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DISORDERS OF
VITAMIN D METABOLISM



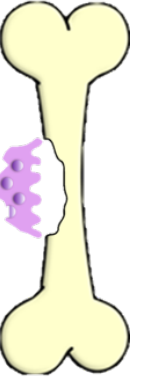
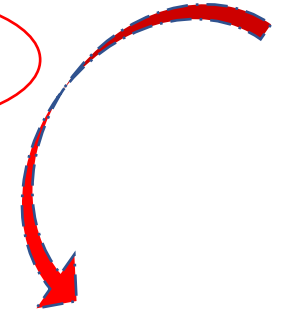
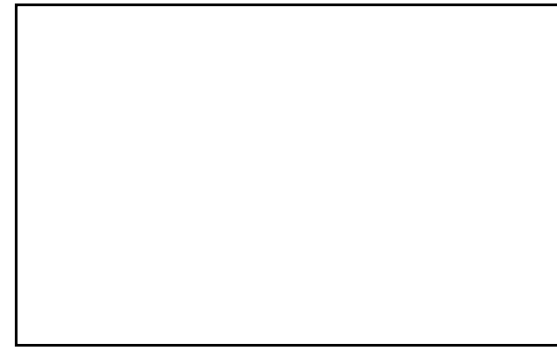
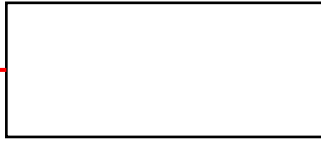
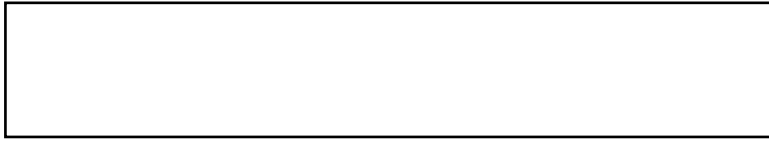
Q. Osteomalacia with high serum phosphate levels indicates

- A. Nutritional Vitamin D deficiency
- B. Familial resistant Vitamin D deficiency
- C. Vitamin D dependency
- D. None of the above

7-DEHYDROCHOLESTROL



VITAMIN D
METABOLISM



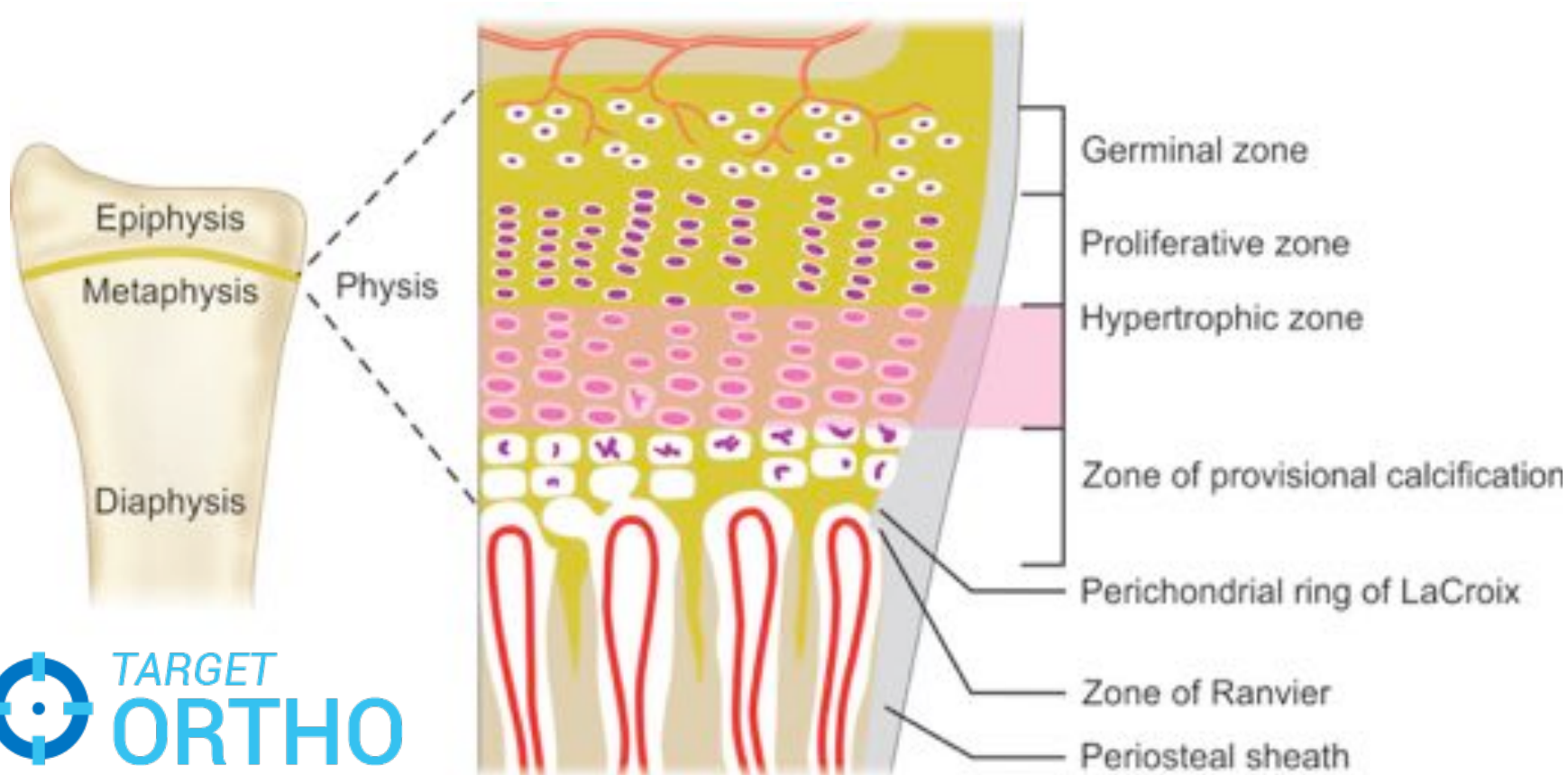
Intestinal absorption

Renal excretion

**VITAMIN D
DEFICIENCY**

Blood Ca →

Bone Ca →



Defective growth & deformities

Infants

Toddlers
Preschool children





RADIOLOGICAL CHANGES !!





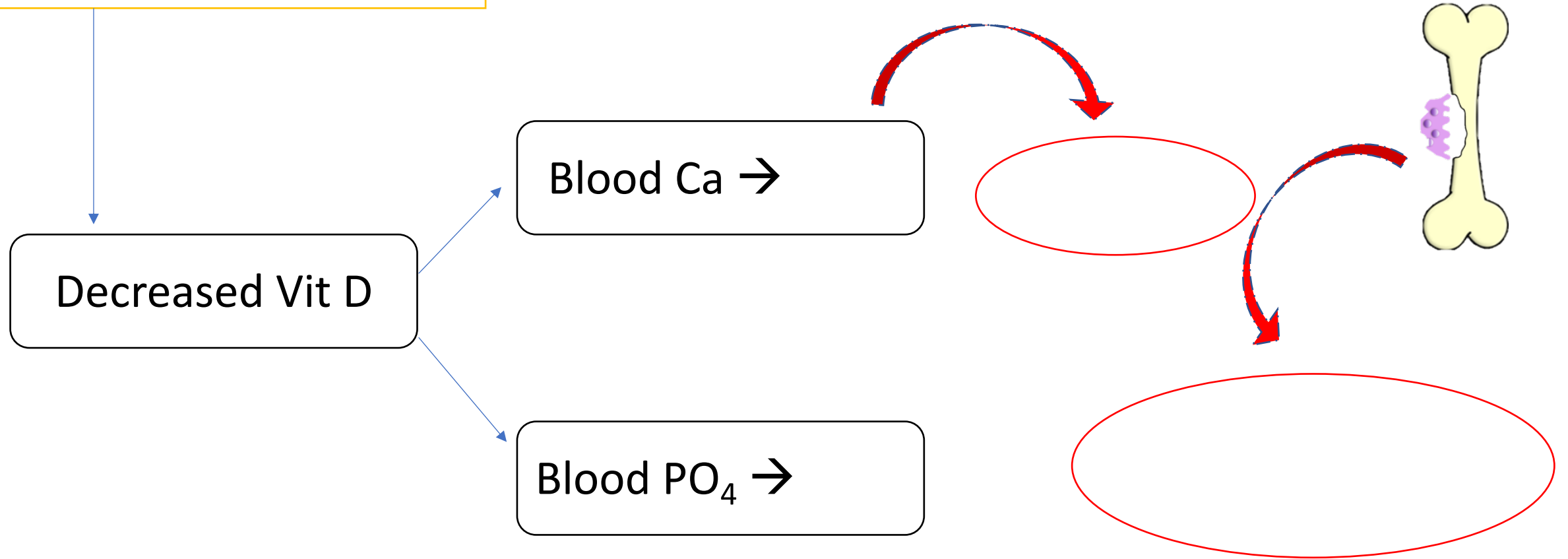
TYPES OF RICKETS



TYPES OF RICKETS

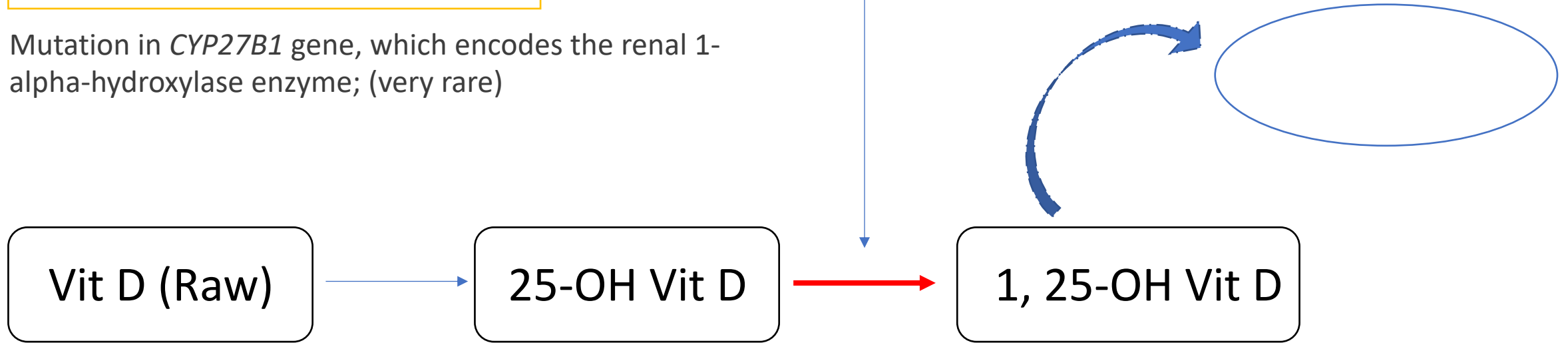
- Vitamin D Deficiency Rickets
- Vitamin D Dependent Rickets (Type I)
- Vitamin D Dependent Rickets (Type II)
- Vitamin D Resistant Rickets
- Renal Osteodystrophy

Vitamin D deficiency Rickets



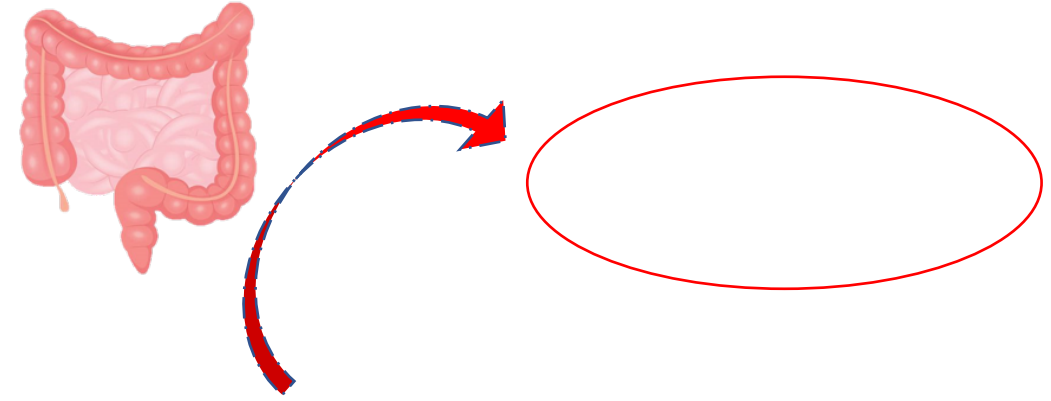
Vitamin D dependant Rickets TYPE 1

Mutation in *CYP27B1* gene, which encodes the renal 1-alpha-hydroxylase enzyme; (very rare)



Vitamin D dependant Rickets TYPE 2

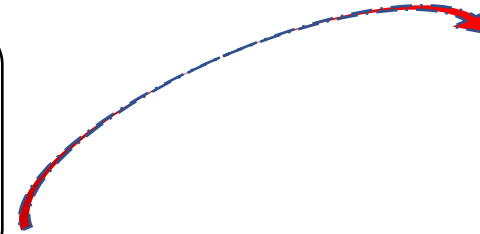
Hereditary vitamin D resistance: mutation in *VDR* gene, which encodes the vitamin D receptor



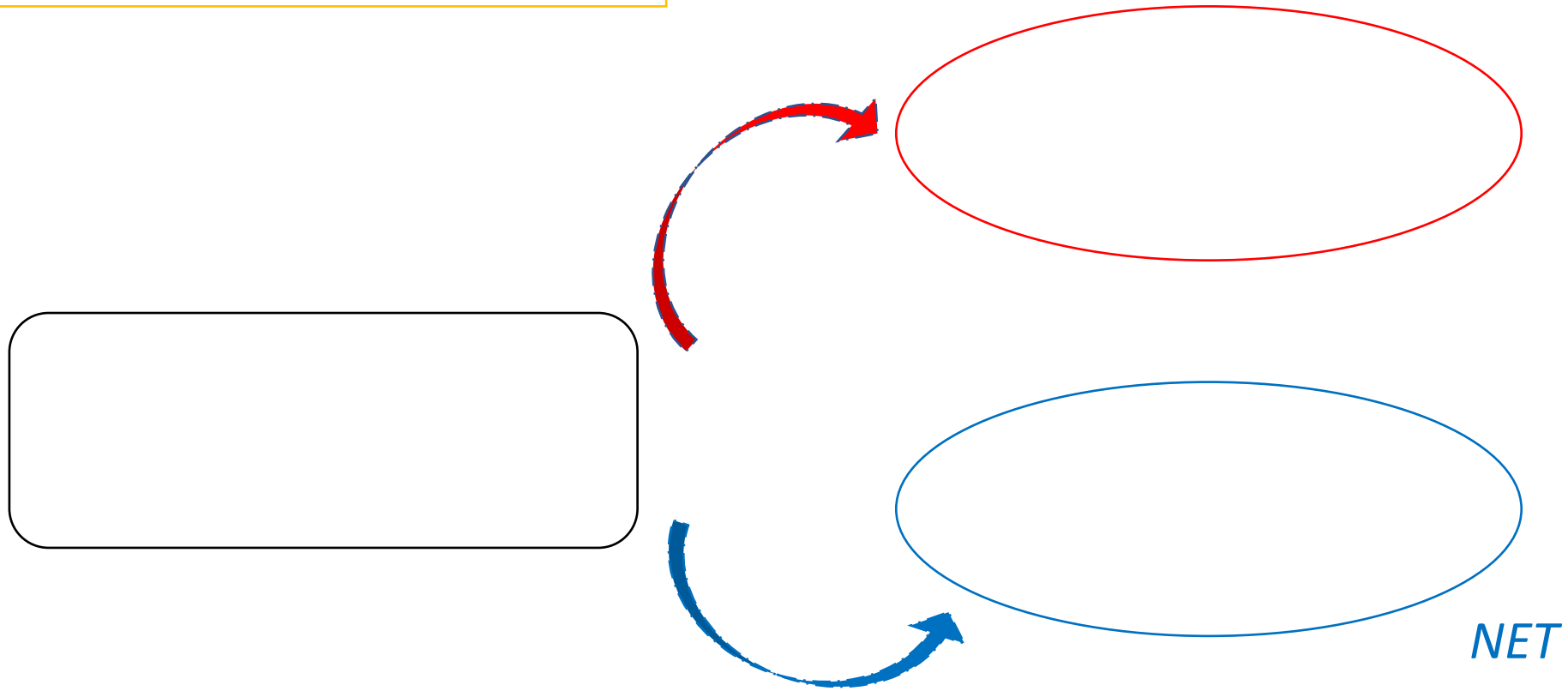
Vitamin D Resistant Rickets

Renal Tubular Rickets

elevated circulating fibroblast growth factor 23 (FGF23) levels and/or
renal tubule disorders



Renal Osteodystrophy





Vit D Deficiency

Vit D
Dependency I

Vit D
Dependency II

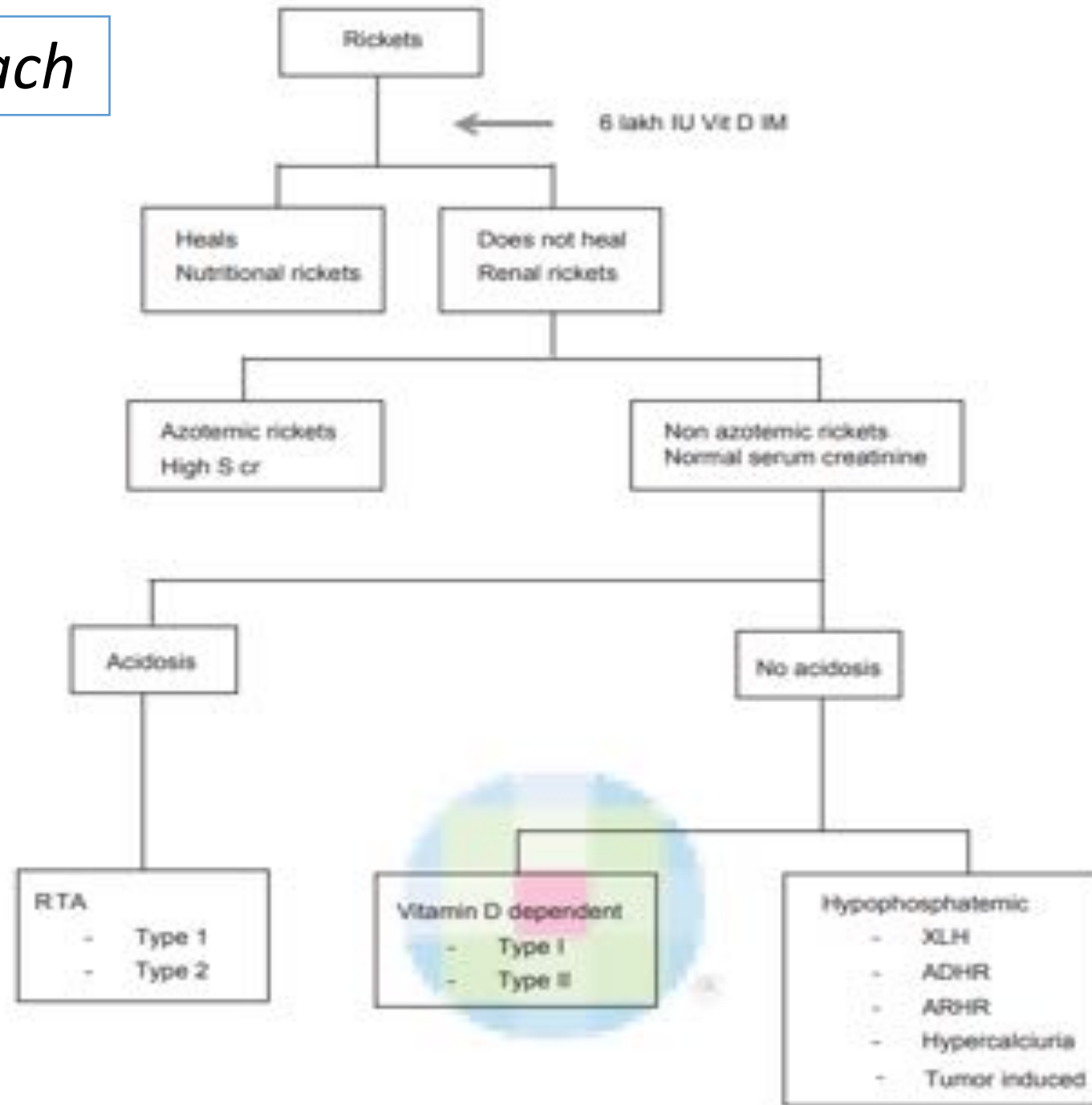
Vit D Resistant

Renal
Osteodystrophy

Clinical Approach

Sahay et al.

Simplified



TREATMENT



RICKETS WITH A DEFORMITY



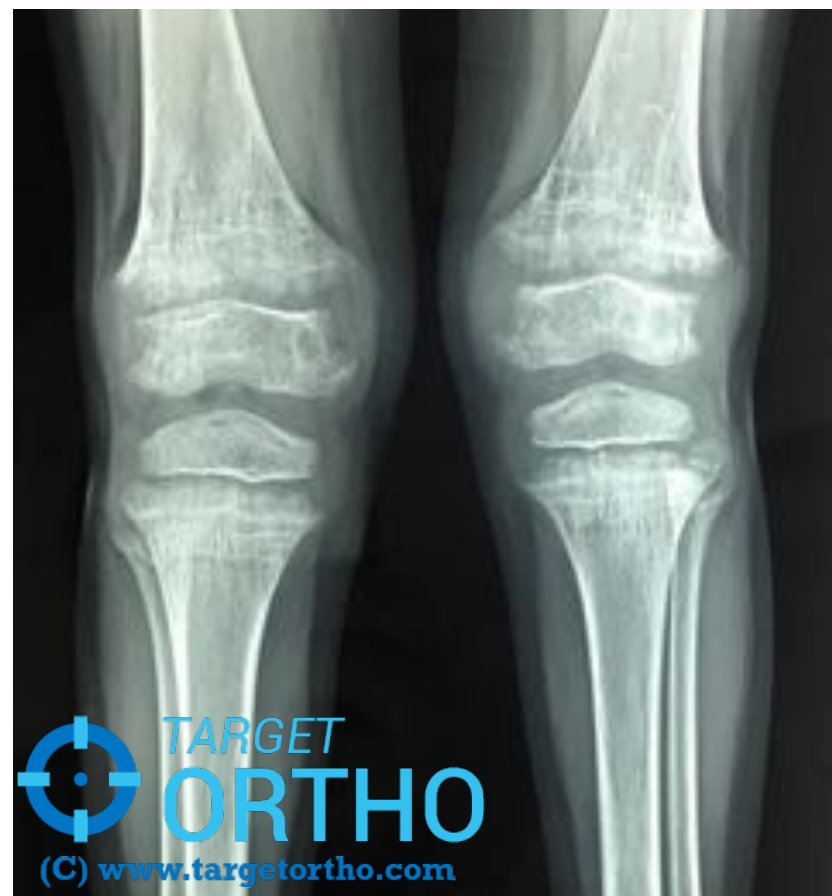
Q. A child had nutritional rickets and developed Genu Varum. Vitamin D supplementation was started and given till growth plate healed on X ray. However, the deformity failed to disappear and hence the child has been planned for a corrective osteotomy. When can we refer this child to the surgeon?

A. Normal Vitamin D levels

B. Normal Serum Calcium levels

C. Normal Serum Phosphate levels

D. Normal Serum Alkaline phosphatase levels



OSTEOMALACIA







LAB FINDINGS

OSTEOMALACIA

TREATMENT

Conditions with Looser's Zones

H

O

PE

F

O

R

Xtra

Oncogenic Osteomalacia

Sun Screen lotions that have a high “Sun Screen Protection Factor” can shield you from sunlight and lead to Osteomalacia. What is the safe limit for this Sun screen protection factor?

A.< 15

B.< 30

C.< 45

D.< 60

Apart from calcium deficiency of which other mineral can simulate Rickets clinical picture?

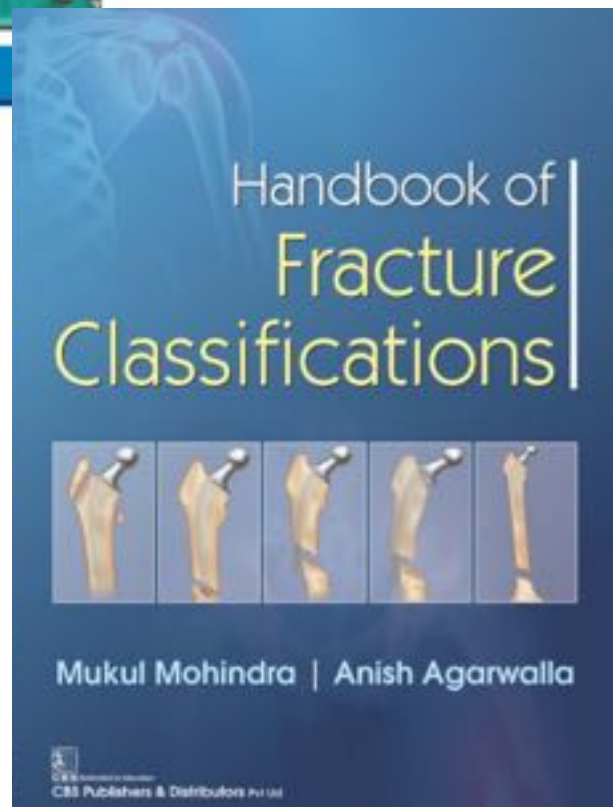
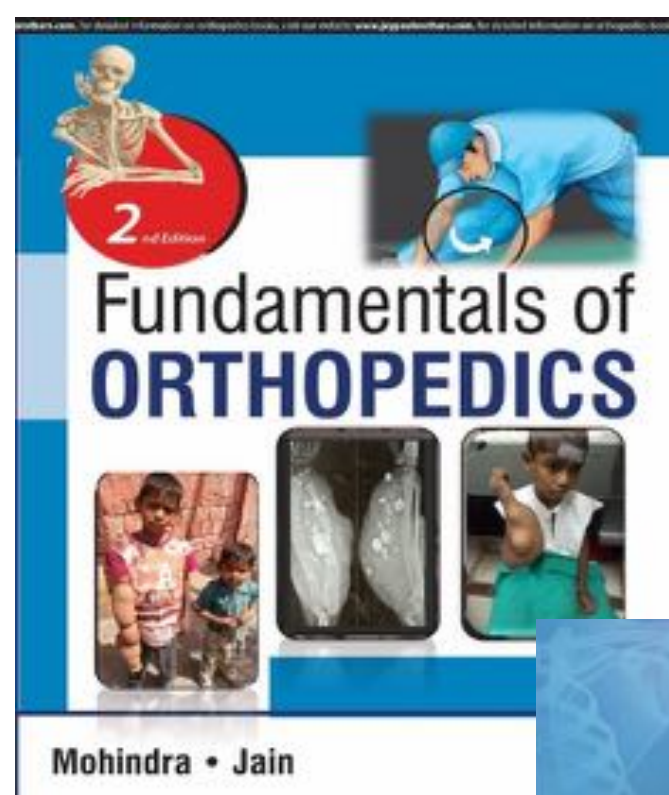
A. Strontium

B. Magnesium

C. Selenium

D. < 60

? Queries



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