WHAT IS CLAIMED IS:

1. Use of a composition prepared using crystals of Glutathione Trisulfide (GSSSG) in the manufacture of a medicament for the treatment, or reduction of risk, of a disorder associated with neurodegeneration in a subject, wherein a therapeutically or prophylactically effective amount of the composition is to be administered to a subject in need thereof.

2. The use of claim 1, wherein the composition comprising GSSSG is prepared by dissolving a crystalline form of GSSSG in saline at pH 3-6.

3. The use of claim 1, wherein the disorder is post-ischemic neuronal death.

4. The use of claim 1, wherein the disorder is a chronic cerebral degenerative disease.

5. The use of claim 4, wherein the chronic cerebral degenerative disease is multi-infarct dementia, Alzheimer's disease, Parkinson's disease, or Lewy body dementia.

6. The use of claim 1, wherein an effective amount of the composition comprising GSSSG is to be administered within a few minutes to hours after a traumatic injury occurs.

7. The use of claim 1, wherein an effective amount of the composition comprising GSSSG is to be administered before a scheduled thoracic and/or abdominal aortic surgical procedure.

8. The use of claim 7, wherein an effective amount of the composition comprising GSSSG is to be administered hours to days before a scheduled thoracic and/or abdominal aortic surgical procedure.

9. The use of claim 8, wherein an effective amount of the composition comprising GSSSG is to be administered 2-24 hours, and/or 1, 2, 3, 4, 5, 6, and/or 7 days before the scheduled thoracic and/or abdominal aortic surgical procedure.

10. A composition prepared using crystals of Glutathione Trisulfide (GSSSG) for use in the treatment, or reduction of risk, of a disorder associated with neurodegeneration in a subject, wherein a therapeutically or prophylactically effective amount of the composition is to be administered to a subject in need thereof.

11. The composition for the use of claim 10, wherein the composition is prepared by dissolving a crystalline form of GSSSG in saline at pH 3-6.

12. The composition for the use of claim 10, wherein the disorder is post-ischemic neuronal death.

13. The composition for the use of claim 10, wherein the disorder is a chronic cerebral degenerative disease.

14. The composition for the use of claim 13, wherein the chronic cerebral degenerative disease is multi-infarct dementia, Alzheimer's disease, Parkinson's disease, or Lewy body dementia.

15. The composition for the use of claim 10, wherein an effective amount of the composition comprising GSSSG is to be administered within a few minutes to hours after a traumatic injury occurs.

16. The composition for the use of claim 10, wherein an effective amount of the composition comprising GSSSG is to be administered before a scheduled thoracic and/or abdominal aortic surgical procedure.

17. The composition for the use of claim 16, wherein an effective amount of the composition comprising GSSSG is to be administered hours to days before a scheduled thoracic and/or abdominal aortic surgical procedure.

18. The composition for the use of claim 17, wherein an effective amount of the composition comprising GSSSG is to be administered 2-24 hours, and/or 1, 2, 3, 4, 5, 6, and/or 7 days before the scheduled thoracic and/or abdominal aortic surgical procedure.

19. A composition prepared using crystals of Glutathione Trisulfide (GSSSG) for use in therapy.