PRESCRIBING INFORMATION

^{C}PHENOBARB
(Phenobarbital Tablets USP)
15 mg, 30 mg, 60 mg, 100 mg

^{C}PHENOBARB ELIXIR
(Phenobarbital Oral Solution USP)
5 mg/mL

Therapeutic Classification
Sedative / Hypnotic / Anticonvulsant / Antihyperbilirubinemic
(Barbiturate)

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(Barbiturate)

SUMMARY PRODUCT INFORMATION

Route of Administration	Dosage Form / Strength/Composition	Non-medicinal Ingredients
Oral	Tablet 15, 30, 60, 100 mg	Lactose monohydrate, gelatin, maize starch, microcrystalline cellulose, silicon dioxide and stearic acid *[For a complete listing see Dosage Forms, Composition and Packaging section.]*
Oral	Elixir 5 mg/mL	Alcohol, anise oil, artificial lemon flavour, FD&C Red No. 2, glycerin, methylparaben, natural and artificial orange flavour, propylparaben, purified water, sodium chloride, sodium cyclamate, and sucrose

PHARMACOLOGY

Phenobarbital acts as a long acting non-selective depressant of the central nervous system with the ability to produce all levels of CNS mood changes ranging from excitation to mild sedation, hypnosis, and deep coma. Phenobarbital can also induce anaesthesia if given in high therapeutic doses.

It acts as a sedative and/or hypnotic at the thalamus by inhibiting ascending conduction in the reticular formation of impulses destined for the cerebral cortex.

Phenobarbital also acts as an anticonvulsant by depressing monosynaptic and polysynaptic transmission in the CNS. However, it also increases the threshold for electrical stimulation of the motor cortex.

Phenobarbital also lowers the serum bilirubin concentrations by inducing glucuronyl transferase, the enzyme which conjugates bilirubin.

PHARMACOKINETICS

Phenobarbital is rapidly absorbed from the gastrointestinal tract particularly if taken well diluted or on an empty stomach. Although it is rapidly distributed to all tissues and fluids with high concentrations in the liver, brain and kidney, it is the slowest of all the barbiturates because of its low lipid solubility which also delays the onset of action to over 60 minutes. It has the longest duration of action (10-12 hours) of the barbiturate because it is metabolised only to a small degree in the liver and up to 75% may be excreted unchanged renally. Phenobarbital is only about 20-45% bound to plasma proteins and has a half-life of 53 to 118 hours in adults and 40 to 70 hours in children.

INDICATIONS

As a sedative, for the relief of anxiety, tension and apprehension. As a hypnotic, for the short-term management of insomnia. As an anticonvulsant, for the long-term treatment of generalized tonicoclonic and partial (cortical focal) seizures. As prophylaxis and treatment of febrile seizures. As an antihyperbilirubinemic, for the prevention and treatment of hyperbilirubinemia in neonates, also to lower bilirubin concentrations in patients with congenital non-hemolytic unconjugated hyperbilirubinemia or chronic intrahepatic cholestasis.

CONTRAINDICATIONS

Phenobarbital is contraindicated in patients:

- who are known to be hypersensitive to barbituric acid derivatives, any ingredient in the formulation or component of the container,
- with porphyria,
- with severe respiratory depression or pulmonary insufficiency, renal impairment, hepatic impairment, sleep apnea, suicidal potential, alcoholism, drug dependence or in the presence of uncontrolled pain (paradoxical excitement may be produced). With the exception of phenobarbital, barbiturates should be avoided in older individuals.

WARNINGS AND PRECAUTIONS

Administer with caution to pregnant women, myxedema, myasthenia gravis, patients with central nervous system depression, hypotension, severe anemia, hemorrhagic shock, cardiac, hepatic or renal impairment, asthma, diabetes mellitus, hyperkinesis tendencies. Concomitant use of the following drugs should be avoided because of likely occurrence of adverse effects: alcohol, anaesthetics and CNS depressants and to a lesser extent, acetaminophen, oral anticoagulants, carbamazepine, oral contraceptives, estrogens, corticosteroids, digitalis, digitoxin, tricyclic

antidepressants, cyclophosphamide, doxycycline, griseofulvin, monoamine oxidase inhibitors, phenytoin, quinidine, sodium valproate, valproic acid and vitamin D.

Phenobarbital should not be discontinued in patients in whom the drug is administered to prevent seizures, because of the strong possibility of precipitating status epilepticus with attendant hypoxia and risk to both the mother and the unborn child. With regard to drugs given for minor seizures, the risk of discontinuing medication prior to or during pregnancy should be weighed against the risk of congenital defects in the particular case and with the particular family history. Lower doses are required in elderly and debilitated patients in order to preclude oversedation.

Prolonged use of phenobarbital, even at therapeutic dosages, may result in psychologic and physiologic dependence. Patients may escalate dosage without medical advice. Withdrawal symptoms may occur following abrupt termination of hypnotic doses causing nightmares or insomnia, sweating, irritability, tremor, weight loss, anorexia or after chronic use of large doses, resulting in delirium, seizures, or death. Withdrawal should be cautious and gradual.

Rarely, rickets and osteomalacia have been reported following prolonged usage of phenobarbital due to increased metabolism of vitamin D (see ADVERSE REACTIONS, Bone Disorders).

Phenobarbital should be used with caution in patients with impaired liver function or in patients with a history of drug dependence or abuse. Caution is essential when the drug is administered in the presence of any respiratory difficulty. Special care should be taken when phenobarbital is administered to patients in whom the hypnotic effect may be prolonged or intensified, as in those suffering from shock, hepatic dysfunction, uremia, or after recent administration of other respiratory depressants.

Bone Disorders
Long-term use of antiepileptics such as carbamazepine, phenobarbital, phenytoin, primidone, oxcarbazepine, lamotrigine and sodium valproate is associated with a risk of decreased bone mineral density that may lead to weakened or brittle bones. Discontinuation of phenobarbital should be considered if evidence of significant bone marrow depression develops (see ADVERSE REACTIONS).

Occupational Hazards
Phenobarbital may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a vehicle or operating machinery. The concomitant use of alcohol or other CNS depressants may have an additive effect. Patients should be warned accordingly. The incidence of fractures due to falls may be increased, particularly in the elderly. Following use of phenobarbital in office procedures, warn patients against operating motor vehicles for the remainder of the day.

Psychiatric
Suicidal Ideation and Behaviour:
Suicidal ideation and behaviour have been reported in patients treated with antiepileptic agents in several indications.

All patients treated with antiepileptic drugs, irrespective of indication, should be monitored for signs of suicidal ideation and behaviour and appropriate treatment should be considered.

Patients (and caregivers of patients) should be advised to seek medical advice should signs of suicidal ideation or behaviour emerge.

An FDA meta-analysis of randomized placebo controlled trials, in which antiepileptic drugs were used for various indications, has shown a small increased risk of suicidal ideation and behaviour in patients treated with these drugs. The mechanism of this risk is not known.

There were 43,892 patients treated in the placebo controlled clinical trials that were included in the meta-analysis. Approximately 75% of patients in these clinical trials were treated for indications other than epilepsy and, for the majority of non-epilepsy indications the treatment (antiepileptic drug or placebo) was administered as monotherapy. Patients with epilepsy represented approximately 25% of the total number of patients treated in the placebo controlled clinical trials and, for the majority of epilepsy patients, treatment (antiepileptic drug or placebo) was administered as adjunct to other antiepileptic agents (i. e., patients in both treatment arms were being treated with one or more antiepileptic drug). Therefore, the small increased risk of suicidal ideation and behaviour reported from the meta-analysis (0.43%for patients on antiepileptic drugs compared to 0.24% for patients on placebo) is based largely on patients that received monotherapy treatment (antiepileptic drug or placebo) for non-epilepsy indications.

The study design does not allow an estimation of the risk of suicidal ideation and behaviour for patients with epilepsy that are taking antiepileptic drugs, due both to this population being the minority in the study, and the drug-placebo comparison in this population being confounded by the presence of adjunct antiepileptic drug treatment in both arms.

Serious Dermatological Reactions

Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis

Serious and sometimes fatal dermatologic reactions, including Stevens-Johnson syndrome (SJS) and Toxic Epidermal Necrolysis (TEN), have been reported with phenobarbital. Post-marketing reporting rate is generally accepted to be an underestimate due to under-reporting. Recurrence of serious skin reactions following re-challenge with phenobarbital has also been reported. Therefore, if a patient develops a skin reaction during phenobarbital treatment, consideration should be given to permanent discontinuation and replacement of the drug with alternative treatment (see ADVERSE REACTIONS).

Drug Reaction with Eosinophilia and Systemic Symptoms

Multi-organ hypersensitivity reactions, also known as drug reaction with eosinophilia and systemic symptoms (DRESS), have occurred with the use of phenobarbital. Some have been fatal or life-threatening. DRESS typically, although not exclusively, presents with fever, rash, and/or lymphadenopathy in association with other organ system involvement, such as hepatitis, nephritis, hematologic abnormalities, aseptic meningitis, myocarditis, or myositis, sometimes resembling an acute viral infection. Eosinophilia is often present. This disorder is variable in its expression and other organ systems not noted here may be involved. The syndrome shows a wide spectrum of

clinical severity and may rarely lead to disseminated intravascular coagulation (DIC) and multi-organ failure (see ADVERSE REACTIONS).

It is important to note that early manifestations of hypersensitivity (e.g. fever, lymphadenopathy) may be present even though a rash is not evident. If such signs or symptoms are present, the patient should be evaluated immediately. PHENOBARB and PHENOBARB ELIXIR should be discontinued if an alternative etiology for the signs or symptoms cannot be established.

Prior to initiation of treatment with PHENOBARB or PHENOBARB ELIXIR, the patient should be instructed that a rash or other signs or symptoms of hypersensitivity (e.g. fever, lymphadenopathy) may herald a serious medical event and that the patient should report any such occurrence to a physician immediately.

Pregnancy
Phenobarbital readily crosses the placental barrier.

Phenobarbital and Primidone
The great majority of mothers on antiepileptic medication deliver normal infants. It is important to note that antiepileptic drugs should not be discontinued in patients in whom the drug is administered to prevent major seizures because of the strong possibility of precipitating status epilepticus with attendant hypoxia and threat to life. In individual cases where the severity and frequency of the seizure disorder are such that the removal of medication does not pose a serious threat to the patient, discontinuation of the drug may be considered prior to and during pregnancy, although it cannot be said with any confidence that even minor seizures do not pose some hazard to the developing embryo or fetus.

In addition to reports of increased incidence of congenital malformations such as cleft lip/palate and heart malformations in children of women receiving phenobarbital and other antiepileptic drugs, there have been reports of fetal hydantoin syndrome. This consists of prenatal growth deficiency, microcephaly and mental deficiency in children born to mothers who have received phenobarbital, phenytoin, alcohol or trimethadione. However, these features are all interrelated and are frequently associated with intrauterine growth retardation from other causes.

If women receiving phenobarbital become pregnant, plan to become pregnant, or if the need to initiate treatment with phenobarbital arises during pregnancy, the drug's potential benefits must carefully be weighed against its hazards, particularly during the first 3 months of pregnancy. The prescribing physician should weigh all these considerations in treating or counseling epileptic women of childbearing potential regarding the possibility of an increased risk of malformations and given the opportunity of antenatal screening.

The serum level of anticonvulsants may decline during pregnancy requiring adjustments in dosage. Postpartum restoration of the original dosage will probably be indicated.

Neonatal coagulation defects have been reported within the first 24 hours in babies born to epileptic mothers receiving phenobarbital, primidone and/or phenytoin. Vitamin K has been shown to

prevent or correct this defect and has been recommended to be given to the mother before delivery and to the neonate after birth.

Folic acid deficiency is known to occur in pregnancy and can contribute to the increased incidence of birth defects in the offspring of treated epileptic women. Like many other anti-epileptic drugs, primidone may contribute to, or aggravate, folic acid deficiency. Folic acid supplementation is recommended before and during pregnancy.

Phenobarbital withdrawal has occurred in newborns who were exposed to the drug *in utero* and may be characterized by hypotonia, irritability and vomiting.

Lactation
Phenobarbital passes into breast milk. Concentration of barbiturates in breast milk is 35 to 50% that of maternal serum concentrations. Phenobarbital is eliminated slowly in neonates and may accumulate. Therefore, the benefits of breast feeding should be weighed against the possible risks to the infant and a decision should be made whether to discontinue nursing or to discontinue phenobarbital, taking into account the importance of the drug to the mother. Breastfed infants should be observed for excessive drowsiness, dizziness, feeding problems, allergic skin reactions such as rash or other adverse reactions. If any of these occur, breastfeeding should be discontinued. When breastfeeding is discontinued there is a potential for withdrawal symptoms in infants.

ADVERSE REACTIONS

Central Nervous System (CNS)
Drowsiness is frequent, especially at initiation of therapy. Mild impairment of concentration, judgment, memory, and fine motor skills may occur. Exacerbation of pre-existing pain may occur. Disturbances of sleep, dizziness, vertigo, headache and depression may occur. Patients with uncontrolled pain may experience paradoxical euphoria, elation, excitement and confusion. In children, hyperactivity is not uncommon; behavioural disturbances and cognitive impairment may occur. Geriatric patients may experience excitation, confusion or depression.

Cardiovascular
Hypotension may be observed with IV administration and is generally related to the rate of administration (see WARNINGS AND PRECAUTIONS**).**

Gastrointestinal
Epigastric pain, nausea, vomiting, diarrhea and constipation.

Hematologic
Megaloblastic anemia (responds to folic acid therapy). Agranulocytosis and thrombocytopenia are rare.

Hepatic
Severe allergic reactions may result in jaundice due to degenerative changes in the liver. Toxic hepatitis is rare.

Hypersensitivity
Facial edema, skin rash (1 to 2%) may be purpuric, vesicular or erythematous. Exfoliative dermatitis and erythema multiforme are rare. Hypersensitivity reactions have a greater tendency to occur in patients with a history of asthma, urticaria or angioedema.

Serious and sometimes fatal dermatologic reactions, including Stevens-Johnson syndrome (SJS) and Toxic Epidermal Necrolysis (TEN), have been reported with the use of phenobarbital. Multi-organ hypersensitivity reactions, also known as drug reaction with eosinophilia and systemic symptoms (DRESS), have occurred with the use of phenobarbital (see WARNINGS AND PRECAUTIONS, Serious Dermatological Reactions).

Metabolic
Phenobarbital may increase vitamin D requirements, possibly by increasing vitamin D metabolism *via* enzyme induction. Rarely, rickets and osteomalacia have been reported following prolonged use of phenobarbital.

Respiratory
Respiratory depression (see WARNINGS AND PRECAUTIONS).

Miscellaneous
Exacerbation of porphyria, withdrawal (see WARNINGS AND PRECAUTIONS).

Post-Market Adverse Drug Reactions

Musculoskeletal, Connective Tissue and Bone Disorders
There have been reports of decreased bone mineral density, osteopenia, osteoporosis and fractures in patients on long-term therapy with antiepileptic drugs, including PHENOBARB and PHENOBARB ELIXIR. The mechanism by which phenobarbital affects bone metabolism has not been identified.

Hypersensitivity Reactions
Multi-organ hypersensitivity reactions, also known as drug reaction with eosinophilia and systemic symptoms (DRESS), have occurred with the use of phenobarbital.

DRUG INTERACTIONS

Most drug interactions have been documented with phenobarbital, however they are likely applicable to other barbiturates as well. The barbiturates are inducers of cytochrome P450 isoenzymes CYP1A2, CYP2C9, CYP2C19 and CYP3A4, and are capable of increasing the clearance of many hepatically metabolized drugs. This can result in two concerns: i) decrease in or loss of effectiveness of other drug(s) during phenobarbital use; ii) increase in effect or frank toxicity of the other drug(s) on discontinuation of phenobarbital.

When adding or deleting any barbiturate to or from the patient's therapeutic regimen, pharmacotherapy must be monitored closely as dosage adjustment may be necessary.

Anticoagulants, Oral
Metabolism of coumarin anticoagulants may be accelerated, resulting in decreased anticoagulant response. Correspondingly, if phenobarbital is discontinued from a stabilized regimen, the hypoprothrombinemic response may be greatly increased, potentially resulting in hemorrhagic complications. Prothrombin times should be monitored closely when barbiturates are added to or deleted from a regimen that includes oral anticoagulants.

Anticonvulsants
Phenytoin: When phenobarbital is used with phenytoin, concentrations of either or both drugs may be increased, decreased or unchanged. While phenobarbital may induce the metabolism of phenytoin, it may also decrease it because both drugs compete for the same metabolic pathway. Plasma concentrations of both drugs should be monitored when any change in the therapeutic regimen occurs.

Valproic Acid: Concomitant administration of valproic acid and phenobarbital usually results in increased levels of phenobarbital and resultant oversedation. There have been case reports of progression of CNS depression to coma. Plasma concentrations of both drugs should be monitored when any change in the therapeutic regimen occurs.

Carbamazepine: When phenobarbital and carbamazepine are used together, the metabolism of carbamazepine is usually accelerated, and plasma concentrations may be decreased. The clinical significance of this interaction is not known. Plasma concentrations of both drugs should be monitored when any change in the therapeutic regimen occurs.

Antidepressants, MAO Inhibitors
MAO inhibitors may inhibit phenobarbital metabolism, resulting in increased CNS depressant effects. A reduction in phenobarbital dosage may be required.

Antidepressants, Tricyclic
Phenobarbital may increase metabolism of tricyclic antidepressants resulting in lack of effect. Plasma tricyclic concentrations should be monitored if possible, especially if the patient is not responding to standard dosages of antidepressant. The use of both drugs concomitantly may result in additive respiratory depressant effects.

CNS Depressants
Alcohol, benzodiazepines and other CNS depressants used concurrently with phenobarbital may result in excessive CNS depression.

Corticosteroids
Phenobarbital may increase the metabolism of corticosteroids. There have been several reports of exacerbation of asthma and other conditions when phenobarbital was added to regimens containing corticosteroids.

Contraceptives, Oral
Phenobarbital may accelerate the metabolism of both the estrogenic and progestagenic components of the contraceptive, resulting in decreased effectiveness, which may or may not be signalled by

breakthrough bleeding. There have been reports of pregnancy resulting from this combination. If phenobarbital is necessary, it would be advisable to use some other form of contraception.

Miscellaneous
Phenobarbital has been reported to increase the metabolism and correspondingly reduce the effectiveness of the following: griseofulvin, digitoxin and doxycycline. When ketamine is used for anesthesia following preoperative administration of phenobarbital, profound respiratory depression may result.

OVERDOSAGE

For management of a suspected drug overdose, contact your regional Poison Control Centre.

Symptoms
Acute overdose with phenobarbital primarily affects the CNS and the cardiovascular system. Mild overdose resembles alcohol intoxication. Drowsiness, confusion, stupor, respiratory depression, ataxia, sluggish or absent reflexes, early hypothermia, late fever, cardiovascular depression with hypotension, renal failure, cardiac arrhythmias, pulmonary edema, aspiration pneumonia, bullae over pressure points and decreased gastrointestinal motility are all possible symptoms. Severe overdose may progress to shock, coma and death.

Doses that result in toxicity vary widely among patients and depend on co-ingestion of other drugs and the patient's underlying comorbidities. The lethal dose of phenobarbital is believed to be 5 g.

The lowest dose of phenobarbital reported to have led to fatality is 1.41 g.

According to literature, the highest acute dose of phenobarbital that has not resulted in fatality was 27 g, which corresponded to 253 mcg/mL phenobarbital in human plasma.

Chronic ingestion of phenobarbital results in the development of tolerance and large doses can be ingested without overt toxicity. Serious toxicity can result at lower phenobarbital levels if combined with alcohol or other CNS depressant drugs.

Treatment
Patients who have ingested phenobarbital in overdose often require respiratory and hemodynamic support. This may include intubation, ventilation, boluses of isotonic IV fluids, and inotrope infusions. Once a patient's airway is protected, activated charcoal should be administered to minimize absorption of orally administered phenobarbital. Administering multiple doses of activated charcoal enhances the clearance of phenobarbital, though there is no evidence that it actually improves clinical outcomes such as duration of intubation. In patients with normal renal and cardiac function, urinary alkalinization also enhances phenobarbital clearance. Likewise, urinary alkalinization has not actually been shown to improve clinical outcomes.

DOSAGE AND ADMINISTRATION

PHENOBARB Tablets are administered orally.

Sedative: Adults (≥18 years): 15 to 30 mg, 2 or 3 times a day.
Children (<18 years): 2 mg/kg or 60 mg/m^2 of body surface 3 times a day.

Hypnotic: Adults (≥18 years): 100 to 200 mg at bedtime.

Anticonvulsant: Adults (≥18 years): 50 to 100 mg, 2 or 3 times a day
Children (<18 years): 15 to 50 mg, 2 or 3 times a day

The usual adult dosage ranges from 30 to 600 mg daily.

PHENOBARB ELIXIR is administered orally.

Sedative: Adults (≥18 years): 4 to 8 mL, 2 or 3 times a day.

DOSAGE FORMS, COMPOSITION AND PACKAGING

Dosage Form and Strength	Medicinal Ingredient	Non-medicinal Ingredients	Description and Packaging
15 mg tablets	15 mg phenobarbital USP	gelatin, lactose monohydrate, maize starch, microcrystalline cellulose and stearic acid	White, round, biconvex tablets which are debossed with 'PH' on one side and '15', '30', '60' or '100' on the other side. Available in bottles of 500 tablets.
30 mg tablets	30 mg phenobarbital USP		
60 mg tablets	60 mg phenobarbital USP	gelatin, lactose monohydrate, maize starch, microcrystalline cellulose, silicon dioxide and stearic acid	
100 mg tablets	100 mg phenobarbital USP		
5 mg/mL elixir	5 mg/mL phenobarbital USP	alcohol, anise oil, artificial lemon flavour, FD&C Red No. 2, glycerin, methylparaben, natural and artificial orange flavour, propylparaben, purified water, sodium chloride, sodium cyclamate, and sucrose	Clear red liquid. Available in bottles of 100 mL.

READ THIS FOR SAFE AND EFFECTIVE USE OF YOUR MEDICINE

PATIENT MEDICATION INFORMATION

[C]PHENOBARB
(Phenobarbital Tablets USP)
15 mg, 30 mg, 60 mg 100 mg

[C]PHENOBARB ELIXIR
(Phenobarbital Oral Solution USP)
5 mg/mL

Read this carefully before you or your child start taking PHENOBARB or PHENOBARB ELIXIR and each time you get a refill. This leaflet is a summary and will not tell you everything about this drug. Talk to your healthcare professional about your or your child's medical condition and treatment and ask if there is any new information about PHENOBARB or PHENOBARB ELIXIR.

What are PHENOBARB and PHENOBARB ELIXIR used for?
PHENOBARB and PHENOBARB ELIXIR are used as:

- a sedative, for the relief of anxiety, tension and apprehension
- as a hypnotic, for the short-term management of insomnia
- as an anticonvulsant, for the long-term treatment of generalized seizures
- as prevention and treatment of febrile seizures
- for the prevention and treatment of hyperbilirubinemia (a condition in which there is too much bilirubin in the blood) in newborns, and in patients with congenital non-hemolytic unconjugated hyperbilirubinemia or chronic intrahepatic cholestasis (bile build up in the liver)

How do PHENOBARB and PHENOBARB ELIXIR work?
It is not completely known how phenobarbital works.

What are the ingredients in PHENOBARB TABLETS?

Medicinal ingredients:
PHENOBARB TABLETS contain:

- Each 15 mg tablet: 15 mg phenobarbital USP
- Each 30 mg tablet: 30 mg phenobarbital USP
- Each 60 mg tablet: 60 mg phenobarbital USP
- Each 100 mg tablet: 100 mg phenobarbital USP

Non-medicinal ingredients:
PHENOBARB TABLETS:

- Each 15 mg and 30 mg tablet contains the following non-medicinal ingredients (alphabetically): gelatin, lactose monohydrate, maize starch, microcrystalline cellulose and stearic acid.
- Each 60 mg and 100 mg tablet contains the following non-medicinal ingredients (alphabetically): gelatin, lactose monohydrate, maize starch, microcrystalline cellulose, silicon dioxide and stearic acid.

What are the ingredients in PHENOBARB ELIXIR?

Medicinal ingredients:
PHENOBARB ELIXIR contains:

- Each 1 mL of elixir: 5 mg phenobarbital USP

Non-medicinal ingredients:
PHENOBARB ELIXIR:

- The elixir contains the following non-medicinal ingredients (alphabetically): alcohol, anise oil, artificial lemon flavour, FD&C Red No. 2, glycerin, methylparaben, natural and artificial orange flavour, propylparaben, purified water, sodium chloride, sodium cyclamate, and sucrose.

PHENOBARB and PHENOBARB ELIXIR come in the following dosage forms:
PHENOBARB Tablets are available in 4 dosage forms containing 15 mg, 30 mg, 60 mg, or 100 mg phenobarbital USP. The tablets are white, round, biconvex and are debossed with 'PH' on one side and '15', '30', '60' or '100' on the other side.

PHENOBARB ELIXIR is available as a clear red liquid containing 5 mg/mL phenobarbital USP.

Do not use PHENOBARB and PHENOBARB ELIXIR if you or your child:

- is allergic to the active ingredient, phenobarbital, or any of the other ingredients, or to barbituric acid derivatives
- have the following symptom or problems:
  - Porphyria (A genetic disorder that can cause nervous system, blood, and skin problems).
  - Lung problems or severe respiratory depression
  - Liver or kidney problems
  - Pauses in breathing during sleep
  - Suicidal potential
  - Alcohol addiction
  - Drug addiction
  - Have uncontrolled pain

To help avoid side effects and ensure proper use, talk to your healthcare professional about any health conditions or problems you or your child may have BEFORE taking PHENOBARB or PHENOBARB ELIXIR, including if you or your child:

- Have ever had a rash or unusual reaction while taking phenobarbital or any other anti-

epileptic drug.

- Drink alcohol. Drinking alcohol with Phenobarbital products may make you less alert and may make any feelings of anger, confusion or sadness worse.
- Are pregnant or planning to become pregnant. You must only take PHENOBARB or PHENOBARB ELIXIR during pregnancy if your doctor tells you to.
    - If you become pregnant while taking PHENOBARB or PHENOBARB ELIXIR, talk to your healthcare provider about registering with the North American Antiepileptic Drug (NAAED) Pregnancy Registry. The purpose of this registry is to collect information about the safety of antiepileptic medicine during pregnancy. You can enroll in this registry by calling 1-888-233-2334. Information on the registry can also be found at the website http://www.aedpregnancyregistry.org/.
- Are nursing or plan to nurse your baby. Nursing while you are taking PHENOBARB or PHENOBARB ELIXIR is not recommended.
- Are taking birth control pills
    - Phenobarbital may make hormonal birth control such as "the pill" less effective.
    - Use other forms of safe and effective birth control when taking PHENOBARB or PHENOBARB ELIXIR.
    - You need to use the other forms of birth control until the end of your menstrual cycle after stopping treatment.
- Have used or abused drugs in the past.
- Have any of the following diseases or conditions:
    - Suffer from seizures that spread to the whole brain
    - Heart problems
    - Have kidney or liver problems. Your doctor may need to adjust the dose
    - Hypothyroidism (a condition in which your body has low thyroid hormone)
    - Myasthenia Gravis (a chronic disease that causes severe muscle weakness)
    - Central nervous system depression
    - Low blood pressure
    - Severe anemia (low red blood cell count)
    - Hemorrhagic shock (shock due to bleeding)
    - Asthma (wheeze or gasp for air due to spasm of the airway)
    - Diabetes mellitus
    - Hyperkinesis tendencies (abnormally heightened, sometimes uncontrollable muscle movement)

Other warnings you should know about:

- If you use Phenobarbital products regularly for a long time, it may cause mental and physical dependence.
- Sudden removal of this drug may cause unwanted side effects. Your doctor should discontinue your drug slowly and carefully.
- Ask your doctor about signs and symptoms of life-threatening skin reactions that have been reported with the use of phenobarbital, including Stevens-Johnson syndrome (SJS, a skin reaction with rash and blisters), Toxic Epidermal Necrolysis (TEN, skin rash often with blisters, lesions and lifting skin) and Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS, a skin reaction with itchy rash and fever). Closely monitor for skin reactions. Most often SJS, TEN and DRESS happen in the first few weeks of treatment. If symptoms or signs of SJS, TEN or DRESS are present, phenobarbital treatment should be stopped, and you should seek urgent medical treatment. The best results in managing SJS,

TEN and DRESS come from early detection and stopping the drug treatment right away (see table of **Serious Side Effects and What to do About Them**, below).

DURING treatment with PHENOBARB or PHENOBARB ELIXIR, tell your doctor if you or your child develops:

- Thoughts of suicide or self-harm
- Abnormal vision (blurry or double vision)

Driving and using machines:
Before doing tasks that require special attention, wait until you know how you respond to PHENOBARB or PHENOBARB ELIXIR. Being dizzy or drowsy can occur. Be careful to avoid accidental injury or falls.

Tell your healthcare professional about all the medicines you or your child are taking, including any drugs, vitamins, minerals, natural supplements or alternative medicines.

The following may interact with PHENOBARB or PHENOBARB ELIXIR:

- Birth control pills
- Other anti-seizure drugs including phenytoin, valproic acid, carbamazepine.
- Oral coumarin anticoagulants
- Antidepressants, MAO Inhibitors (e.g. isocarboxazid, moclobemide, or linezolid etc.)
- Tricyclic antidepressants (e.g. clomipramine, imipramine, or nortriptyline, amitriptyline)
- CNS depressants, including alcohol, benzodiazepines
- Corticosteroids (e.g. beclomethasone, fluticasone furoate etc.)
- Griseofulvin (an antifungal drug)
- Digitoxin
- Doxycycline (an antibiotic)
- Ketamine
- Anesthetics
- To a lesser extent: acetaminophen, estrogens, digitalis, digitoxin, cyclophosphamide, doxycycline, quinidine, and vitamin D.

How to take PHENOBARB or PHENOBARB ELIXIR:
Usual dose:

PHENOBARB Tablets are given orally.

Sedative:	Adults (≥18 years): 15 to 30 mg, 2 or 3 times a day. Children (<18 years): 2 mg/kg or 60 mg/m^2 of body surface 3 times a day.
Hypnotic:	Adults (≥18 years): 100 to 200 mg at bedtime.
Anticonvulsant:	Adults (≥18 years): 50 to 100 mg, 2 or 3 times a day Children (<18 years): 15 to 50 mg, 2 or 3 times a day

PHENOBARB ELIXIR is administered orally.

Sedative:	Adults (≥18 years): 4 to 8 mL, 2 or 3 times a day.

Lower doses are required in elderly and debilitated patients in order to prevent oversedation.

- **Do not stop taking PHENOBARB or PHENOBARB ELIXIR without talking to your doctor if you are using it to control seizures.** Stopping PHENOBARB or PHENOBARB ELIXIR suddenly can cause serious problems, including seizures that will not stop. Your doctor will tell you if and when you or your child can stop taking this medicine.

- When given for minor seizures, the risk of discontinuing medication prior to or during pregnancy should be weighed against the risk of congenital defects in the particular case and with the particular family history.

Overdose:

If you think you have taken too much PHENOBARB or PHENOBARB ELIXIR, contact your healthcare professional, hospital emergency department or regional Poison Control Centre immediately, even if there are no symptoms.

Missed Dose:
If you forget to take one dose, you should never make up for the missing dose by doubling the dose next time. Instead, you should simply continue with the following dose when it is due.

What are possible side effects from using PHENOBARB or PHENOBARB ELIXIR?
These are not all the possible side effects you may feel when taking PHENOBARB or PHENOBARB ELIXIR. If you or your child experience any side effects not listed here, contact your healthcare professional. Please also see Warnings and Precautions.

The most common side effects associated with the use of PHENOBARB or PHENOBARB ELIXIR are:

- Sleepiness/drowsiness, feeling tired/fatigue
- Headache, dizziness along with the feeling of a spinning movement
- Nausea/ vomiting
- Broken sleep
- Depression
- Diarrhea, constipation
- Unusual or unexpected feeling of joy, happiness, excitement and confusion
- Hypotension (low blood pressure)
- Hyperactivity in children
- "Hangover" confusion especially in the elderly (drowsiness the day after a dose)

Other possible side effects associated with the use of PHENOBARB or PHENOBARB ELIXIR:

- Increase/worsening of pre-existing pain
- Epigastric pain (pain in the upper abdomen)

Serious Side Effects and What to do About Them				
Symptom / effect		**Talk to your Healthcare Professional**		**Stop taking drug and get immediate medical help**
		Only if Severe	**In all Cases**	
Common	Low sodium level in blood (symptoms like lack of energy, confusion, muscular twitching or convulsions)		**X**	
	Nervous system problems (symptoms like dizziness, trouble walking or with coordination, feeling sleepy and tired, trouble concentrating, blurred vision, double vision, etc.)		**X**	
	Allergies (symptoms like fever, rash and swollen lymph nodes, and may be associated with symptoms involving other organs, e.g., liver)			**X**
Uncommon	Liver problems (symptoms like yellowing of your skin or the whites of your eyes, nausea or vomiting, loss of appetite, stomach pain, dark [brownish] urine etc.)		**X**	
	Thoughts of suicide or self-harm			**X**
	Respiratory depression (shallow, slow, weak breathing)			**X**
	Thinning of the bone, bone softening, bone disease, or fractures (In situations where healthy people would not normally break a bone you may have sudden pain in any location and especially in the wrist, spine or hip. This may be a fracture.)		**X**	
	Altered numbers and types of blood cells, symptoms like unexplained tiredness, weakness, shortness of breath, and sometimes, feeling like you are going to pass out and increased bruising, nosebleeds, sore throats, or infections)		**X** You should tell your doctors who may want to perform a blood test	
Rare	Severe allergic reactions (symptoms like swelling of face, eyes, lips, or tongue, trouble swallowing or breathing, skin rash)			**X**

Serious Side Effects and What to do About Them			
Symptom / effect	Talk to your Healthcare Professional		Stop taking drug and get immediate medical help
	Only if Severe	In all Cases	
A rare, serious disorder in which your skin reacts severely to a medication (Stevens-Johnson syndrome [SJS] or Drug Reaction with Eosinophilia and Systemic Symptoms [DRESS]). If symptoms or signs of SJS or DRESS (e.g. skin rash often with blisters or lesions) are present, phenobarbital treatment should be stopped right away.			**X**
Severe skin reaction where the upper surface of your skin detaches like a patient who has suffered burns (Toxic Epidermal Necrolysis [TEN]). If symptoms or signs of TEN (e.g. skin rash often with blisters or lesions and lifting skin) are present, phenobarbital treatment should be stopped right away.			**X**

If you or your child have a troublesome symptom or side effect that is not listed here or becomes bad enough to interfere with daily activities, talk to your healthcare professional.

Reporting Side Effects

You can report any suspected side effects associated with the use of health products to Health Canada by:

- Visiting the Web page on Adverse Reaction Reporting (http://www.hc-sc.gc.ca/dhp-mps/medeff/report-declaration/index-eng.php) for information on how to report online, by mail or by fax; or
- Calling toll-free at 1-866-234-2345.

NOTE: Contact your health professional if you need information about how to manage your side effects. The Canada Vigilance Program does not provide medical advice.

Storage:
Store at room temperature (15°C to 30°C).
Keep out of reach and sight of children.

If you want more information about PHENOBARB or PHENOBARB ELIXIR:

- Talk to your healthcare professional
- Find the full Prescribing Information that is prepared for healthcare professionals and includes this Patient Medication Information by visiting the Health Canada website (http://hc-sc.gc.ca/index-eng.php) or by contacting the manufacturer, at 1-888-550-6060.

This leaflet was prepared by:

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