

# Protocol 9-12

**SECTION:** Pediatric General Medical Emergencies

**PROTOCOL TITLE:** Medical – Seizure

**REVISED:** 06/2017

**OVERVIEW:**

A seizure is a period of altered neurologic function caused by abnormal neuronal electrical discharges. Generalized seizures begin with an abrupt loss of consciousness. If motor activity is present, it symmetrically involves all four extremities. Episodes that develop over minutes to hours are less likely to be seizures; most seizures only last 1 - 2 minutes. Patients with seizure disorders tend to have stereotype, or similar, seizures with each episode and are less likely to have inconsistent or highly variable attacks. True seizures are usually not provoked by emotional stress. Most seizures are followed by a postictal state of lethargy and confusion.

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> <li>• Reported, witnessed</li> <li>• Seizure activity description</li> <li>• Previous seizure history</li> <li>• Medic alert tag information</li> <li>• Seizure medications</li> <li>• History of trauma</li> <li>• History of diabetes mellitus</li> <li>• History of pregnancy</li> </ul>	<ul style="list-style-type: none"> <li>• Decreased mental status</li> <li>• Sleepiness</li> <li>• Incontinence</li> <li>• Observed seizure activity</li> <li>• Evidence of trauma</li> </ul>	<ul style="list-style-type: none"> <li>• CNS (head) trauma</li> <li>• Tumor</li> <li>• Metabolic, hepatic, renal failure</li> <li>• Diabetic</li> <li>• Hypoxia</li> <li>• Electrolyte abnormality</li> <li>• Drugs, medications, non-compliance</li> <li>• Infection, fever, meningitis</li> <li>• Alcohol withdrawal</li> <li>• Hyperthermia</li> </ul>

	EMR	EMT	A	I	P
1. Perform general patient management.	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•
a. Suction the oro- and nasopharynx as necessary.	•	•	•	•	•
b. Place a nasopharyngeal airway as necessary (avoid in head trauma).	•	•	•	•	•
3. Administer oxygen to maintain $SPO_2$ 94 - 99%. Support respirations as necessary with a BVM.	•	•	•	•	•
4. Do not restrain the patient. Let the seizure take its course but protect patient from injury.	•	•	•	•	•

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## SEIZURES

	EMR	EMT	A	I	P
5. If the seizure persists give <u>MIDAZOLAM</u> 0.2 mg / kg INTRANASAL (max single dose 10 mg) –OR- give <u>MIDAZOLAM</u> 0.1 mg / kg IV / IM (max single dose 10 mg) a. Repeat dose in 5 minutes if seizure persists. b. If Midazolam is unavailable, administer, <u>DIAZEPAM</u> 0.25 mg / kg up to 5 mg slow IV push, titrated to effect. Diazepam may also be administered Per Rectum (PR) in pediatric patients.				•	•
6. Perform rapid glucose determination. If glucose less than 60 mg / dL or clinical signs and symptoms indicate hypoglycemia, refer to the Hypoglycemia protocol		•	•	•	•
7. Establish an IV of normal saline at KVO.			•	•	•
8. Place patient on cardiac monitor (sometime life-threatening dysrhythmias can cause seizure-like activity).				•	•
9. Consider placing the patient in the recovery position during the postictal period.	•	•	•	•	•
10. Transport and perform ongoing assessment as indicated.		•	•	•	•

### TYPES OF SEIZURES

<u>Generalized</u>	<u>Simple Partial</u>	<u>Complex Partial</u>
<ul style="list-style-type: none"> <li>Absence (Petit-Mal)</li> <li>Atonic (Drop Attack)</li> <li>Myoclonic (Brief bilateral jerking)</li> <li>Tonic-Clonic (Grand-Mal)</li> </ul>	<ul style="list-style-type: none"> <li>Focal / Local: Localized twitching of hand, arm, leg, face, or eyes. Patient may be conscious or unconscious</li> </ul>	<ul style="list-style-type: none"> <li>Temporal Lobe</li> <li>Psychomotor</li> </ul>

Age	Pre-Term	Term	3 month	6 month	1 year	3 years	6 years	8 years
Weight (lb / kg)	3.3 lb 1.5 kg	6.6 lb 3 kg	13.2 lb 6 kg	17.6 lb 8 kg	22 lb 10 kg	30.8 lb 14 kg	44 lb 20 kg	55 lb 25 kg
Midazolam IV	0.15 mg	0.3mg	0.6mg	0.8 mg	0.1mg	1.4mg	2mg	2.5mg
Midazolam IN *1/2 dose per nostril	0.3 mg	0.6mg	1.2mg	1.6mg	2mg	2.8mg	4mg	5mg
Diazepam IV	0.1 ml	0.2 ml	0.4 ml	0.5 ml	0.6 ml	0.84 ml	1.2 ml	1.5 ml

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(5.0 mg / ml) 0.3 mg/kg								
Diazepam PR (5.0 mg / ml) 0.5 mg / kg	0.15 ml	0.3 ml	0.6 ml	0.8 ml	1.0 ml	1.4 ml	2.0 ml	2.0 ml

### PEARLS:

1. Respirations during an active seizure should be considered ineffective and airway maintenance should occur per assessment.
2. Status epilepticus is defined as two or more consecutive seizures without a period of consciousness or recovery. This is a true emergency requiring rapid airway support, treatment, and transport.
3. Grand Mal seizures are generalized in nature and associated with loss of consciousness, incontinence, and possibly tongue trauma.
4. Focal seizures affect only a specific part of the body and are not usually associated with loss of consciousness.
5. Jacksonian seizures are seizures, which start as focal in nature and become generalized.
6. Petit Mal seizures may be localized to a single muscle group or may not involve visible seizure activity all. Always examine pupils for nystagmus, which would alert provider to continued seizure activity.
7. Be prepared for airway problems and continued seizures.
8. Investigate possibility of trauma and substance abuse.
9. Be prepared to assist ventilations as dosages of benzodiazepines are increased.

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**SEIZURES**

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