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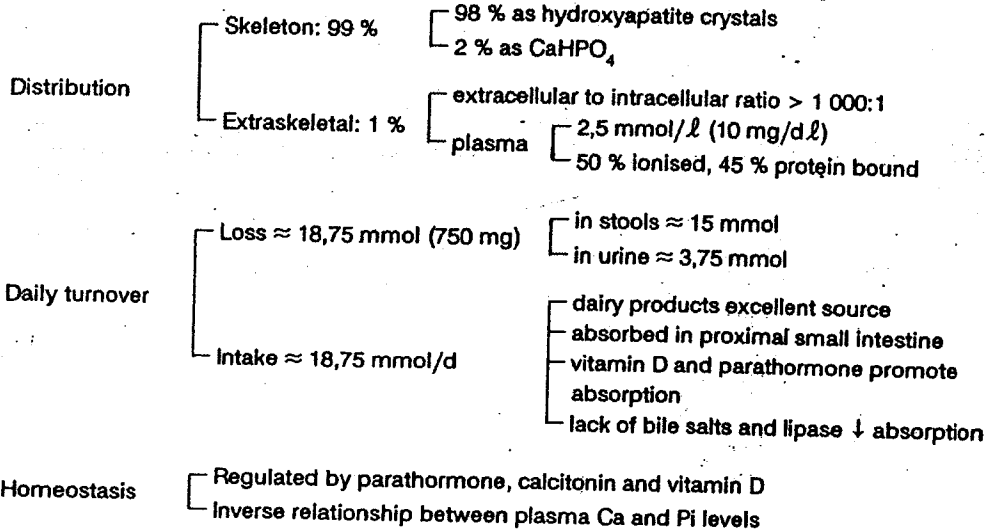
(space flights) also predisposes to osteoporosis as do excess glucocorticoids (p 18.41), hyperthyroidism and hypoinsulinism.

These conditions are associated with increased breakdown of bone matrix – this may explain the decrease in bone mass.

SUMMARY: parathormone, calcitonin, vitamin D and bone

Overview of calcium metabolism

Total body calcium: approximately 1 100 g (27,5 mol)



Functions: Ca^{2+} required for calcification, enzyme activation, hormone and transmitter release, etc.

Hypercalcaemia: parathormone or vitamin D excess, bone metastasis, etc.

Hypocalcaemia: parathormone or vitamin D deficiency – tetany may develop

Parathyroids: parathormone (PTH)

Source: parathyroid glands (4) located on posterior aspect of thyroid

Secretion: controlled by plasma $[\text{Ca}^{2+}]$; decrease stimulates secretion

Biosynthesis: preproparathormone \rightarrow proparathormone \rightarrow parathormone

