

South Australian Neonatal Medication Guidelines

# phenobarbitone

200mg/mL injection, 3mg/mL mixture

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**This is a High Risk Medication** ⚠️  
Rapidly fatal in overdose.

## Checklist

Before administering a dose:

- > Check if phenobarbitone serum level results need to be acted upon prior to the administration of the next dose;
- > Check if the dose or dosing interval needs amendment as a result of the blood level results;
- > Check the date and time when the next blood level is required; and
- > Document the ongoing plan in the Nursing Care Plan and/or Medication Chart

## Synonyms

Phenobarbital sodium

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## Dose and Indications

### Anticonvulsant

#### Intravenous or Oral Loading Dose

Start at 20mg/kg/dose administered over 20 minutes. For ventilated patients repeat doses of 20mg/kg every 20 minutes to a total of 80mg/kg if required for seizure control.

#### Intravenous or Oral Maintenance Dose

5mg/kg once a day, commencing 24 hours after the loading dose.

### Neonatal Abstinence Syndrome

#### Oral

Loading dose of 10mg/kg followed 12 hours later by a maintenance dose 5 mg/kg once daily. Wean as per neonatologist advice.

Refer the [South Australian Perinatal Practice Guidelines](#) .

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### Preparation and Administration

#### Intravenous

Add 1mL (200mg) of phenobarbitone injection to 9mL of compatible fluid (to a total volume of 10mL). Shake gently to mix. The resulting solution contains 20mg/mL phenobarbitone

|        |       |       |       |       |      |
|--------|-------|-------|-------|-------|------|
| Dose   | 4mg   | 8mg   | 12mg  | 16mg  | 20mg |
| Volume | 0.2mL | 0.4mL | 0.6mL | 0.8mL | 1mL  |

Discard unused solution

Administer slowly over 20 minutes. Maximum intravenous push rate (in emergency) is 2mg/kg/minute.

#### Oral

The oral solution contains 3mg/mL phenobarbitone.

|        |     |     |     |      |      |
|--------|-----|-----|-----|------|------|
| Dose   | 3mg | 6mg | 9mg | 12mg | 15mg |
| Volume | 1mL | 2mL | 3mL | 4mL  | 5mL  |

Give with feeds to minimise gastric irritation.

### Compatible Fluids

Glucose 5%, glucose/sodium chloride solutions, sodium chloride 0.9%

### Adverse Effects

Prolonged use may cause physical dependence.

#### Common

Sedation, paradoxical insomnia, rash. Hypotension and respiratory depression are more likely with intravenous therapy

#### Infrequent

Nystagmus, ataxia

#### Rare

Megaloblastic anaemia, skin necrosis (extravasation), spasm and pain particularly with intravenous use.

Hypersensitivity reactions are not commonly seen in the neonates

### Monitoring

> When this medication is given regularly as an anticonvulsant, Therapeutic Drug Monitoring

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is recommended

- > It will take several (2 to 3) weeks to achieve steady state unless a loading dose is given
- > Trough levels are recommended (prior to next dose). The therapeutic range is between 65 and 170 micromol/L
- > The recommended therapeutic range of phenobarbitone is higher in the neonatal period than in children and adults.

### Practice Points

- > Assisted ventilation may be required during intravenous injection and should be available when giving via this route
- > Do not use any solution which has a precipitate or discolouration
- > IM administration is associated with poor absorption and tissue damage while subcutaneous administration is associated with tissue necrosis. The solution is highly alkaline. Neither route is recommended
- > The ampoule contains benzyl alcohol, propylene glycol, sodium hydroxide and/or hydrochloric acid
- > The elixir contains less than 10% ethanol
- > **Do not use** in patients with acute porphyria
- > Use with CAUTION in patients with severe hepatic or renal impairment, hypotension or respiratory depression or asphyxia as half-life may be prolonged
- > Phenobarbitone has been used for hyperbilirubinaemia
- > Phenobarbitone interacts with a range of medications; please check with your local pharmacy department for specific advice.

### Version control and change history

**PDS reference:** OCE use only

| Version | Date from     | Date to | Amendment        |
|---------|---------------|---------|------------------|
| 1.0     | November 2012 | current | Original version |
|         |               |         |                  |
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|         |               |         |                  |