

# CALCIUM METABOLISM

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THE ADULT BODY CONTAINS APPROXIMATELY 1 KG OF  $Ca^{2+}$  (25,000 MMOL). THE VAST MAJORITY, OVER 99%, IS BOUND IN THE SKELETON

- **HYPERCALCAEMIA** IS SAID TO BE PRESENT WHEN SERUM CALCIUM IS  $> 2.6$  MMOL/L
- **HYPOCALCAEMIA** IS SAID TO BE PRESENT WHEN SERUM CALCIUM IS  $< 2.2$  MMOL/L

REMEMBER BOTH OF THESE VALUES ARE SUBJECT TO CORRECTION FOR ALBUMIN LEVEL.

## CAUSES OF HYPERCALCAEMIA

- 1 - **MALIGNANCY**(WITH OR WITHOUT BONY METASTASIS)
  - 2 - **MYELOMA**
  - 3 - **PRIMARY HYPERPARATHYROIDISM**
- **THYROTOXICOSIS**
  - **VITAMIN D INTOXIFICATION**
  - **VITAMIN A**
  - **THIAZIDES**
  - **RENAL FAILURE PATIENTS TAKING  $CaCO_3$**
  - **LITHIUM**
  - **IMMOBILISATION**
  - **ACUTE ADRENAL FAILURE**
  - **SARCROID**

90% OF ALL CASES ARE CAUSED BY 1, 2 AND 3

## TREATMENT

- **REHYDRATE** EVEN ORALLY, ENHANCES CALCIUM EXCRETION
- **BISPHOSPHONATES** USEFUL IN MALIGNANCY AND OTHER AETIOLOGIES
- **CALCITONIN** IT'S EFFICACY IS LIMITED TO FIRST 48 HRS
- **PREDNISOLONE** USUALLY ONLY SLIGHTLY HELPFUL IN MYELOMA AND SARCROID
- **ORAL PHOSPHATE** CAN BE USED BUT INTRAVENOUS IS DANGEROUS
- **FUROSEMIDE** USED TO INCREASE RENAL EXCRETION OF CALCIUM

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