Nursing Process Focus:
Patients Receiving Phenytoin (Dilantin)

<table>
<tr><td>Assessment
Prior to administration:
• Obtain complete health history including allergies, developmental, neurological, pulmonary, cardiac, hematological, renal, biliary, and mental disorders including blood studies: CBC, BUN, creatinine, electrolytes, PT, PTT, liver enzymes, etc.
• Obtain patient's drug history to determine possible drug interactions and allergies.
• Assess neurological status, including identification of recent seizure activity.
• Assess growth and development.</td><td>Potential Nursing Diagnoses
• Deficient Knowledge, related to drug regimen, action, and side effects
• Imbalanced Nutrition: Less than Body Requirements, related to nutrient deficiency
• Impaired Oral Mucous Membrane, related to drug effects
• Risk for Impaired Skin Integrity, related to adverse drug reaction
• Risk for Injury, related to drug side effects</td></tr>
<tr><td colspan="2">Planning: Patient Goals and Expected Outcomes
The patient will:
• Report absence of seizure activity.
• Demonstrate understanding of drug action by accurately describing drug side effects and precautions.
• Demonstrate proper daily oral hygiene.</td></tr>
<tr><td colspan="2">Implementation</td></tr>
<tr><td>Interventions and (Rationales)</td><td>Patient Education/Discharge Planning</td></tr>
<tr><td>*In emergencies (status epilepticus) monitor ALL vital signs, including cardiac output, central venous pressure, etc. per Intensive Care Unit (ICU) or Emergency Department (ED) protocol). Monitor EKG during I.V. infusion of the drug.</td><td>*Instruct the patient to immediately report: any difficulty breathing, palpitations, chest pain, dizziness or impending syncope.</td></tr>
<tr><td>*Monitor neurological status, especially changes in level of consciousness and/or mental status. or chorea. (At high doses, phenytoin may produce respiratory depression and delirium. Phenytoin may have a paradoxical effect, producing involuntary movements such as dyskinesia or chorea.)</td><td>Instruct the patient to:
*Report any significant change in sensorium, such as slurred speech, confusion, hallucinations, or extreme lethargy.
*Report any changes in seizure quality or unexpected involuntary muscle movement, such as twitching, tremor or nystagmus.
*Avoid driving and other activities requiring mental alertness and physical coordination until effects of the medication are known.</td></tr>
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*Monitor for adverse immune reaction, such as hypersensitivity syndrome and dermatological manifestations such as purpuric dermatitis or Stevens-Johnson syndrome.	Instruct the patient to: *Immediately report shortness of breath, wheezing, tightness in the throat, itching or any changes in the skin such as a measles-like ("morbilliform") rash or dermatitis, fever, joint pain, profound fatigue. *Call the health care provider *immediately* (*before* the next scheduled dose) for any adverse reaction. *Keep in mind that abrupt cessation of the drug can cause rebound seizures.

*Monitor effectiveness of drug therapy. *Observe for developmental changes indicating the need for dose adjustment. (Phenytoin needs increase with initial maturing, especially at puberty, a time of rapid growth.)	Instruct patient to: *Keep a "seizure diary" during drug initiation phase, or during dose adjustment. *Take the medication *exactly* as ordered, including the *same manufacturer's drug* each time the prescription is refilled. Switching brands may result in alterations in seizure control. *Take a missed dose as soon as remembered, but do not double doses to "catch up" (doubling doses could result in toxic serum level.)
*Use cautiously in the elderly. (Diminished kidney and liver function related to aging result in lowered drug clearance and increased serum drug levels.)	Instruct patient to: • Keep all appointments for follow-up lab studies. • Report signs of toxicity to the health care provider immediately.
*Monitor oral health. Observe for signs of gingival hypertrophy, bleeding, inflammation, etc.	Instruct the patient to: *Use a soft toothbrush, and oral rinses as prescribed by the dentist. *Avoid mouthwashes containing alcohol, which dries mucous membranes. *Brush and floss teeth after every meal; massage the gums daily. *Report changes in oral health such as excessive bleeding or inflammation of the gums. *Maintain regular schedule of dental visits.
*Provide patient with information concerning contraceptive use. (Phenytoin may reduce the effectiveness of oral contraceptives.)	Instruct the patient to: *Remain abstinent or use reliable birth control while taking this medication. *Inform the health care provider if pregnancy occurs. *Avoid abrupt cessation of the drug; rebound seizures may cause harm to the fetus. *Phenytoin dose requirements increase during pregnancy.
*Monitor serum glucose and observe for signs of diabetes mellitus. (Phenytoin alters glycemic control and may cause hyperglycemia.)	Instruct the patient to: *Observe for subtle signs of hyperglycemia (e.g. polydipsia, polyuria, slow wound healing, etc.) *Regularly monitor blood and/or urine glucose levels as specified by the health care provider. *Adhere to a calorie-controlled low refined sugar (or ADA) diet as prescribed by the health care provider.
*Monitor laboratory tests such as CBC, BUN,	Instruct the patient to:

creatinine, electrolytes including serum calcium, urinalysis and liver enzymes to determine kidney and liver function. (Phenytoin is metabolized in the liver and excreted by the kidneys; impaired organ function can increase serum drug levels.)	*Report shortness of breath, profound fatigue, pallor (signs of anemia.) *Report nausea, vomiting, diarrhea, rash, jaundice, abdominal pain, tenderness, distention, or change in color of stool. *Adhere to laboratory testing regimen for blood tests and urinalysis as directed.
Include effects of phenytoin use on lab tests in teaching plan. • Reduces free thyroxine levels. • Reduces 17 keto-steroid levels. • Decreases dexamethasone suppression values, and urine 6-b hydroxycortisol levels.	Inform the patient that: • Phenytoin may cause false positive results on tests for hypothyroidism, ant other endocrine tests. • The patient should notify laboratory personnel of phenytoin drug therapy when providing blood or urine samples.
*Monitor nutritional status. (Phenytoin's action on electrolytes at the cellular level [desensitizing sodium channels] contributes to decreased absorption of folic acid, vitamin D, magnesium and calcium. Folic acid deficiency leads to anemia; vitamin D, magnesium and calcium deficiencies lead to osteoporosis.)	Instruct the patient to: *Eat well balanced meals high in vitamins and nutrients. *Regularly take vitamin and mineral supplements (Vitamin D, folic acid, magnesium, and calcium) as recommended by the health care provider.
*Observe patterns of elimination. (Phenytoin's central nervous system depressant effects decrease gastrointestinal motility, producing constipation.)	Instruct patient to: *Take the drug with food to reduce gastrointestinal upset. *Immediately report any severe or persistent heartburn, upper G.I. pain, nausea or vomiting. *Increase exercise, fluid and fiber intake to facilitate stool passage. *Consult the health care provider regarding the need for a bulk laxative or stool softener for chronic constipation.
Evaluation of Outcome Criteria Evaluate the effectiveness of drug therapy by confirming that patient goals and expected outcomes have been met (see “Planning”).	