

**Pediatric Endocrine Society (PES) Board Review Course
May 2025 – Cram sheet**

1. Pseudohypoparathyroidism types

	PHP IA	PHP IB	PHP IC	PHP type II	Pseudo PHP
Gsα mutation	Maternal inheritance	Sporadic or maternally inherited or Methylation defect	None	None	Paternal inheritance
AHO phenotype	+	-	+	-	+
PTH resistance (↓Ca, ↑Phos, ↑PTH)	+	+	+	+	-
Other Hormone (TSH, LH/FSH, GHRH) resistance	+	+(TSH)	+	-	-
Renal cAMP production to PTH	↓	↓	N	N	N
Phosphaturic response to PTH	↓	↓	↓	↓	N

2. Rickets related to calcium, phosphorus, or vitamin D deficiency

	Vitamin D deficiency	Vitamin D dependent Rickets, type 1A	Vitamin D dependent Rickets, type 1B	Vitamin D dependent Rickets, type 2	X-Linked Hypophosphatemic Rickets	Calcium deficiency
Pathology	Nutritional	1 α hydroxylase deficiency	25 hydroxylase deficiency	VDR mutation	Renal phosphate wasting	Dietary calcium deficiency
Serum calcium	↓/N	↓	↓	↓	N	↓
Serum phosphorus	↓	↓	↓	↓	↓	↓
Alkaline phosphatase	↑	↑	↑	↑	↑	↑
iPTH	↑	↑	↑	↑	N	↑
Serum 25 (OH) D	↓	N/↑	↓	N	N	N
Serum 1,25 (OH) ₂ D	Variable	↓	↓	↑↑	N/↓	↑

Treatment	Ergo or cholecalciferol	Calcitriol	Calcitriol	High doses of calcitriol and calcium	Phosphorus & calcitriol OR burosumab	Calcium
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3. Hypercalcemia – Causes and lab findings

PTH dependent causes	Serum Phosphorus	iPTH	1,25 (OH) ₂ D	Urine calcium
Primary HPT - Transient neonatal - Adenoma/hyperplasia A. Sporadic B. Genetic - MEN 1 - MEN 2A - MEN 4 - HPT-Jaw Tumor Syndrome	↓	↑	↑	↑
CaSR inactivating mutations - Familial hypocalciuric hypercalcemia - Neonatal severe HPT	N/↓	N/↑	N/↑	N/↓
Activating mutations of PTH/PTHrP Receptor - Jansen's metaphyseal chondrodysplasia	↓	↓	↑	↑
PTH Independent Causes	Phos	PTH	1,25 (OH) ₂ D	Urine calcium
Williams Syndrome	N	↓	N/↑	↑
Subcutaneous fat necrosis	N	↓	↑	↑
Hypervitaminosis D	N/↑	↓	N	↑
Granulomatous disease	N	↓	↑	↑
Phosphate depletion	↓	↓	↑	↑
Malignancy - Metastatic - Non-metastatic	N/↓	↓ (↑ PTHrP)	↓	↑
Immobilization	N	↓	↓	↑