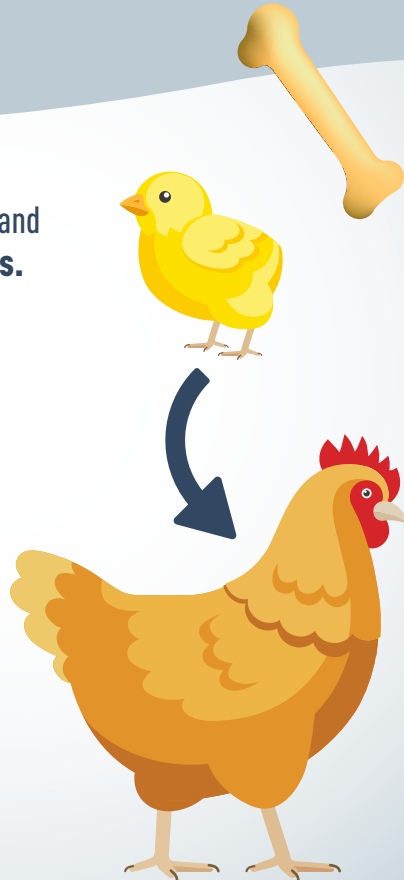




# Phosphorus in layer life

- ✓ Mineralization of the skeleton and growth of the pullet **0-6 weeks.**
- ✓ Secondary mineralization of the bones **17-21 weeks.**
- ✓ Sexual maturity growth in production **17-25 weeks.**
- ✓ **Bone reabsorption in production**





# Phosphorus

## key of growth



**Ensures the transfer of energy**  
(ATP, ADP, GTP).

**It also contributes  
to regulation of  
feed intake**  
in case of low and  
marginal supply of  
phosphorus.



**It is part of  
phospholipids**  
which form the cell  
membranes and  
participates to numerous  
regulations of cell  
pathways through  
phosphorylation of  
proteins.



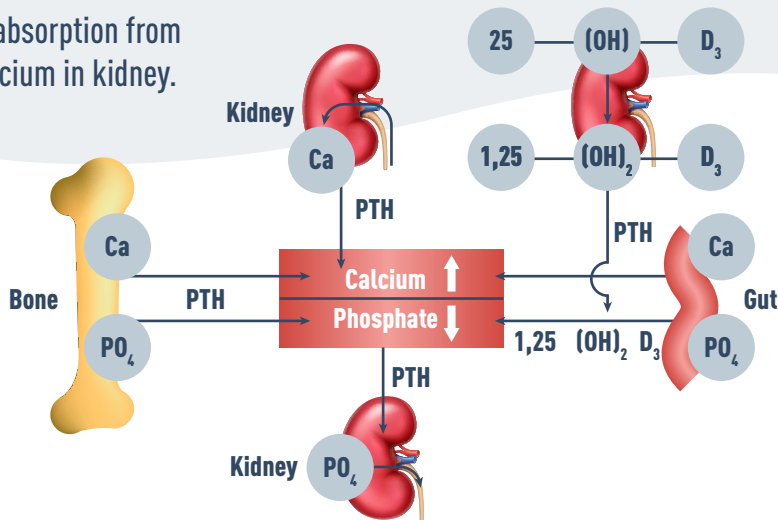
# The cycle of phosphorus for the eggshell formation

The PTH hormone stimulates the excretion of phosphorus by:

- ✓ Inhibiting reabsorption of phosphate in kidney.
- ✓ Reabsorption from calcium in kidney.

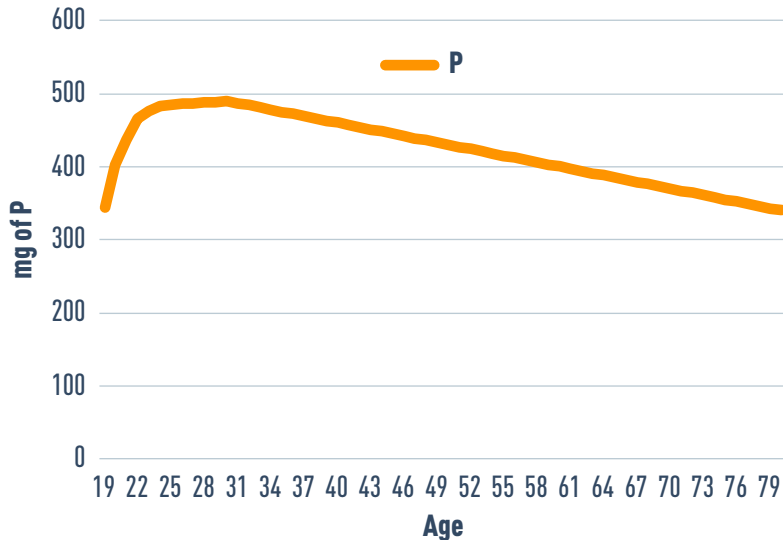
1,25-dihydroxy Vitamin D3 (Vitamin D3): stimulates absorption of phosphorus from gut

Calcitonine: is a physiological antagonist to PTH regarding  $\text{Ca}^{2+}$  homeostasis





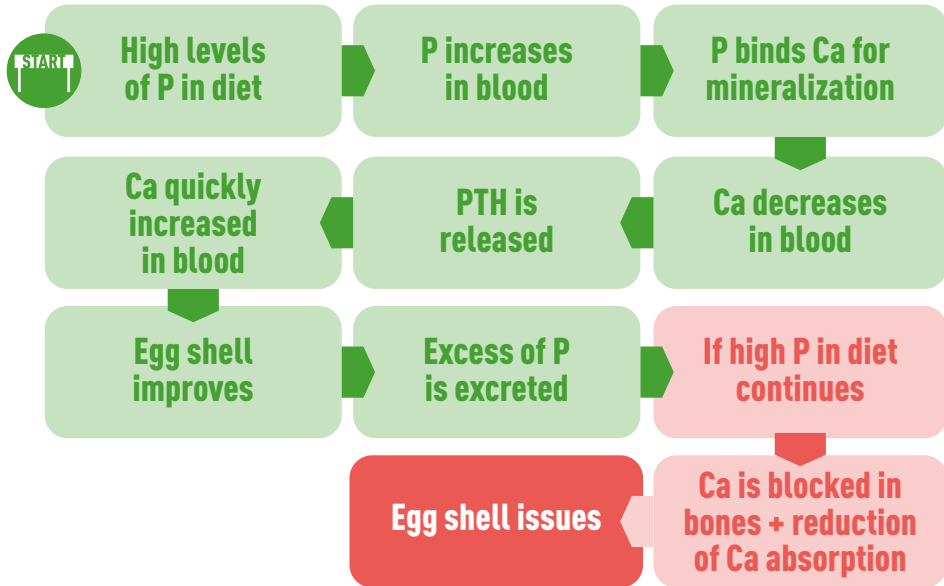
# What are the needs of Phosphorus in production?



**The needs of phosphorus decrease significantly once the needs of growth and bone formation have finished.**



# Effect of excess of Phosphorus in diet



# Bibliography



- K. Keshavarz. Phosphorus Requirement of Laying Hens with and Without Phytase on a Phase Feeding Program - Poultry Science 79:748–763
- K. Keshavarz. The Effect of Different Levels of Nonphytate Phosphorus with and Without
- Phytase on the Performance of Four Strains of Laying Hens - Poultry Science 82:71–91
- H. Ahmadi and M. Rodehutscord. A meta-analysis of responses to dietary nonphytate phosphorus and phytase in laying hens - Poultry Science 91 :2072–2078
- H&N Management guide 2019