

CENTRAL CALIFORNIA
EMERGENCY MEDICAL SERVICES
A Division of the Fresno County Department of Public Health

Manual	Emergency Medical Services Administrative Policies and Procedures	Policy Number 530.19
Subject	Paramedic Treatment Protocols SEIZURES	Page 1 of 3
References	Title 22, Division 9, Chapter 4 of the California Code of Regulations	Effective Fresno County: 01/15/82 Kings County: 04/10/89 Madera County: 06/15/85 Tulare County: 04/19/05

STANDING ORDERS	
1. Assessment	ABCs
2. Secure Airway	Protect with position, basic airway maneuvers, pharyngeal airway, advanced airway if indicated, assist respirations as needed, suction as needed.
3. Oxygen	Low flow. High flow for status epilepticus, or respiratory compromise. Refer to EMS Policy #530.02.
4. Monitor	Treat rhythm if appropriate.
5. Midazolam	Intranasal (IN) - 0.1 mg/kg intranasally (4 mg maximum). Administer half in each nostril using mucosal atomizer device (MAD).
6. IV Access	Saline lock for first time seizure (except for a pediatric febrile seizure), prolonged, focal seizure, or recurrent seizures. IV LR TKO – Standard Tubing - if medications are anticipated.
7. Midazolam	Intravenous (IV) - If seizure continues, administer 0.05 mg/kg slow IV push over two minutes (2.0 mg maximum per dose). May repeat once in ten minutes. Intramuscular (IM) - 0.1 mg/kg IM if no IV access (4.0 mg maximum per dose). May <u>NOT</u> repeat without Base contact.
8. Accucheck	Fingerstick for Chemstrip/Accucheck. Record value on PCR and GCS at time of fingerstick.
9. Dextrose	25 grams IV - if altered mental status more severe than disorientation to time or date, and if blood glucose is less than 80. May repeat in 5 minutes if altered mental status persists and repeat fingerstick is less than 80.

STANDING ORDERS – CONTINUED ON NEXT PAGE

Approved By	Daniel J. Lynch	Revision
EMS Division Manager	(Signature on File at EMS Agency)	02/01/2011
EMS Medical Director	Jim Andrews, M.D. (Signature on File at EMS Agency)	

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STANDING ORDERS (CONTINUED)

10. Dextrose - continued	<p><u>Pediatrics</u> – 1 ml/kg D50 IVP (maximum 50 ml). If less than 2 years old <u>Dilute</u> 1:1 with NS <u>NOTE</u>: Diluted solution will double the volume. Example: 10 kg/1 year old = 10 ml/D50 diluted 1:1 with 10 ml NS = 20 ml/D25 IVP.</p> <p>Refer to Broselow Tape for specific pediatric doses.</p>
11. Glucagon	<p>1 mg (1 ml) intranasally (0.5 mg per nostril) using mucosal atomizer device (MAD) – if altered mental status more severe than disorientation to time or date, and blood glucose is less than 80, and unable to start IV. May repeat in 5 minutes if altered mental status persists and repeat glucose is less than 80.</p> <p>Refer to Broselow Tape for specific pediatric doses.</p> <p>Intramuscular (IM) - Administer 1 mg if unable to administer intranasally (see special considerations).</p>
12. Magnesium Sulfate	5 gm in 250 ml of NS over 20 minutes, <u>following Midazolam</u> to stop the seizure, if in late pregnancy and hypertensive, or if late pregnancy with no prior history of seizure disorder.
13. Transport	Minimize on scene time. STAT transport if patient is unstable.
14. Passive Cooling	For febrile seizures, remove clothing.
15. Contact Hospital	Per EMS Policy #530.02.

SPECIAL CONSIDERATION AND PRIORITIES

- Assessment – Airway, vital signs, mental status, pupils, needle tracks, head or spine trauma, pill bottles, ETOH, neuro deficits, focal seizure, postictal paralysis, medications, and known seizure disorder.
- History from witnesses: Seizure activity? Length of unconsciousness, mental status on arousal, focal neurologic deficits on arousal. Trauma?
- Do not delay therapy or transport to obtain a detailed history.
- Protect airway and assist respirations as necessary.
- If patient is seizing, move objects away from the patient to protect head and neck. Immobilize spine if in setting of trauma and position on left side if no trauma – prevent aspiration.
- Intranasal medication administration should be divided 50% to each nostril. However, the entire dose can be administered in one nostril if the other nostril is obstructed (i.e., NG tube, NPA, trauma). If both nostrils are completely obstructed (i.e., trauma) administer IM or IV as per protocol.
- The Paramedic may also perform an accucheck on a patient complaining of generalized weakness who presents with a diabetic history or is on diabetic medicine when family or acquaintance feels the patient is altered even if the patient is answering all questions appropriately. *This is based on Paramedic Judgement.* If an accucheck is performed and blood glucose is 60 or less, treat per protocol (i.e., orange juice sweetened with sugar, regular soft drinks or candy, oral paste, Dextrose, or Glucagon).
- Transport lights/siren for patients with unmanageable airway, deteriorating vital signs or mental status, or persistent or recurrent seizures.
- Patients with known seizure disorder may have another cause for the present seizure. Always consider trauma in patients prone to sudden loss of consciousness (e.g., is this seizure due to a subdural hematoma sustained during a prior seizure and fall?)

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10. "FACTS" mnemonic for seizures:

"F"	Focus
"A"	Activity
"C"	Color
"T"	Time (onset and duration)
"S"	Supplemental History (medication compliance, trauma, last seizure)

DOSING AND VOLUME ADMINISTRATION FOR MIDAZOLAM (VERSED)

10mg/2ml Vials for Injection

Pt Weight		IN/IM 0.1 mg/kg **max dose 4 mg**		IV 0.05 mg/kg **max dose 2 mg**	
kg	lbs	Dose (mg)	Volume (ml)	Dose (mg)	Volume (ml)
3 kg	6.6 lbs	0.3 mg	0.06cc	0.15 mg	0.03 cc
4 kg	8.8 lbs	0.4 mg	0.08 cc	0.2 mg	0.04 cc
5 kg	11.0 lbs	0.5 mg	0.1 cc	0.25 mg	0.05 cc
6 kg	13.2 lbs	0.6 mg	0.12 cc	0.3 mg	0.06 cc
7 kg	15.4 lbs	0.7 mg	0.14 cc	0.35 mg	0.07 cc
8 kg	17.6 lbs	0.8 mg	0.16 cc	0.4 mg	0.08 cc
9 kg	19.8 lbs	0.9 mg	0.18 cc	0.45 mg	0.09 cc
10 kg	22.0 lbs	1 mg	0.2 cc	0.5 mg	0.1cc
11 kg	24.2 lbs	1.1 mg	0.22 cc	0.55 mg	0.11 cc
12 kg	26.4 lbs	1.2 mg	0.24 cc	0.6 mg	0.12 cc
13 kg	28.6 lbs	1.3 mg	0.26 cc	0.65 mg	0.13 cc
14 kg	30.8 lbs	1.4 mg	0.28 cc	0.7 mg	0.14 cc
15 kg	33.0 lbs	1.5 mg	0.3 cc	0.75 mg	0.15cc
16 kg	35.2 lbs	1.6 mg	0.32 cc	0.8 mg	0.16 cc
17 kg	37.4 lbs	1.7 mg	0.34 cc	0.85 mg	0.17 cc
18 kg	39.6lbs	1.8 mg	0.36 cc	0.9 mg	0.18 cc
19 kg	41.8 lbs	1.9 mg	0.38 cc	0.95 mg	0.19 cc
20 kg	44.0lbs	2 mg	0.4 cc	1 mg	0.2cc
22 kg	48.4 lbs	2.2 mg	0.44 cc	1.1 mg	0.22 cc
24 kg	52.8 lbs	2.4 mg	0.48 cc	1.2 mg	0.24 cc
26 kg	57.2 lbs	2.6 mg	0.52 cc	1.3 mg	0.26cc
28 kg	61.6 lbs	2.8 mg	0.56 cc	1.4 mg	0.28 cc
30 kg	66 lbs	3 mg	0.6 cc	1.5 mg	0.3cc
32 kg	70.4 lbs	3.2 mg	0.64 cc	1.6 mg	0.32 cc
34 kg	74.8 lbs	3.4 mg	0.68 cc	1.7 mg	0.34 cc
36 kg	79.2 lbs	3.6 mg	0.72 cc	1.8 mg	0.36 cc
38 kg	83.6 lbs	3.8 mg	0.76 cc	1.9 mg	0.38 cc
*40 kg (max dose)	*88 lbs (max dose)	*4 mg (max dose)	*0.8 cc (max dose)	*2 mg (max dose)	*0.4 cc (max dose)