

# California Poison Control System

# ANTIDOTE CHART

(For medical centers choosing to stock antidotes, the suggested Stocking Level is based on the dose needed to treat a single 100 kg patient for either 8 hours or for 24 hours.\* Medical centers that might expect to receive large numbers of patients in a single incident should stock larger amounts of antidotes or have an effective and efficient drug sharing/transfer procedure in place to rapidly obtain additional antidotal supplies.)

Generic / Name Brand	Indications	Notes	Suggested Stocking Level	Access Priority
<b>Atropine</b>	Organophosphate/ carbamate insecticide poisoning and other cholinesterase inhibitors (eg, warfare agents); bradycardia induced by a variety of toxins	May require large amounts in severe cholinesterase inhibitor poisoning. Also stocked in the Strategic National Stockpile: for mass casualties, the SNS may provide supplies for first 48 hours (coordinated by state department of health and emergency response system).	<b>8 Hours:</b> 100 mg or 13 vials (0.4 mg/mL, 20 mL each) <b>24 hours:</b> 200 mg or 26 vials (0.4 mg/mL, 20 mL each)	<b>Immediate emergency department</b>
<b>Antivenom, Crotalidae Polyvalent Immune-FAB(ovine)/ Cro-Fab®</b>	Rattlesnake envenomation	Either antivenom product equally efficacious	<b>8 hours:</b> 18 vials <b>24 hours:</b> 36 vials	<b>Within 1 hour</b>
<b>Antivenom, Crotalidae Immune- FAB<sub>2</sub>(equine)/ Anavip®</b>	Rattlesnake envenomation	Either antivenom product equally efficacious	<b>8 hours:</b> 30 vials <b>24 hours:</b> 60 vials	<b>Within 1 hour</b>
<b>Antivenom, Black Widow Spider/ Antivenom (Latrodectus Mactans)®</b>	Black Widow Spider envenomation	Equine base risk of allergic hypersensitivity	<b>8 and 24 hours:</b> 1 vial	<b>Special Access:</b> (Merck, 1-800-672-6372); Merck Order Management Center, 1-800-637-2579, will drop ship up to 2 vials.
<b>BAL(Dimercaprol)/ BAL in oil 10%®</b>	Heavy metal poisoning (Arsenic, mercury, lead and gold)	IM administration only	<b>8 hours:</b> 800 mg or 3 amps (100 mg/mL, 3 mL each) <b>24 hours:</b> 2400 mg or 8 amps (100 mg/mL, 3 mL each)	<b>Within 1 hour</b>
<b>Bicarbonate, Sodium</b>	Sodium channel blocker toxicity & urinary alkalinization	IV bolus dosing for reversal of sodium channel blocker toxicity; monitor alkalemia	<b>8 hours:</b> 63 g (750 mEq) or 750 mL of 8.4% solution <b>24 hours:</b> 84 g (1000 mEq) or 1 L of 8.4% solution	<b>Immediate emergency department</b>
<b>Botulinum antitoxin / H-BAT- heptavalent</b>	Botulism	Contact local or state health department for reporting and to facilitate access to the antitoxin.	Only available through the state health department (CA) or CDC	<b>Special Access;</b> CDC 1-770-488-7100; California call: 1-916-328-3605; LA call: 1-213-240-7941

<b>Calcium Chloride injection</b>	Calcium channel blocker poisoning; hypocalcemia induced by various agents	Can cause tissue necrosis if extravasation occurs – use large vein for infusion <b>OR</b> use calcium gluconate injection (see below)	<b>8 and 24 hours:</b> 10 g or 10 vials (10%, 10 mL)	<b>Immediate emergency department</b>
<b>Calcium Gluconate Powder</b>	Hydrofluoric acid dermal burns	For compounding a topical gel	<b>8 and 24 hours:</b> 1 x 100 g powder bottle	<b>Within 1 hour</b>
• <b>Calcium Gluconate injection</b>	Hydrofluoric acid skin exposure or poisoning; hypocalcemia induced by various agents		<b>8 and 24 hours:</b> 30 g or 30 vials (10%, 10 mL)	<b>Immediate emergency department</b>
<b>Calcium Gluconate gel/ Calgonate 2.5% gel®</b>	Hydrofluoric acid dermal burns	For topical burns	<b>8 hours:</b> 6 x 25 g tubes <b>24 hours:</b> 10 x 25 g tubes	<b>Within 1 hour</b>
<b>Carnitine (L-Carnitine)/ Carnitor®</b>	Hyperammonemia &/or hepatotoxicity from valproic acid toxicity		<b>8 hours:</b> 10 g or 10 x 1 g vials <b>24 hours:</b> 20 g or 20 x 1 g vials	<b>Within 1 hour</b>
<b>Cyanide Antidote Kit (Nithiodote by Hope Pharmaceuticals)</b>	Cyanide & sodium nitroprusside toxicity	Conventional cyanide antidote: contains 1-10 mL (300 mg) vial of sodium nitrite, 1-50 mL (12.5 g) vial of sodium thiosulfate (amyl nitrite inhalant ampules not included)	2 kits for small hospitals, 6 kits for major medical centers <b>or</b> stock separate supplies of sodium thiosulfate and sodium nitrite vials <b>OR</b> stock the <i>Cyanokit® (hydroxocobalamin) antidote kit (see below)</i>	<b>Immediate emergency department</b>
• <b>Sodium Nitrite</b>	Cyanide	Risk of methemoglobinemia and hypotension with use.	<b>2 x 10 mL (3%) vials;</b> 6 vials for major medical centers	<b>Immediate emergency department</b>
• <b>Sodium Thiosulfate</b>	Cyanide; sodium nitroprusside toxicity	If used alone for cyanide toxicity, may have a slow onset of action. Thiosulfate is synergistic with sodium nitrite, and the two drugs should be used together to treat cyanide poisoning whenever possible.	<b>2 x 50 mL (25%) vials;</b> 6 vials for major medical centers	<b>Immediate emergency department</b>
<b>Cyanokit®/ Hydroxocobalamin</b>	Cyanide poisoning	Preferred antidote for cyanide poisoning due to better safety and easier use.	<b>8 and 24 hours:</b> 10 g or 2 kits	<b>Immediate emergency department</b>
<b>Cyproheptadine</b>	Mild to moderate serotonin syndrome	Anticholinergic side effects and only PO administration	<b>8 hours:</b> 20 mg or 5 tablets (4 mg each) <b>24 hours:</b> 36 mg or 9 tablets (4 mg each)	
<b>Dantrolene</b>	Malignant hyperthermia		<b>8 hours:</b> 1000 mg or 50 x 20 mg vials <b>24 hours:</b> 2000 mg or 56 vials	<b>Immediate emergency department</b>

<b>Deferiprone/ Ferriprox®</b>	Iron overload	Oral Chelator	<b>8 hours:</b> 3.3 g or 7 x 500 mg tablets <b>24 hours:</b> 9.9 g or 20 x 500 mg tablets	<b>Specialty/optional</b>
<b>Deferoxamine/ Desferal®</b>	Iron poisoning	IV use only	<b>8 hours:</b> 12 g or 6 x 2 g vials <b>24 hours:</b> 36 g or 18 x 2 g vials	<b>Within 1 hour</b>
<b>Digoxin Immune FAB (ovine)/ DigiFab®</b>	Digoxin poisoning; other cardiac glycosides (eg, oleander, foxglove)	Consult with poison center regarding dosing, especially for cardiac glycosides other than digoxin	<b>8 and 24 hours:</b> 15 vials	<b>Immediate emergency department</b>
<b>DMSA (Succimer)/ Chemet®</b>	Heavy metal poisoning (lead, mercury, arsenic)		<b>8 hours:</b> 1 g or 10 x 100 mg capsules <b>24 hours:</b> 3 g or 30 x 100 mg capsules	
<b>DTPA-Calcium (Diethylenetriamine pentaacetate)/ (Pentetate Calcium Trisodium injection)</b>	Dirty bomb agents: radioactive plutonium, americium and curium	Only available through government sources. Stocked in the Strategic National Stockpile: supplies for first 48 hours coordinated by state department of health and emergency response system.	<b>8 and 24 hours:</b> 1 x 1 g amp	<b>Special access - Strategic National Stockpile. The Radiation Emergency Assistance Center/Training Site (REAC/TS) can be contacted for information on use of antidote. business hours: 1-865-576-3131; after hours: 1-865-576-1005.</b>
<b>DTPA-Zinc (Diethylenetriamine pentaacetate)/ (Pentetate Zinc Trisodium injection)</b>	Dirty bomb agents: radioactive plutonium, americium and curium	Only available through government sources. Stocked in the Strategic National Stockpile: supplies for first 48 hours coordinated by state department of health and emergency response system.	<b>8 and 24 hours:</b> 1 x 1 g amp	<b>Special access - Strategic National Stockpile. The Radiation Emergency Assistance Center/Training Site (REAC/TS) can be contacted for information on use of antidote. Business hours: 1-865-576-3131; After hours: 1-865-576-1005.</b>
<b>EDTA-Calcium/ Versenate®</b>	Lead poisoning; also zinc, manganese, and certain radioisotopes	Note: Do not confuse with "Sodium" EDTA	<b>8 hours:</b> 1 g or 1 1000 mg/5 mL amp <b>24 hours:</b> 3 g or 3 1000 mg/5 mL amps	

<b>Ethanol IV 10% with 5% Dextrose</b>	Ethylene glycol or methanol poisoning	Note: fomepizole is the preferred antidote due to easier dosing, monitoring and safety.	<b>8 hours:</b> 22 x (5 mL) vials or ampules of 98% solution for injection <b>24 hours:</b> 44 x (5-mL) vials or ampules  (10% solution can be prepared using 98% ethanol product)	<b>Within 1 hour</b>
<b>Ethanol (oral)</b>	Ethylene glycol or methanol poisoning	Note: fomepizole is the preferred antidote due to easier dosing, monitoring and safety.  Oral ethanol-containing beverage (eg, whiskey, vodka) can be used in an emergency situation.	<b>8 hours:</b> 850 mL of 80 proof (40%) liquor <b>24 hours:</b> 2450 mL of 80 proof (40%) liquor	<b>Within 1 hour</b>
<b>Flumazenil</b>	Benzodiazepine poisoning	Use small initial dose to avoid abrupt awakening/delirium; use with caution in patients on chronic benzodiazepine therapy as withdrawal seizures may occur; use with caution in mixed drug overdoses.	<b>8 hours:</b> 6 mg or 6 x 1 mg/10 mL vials <b>24 hours:</b> 12 mg or 12 x 1 mg/10 mL vials	<b>Immediate emergency department</b>
<b>Fomepizole (4-MP)/ Antizol®</b>	Preferred antidote for ethylene glycol or methanol poisoning	Manufacturer of Antizol® will replace expired stocks	<b>8 hours:</b> 1.5 g or 1 x 1.5 mL (1 g/mL) vials <b>24 hours:</b> 4.5 g or 3 x 1.5 mL (1 g/mL) vials	<b>Within 1 hour</b>
<b>Glucagon</b>	Beta blocker/calcium channel blocker poisoning	Anticipate nausea and vomiting	<b>8 hours:</b> 90 mg or 90 x 1 mg vials <b>24 hours:</b> 250 mg or 250 x 1 mg vials	<b>Immediate emergency department</b>
<b>Glucarpidase/ Voraxaze®</b>	Methotrexate toxic levels	Use in patient with toxic levels and impaired renal function; glucarpidase may also metabolize leucovorin so stagger doses at least 2 hours.	<b>8 and 24 hours:</b> 5 vials (1000 U/vial)	<b>Specialty/optional product: 1-855-786-7292</b>
<b>Idarucizumab/ Praxbind®</b>	Monoclonal antibody that binds to dabigatran and its acylglucuronide metabolites and neutralizes their anticoagulant effects	Specific only for dabigatran; not effective for other oral anticoagulants	<b>8 and 24 hours:</b> 5 g or 2 x (2.5 g/50 mL) vials	<b>Immediate emergency department</b>
<b>Insulin</b>	Hyperinsulinemia - euglycemia (HIE) therapy for calcium antagonist and beta-blocker poisoning	Accompany with dextrose if blood glucose < 200 mg/dL	<b>8 hours:</b> 1000 U or one vial (100 U/mL, 10 mL each) <b>24 hours:</b> 3000 U or three vials (100 U/mL, 10 mL each)	<b>Immediate emergency department</b>
<b>Intravenous Fat Emulsion/ Intralipid®</b>	Lipophilic cardiotoxic drugs	Immediately after administration several laboratory tests of patient serum/blood may be uninterpretable	<b>8 and 24 hours:</b> 1500 mL of 20% or 3 bags (500 mL each)	<b>Immediate emergency department</b>

<b>Leucovorin calcium</b>	Folic acid antagonists / methanol		<b>8 hours:</b> 300 mg (3 x 100 mg vials) <b>24 hours:</b> 1000 mg (10 x 100 mg vials)	<b>Within 1 hour</b>
<b>Methylene Blue</b>	Methemoglobinemia		<b>8 hours:</b> 400 mg or 4 x 10 mL (10 mg/mL) amps <b>24 hours:</b> 600 mg or 6 x 10 mL (10 mg/mL) amps	<b>Immediate emergency department</b>
<b>N-Acetylcysteine (NAC) Mucomyst® or generic</b>	Acetaminophen poisoning (oral preparation)	Use orally. Dilute at least by a 3:1 ratio.	<b>8 hours:</b> 28 g or 5 x 30 mL (20%) vials <b>24 hours:</b> 56 g or 10 x 30 mL (20%) vials	<b>Immediate emergency department</b>
<b>N-Acetylcysteine (NAC) Acetadote®</b>	Acetaminophen poisoning (IV preparation)	Note: 2 different dilutions are used (150 mg/kg/hr x 1 hour followed by 15 mg/kg/hr x 20 hours). Loading dose should be infused slowly over 60 minutes.	<b>8 hours:</b> 30 g or 5 x 30 mL (20%) vials <b>24 hours:</b> 54 g or 9 x 30 mL (20%) vials	<b>Within 1 hour</b>
<b>Naloxone/ Narcan®</b>	Opioid overdose	Use small initial dose to avoid abrupt awakening/withdrawal	<b>8 hours:</b> 20 mg or 50 x 0.4 mg/2 mL amps or 2 x 10 mg/10 mL vials <b>24 hours:</b> 40 mg or 4 x 10 mg/mL vials	<b>Immediate emergency department</b>
<b>Octreotide acetate/ Sandostatin®</b>	Oral sulfonylurea poisoning and meglitinide poisoning	Avoid long-acting depot products	<b>8 hours:</b> 200 mcg or 2 x 1 mL (0.1 mg/mL) amps <b>24 hours:</b> 1000 mcg or 1 x 5 mL (0.2 mg/mL) multidose vial	<b>Within 1 hour</b>
<b>Physostigmine/ Antilirium®</b> (When available)	Anticholinergic poisoning, especially antimuscarinic delirium	Administer at low dose (0.5 mg) and slowly, over 2-5 minutes to avoid severe adverse reactions including bradycardia, asystole and seizures (Contraindicated in TCA or similar poisoning with widened QRS intervals)	<b>8 and 24 hours:</b> 4 mg or 2 x 2 mL (1 mg/mL) amps  (When available)	<b>Immediate emergency department</b>
<b>Potassium Iodide</b>	Thyroid radioiodine protection	Highest risk groups for radioiodine-induced cancer are infants, children and pregnant and nursing females. Should only be used when directed by public health officials.	<b>8 and 24 hours:</b> 130 mg	<b>Within 1 hour</b>
<b>Pralidoxime (2-PAM)/ Protopam®</b>	Cholinesterase Inhibitor poisoning (organophosphate or "nerve gas")	Also stocked in the Strategic National Stockpile: for mass casualties, local cache may provide supplies for first 48 hours coordinated by state department of health and emergency response system.	<b>8 hours:</b> 7 g or 7 x 1 gm (20 mL) vials <b>24 hours:</b> 18 g or 18 x 1 gm (20 mL) vials	<b>Within 1 hour</b>
<b>Protamine</b>	Heparin reversal	May also partially neutralize low-molecular weight heparins	<b>8 hours:</b> 500 mg or 2 vials (10 mg/mL, 25 mL each) <b>24 hours:</b> 1250 mg or 5 vials (10 mg/mL, 25 mL each)	<b>Immediate emergency department</b>

<b>Prothrombin Complex Concentrate (PCC): 3 factor and 4 factor</b>	Reversal of bleeding from anticoagulants (vitamin K antagonists, direct thrombin inhibitors, factor Xa inhibitors)	Specific reversal agents may be available (idarucizumab, andexanet alpha) and Vitamin K. Otherwise, 4 factor PCC is preferred over 3 factor. Activated prothrombin complex concentrate (APCC or FEIBA) does not contain heparin and preferred for direct thrombin inhibitors.	<b>8 and 24 hours:</b> 5,000 IU	<b>Immediate emergency department</b>
<b>Prussian Blue/ Radiogardase®</b>	Dirty bomb agents: radioactive cesium and thallium and non-radioactive thallium	Only available through government sources. Stocked in the Strategic National Stockpile: will provide supplies for first 48 hours coordinated by state department of health and emergency response system.	<b>8 hours:</b> 12.5 g  <b>24 hours:</b> 25 g	<b>Special access - Strategic National Stockpile. The Radiation Emergency Assistance Center/Training Site (REAC/TS) can be contacted for information on use of antidote. Business hours: 1-865-576-3131; After hours: 1-865-576-1005. For product acquisition contact McGuff Pharmacy: 1-877-444-1133</b>
<b>Pyridoxine (Vitamin B<sub>6</sub>)</b>	Isoniazid (INH) poisoning	Large amounts needed for poisoning: 5 grams is the minimum antidotal dose used in an ingestion of an unknown amount. Note: the 30 mL vials may only be available from compounding pharmacies. The 100 mg in 1 mL vials may contain the preservative chlorobutanol.	<b>8 hours:</b> 9 g or 3 vials (100 mg/mL, 30 mL each) or the equivalent  <b>24 hours:</b> 24 g or 8 vials (100 mg/mL, 30 mL each) or the equivalent  <i>(If possible: Use preservative free product or powder for reconstitution.)</i>	<b>Immediate emergency department</b>
<b>Sugammadex/ Bridion®</b>	Reversal of rocuronium and vecuronium (and possibly pancuronium) neuromuscular blockade.  Emergent reversal dosing depends on the depth of the paralysis and can range from 2 mg/kg up to 16 mg/kg.	This agent is used in lieu of carbamate (cholinergic) reversal agents such as neostigmine.  More information here: <a href="https://reference.medscape.com/drug/bridion-sugammadex-sodium-999851">https://reference.medscape.com/drug/bridion-sugammadex-sodium-999851</a>	<b>Available in two vial sizes:</b>  200 mg/2 mL (100 mg/mL) in a single-dose vial for bolus injection (comes in a box of 10 vials)  <b>or</b>  500 mg/5 mL (100 mg/mL), in a single-dose vial for bolus injection (comes in a box of 10 vials).	<b>Immediate-stock in areas where accidental administration of paralytics may occur (Emergency Department of Operating Room)</b>

<b>Uridine triacetate/ Vistogard®</b>	5-FU, capecitabine poisoning	Recommended for use within 96 hours of last dose where toxicity is evident or expected; doses of up to 10 grams every 6 hours for a total of 20 doses have been well-tolerated.	<b>8 hours:</b> 20 g or 2 x 10 g packets <b>24 hours:</b> 40 g or 4 x 10 g packets	<b>Wellstat Medical: 1-800-914-0071 or Cardinal Health Specialty: 1-866-677-4844</b>
<b>Vitamin K<sub>1</sub>(Phytonadione)/ Mephyton® or AquaMephyton®</b>	Warfarin, warfarin-based anticoagulants and super-warfarin based rodenticide poisoning	If patient is actively bleeding use fresh frozen plasma or Factor VII concentrate or prothrombin complex concentrates.	<b>8 hours:</b> 50 mg or 10 x 5 mg tabs or 5 x 10 mg/mL amps <b>24 hours:</b> 100 mg or 40 x 5 mg tabs or 20 x 10 mg/mL amps	<b>Immediate emergency department</b>

Expert advice regarding use of antidotes and treatment of poisoning and overdose is available 24 hours a day, 7 days a week from the California Poison Control System. Health Professionals: call 1-800-411-8080 Members of the public: call 1-800-222-1222

Visit [calpoison.org](http://calpoison.org) to learn more and order free materials.

Facebook: @CalPoison

Twitter: @PoisonInfo

Mobile Phone: Text TIPS to 20121 for poison safety information in English.

Text PUNTOS for Spanish.

**\*Adapted from Dart RC et al. Annals of Emergency Medicine. 2018; 71(3):314-325.**

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