



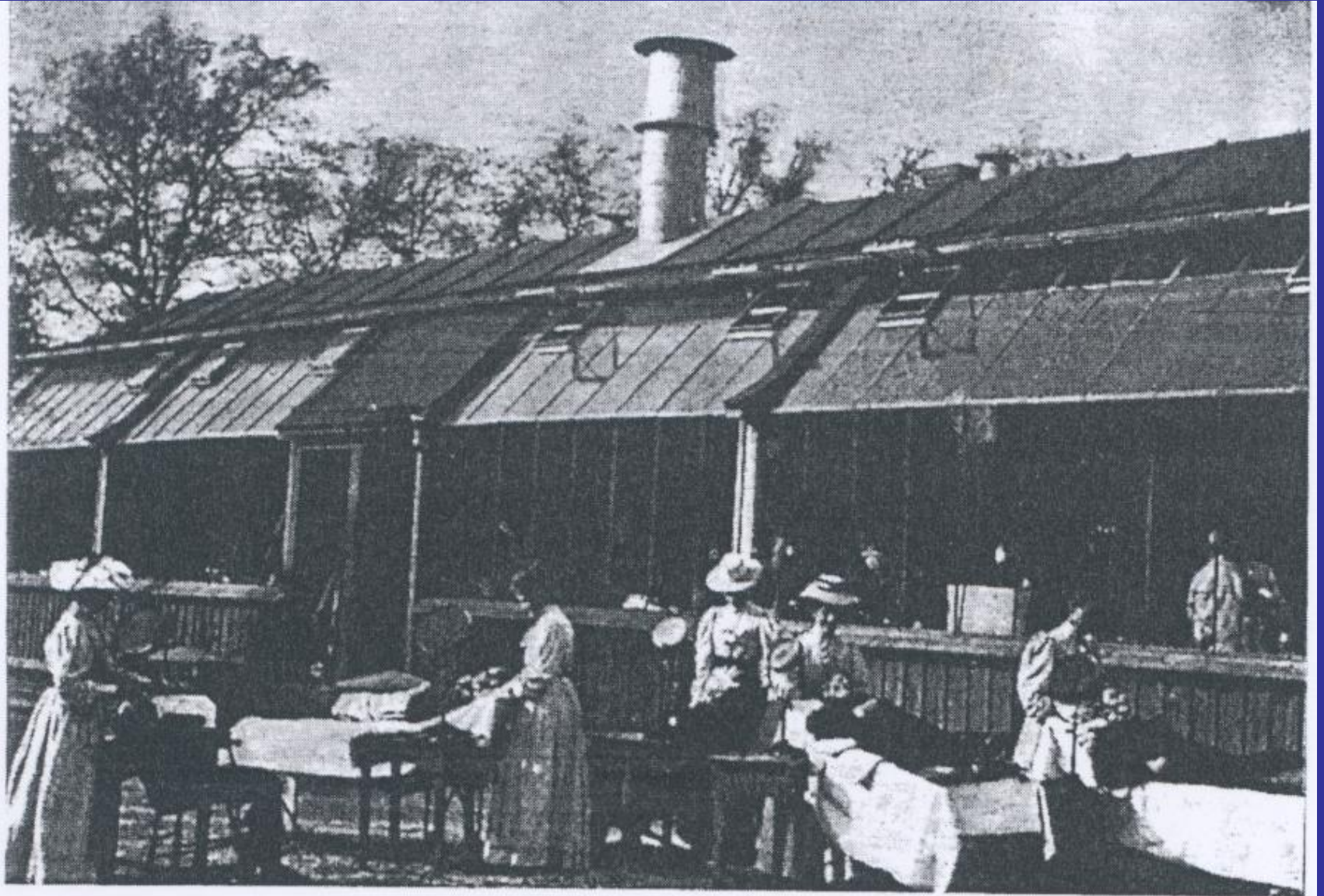
# Cholecalciferol Supplementation an HD – sinnvoll oder nicht ? - PRO

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## Nils Finsen, Nobelpreis 1903



**Figure 3.** Typical solar treatment center where a magnifying lens was positioned over the patient before the solar treatment.



KDIGO Clinical Practice Guideline for the Diagnosis, Evaluation, Prevention, and Treatment of Chronic Kidney Disease-Mineral and Bone Disorder (CKD-MBD)

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### 3.1.3

In patients with CKD stages 3–5D, we suggest that 25(OH)D (calcidiol) levels might be measured (2C).

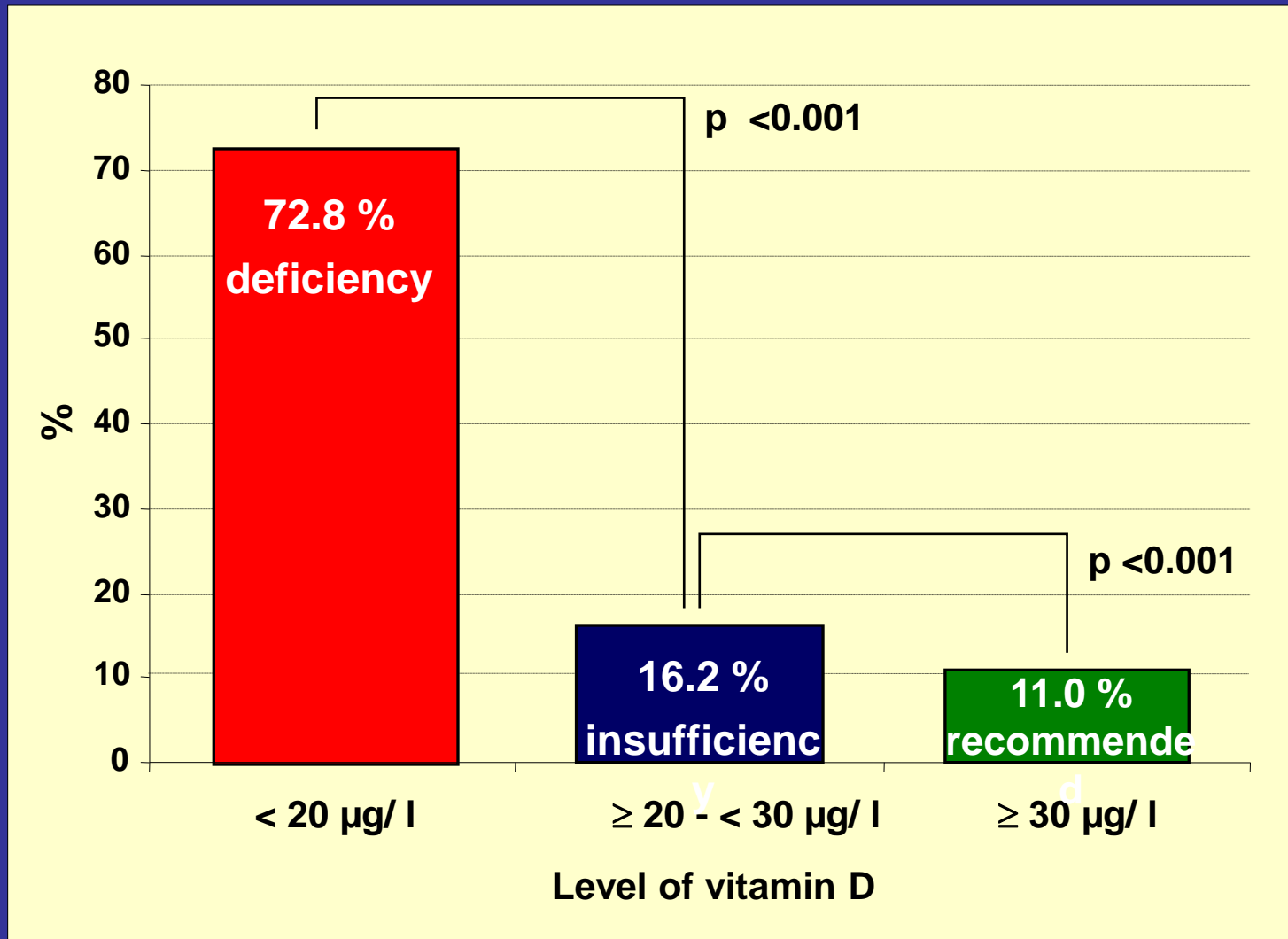
We suggest that vitamin D deficiency and insufficiency be corrected using treatment strategies recommended for the general population (2C).

Most studies define deficiency as serum 25(OH)D (calcidiol) values <10 ng/ml (25 nmol/l), and insufficiency as values <20–32 ng/ml (50–80 nmol/l).

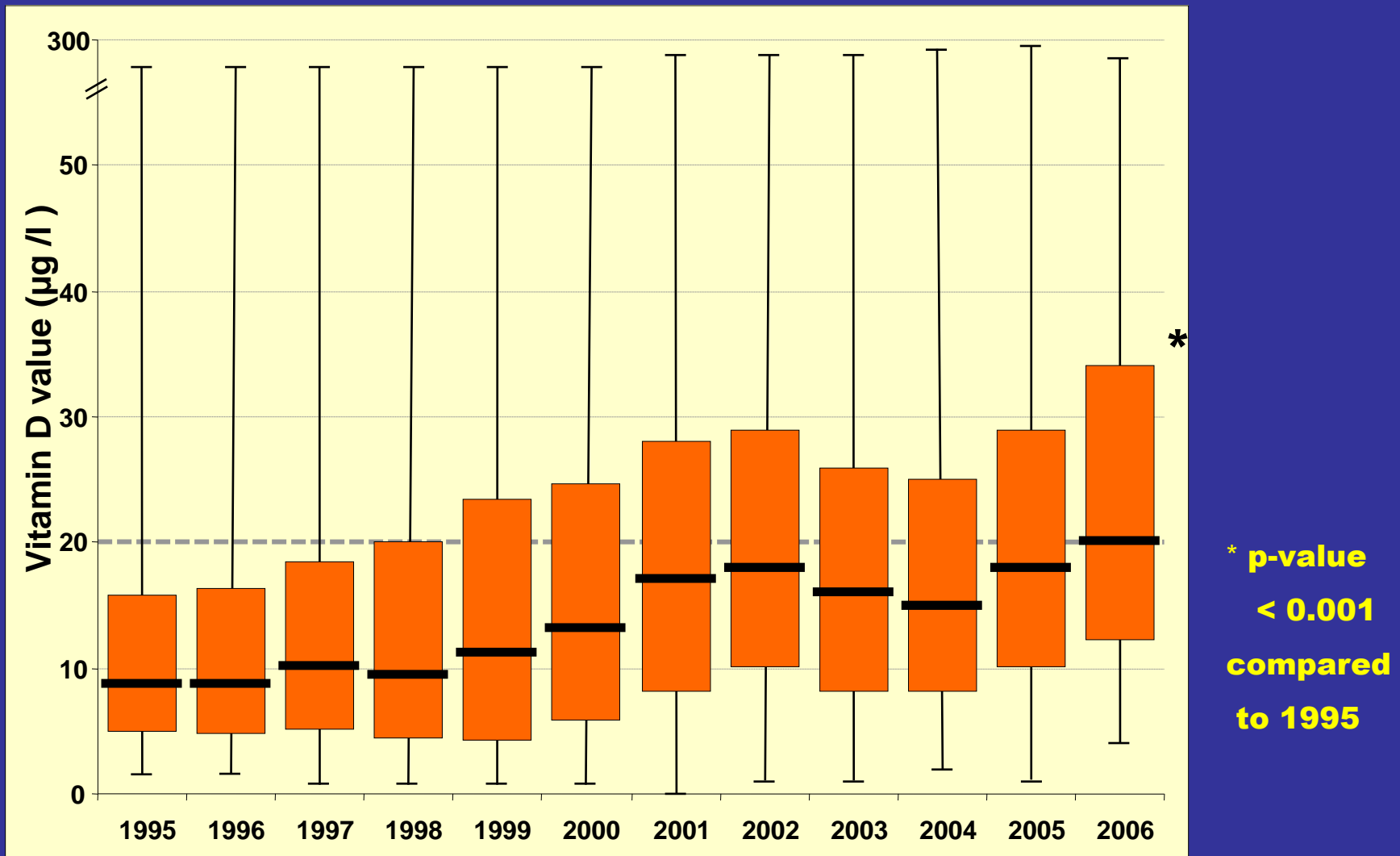
Numerous publications have found associations of vitamin D deficiency to be associated with various diseases.

In the general population and in patients with CKD there is an association of low 25(OH)D levels with mortality.

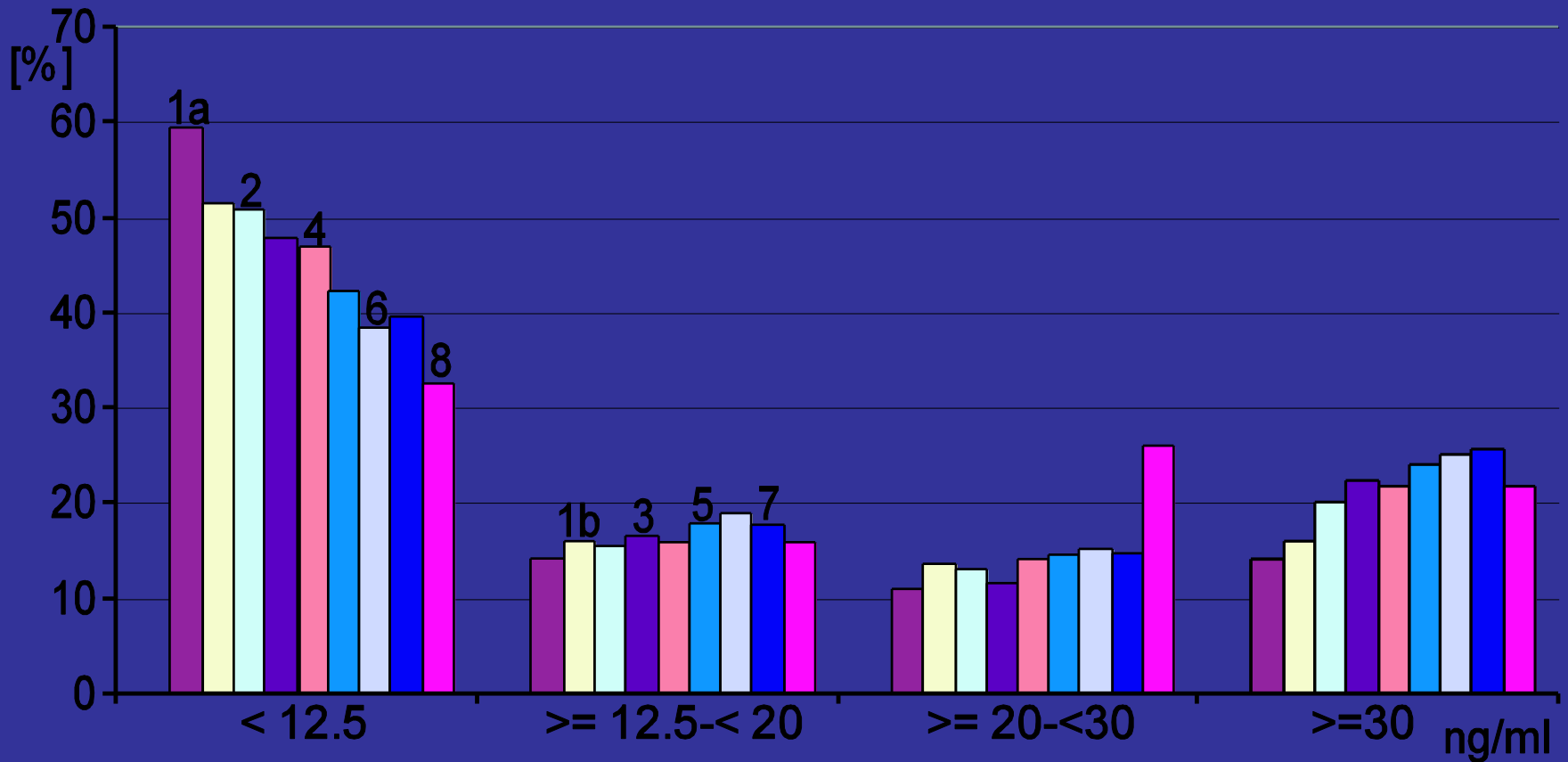
# Vitamin D status of German RRT population



# Time course of Vitamin D status 1995-2006

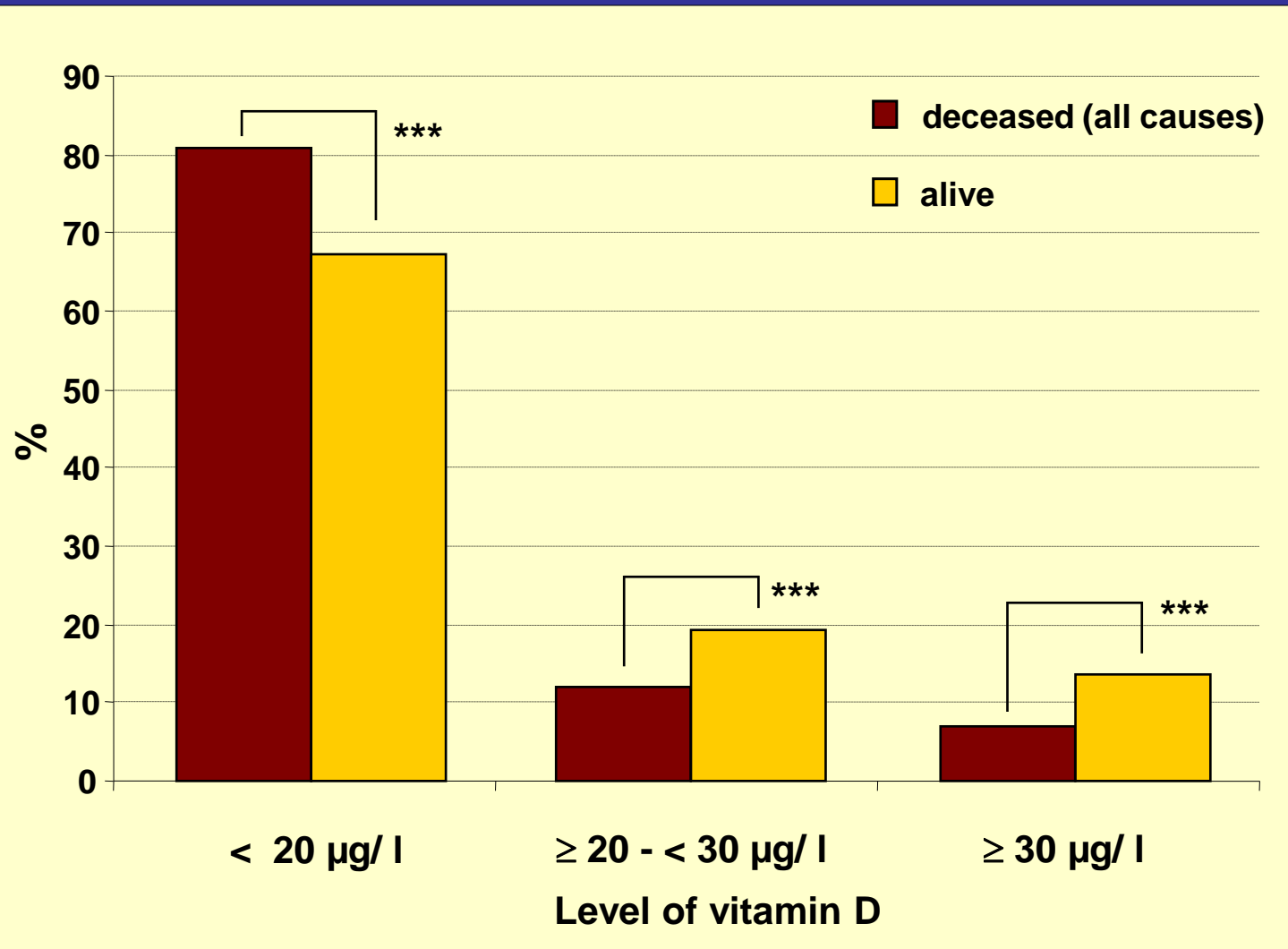


# Vitamin-D-Status und renale Grundkrankheiten bei HD-Patienten

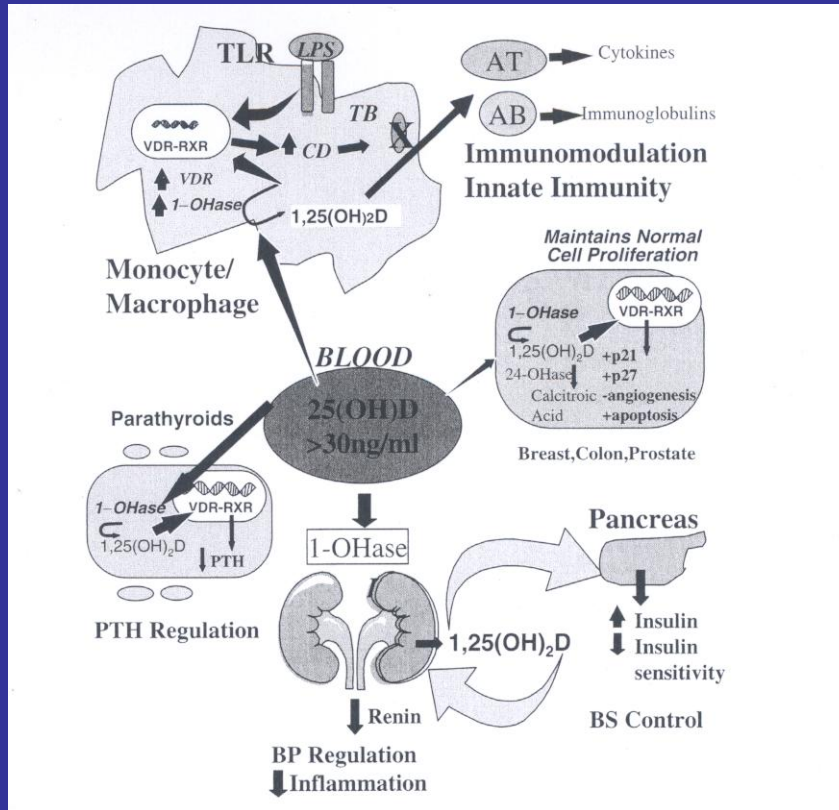


1a Diab I ,1b Diab II, 2 Interstitielle Nephritis, 3 Systemerkrankungen, 4 Verschiedene, 5Vaskuläre Nephropathie, 6 Glomerulonephri., 7 Zystennieren, 8. Vererbte Nephropathien.

# Vitamin D status by vital status



# Pleiotrope Effekte von Calcidiol



Calcium, Phosphate, PTH

Bone and Muscle

Hypertension and Cardiovascular

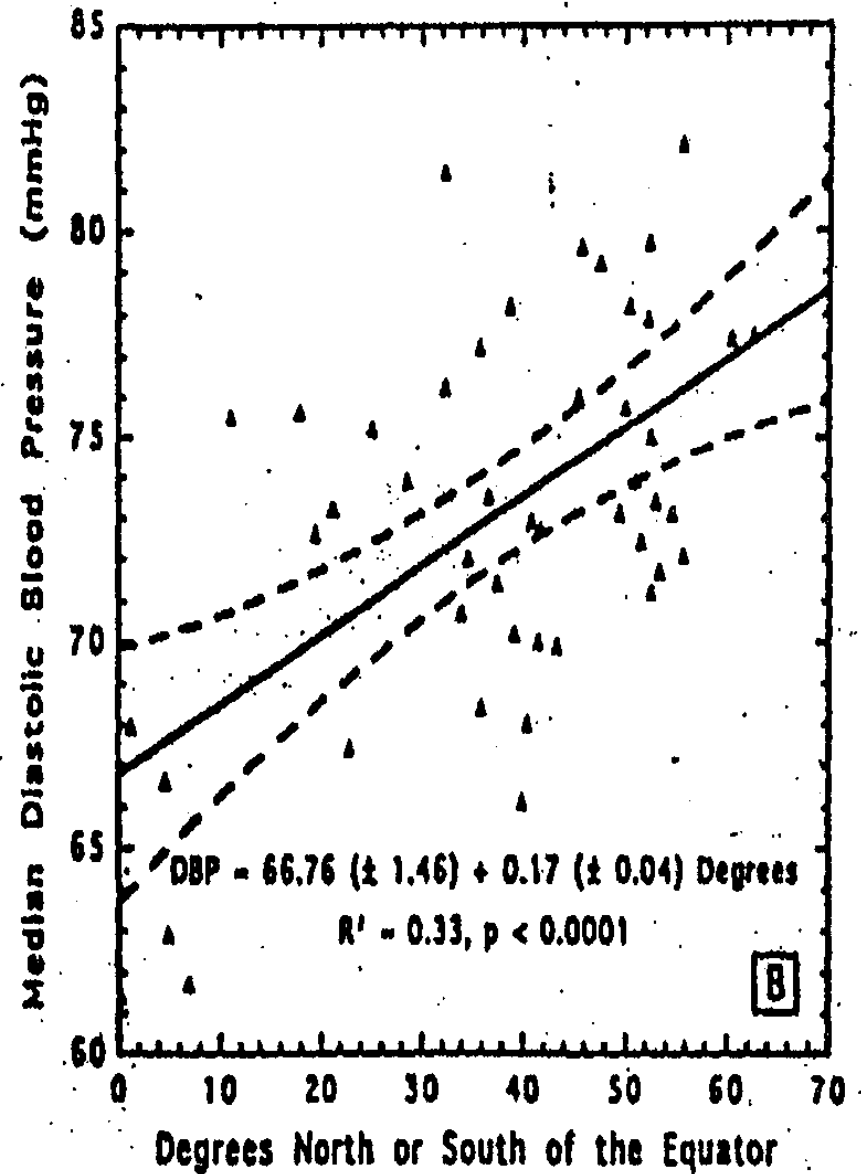
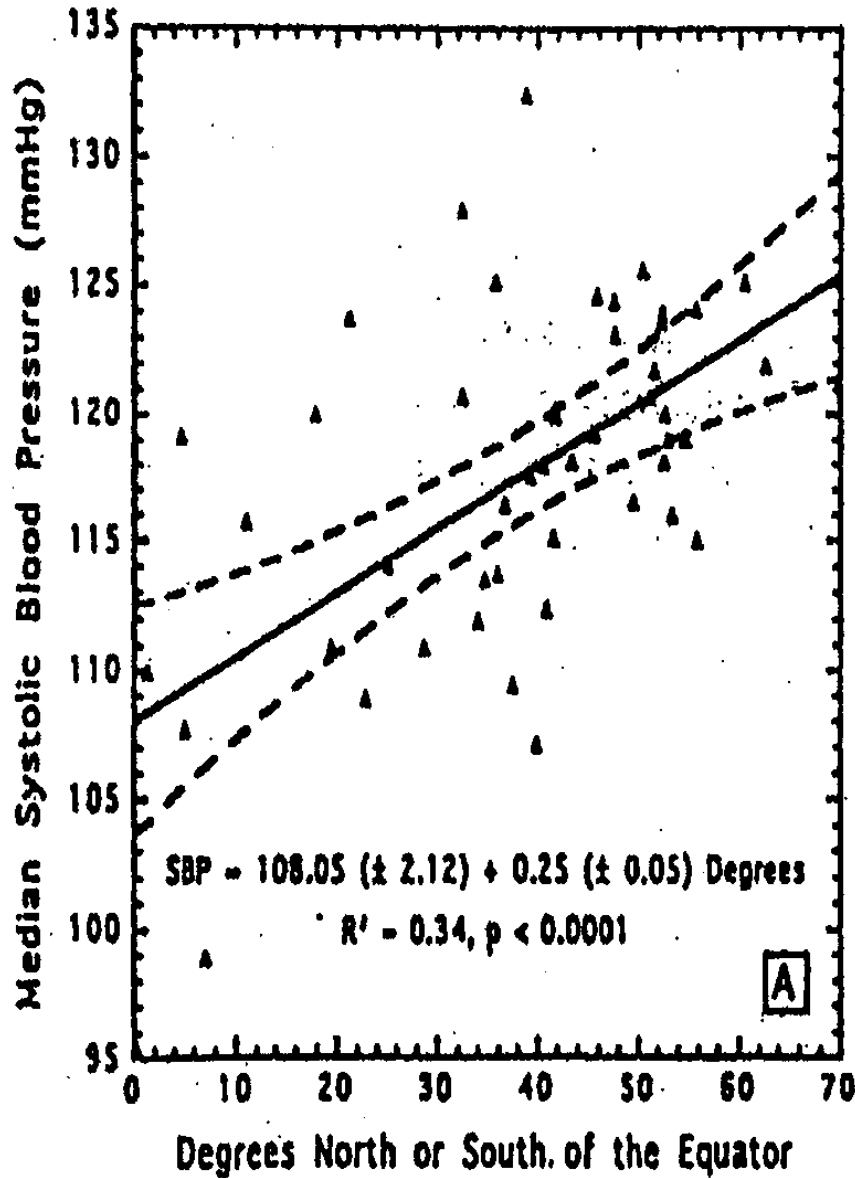
Diabetes and Metabolic Syndrom

Cell Differentiation and Cancer

Immunity and Infection



# Blood Pressure, Hypertension and Ultraviolet Radiation



# Bakterizide Wirkung von Vitamin D

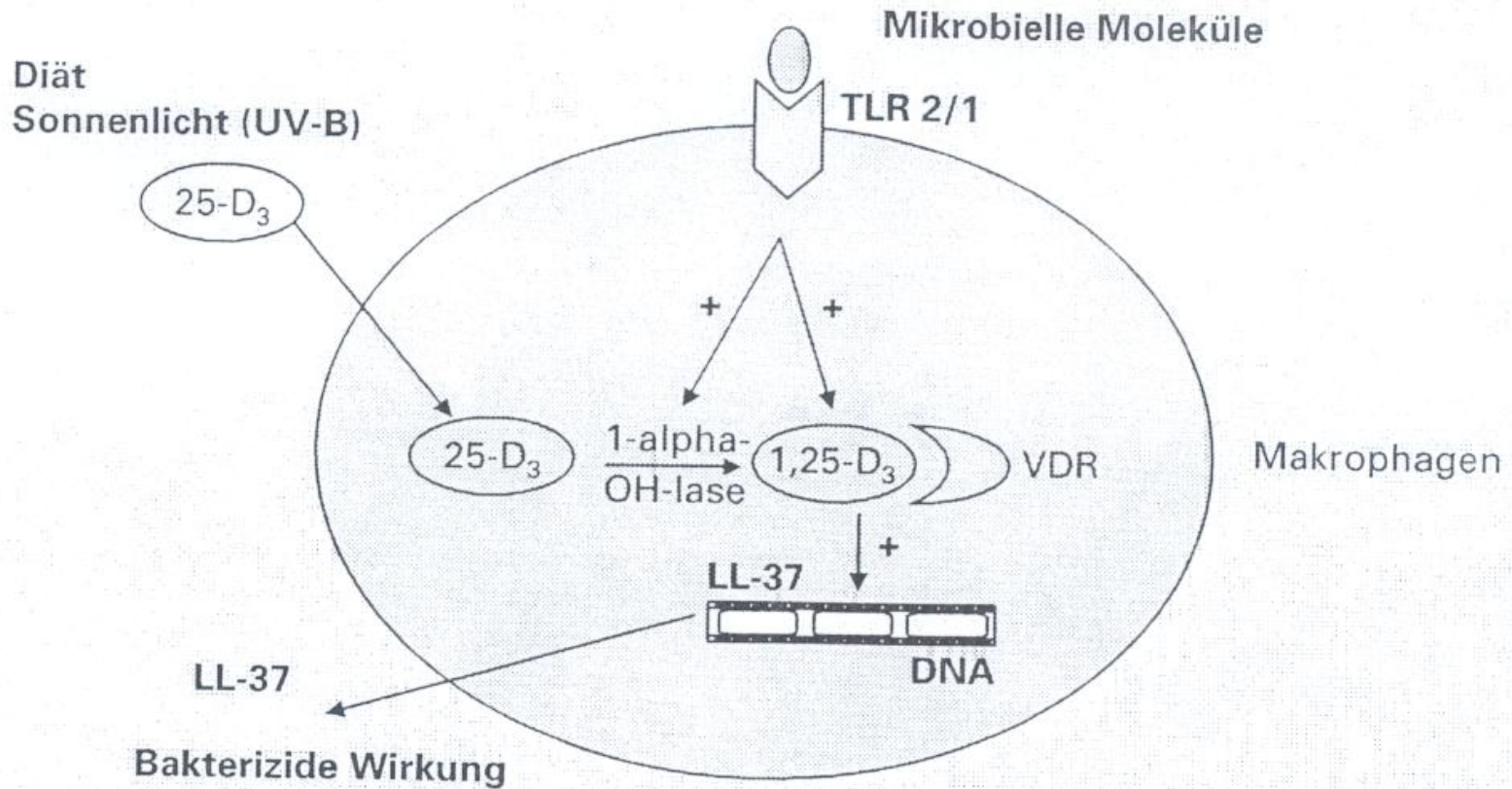
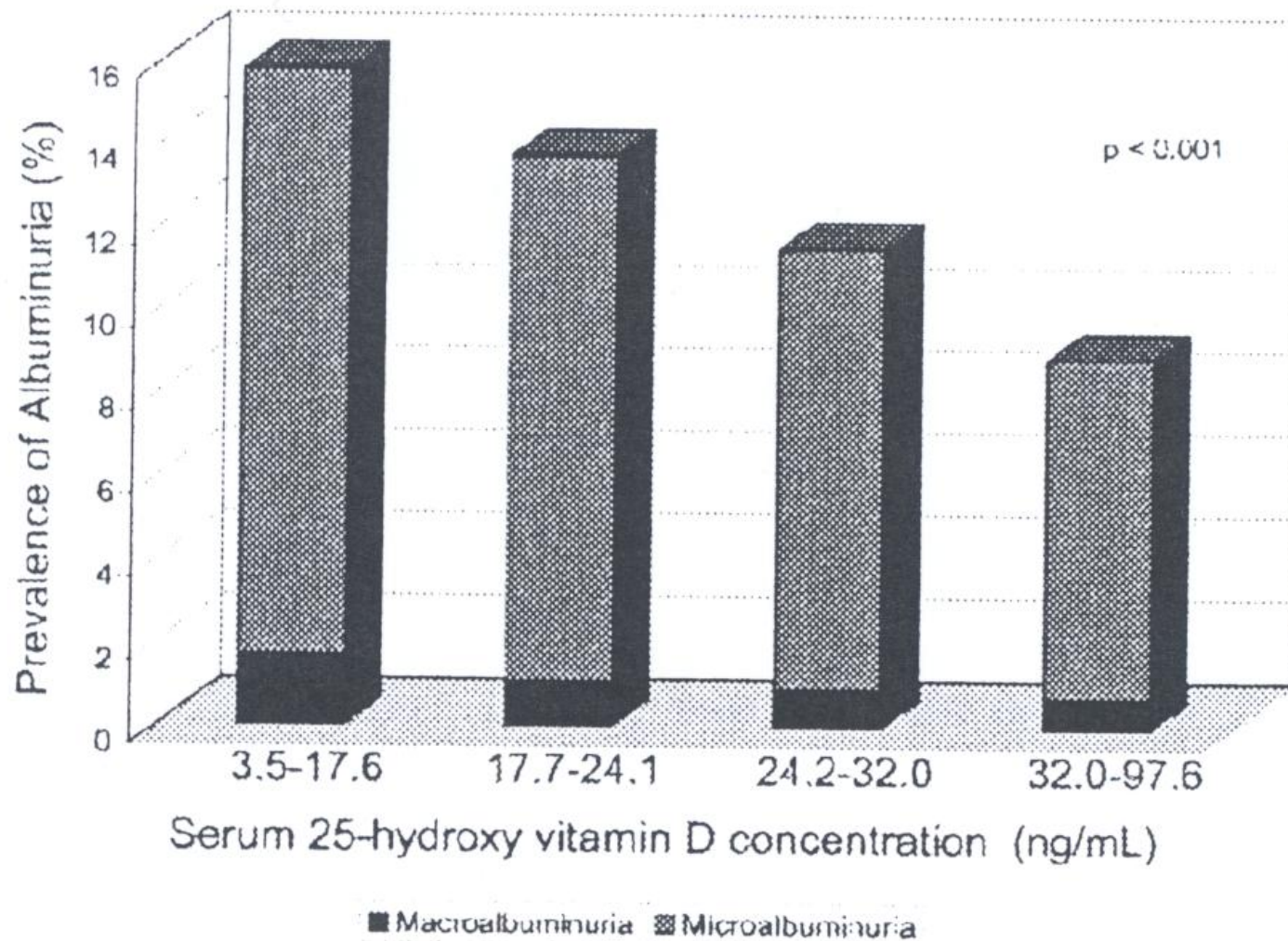


Abbildung 1

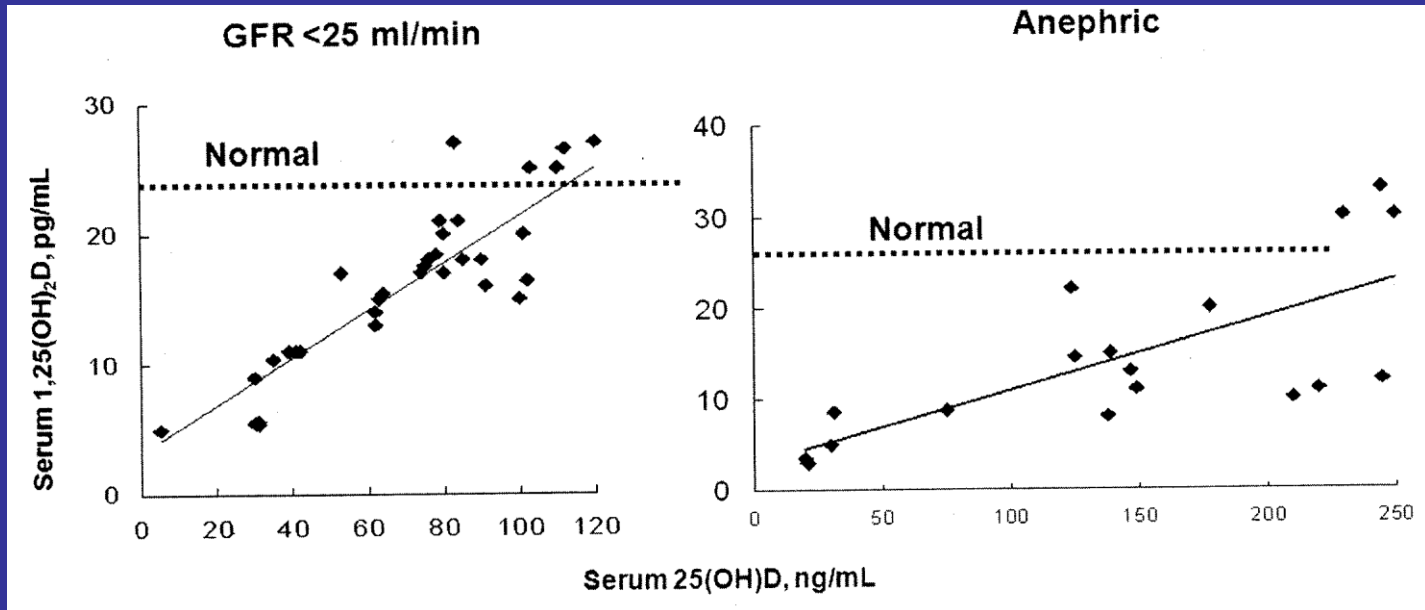
Mechanismus der bakteriziden Wirkung von Vitamin D (adaptiert nach Zasloff [2]).

# 25-Hydroxyvitamin D levels and albuminuria (NHANES III)



De Boer. *Am.J.Kidn.Dis.* (2007) 50: 69

# Calcidiol und Calcitriol bei chronischer Niereninsuffizienz



## Reference ranges 25-OH-Vitamin D

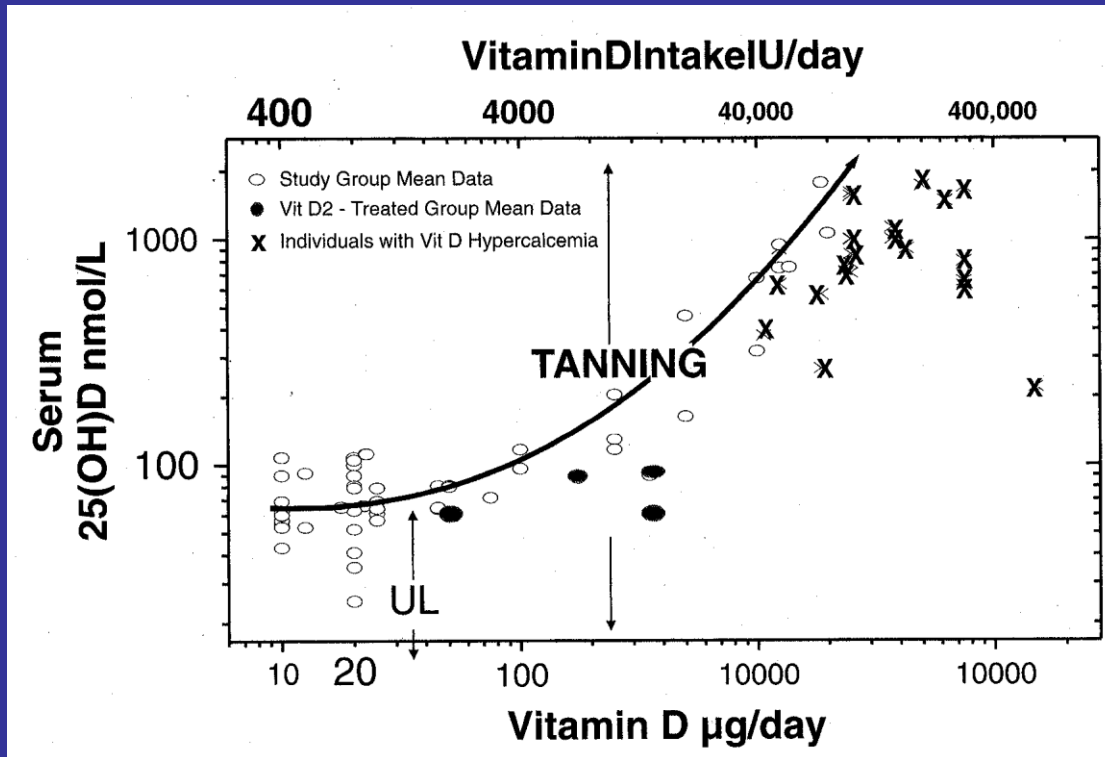
Deficiency:  $< 20 \mu\text{g} / \text{l}$

Intoxication:  $> 150 \mu\text{g} / \text{l}$

Normal:  $20 - 100 \mu\text{g} / \text{l}$

Recommended:  $30 - 60 \mu\text{g} / \text{l}$

# Vitamin-D-Status und Vitamin-D-Dosis



100 nmol/L = 40 ng/ml

UL = upper level Food&Nutr.Board

Vieth R, Vitamin D 2010

# Zusammenfassung und Ausblick:

1. Vitamin-D-Status = 25(OH)D [Calcidiol] -Blutspiegel
2. Optimale Blutspiegel für Calcidiol: 40 – 70 ng/ml (100 – 175 nmol/L),  
Vitamin-D-Defizit < 30 ng/ml (75 nmol/l)
3. Vitamin-D-Defizit beginnt in CKD Stadium 2-3,  
Maximum in Stadium 5 und im Winter
4. Pleiotrope Effekte abhängig von individueller Disposition  
u.a. Lebensalter, Geschlecht, Lebensstil (Adipositas),  
VDR-Polymorphismus
5. Cholecalciferol-Wochendosis (insbes. im Winter):  
für Gesunde ca. 15.000 IE, bei CKD 5 mindestens 20.000 IE