of claims 1-170, wherein the C-SSRS score of the subject is from 2 units to 5 units prior to intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

172. The use of any one of claims 1-171, wherein the CSSR-S score of the subject is zero units 24 hours after intranasal administration of the racemic ketamine, or a pharmaceutically acceptable salt thereof.

173. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidality in a subject in need thereof, wherein the use comprises:

determining if the subject has one or more of:

(i) a MADRS Total Score of at least 20 units;

(ii) a MADRS Item 10 Score of 4, 5, or 6 units;

(iii) a CGIS-SI/B score of 4 or 5 units;

(iv) a S-STS CMCM score of at least 15 units;

(v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and

(vi) a C-SSRS score of at least 2;

wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and

wherein intranasal administration of the racemic ketamine exhibits one or more of:

an AUC_{0-t} of norketamine that is at least 1.5 times higher than the AUC_{0-t} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an AUC_{0-inf} of norketamine that is at least 1.5 times higher than the AUC_{0-inf} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of norketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

174. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidal ideation in a subject in need thereof, wherein the use comprises:

determining if the subject has one or more of:

(i) a MADRS Total Score of at least 20 units;

(ii) a MADRS Item 10 Score of 4, 5, or 6 units;

(iii) a CGIS-SI/B score of 4 or 5 units;

(iv) a S-STS CMCM score of at least 15 units;

(v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and

(vi) a C-SSRS score of at least 2;

wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and

wherein intranasal administration of the racemic ketamine exhibits one or more of:

an AUC_{0-t} of norketamine that is at least 1.5 times higher than the AUC_{0-t} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an AUC_{0-inf} of norketamine that is at least 1.5 times higher than the AUC_{0-inf} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of norketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

175. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating major depressive disorder in a subject in need thereof, wherein the use comprises:

determining if the subject has one or more of:

(i) a MADRS Total Score of at least 20 units;

(ii) a MADRS Item 10 Score of 4, 5, or 6 units;

(iii) a CGIS-SI/B score of 4 or 5 units;

(iv) a S-STS CMCM score of at least 15 units;

(v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and

(vi) a C-SSRS score of at least 2;

wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and

wherein intranasal administration of the racemic ketamine exhibits one or more of:

an AUC_{0-t} of norketamine that is at least 1.5 times higher than the AUC_{0-t} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an $AUC_{0\text{-}inf}$ of norketamine that is at least 1.5 times higher than the $AUC_{0\text{-}inf}$ of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of norketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

176. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating suicidality in a subject in need thereof, wherein the use comprises:

determining if the subject has one or more of:

(i) a MADRS Total Score of at least 20 units;

(ii) a MADRS Item 10 Score of 4, 5, or 6 units;

(iii) a CGIS-SI/B score of 4 or 5 units;

(iv) a S-STS CMCM score of at least 15 units;

(v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and

(vi) a C-SSRS score of at least 2;

wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and

wherein intranasal administration of the racemic ketamine exhibits one or more of:

an $AUC_{0\text{-}t}$ of hydroxynorketamine that is at least 1.5 times higher than the $AUC_{0\text{-}t}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an $AUC_{0\text{-}inf}$ of hydroxynorketamine that is at least 1.2 times higher than the $AUC_{0\text{-}inf}$ of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of hydroxynorketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

177. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof. In the manufacture of a medicament for treating suicidal ideation in a subject in need thereof, wherein the use comprises:

determining if the subject has one or more of:

(i) a MADRS Total Score of at least 20 units;

(ii) a MADRS Item 10 Score of 4, 5, or 6 units;

(iii) a CGIS-SI/B score of 4 or 5 units;

(iv) a S-STS CMCM score of at least 15 units;

(v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and

(vi) a C-SSRS score of at least 2;

wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and

wherein intranasal administration of the racemic ketamine exhibits one or more of:

an AUC_{0-t} of hydroxynorketamine that is at least 1.5 times higher than the AUC_{0-t} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an AUC_{0-inf} of hydroxynorketamine that is at least 1.2 times higher than the AUC_{0-inf} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of hydroxynorketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

178. Use of a racemic ketamine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating major depressive disorder in a subject in need thereof, wherein the use comprises:

determining if the subject has one or more of:

(i) a MADRS Total Score of at least 20 units;

(ii) a MADRS Item 10 Score of 4, 5, or 6 units;

(iii) a CGIS-SI/B score of 4 or 5 units;

(iv) a S-STS CMCM score of at least 15 units;

(v) a S-STS CMCM Risk of Suicide at Within the Next 7 Days score of at least 5 units; and

(vi) a C-SSRS score of at least 2;

wherein the racemic ketamine, or a pharmaceutically acceptable salt thereof is to be intranasally administered to the subject; and

wherein intranasal administration of the racemic ketamine exhibits one or more of:

an AUC_{0-t} of hydroxynorketamine that is at least 1.5 times higher than the AUC_{0-t} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine;

an AUC_{0-inf} of hydroxynorketamine that is at least 1.2 times higher than the AUC_{0-inf} of hydroxynorketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine; and

a C_{max} of hydroxynorketamine that is at least 2 times higher than the C_{max} of norketamine exhibited by intravenous administration of an equivalent dose of racemic ketamine.

179. The use of any one of claims 173-178, wherein one or more of the MADRS Total, MADRS Item 10, CGIS-SI/B, S-STS CMCM, S-STS CMCM Risk of Suicide at Within the Next 7 Days, and C-SSRS scores is reduced by at least 50% 96 hours after intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

180. The use of any one of claims 173-179, wherein one or more of the MADRS Total, MADRS Item 10, CGIS-SI/B, S-STS CMCM, S-STS CMCM Risk of Suicide at Within the Next 7 Days, and C-SSRS scores is reduced by at least 50% 48 hours after intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

181. The use of any one of claims 173-180, wherein one or more of the MADRS Total, MADRS Item 10, CGIS-SI/B, S-STS CMCM, S-STS CMCM Risk of Suicide at Within the Next 7 Days, and C-SSRS scores is reduced by at least 50% 24 hours after intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

182. The use of any one of claims 173-181, wherein one or more of the MADRS Total, MADRS Item 10, CGIS-SI/B, S-STS CMCM, S-STS CMCM Risk of Suicide at Within the Next 7 Days, and C-SSRS scores is below the standard for remission 96 hours after intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

183. The use of any one of claims 173-182, wherein one or more of the MADRS Total, MADRS Item 10, CGIS-SI/B, S-STS CMCM, S-STS CMCM Risk of Suicide at Within the Next 7 Days, and C-SSRS scores is below the standard for remission 48 hours after intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.

184. The use of any one of claims 173-183, wherein one or more of the MADRS Total, MADRS Item 10, CGIS-SI/B, S-STS CMCM, S-STS CMCM Risk of Suicide at Within the Next 7 Days, and C-SSRS scores is below the standard for remission 24 hours after intranasal administration of racemic ketamine, or a pharmaceutically acceptable salt thereof.