Najaarssymposium Orpadt 25 november 2016

Stoornissen in Ca-P metabolisme bij chronisch nierlijden

Wat is het probleem?

Erik Ghijsels

OLV Aalst

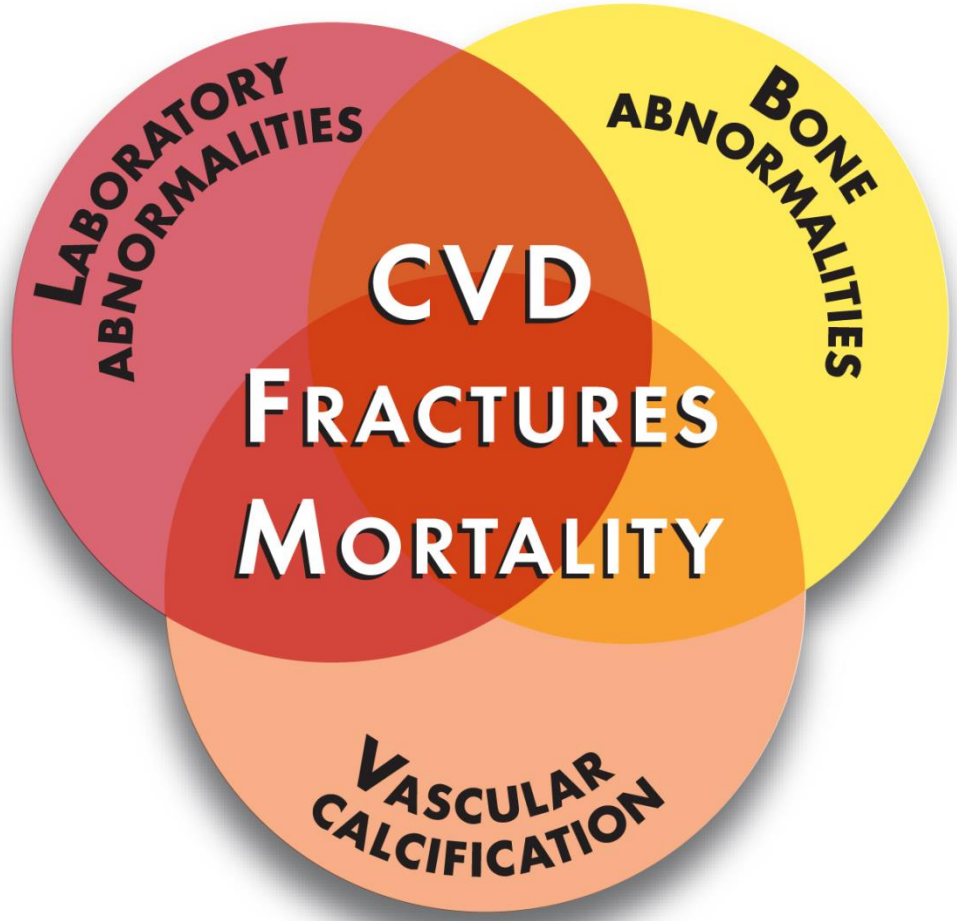
Inleiding - Overzicht

- Calcium, fosfor, PTH, vitamine D
- Botmetabolisme: renale osteodystrofie
- Vaat-afwijkingen: arteriosclerose

→"The Bone-Vascular Axis"

→CKD-MBD

Chronic Kidney Disease–Mineral and Bone Disorder



CKD-MBD

ORPADT VZW

olv Top in Zorg.

CKD-MBD: labo-afwijkingen

1. Vitamine D..te laag
2. PTH.....stijgt
3. Fosfor.....stijgt
4. Calcium.....zakt

Vitamine D

Natuurlijk vitamine D

- Zonlicht
- Voeding (vette vis, orgaanvlees)
- D-Cure

Vitamine D

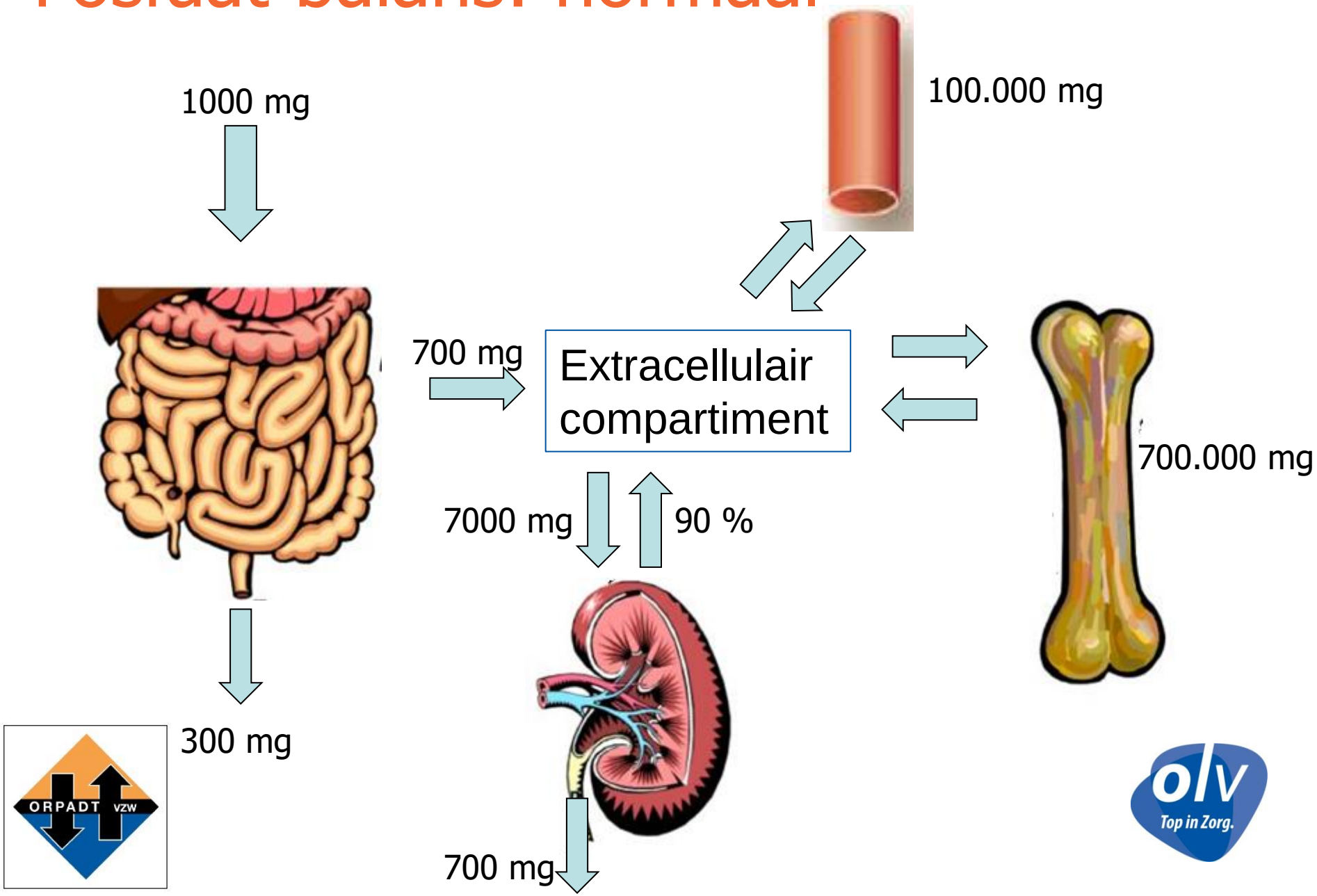
Natuurlijk vitamine D

Lever: 25-OH vitamine D

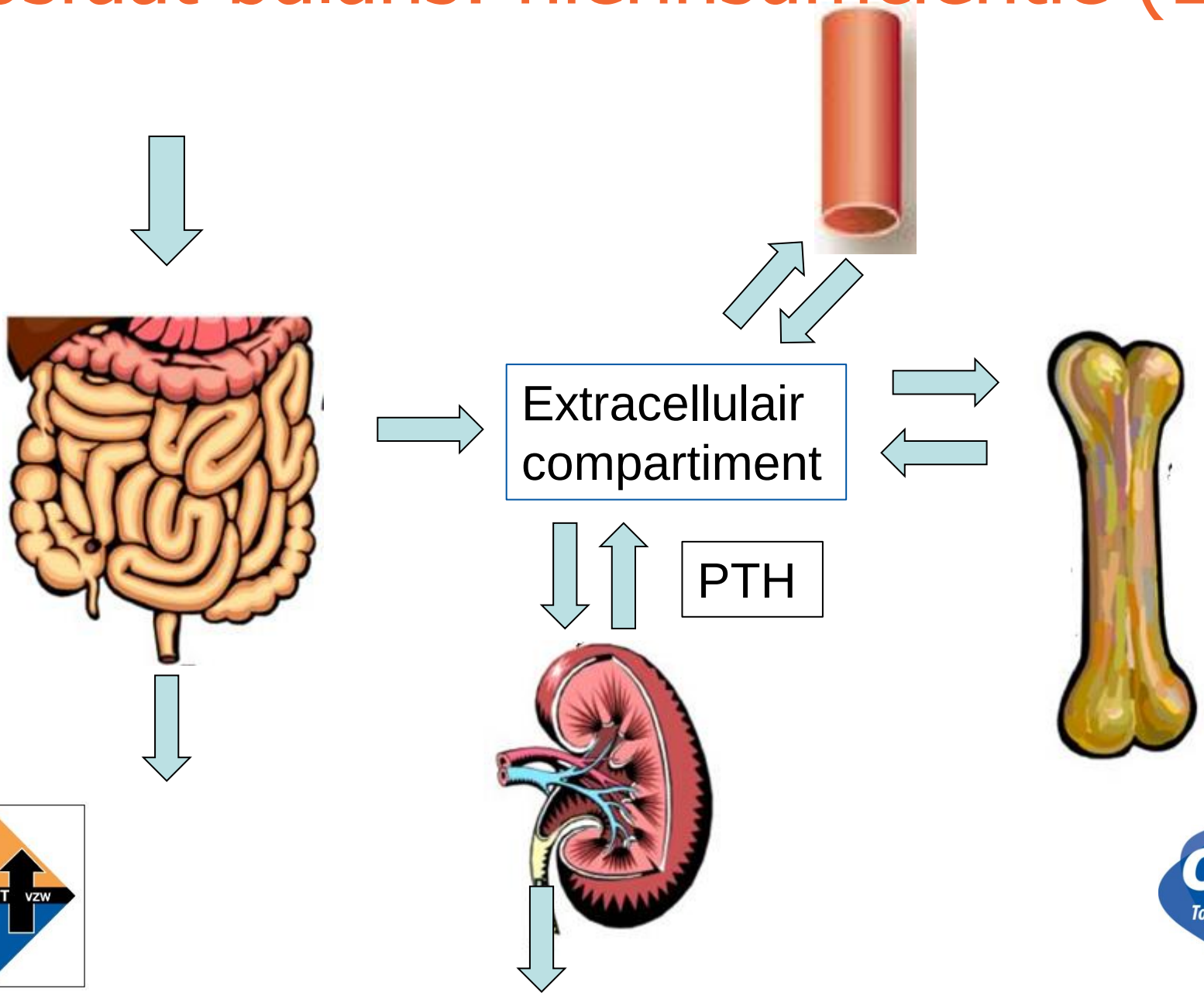
Nier: 1,25$(OH)_2$ vitamine D = calcitriol

Calcitriol = hormoon.

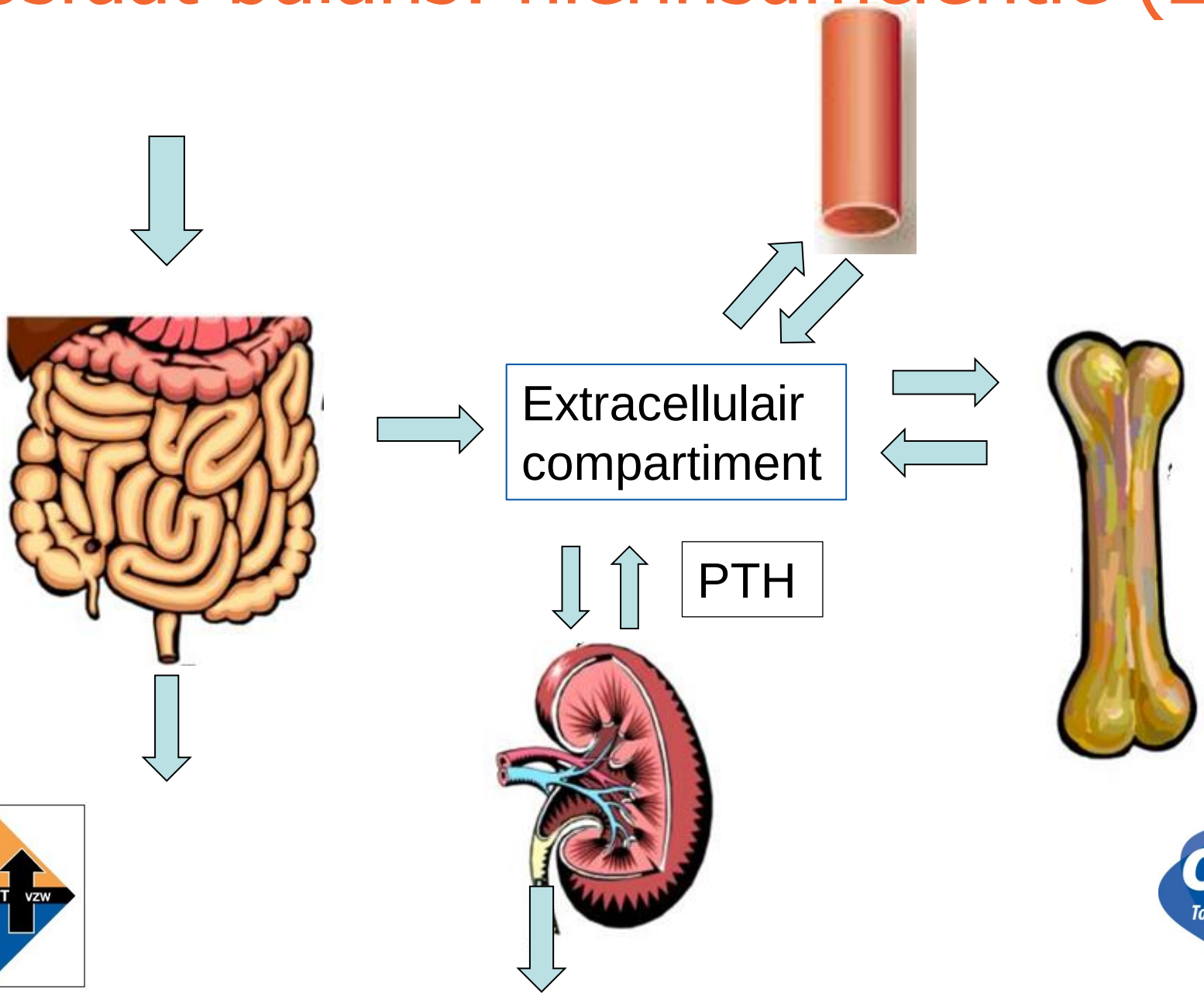
Fosfaat-balans: normaal



Fosfaat-balans: nierinsufficiëntie (1)



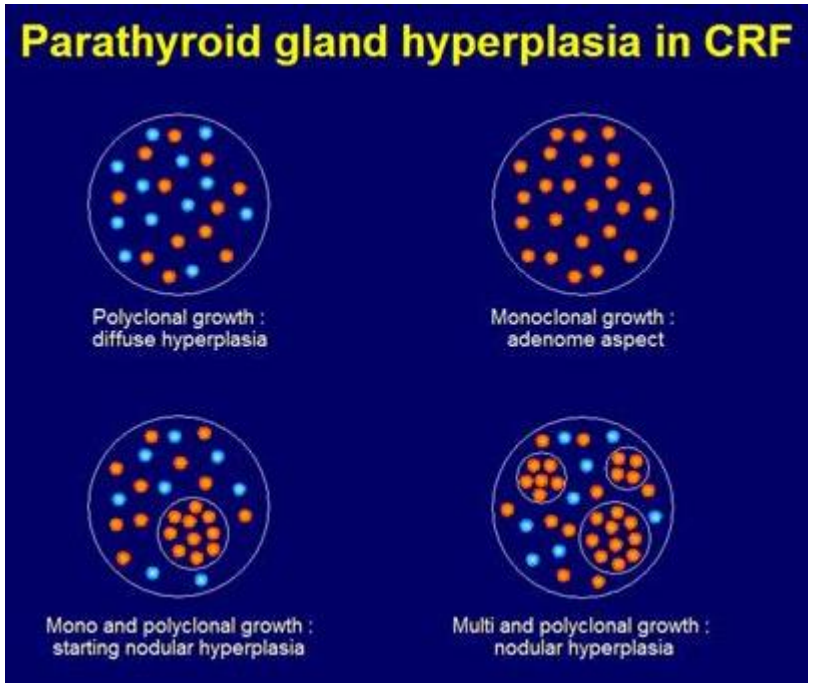
Fosfaat-balans: nierinsufficiëntie (2)



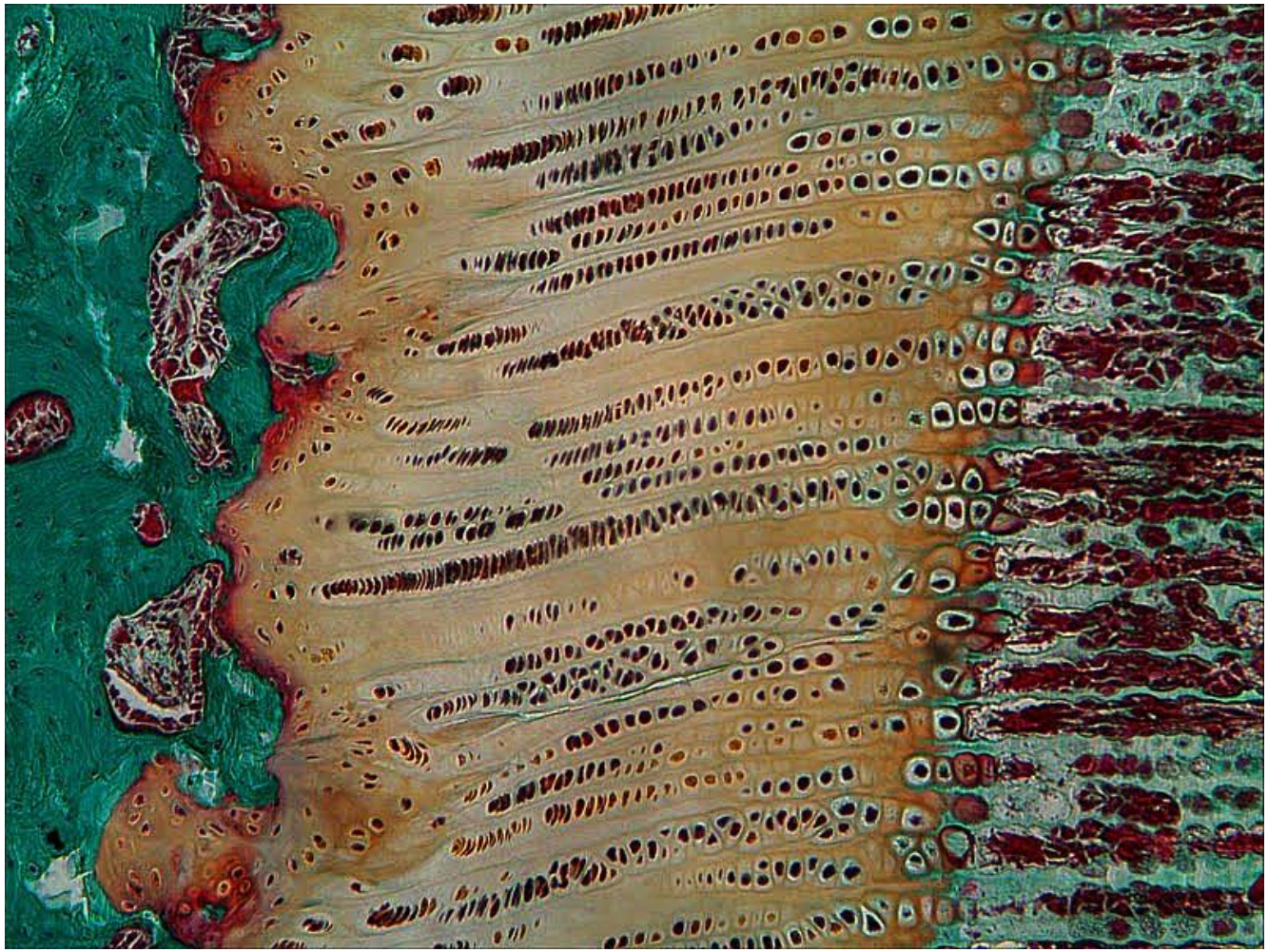
Hyperparathyroidie

PTH afhankelijk van:

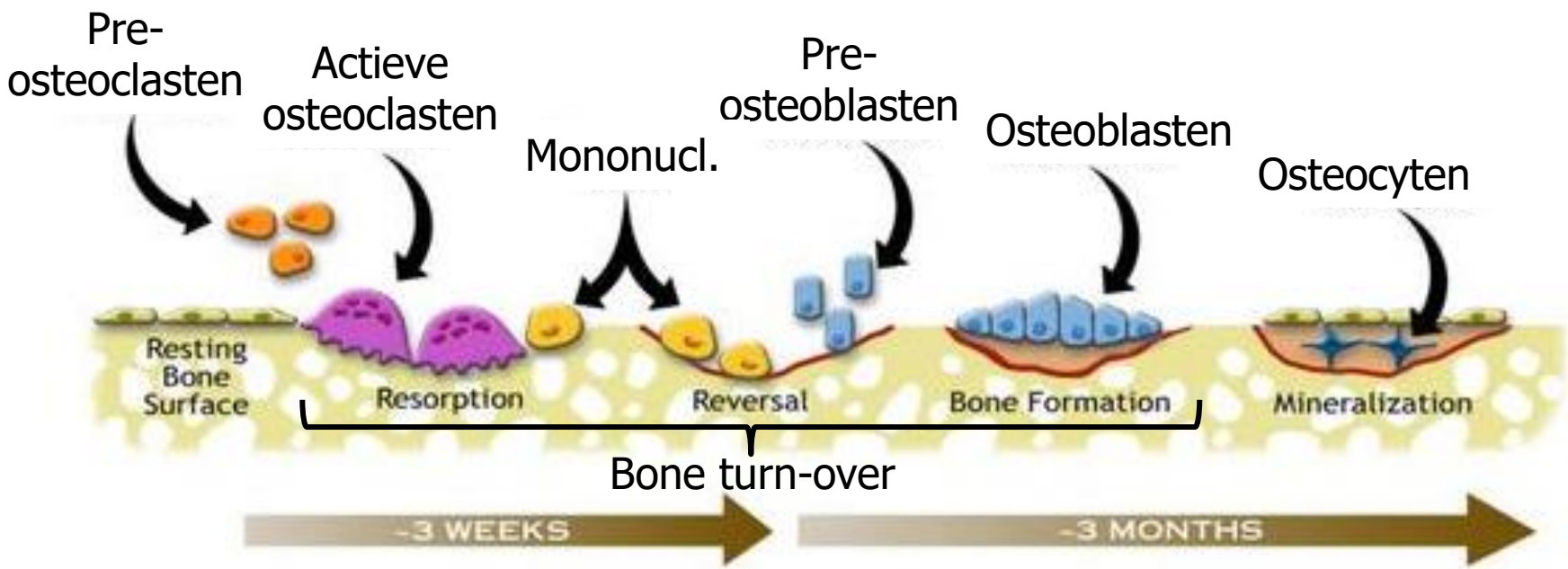
- Calcium
- Fosfor
- Calcitriol



Renale Osteodystrofie



Bot = levend weefsel



Bot turn-over wordt beïnvloed door:

Hormonen: PTH, calcitriol, steroïden, calcitonine, groeihormoon, …

Cytokines en groeifactoren: M-CSF, VGEF, RANKL, IL-6, …

Renale Osteodystrofie

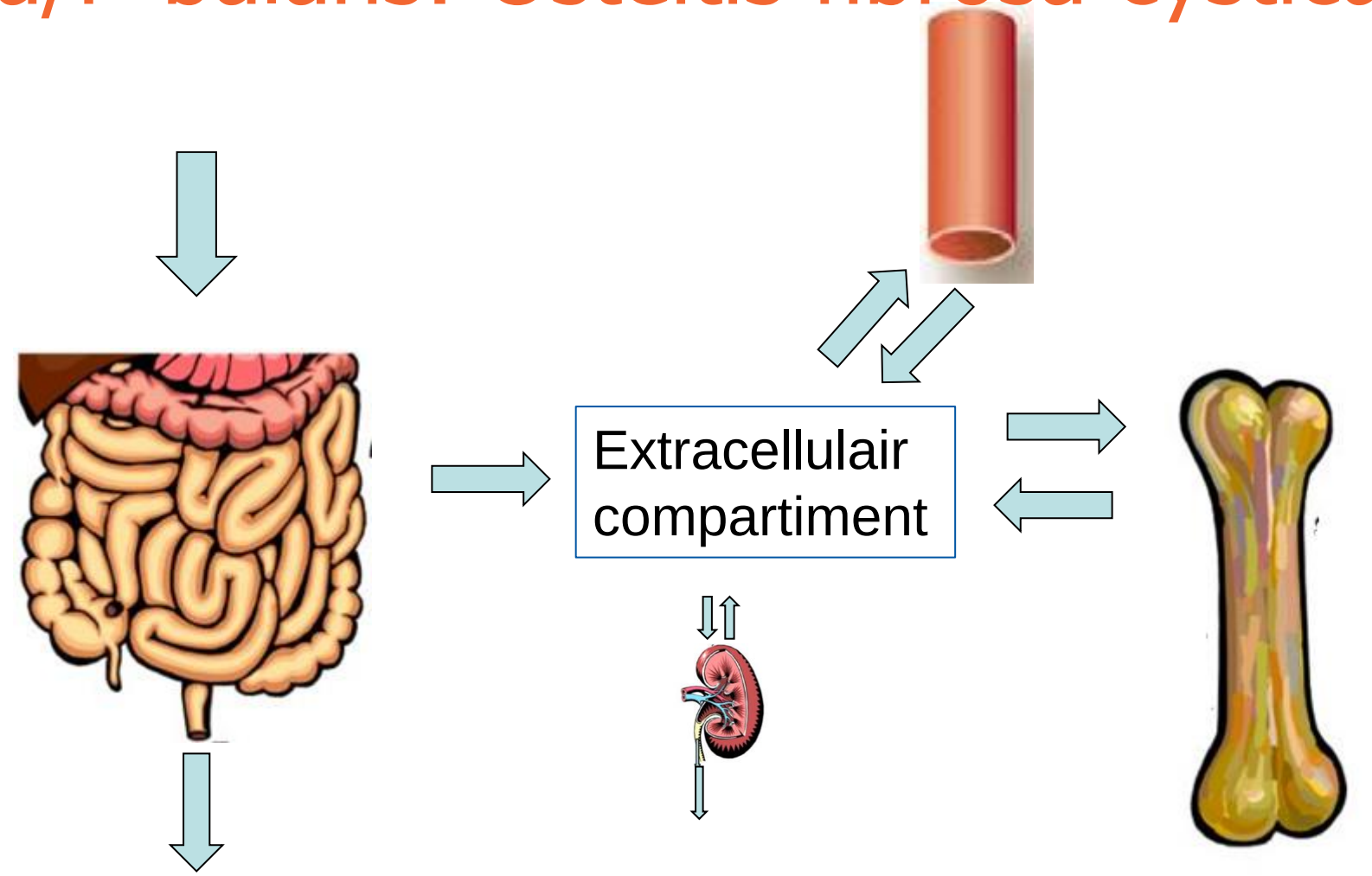
Stoornissen in:

- Bot turn-over
  - Te hoog
  - Te laag
- Bot mineralisatie
  - Te traag

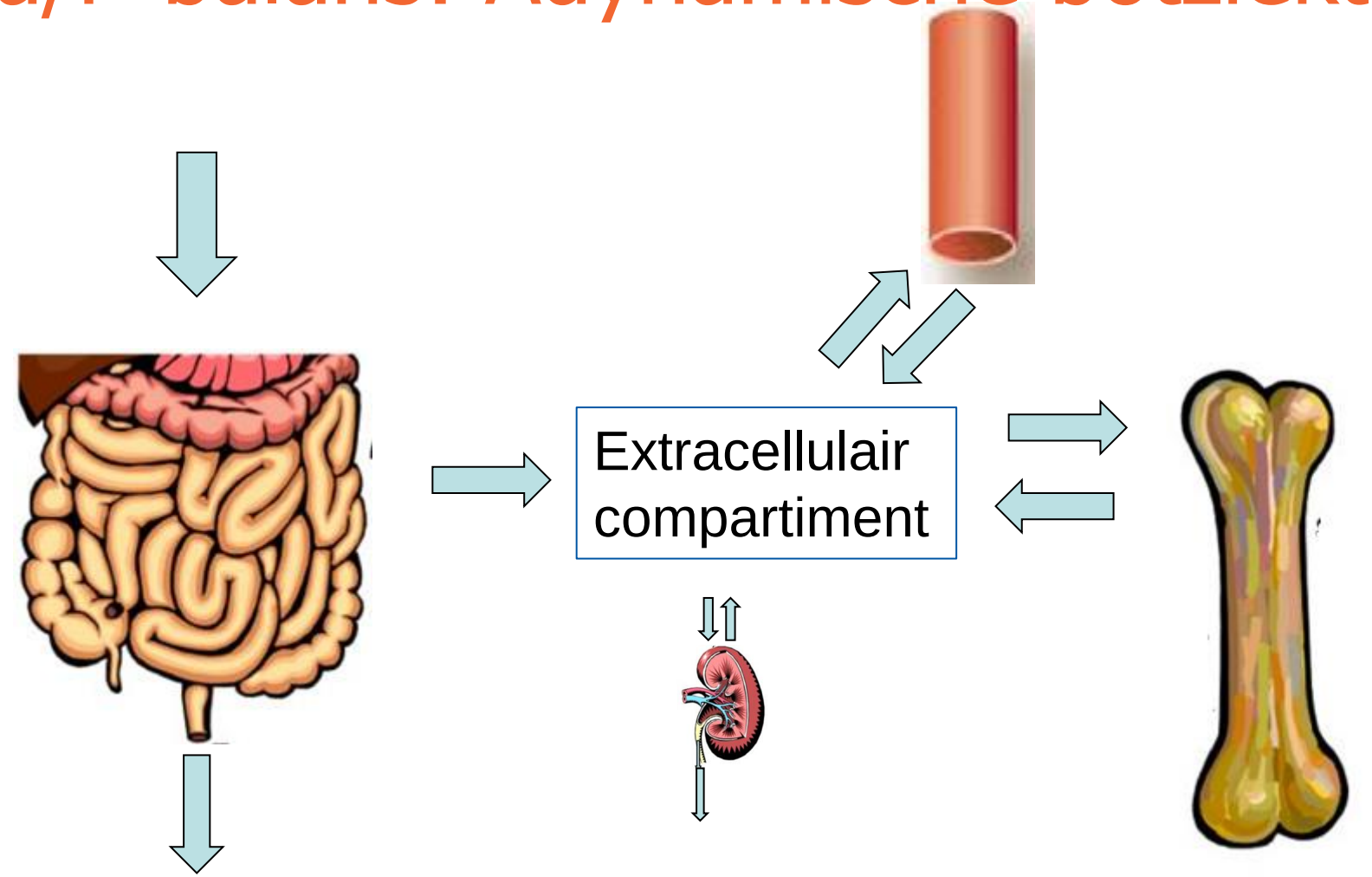
Renale Osteodystrofie

1. Osteitis Fibrosa Cystica (hyperpara)
2. Adynamic Bone Disease ("dood bot")
3. Osteomalacie (aluminium)
4. Gemengde Uremische Osteodystrofie
5. Botcysten (dialyse-amyloidose)

Ca/P-balans: Osteïtis fibrosa cystica



Ca/P-balans: Adynamische botziekte



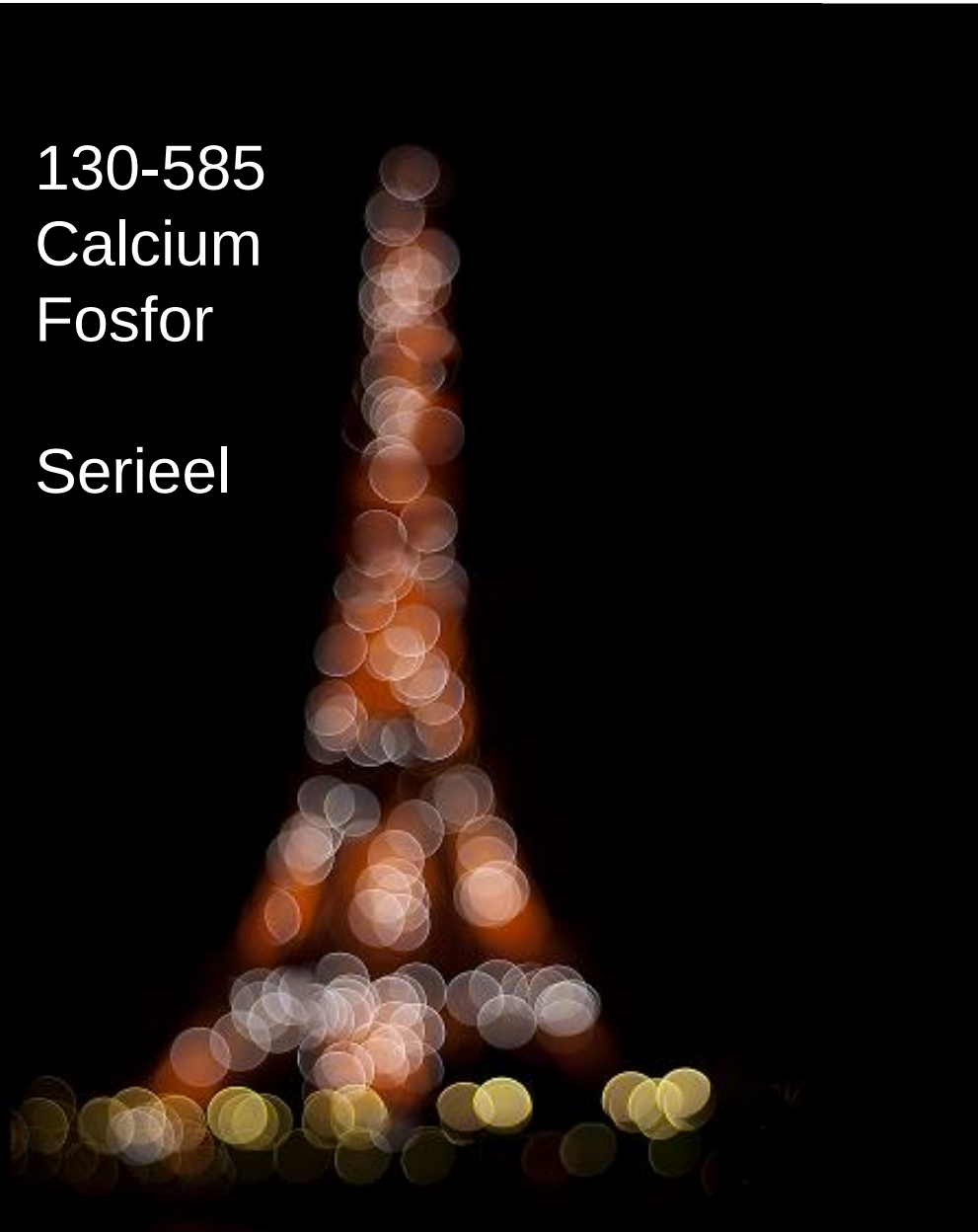
Renale Osteodystrofie: Kliniek

PTH en bot turn-over…

150-300

130-585
Calcium
Fosfor

Serieel

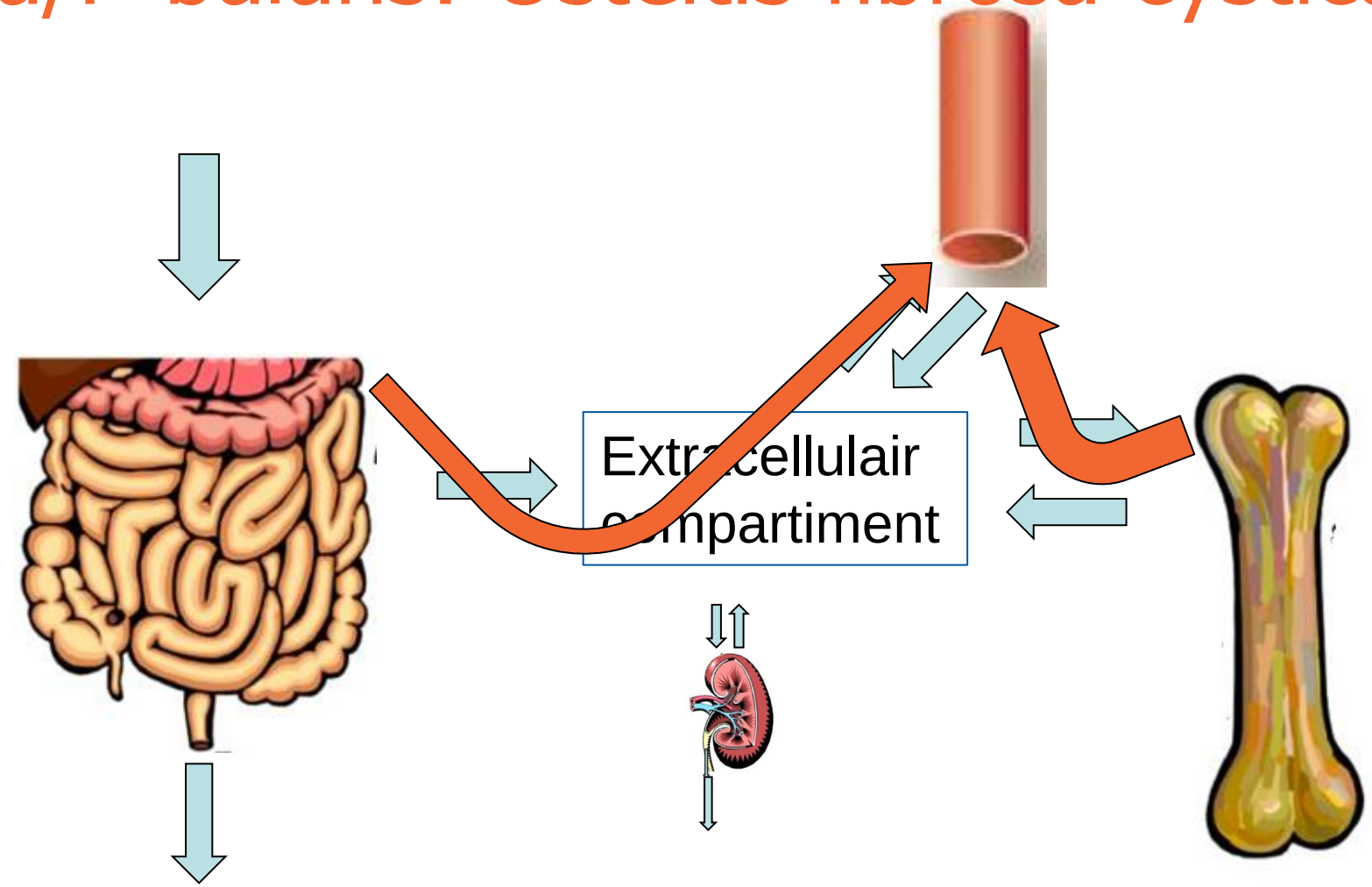


Waarom?

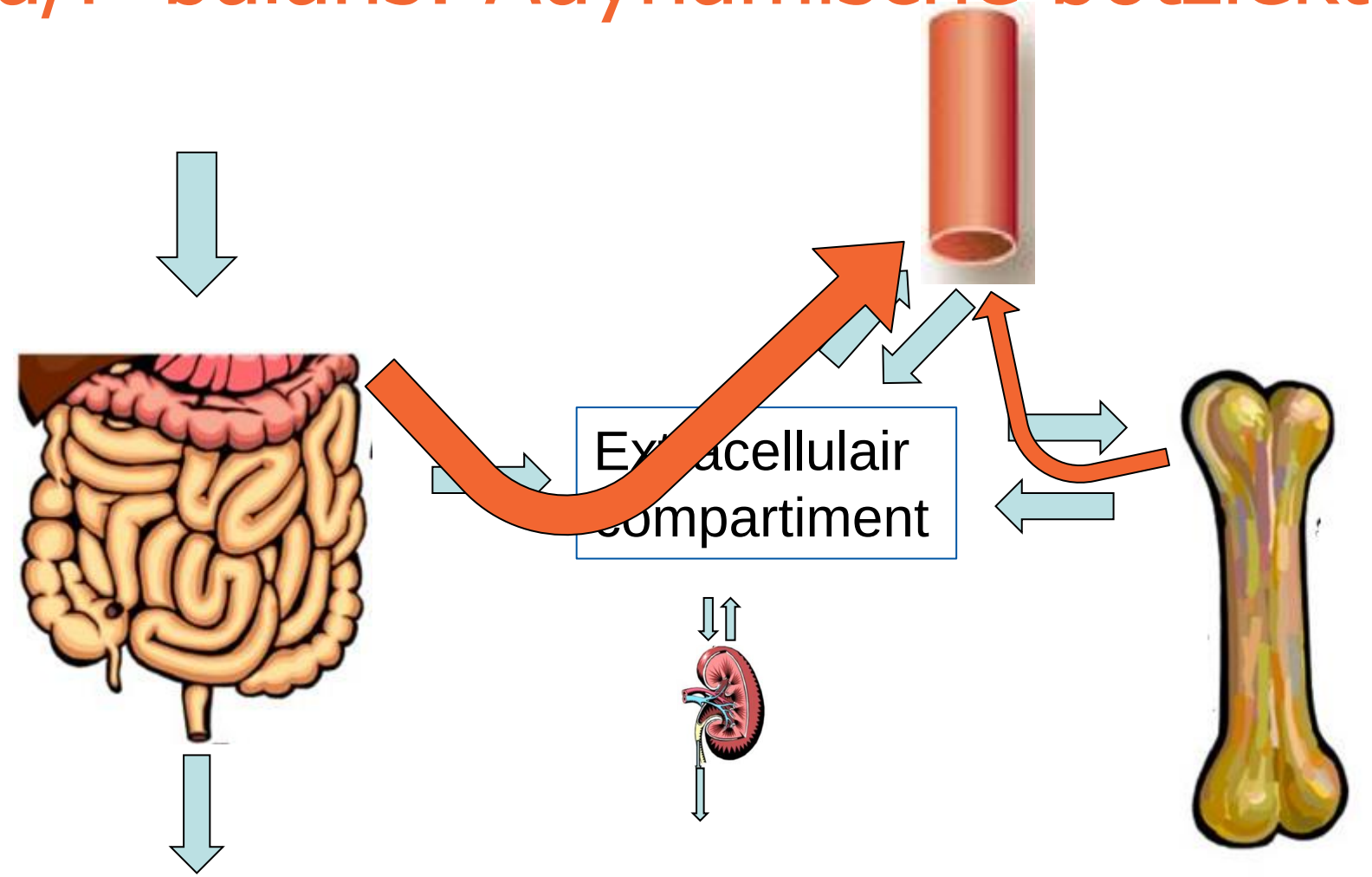
- Botbiopsie = gouden standaard
- Adynamisch bot: meest frequente bevinding, zowel bij HD als PD.
- Adynamisch bot: zelfs bij PTH > 450 ng/L.

CKD-MBD: vaatlijden

Ca/P-balans: Osteïtis fibrosa cystica



Ca/P-balans: Adynamische botziekte

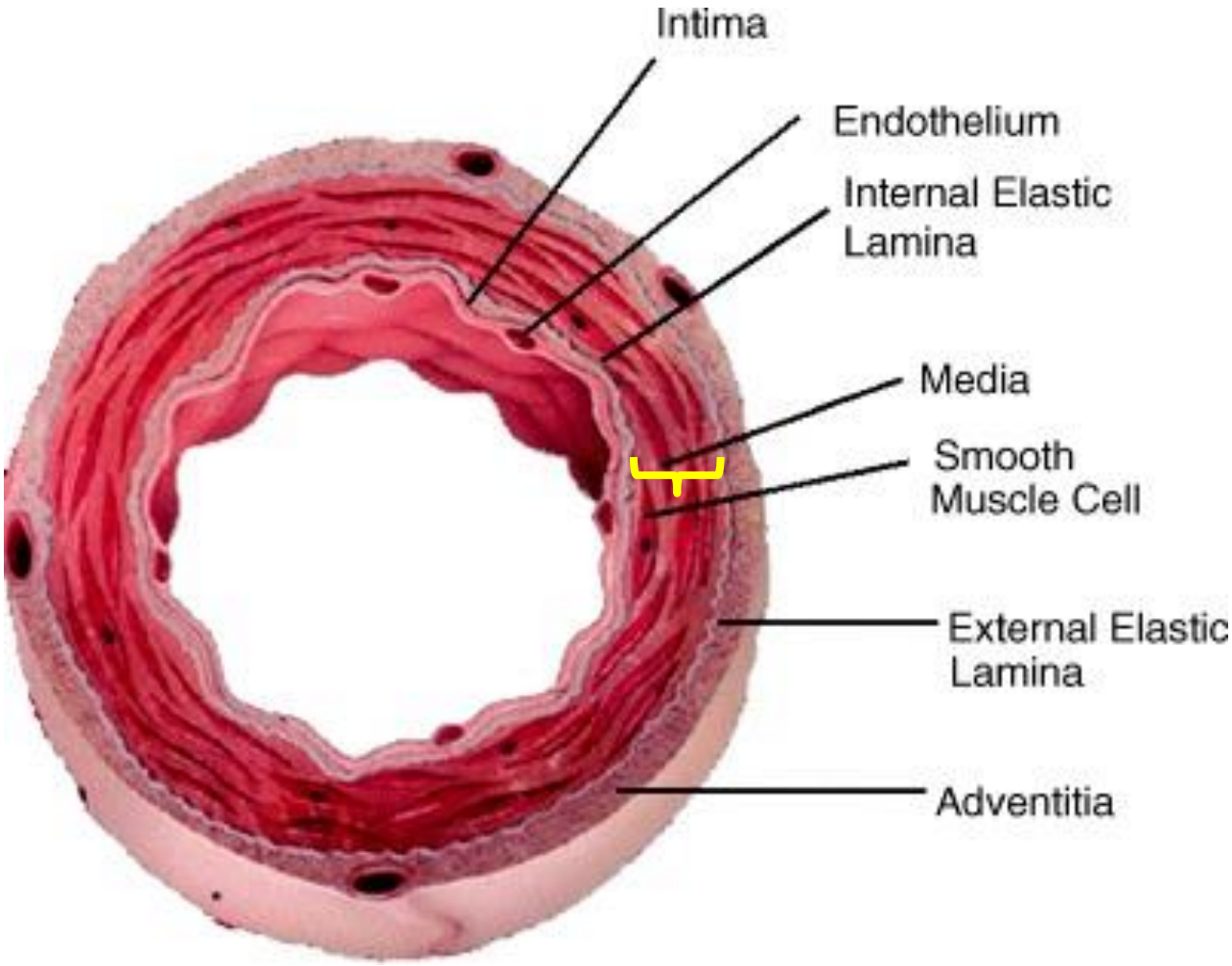


CKD-MBD: vaatlijden

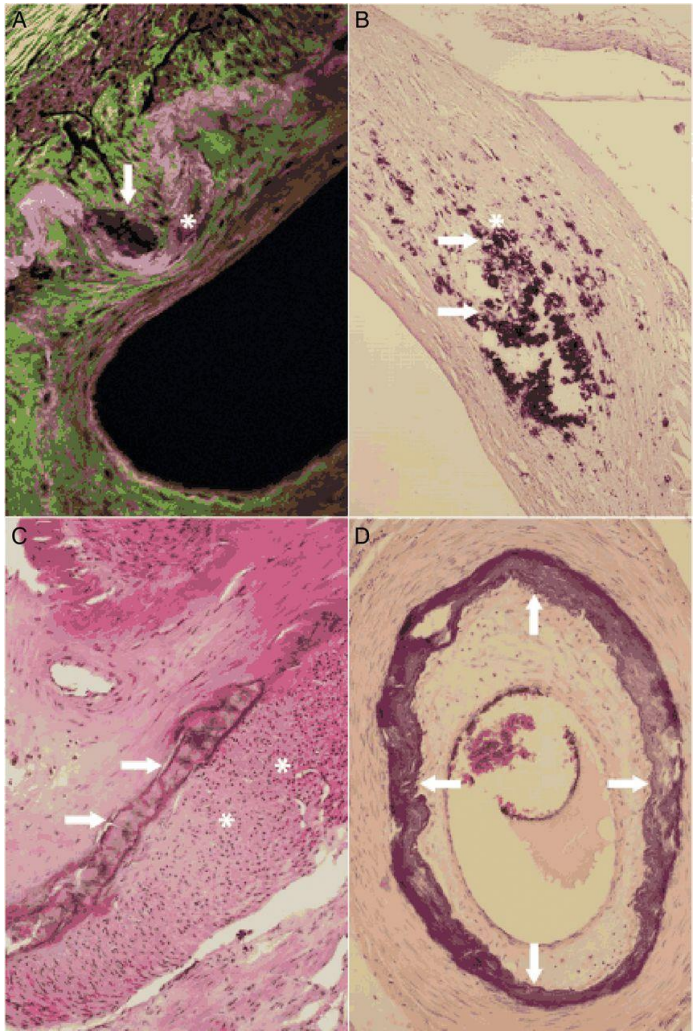
CKD-MBD: vaatlijden

- Arteriosclerose
- “Media-calcificatie”
- “Mönckeberg media sclerose”

Arteriosclerose ≠ Atherosclerose



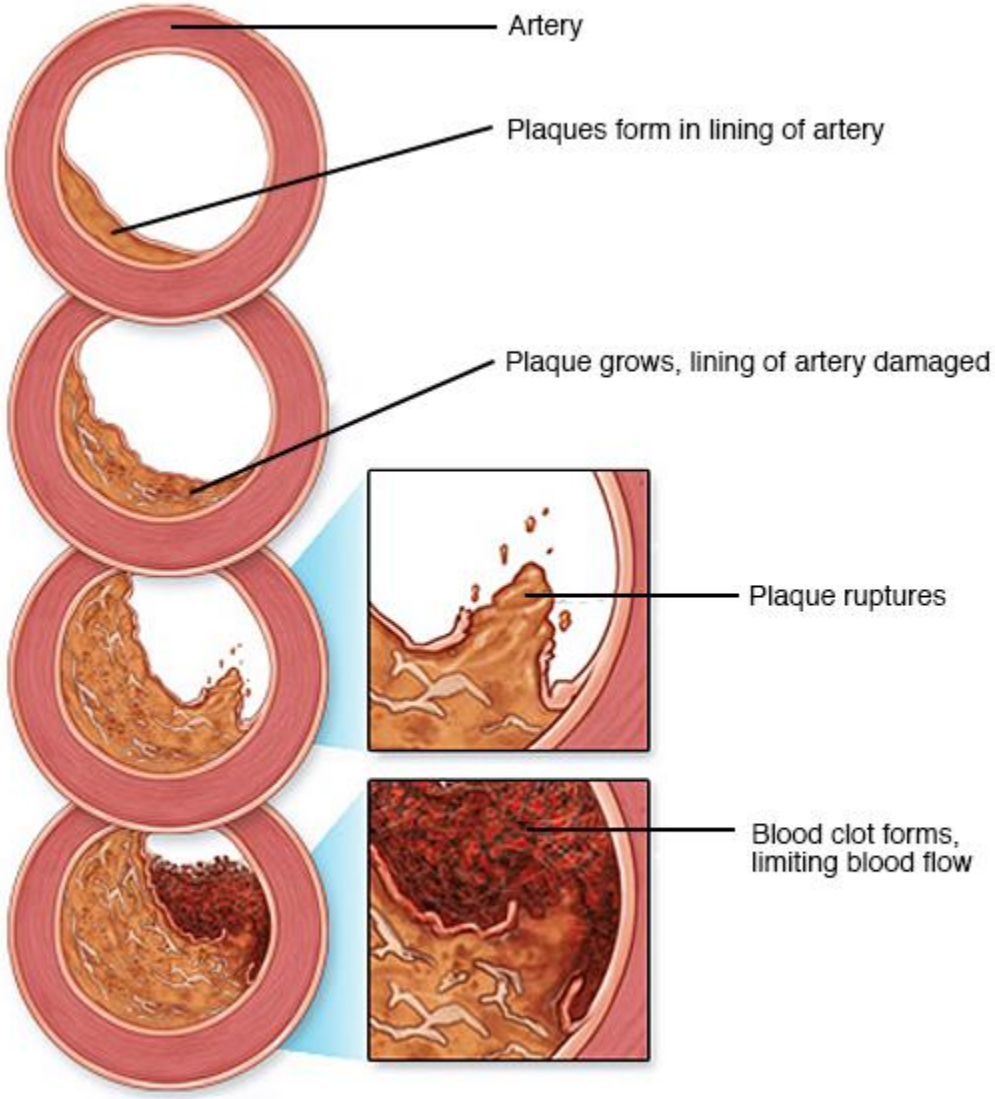
Arteriosclerosis: APO



Peter Lanzer et al. Eur Heart J 2014;35:1515-1525

European Heart Journal

Atherosclerose



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Arteriosclerose ≠ Atherosclerose

Arteriosclerose	Atherosclerose
• Tunica media	• Tunica intima
• Continu	• “Patchy”
• CKD, DM, lft.	• Chol, AHT, DM, roken, …
• Leidt tot hypertensie	• Gevolg van hypertensie
• Stijve vaten	• Vernauwing/occlusie
• LVH, aritmie	• Infarct, CVA, claudicatio

DUS…

- Twee tegenovergestelde fysiopathologische processen
- Flink overlappend labo
- Zeer gelijkaardige verwikkelingen
- Aanpak deels gelijklopend
  deels sterk verschillend

EINDE DEEL 1…