# Succimer

Section: 4. Antidotes and other substances used in poisonings > 4.2. Antidotes and other substances used in poisonings > Specific

EMLc | ATC codes: Pending

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|---|---|
| **Indication** | Harmful effects of or exposure to noxious substances, chiefly nonmedicinal as to source, not elsewhere classified ICD11 code: NE61 |
| **INN** | Succimer |
| **Medicine type** | Chemical agent |
| **List type** | Complementary |
| **Formulations** | **Oral > Solid:** 100 mg |
| **EML status history** | First added in 2011 (TRS 965) |
| **Sex** | All |
| **Age** | Also recommended for children |
| **Therapeutic alternatives** | The recommendation is for this specific medicine |
| **Patent information** | Patents have expired in most jurisdictions<br>Read more about patents. |
| **Wikipedia** | Succimer |
| **DrugBank** | Succimer |

## Summary of evidence and Expert Committee recommendations

An application was prepared by Dr Volans, Dr Karalliedde and Ms Heather Wiseman, Medical Toxicology Information Services, Guy's and St Thomas' NHS Foundation Trust, United Kingdom, for the inclusion of succimer in the Model List. Listing is requested as an individual medicine. Expert reviews were prepared by Professor Noel Cranswick and Professor David Ofori-Adjei. Comments were received from the Department for Evidence and Policy on Emerging Environmental Health issues, WHO; the European Association of Poisons Centres and Clinical Toxicologists, the American Academy of Clinical Toxicology, and Medecins Sans Frontieres. The Committee noted that succimer is recommended for children with moderate lead poisoning (45–69 micrograms/L), who can be protected from further exposure and have no signs of encephalopathy by international guidelines (1-3). The Committee considered evidence from 4 RCTs (4-6), 3 observational studies (8-10), and 3 environmental studies (11-13) to support the safety and efficacy of succimer in children. The Committee noted that evidence for long-term effectiveness in children is limited and that no published studies have demonstrated an improvement in cognition, behaviour, or neuropsychological function in children given succimer compared to placebo. The Committee noted that compared with other antidotes for lead poisoning, succimer has a better adverse effect profile and causes less urinary loss of minerals. The Committee noted that although there are no cost–effectiveness data for succimer compared to other lead chelators, the overall cost of treatment with succimer is likely to be lower because it can be administered orally and does not require hospitalization unlike parenteral chelators. The Committee recommended the addition of succimer to the Model List for both children and adults, based on evidence of short-term efficacy, its favourable safety profile compared to other antidotes for lead poisoning, and the potential for cost savings because it can be administered orally and does not require

hospitalization unlike parental antidotes. However, given the need for expert diagnosis and management of lead poisoning, it was decided to add this agent to the Complementary List. References: 1. TOXBASE. Lead chelation therapy in children. United Kingdom National Poisons Information Service, 2009. 2. American Academy of Pediatrics, Committee on Drugs. Treatment guidelines for lead exposure in children. Pediatrics, 1995, 96:155–160. 3. L'intoxication par le plomb de l'enfant et de la femme enceinte. Guide publié en 2006 par le Ministère de la Santé et des Solidarités, Paris (http://www.sante.gouv.fr/IMG/pdf/guide_depistage_saturnisme-2.pdf, accessed 29 September 2011). 4. Graziano JH et al. Controlled study of meso-2,3-dimercaptosuccinic acid for the management of childhood lead intoxication. Journal of Pediatrics, 1992, 120:133–139. 5. Farrar HC et al. A comparison of two dosing regimens of succimer in children with chronic lead poisoning. The Journal of Clinical Pharmacology, 1999, 39:180–183. 6. O'Connor ME, Rich D. Children with moderately elevated lead levels: is chelation with DMSA helpful? Clinical Pediatrics, 1999, 38:325–331. 7. Rogan WJ et al. Treatment of Lead-Exposed Children Trial Group. The effect of chelation therapy with succimer on neuropsychological development in children exposed to lead. The New England Journal of Medicine, 2001, 344(19):1421–1426. 8. Besunder JB et al. Short-term efficacy of oral dimercaptosuccinic acid in children with low to moderate lead intoxication. Pediatrics, 1995, 96:683–687. 9. Liebelt EL et al. Efficacy of oral meso-2,3 dimercaptosuccinic acid therapy for low-level childhood plumbism. Journal of Pediatrics, 1994, 124:313–317. 10. Graziano JH et al. Dose-response study of oral 2,3-dimercaptosuccinic acid in children with elevated blood lead concentrations. Journal of Pediatrics, 1988, 113:751–757. 11. Counter SA et al. Lead concentrations in maternal blood and breast milk and pediatric blood of Andean villagers: 2006 follow-up investigation. Journal of Occupational and Environmental Medicine, 2007, 49:302–309. 12. Zavaleta CAS. Support for Phase II of the Peru lead project to determine blood and ambient lead levels in metropolitan Lima and to manage the lead exposure problem in critical areas. Activity Report 110, 2001 (http://www.ehproject.org/PDF/Activity_Reports/AR110-PELeadPrj2Final.pdf, accessed 29 September 2011). 13. Senegal: Outbreak of lead intoxication in Thiaroye sur Mer, Senegal. Geneva, World Health Organization, Update 2-23 February 2009 (http://www.who.int/environmental_health_ emergencies/events/Senegal2008_update2/en/index.html, accessed 29 September 2011).

