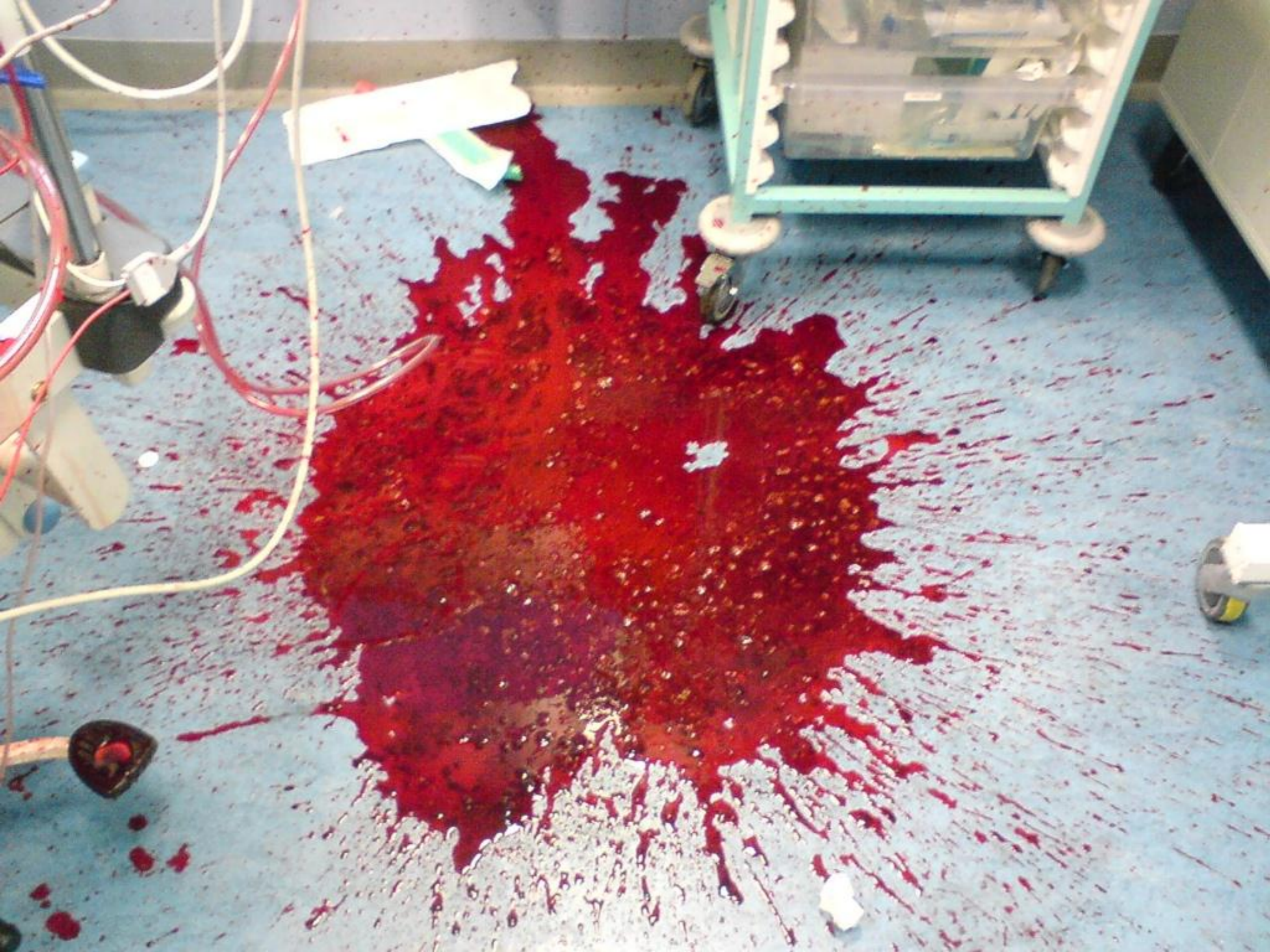


Vitamin D - clinical experience

Dr David S Grimes

Consultant physician/gastro-enterologist
Royal Blackburn Hospital











Hoghton Tower





Blackburn

Standardised Mortality Ratio

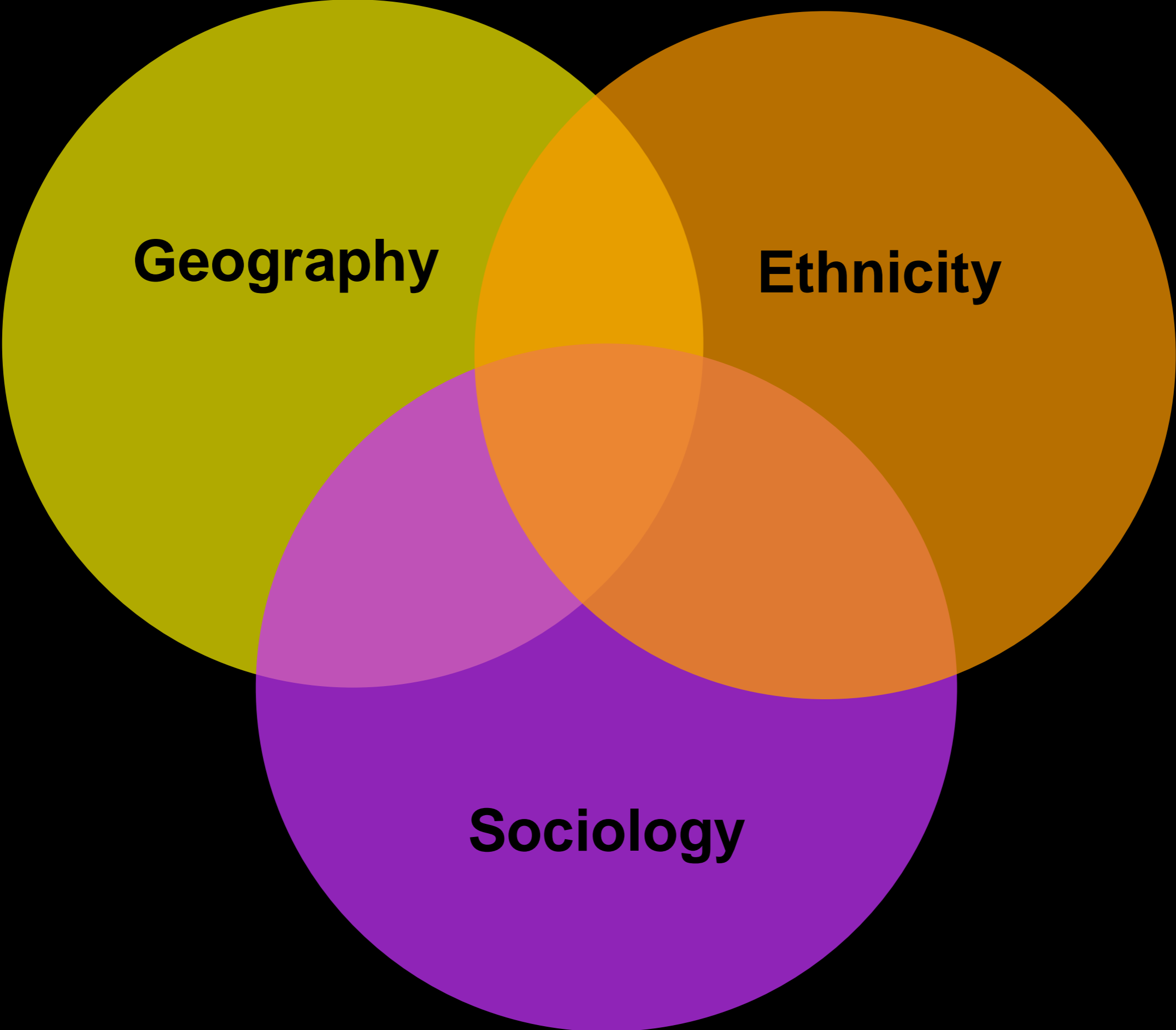
143

Blackburn

Geography

Social

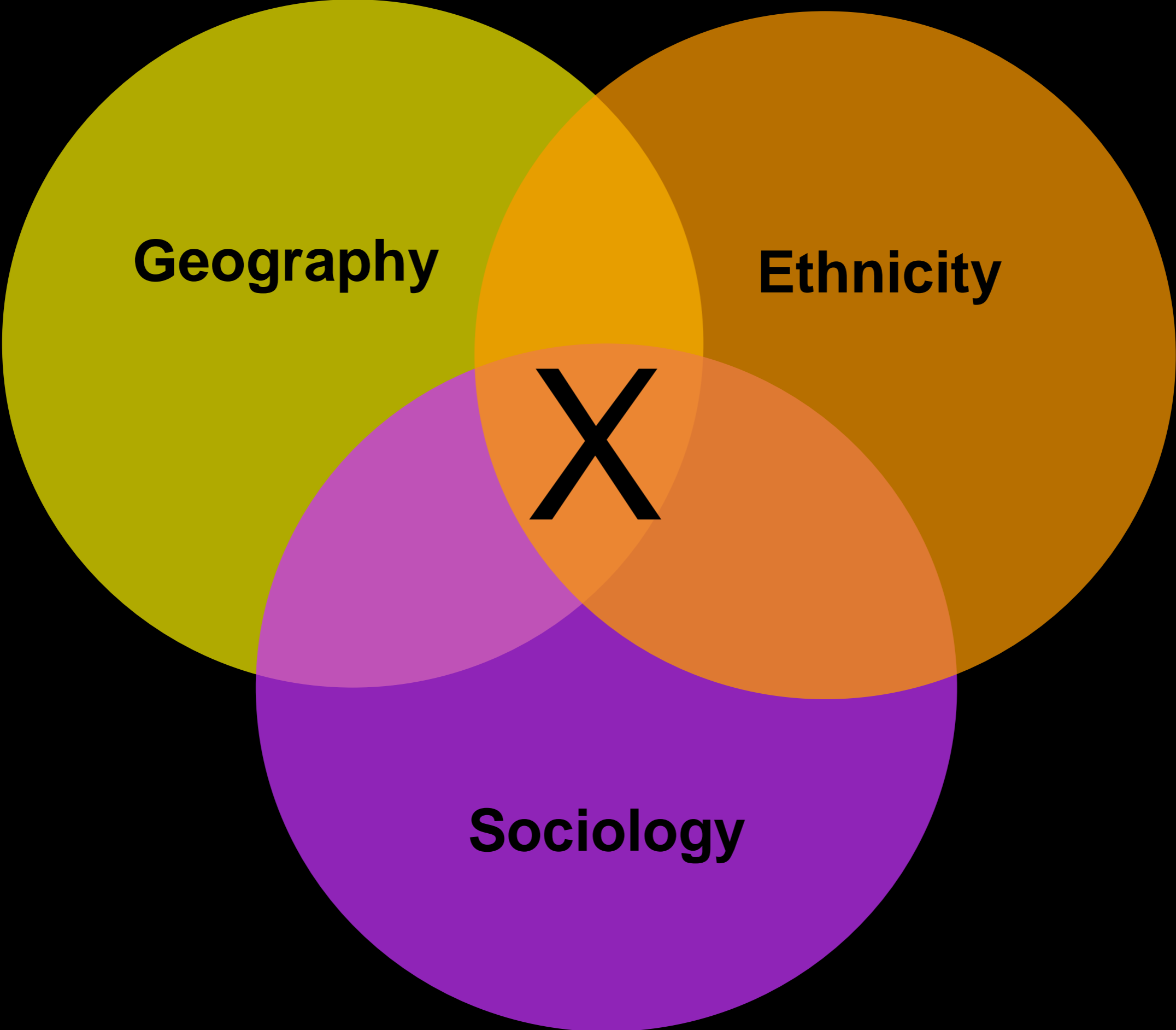
Ethnic



Geography

Ethnicity

Sociology



Geography

Ethnicity

X

Sociology

Blackburn

Geography

Social

Ethnic

Vitamin D deficiency



Vitamin D

in

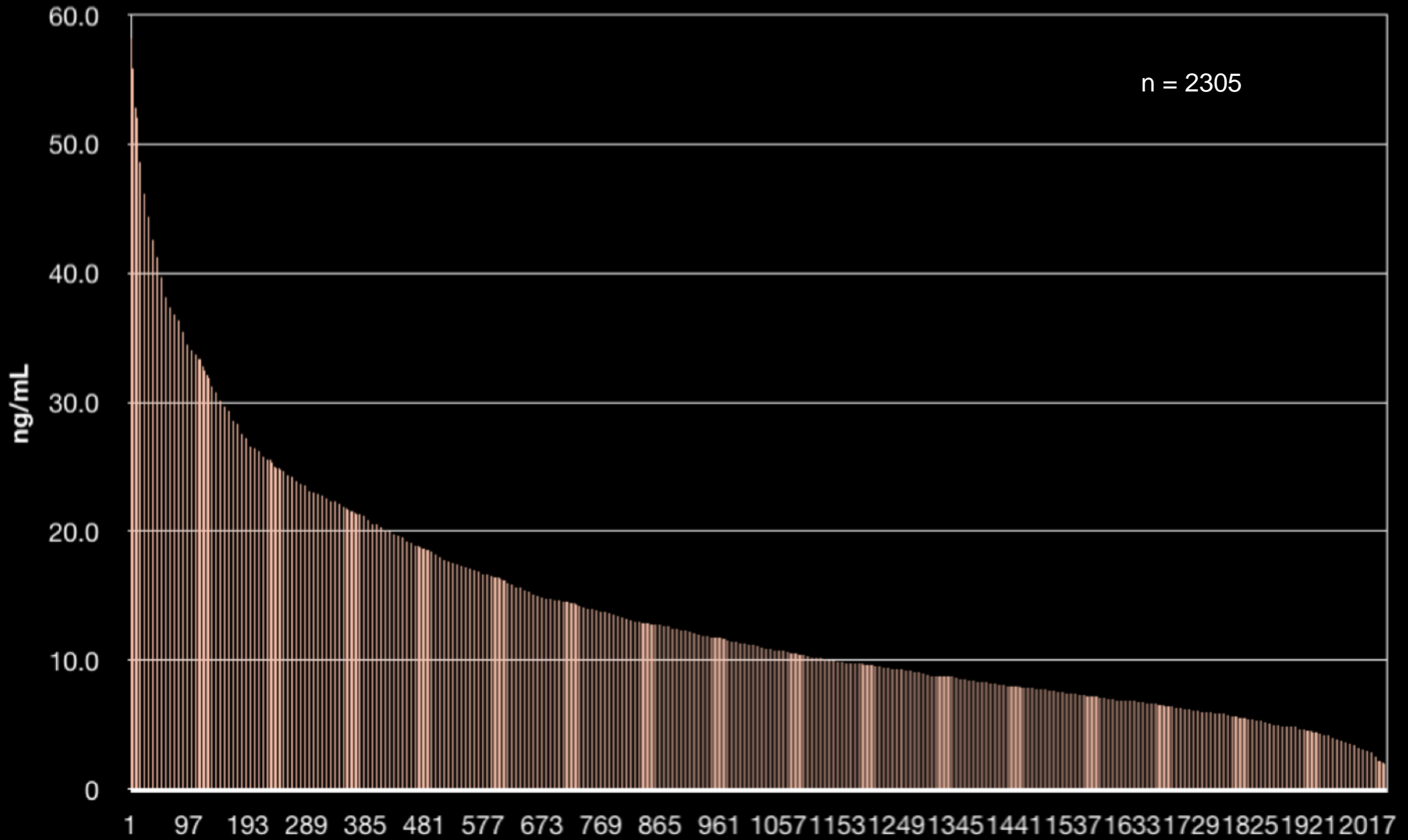
Blackburn

GP and Hospital patients

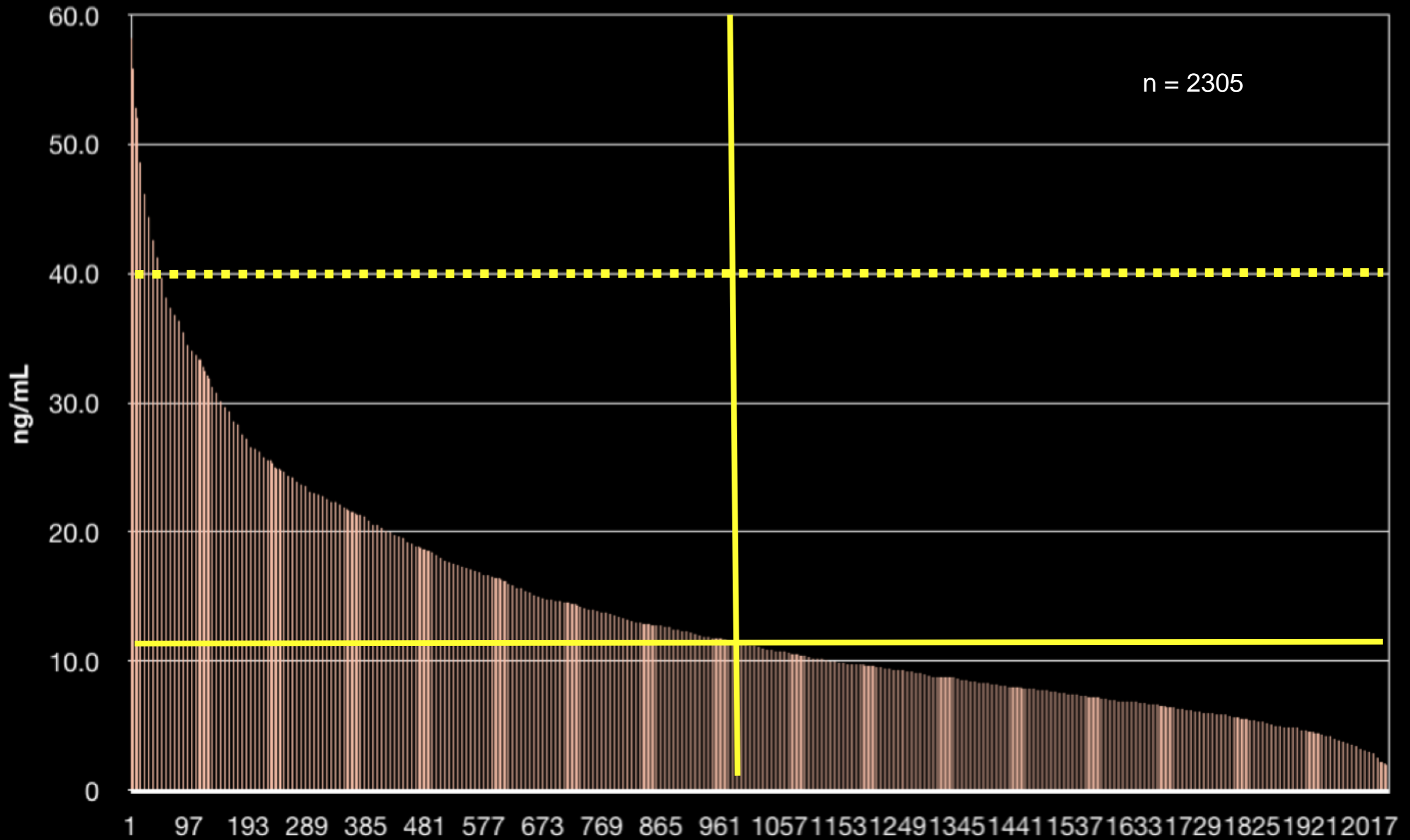
GP and Hospital
patients

not random sample

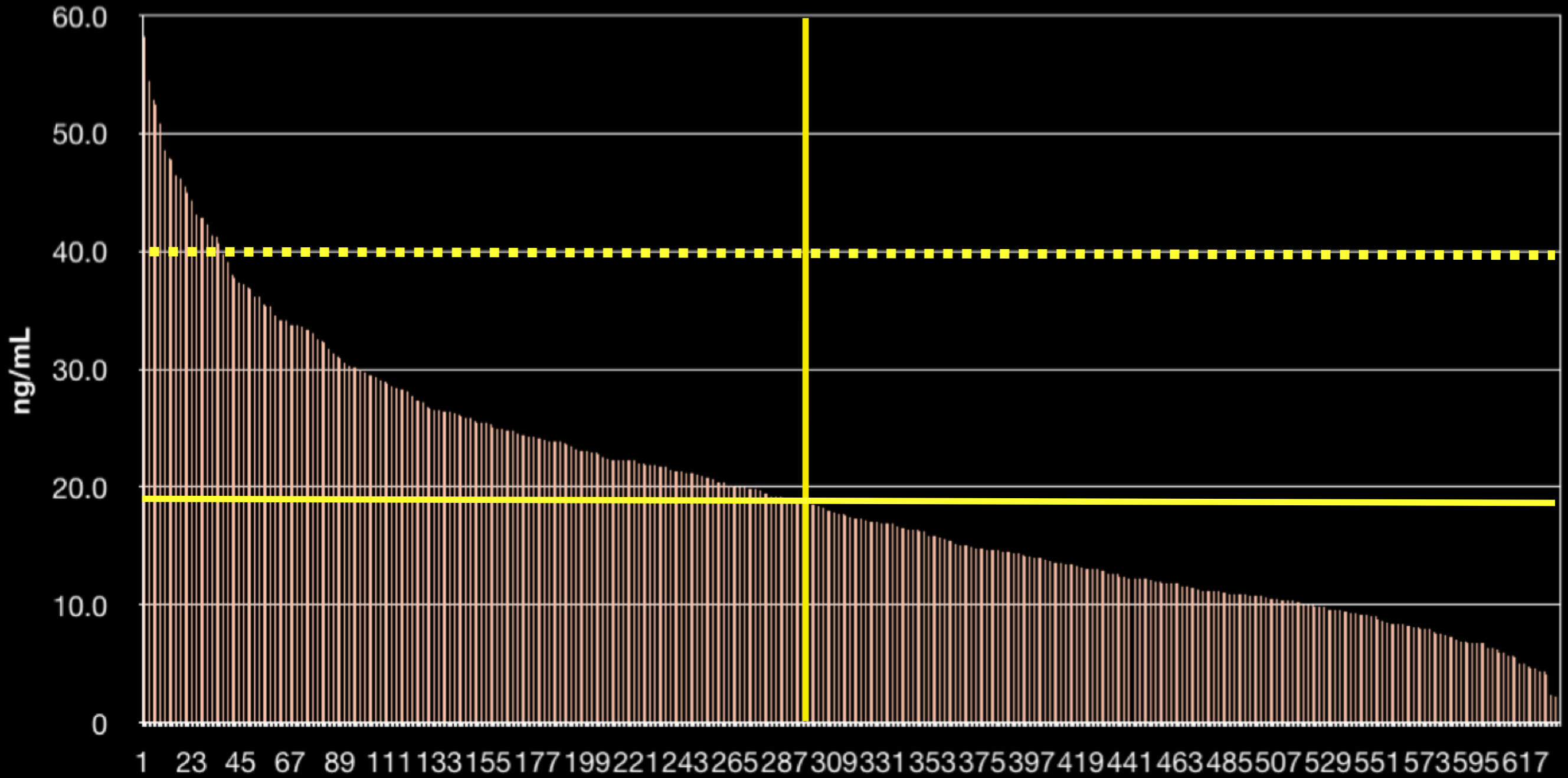
Vitamin D distribution East Lancs



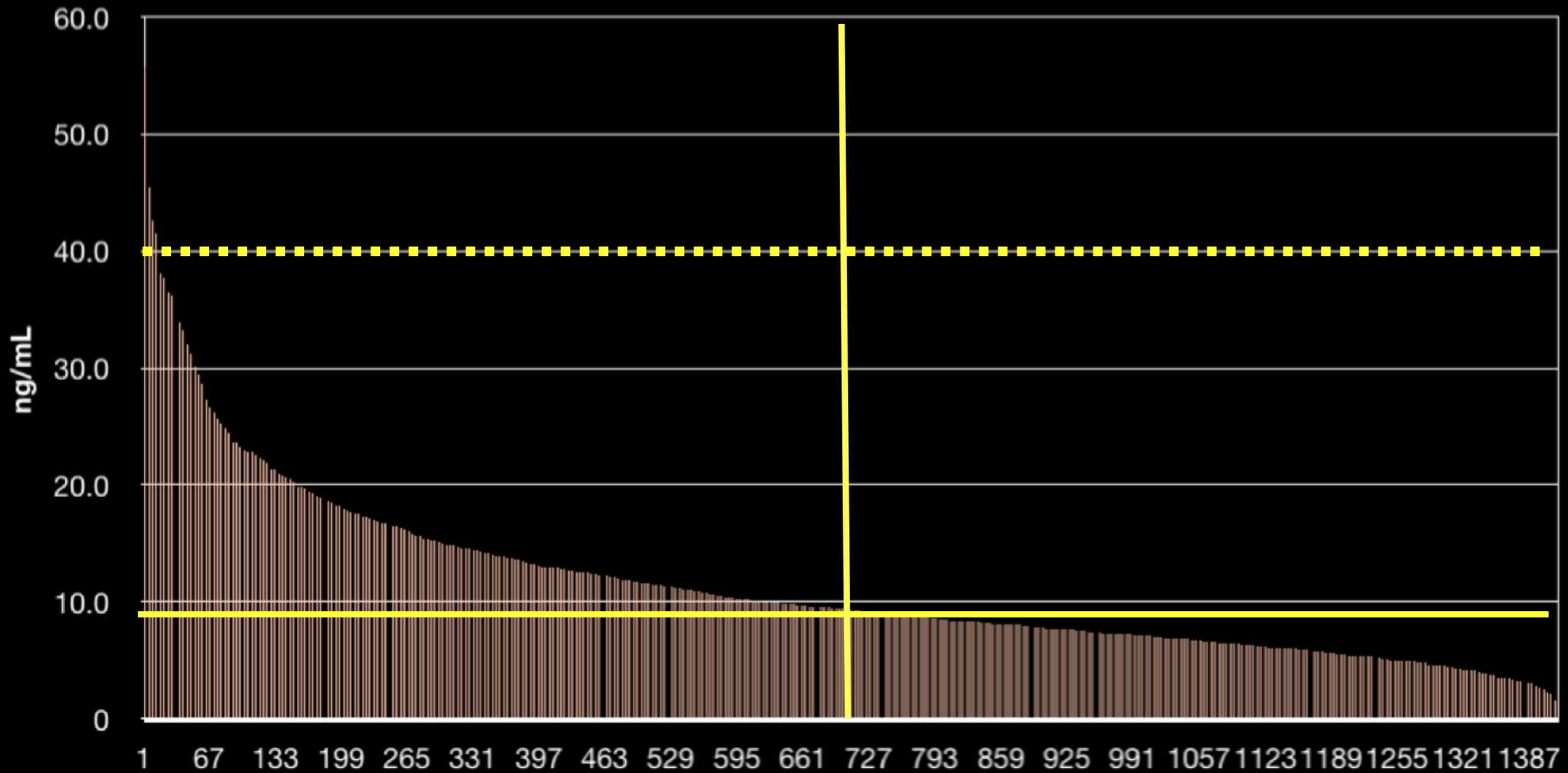
Vitamin D distribution East Lancs



Vitamin D distribution - British names



Vitamin D distribution - South Asian names



USA population study

median Vitamin D 23.5 ng/ml

East Lancs 12 ng/ml

learning
from
patients

Alison
age 36 years

aches & pains

osteomalacia

Ca 2.34

PTH 136 (<65)

osteomalacia

Ca 2.34

PTH 136 (<65)

Vitamin D 4.2 ng/ml

osteomalacia

geography

+

strict vegetarian





Alan

year of birth 1953

omnivore

Alan

reflux oesophagitis

Alan

reflux oesophagitis

good tan (for Blackburn)

Alan

sun bed ++++

Alan

sun bed +++

vitamin D 56.8 ng/ml

Mrs Ahmed

year of birth 1958

UK 30yrs

Mrs Ahmed

aches and pains all over

Mrs Ahmed

? osteomalacia

Ca, Alk Phos , PTH normal

Vitamin D 37.8 ng/ml

Mrs Ahmed

eats fish from

Bangladesh

3 times per day

Anne

year of birth 1980

Spina Bifida

tired

mild diarrhoea

tired
mild diarrhoea

Hb 10.9

ESR 79

CRP 162

Albumin 34

2007

Crohn's disease

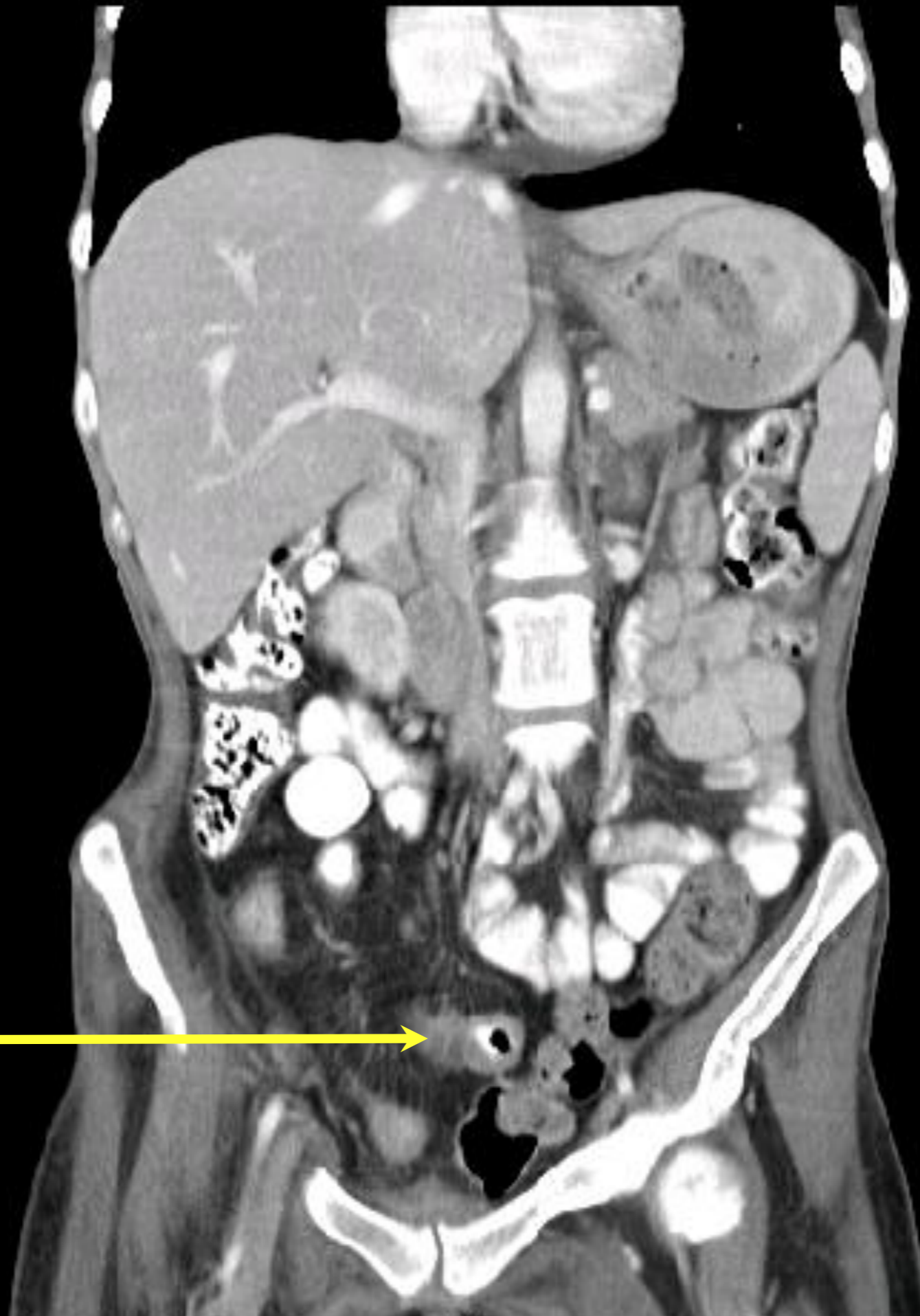
2007

Crohn's disease

terminal ileum

CT scan





Vitamin D 2.1 ng/ml

Vitamin D 20,000 u oral each week

Vitamin D 53.8 ng/ml

Very well

Very well

Hb	10.9	→	12.4
ESR	79	→	30
CRP	162	→	18
Albumin	34	→	44

Why Vitamin D deficient ?

Why Vitamin D deficient ?

geography

Why Vitamin D deficient ?

Rossendale
Lancashire



L. WHITAKER
AND
SONS LTD.



Why Vitamin D deficient ?

geography

Why Vitamin D deficient ?

geography

disability

Burnley





Abdul

Age 34 years

abnormal liver function tests

abnormal liver function tests

ALT 135 (<55)

Alk Phosphatase 180 (<130)

GGT 170 (<65)

abnormal liver function tests

weight 95kg

U/S scan : fatty liver

abnormal liver function tests

family:

diabetes

coronary heart disease

early death

metabolic syndrome

fatty liver

diabetes

coronary heart disease

early death

metabolic syndrome

family risk

geography

ethnicity

social

Vitamin D

4.5 ng/ml

PTH 45 (<65)

metabolic syndrome

Rx Vitamin D 20,000u /week

6 months

liver function tests normal

Clitheroe



Clitheroe

middle class

SMR 94



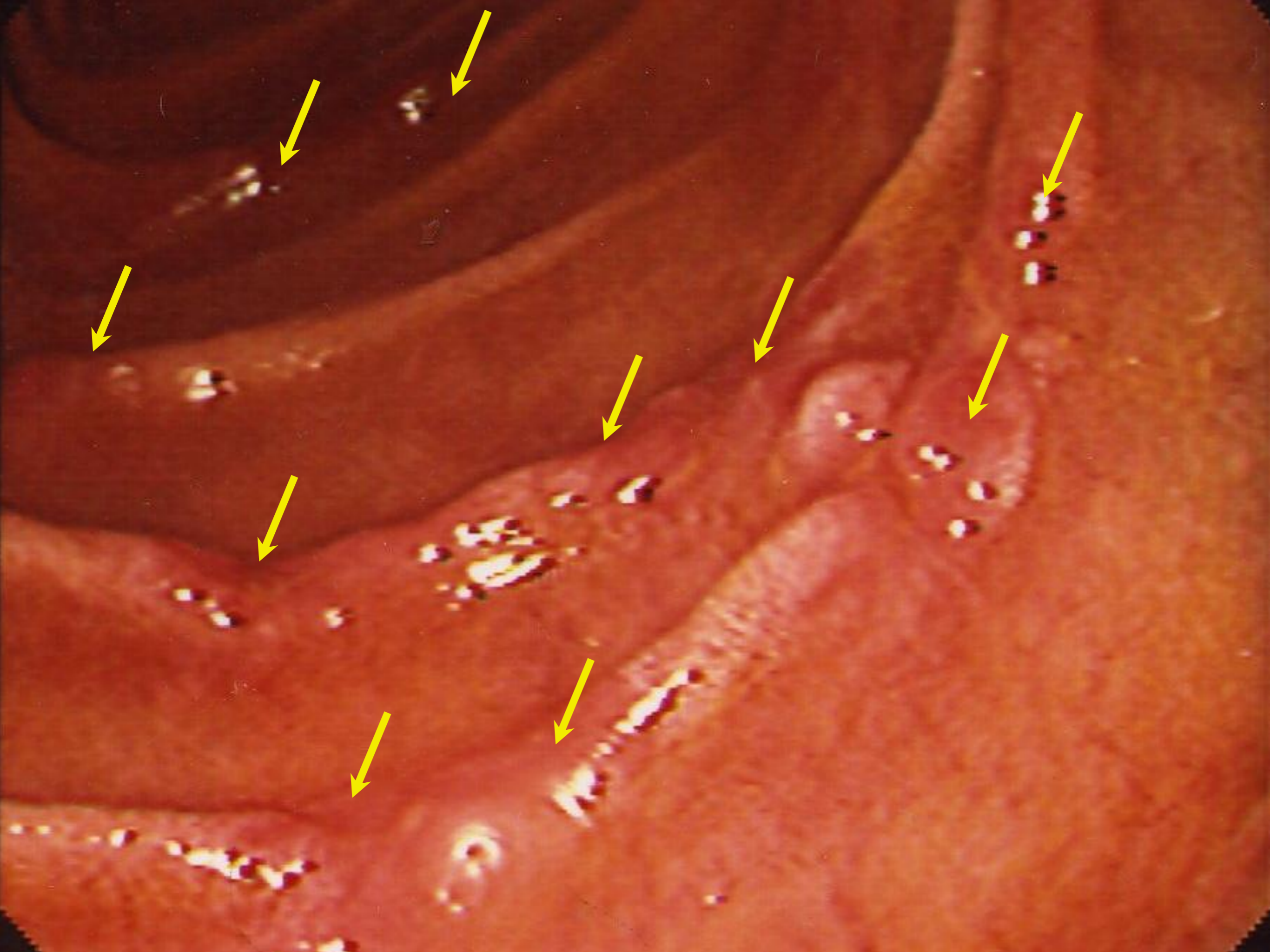
Andrew

age 35 years

Crohn's Disease

diffuse small intestine

1993



Alkaline phosphatase 183 (<130)

? low-grade pericholangitis

Alkaline phosphatase 183 (<130)

but

gamma GT normal 36

Alkaline phosphatase 183 (<130)

therefore

alk phos of bone origin

serum calcium normal

serum calcium normal

Paget's disease

serum calcium normal

osteomalacia

serum calcium normal

osteomalacia

PTH elevated 145 (<65)

serum calcium normal

osteomalacia

PTH elevated 145 (<65)

Vitamin D 38.5 ng/ml

Vitamin D resistant osteomalacia

Vitamin D resistant osteomalacia

VDR mutation / polymorphism

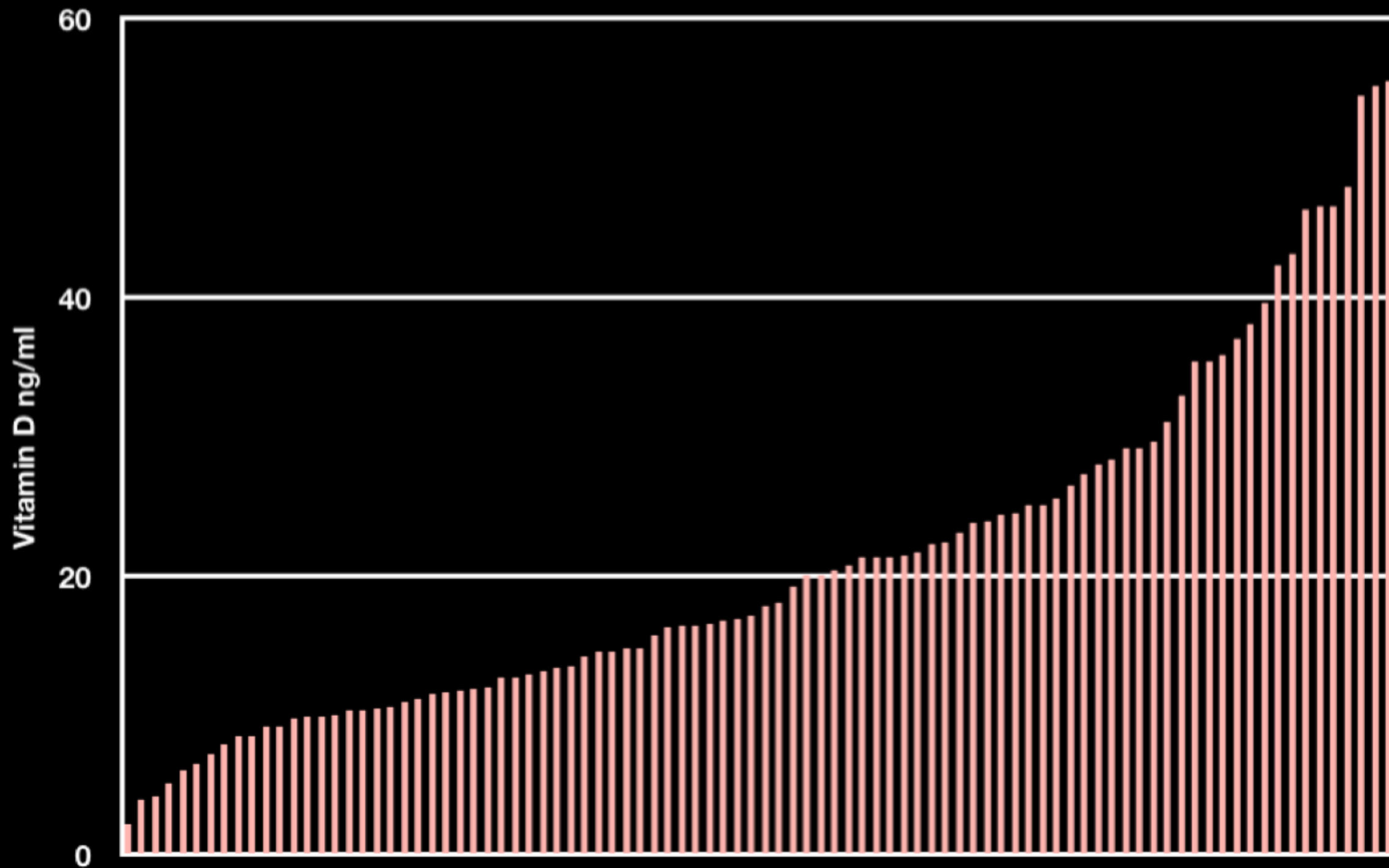
Vitamin D resistant osteomalacia

VDR mutation / polymorphism

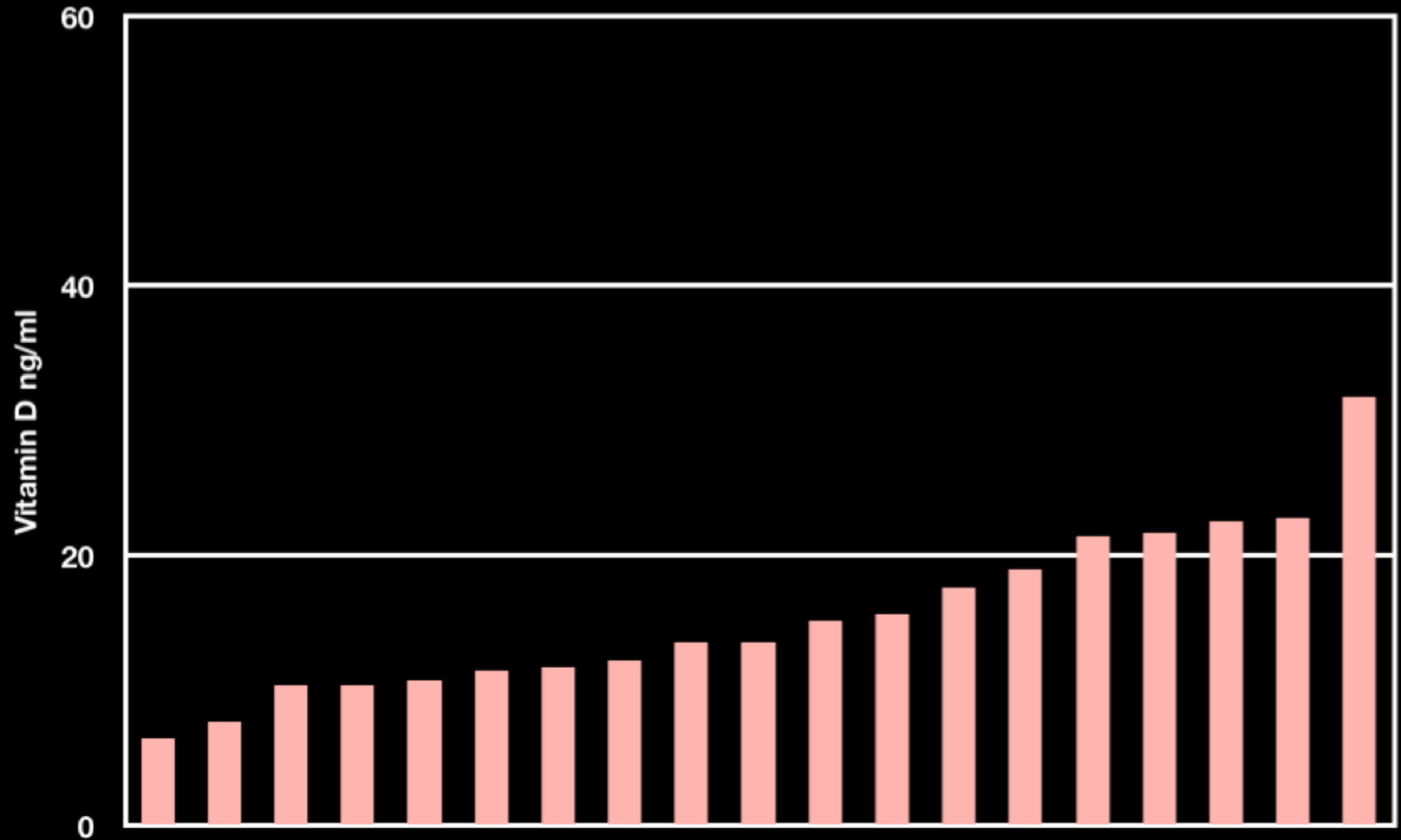
40 % of patients
with Crohn's Disease

Crohn's disease
fatty liver
metabolic syndrome

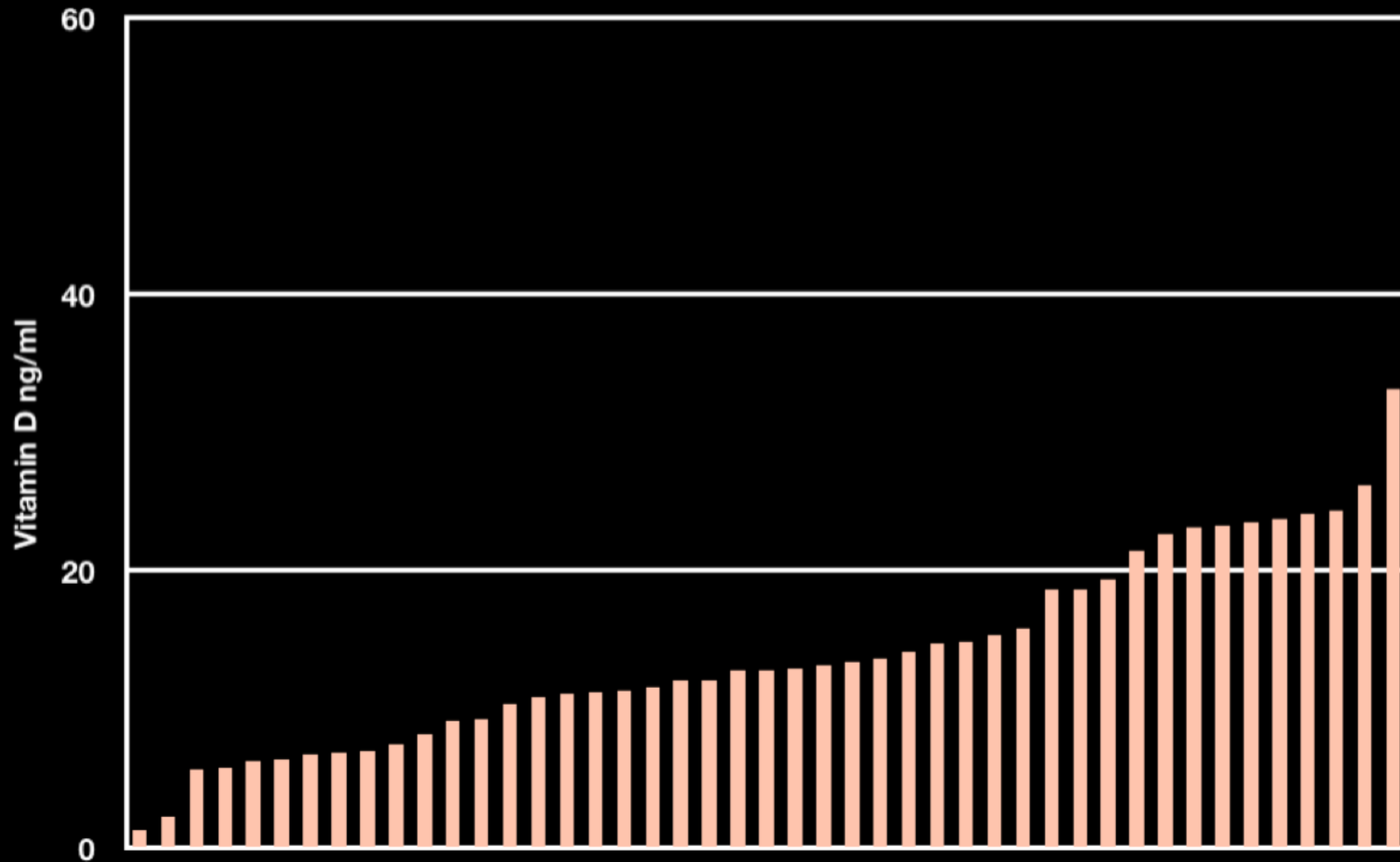
Crohn's disease



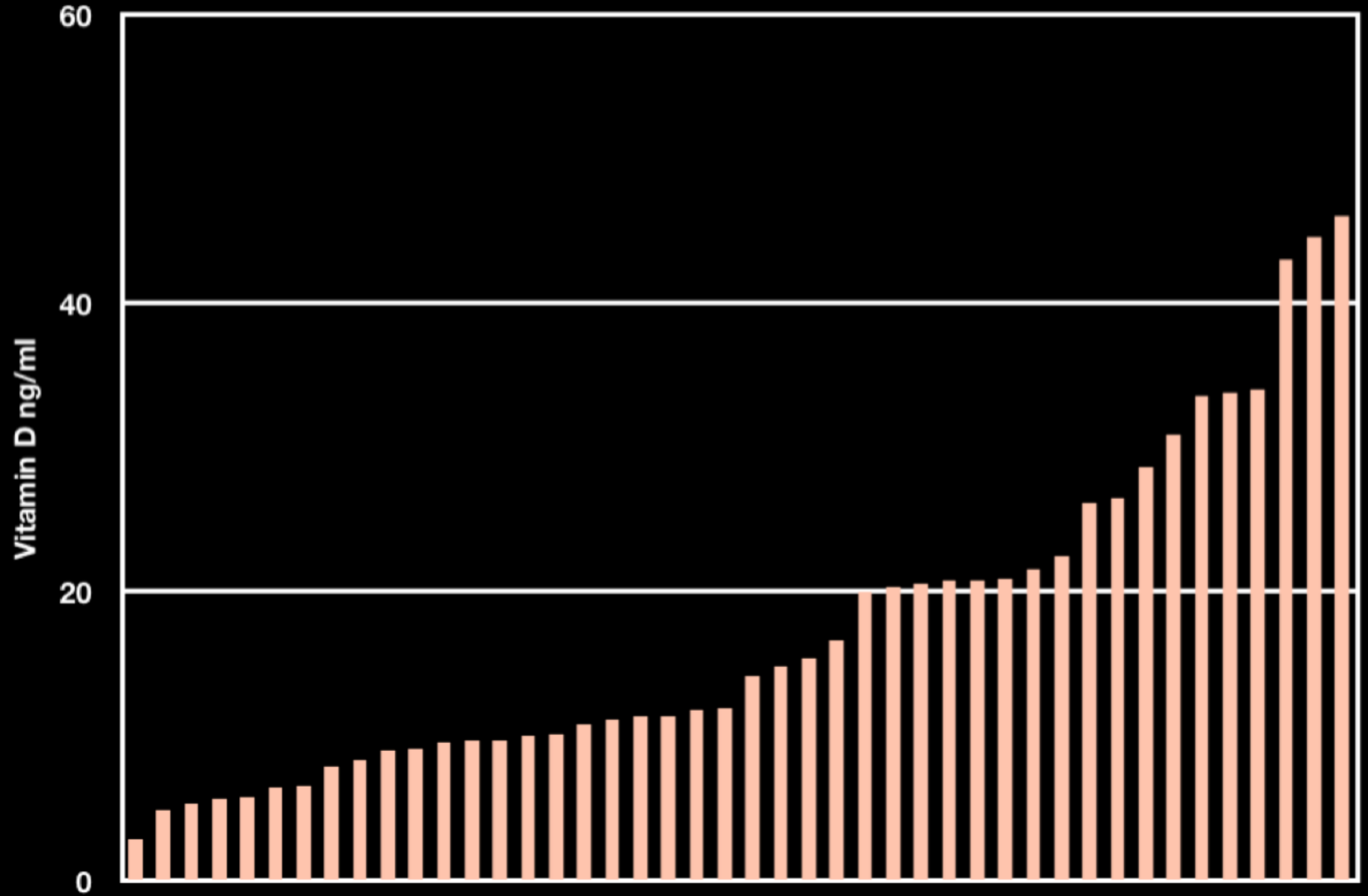
Fatty liver



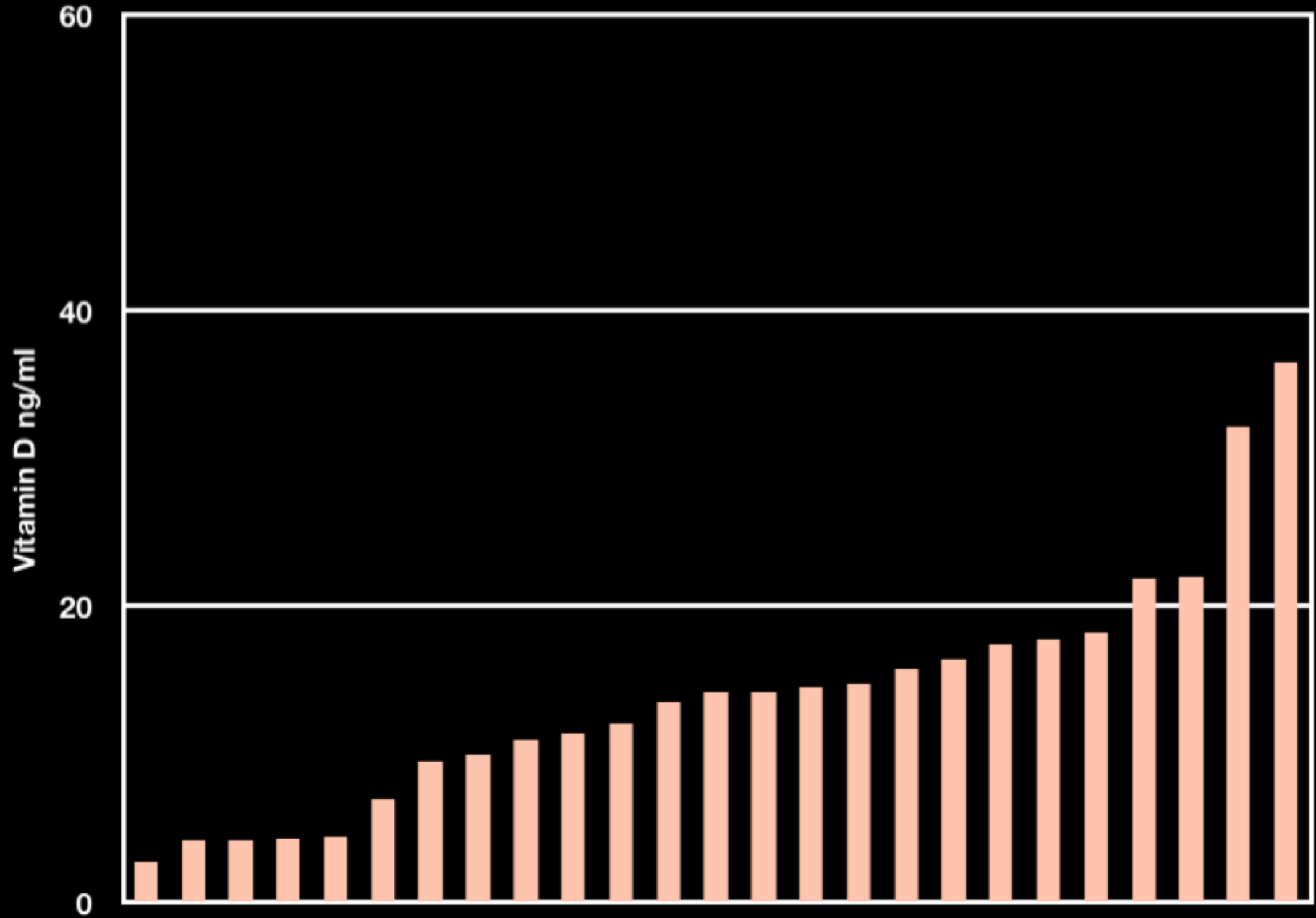
Chronic liver disease



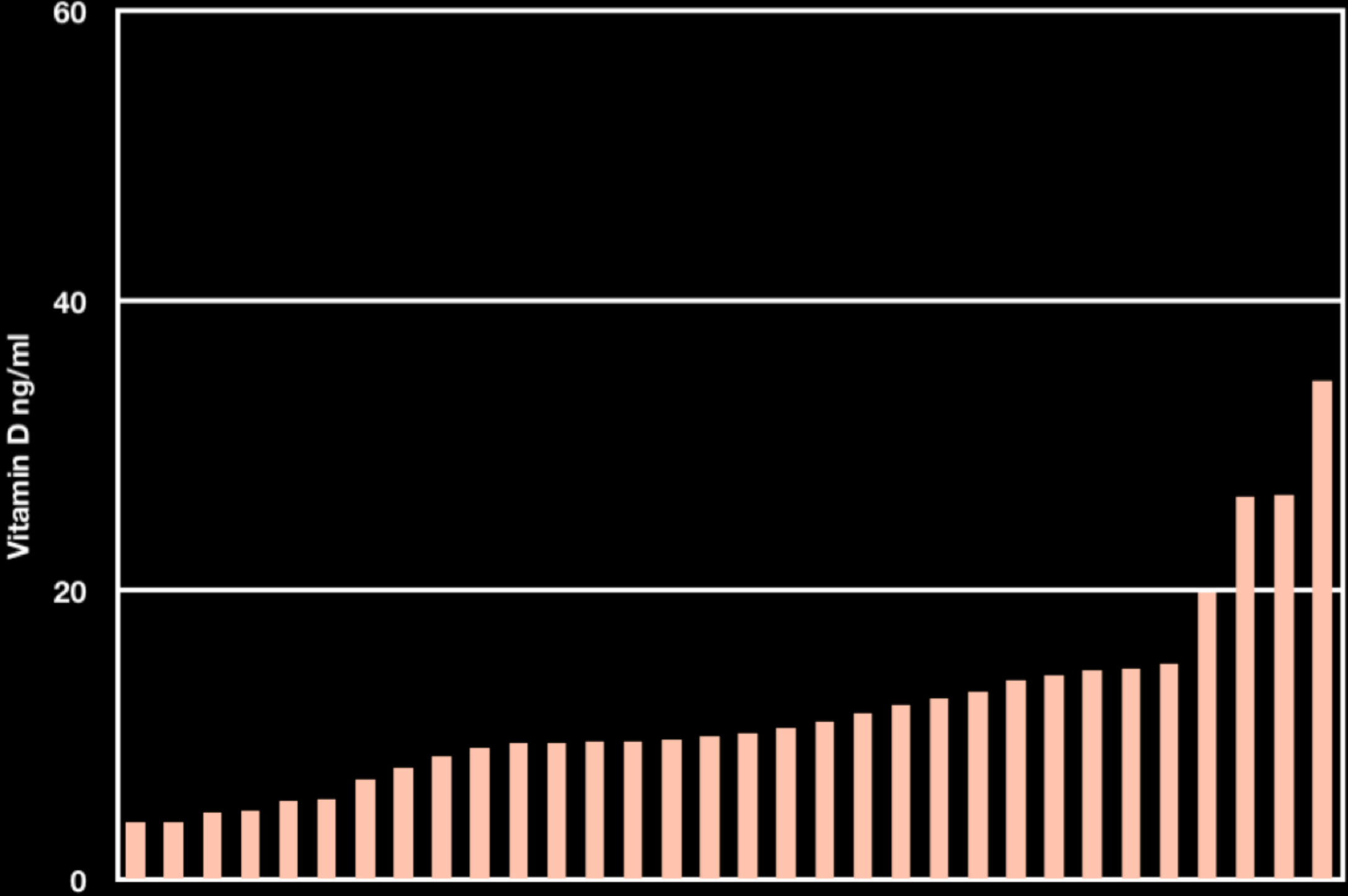
HCV



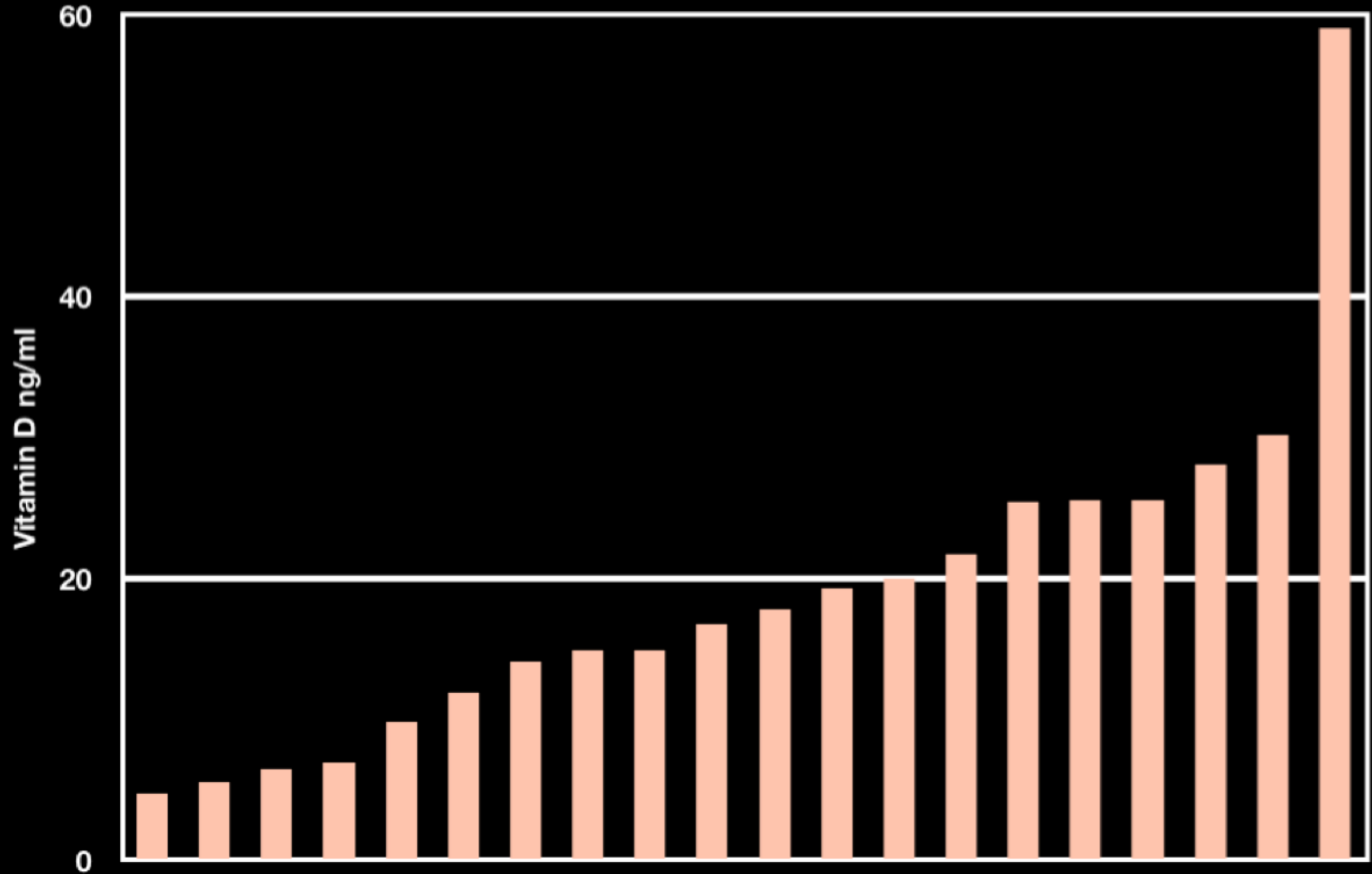
HBV



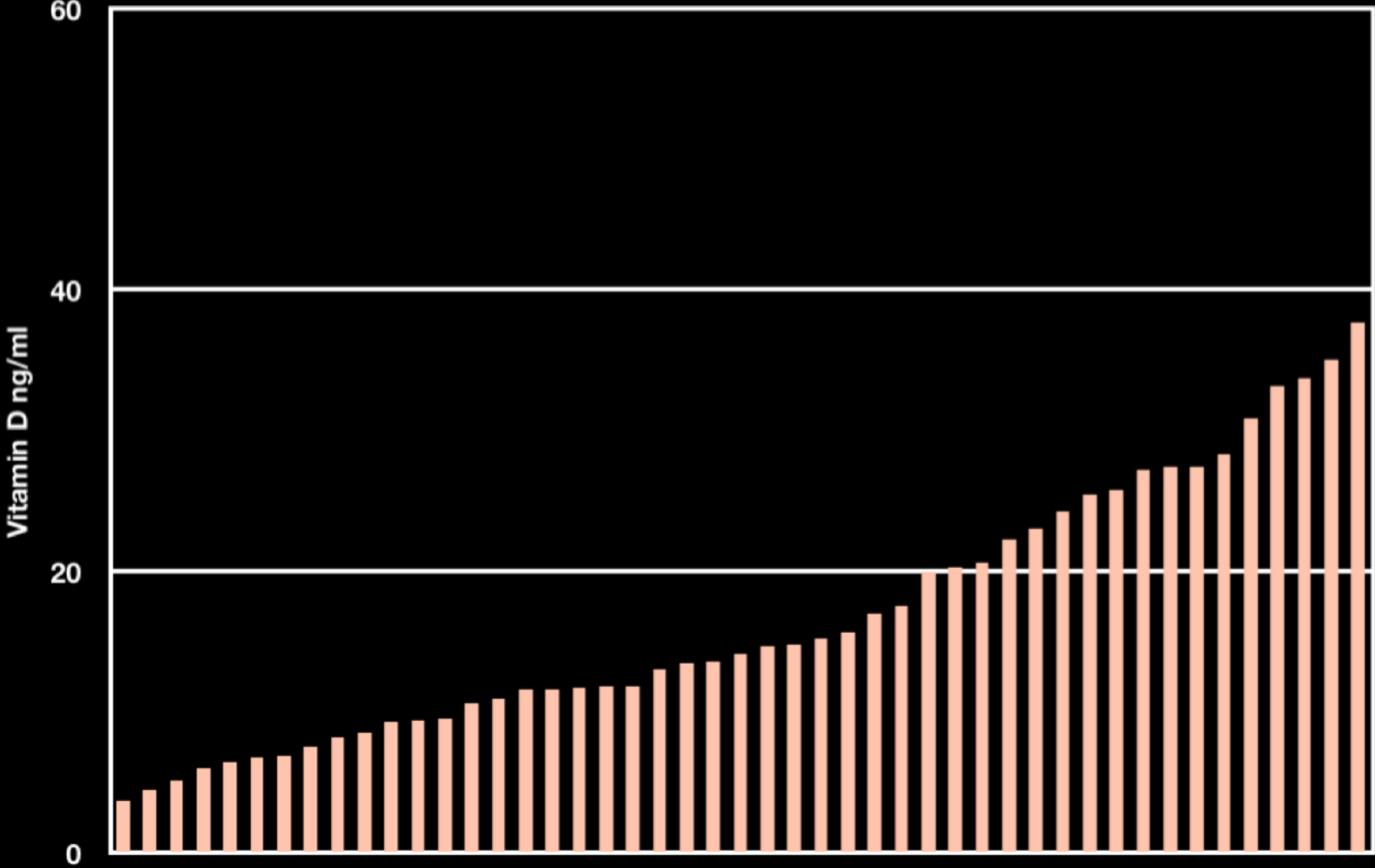
Alcoholic liver disease



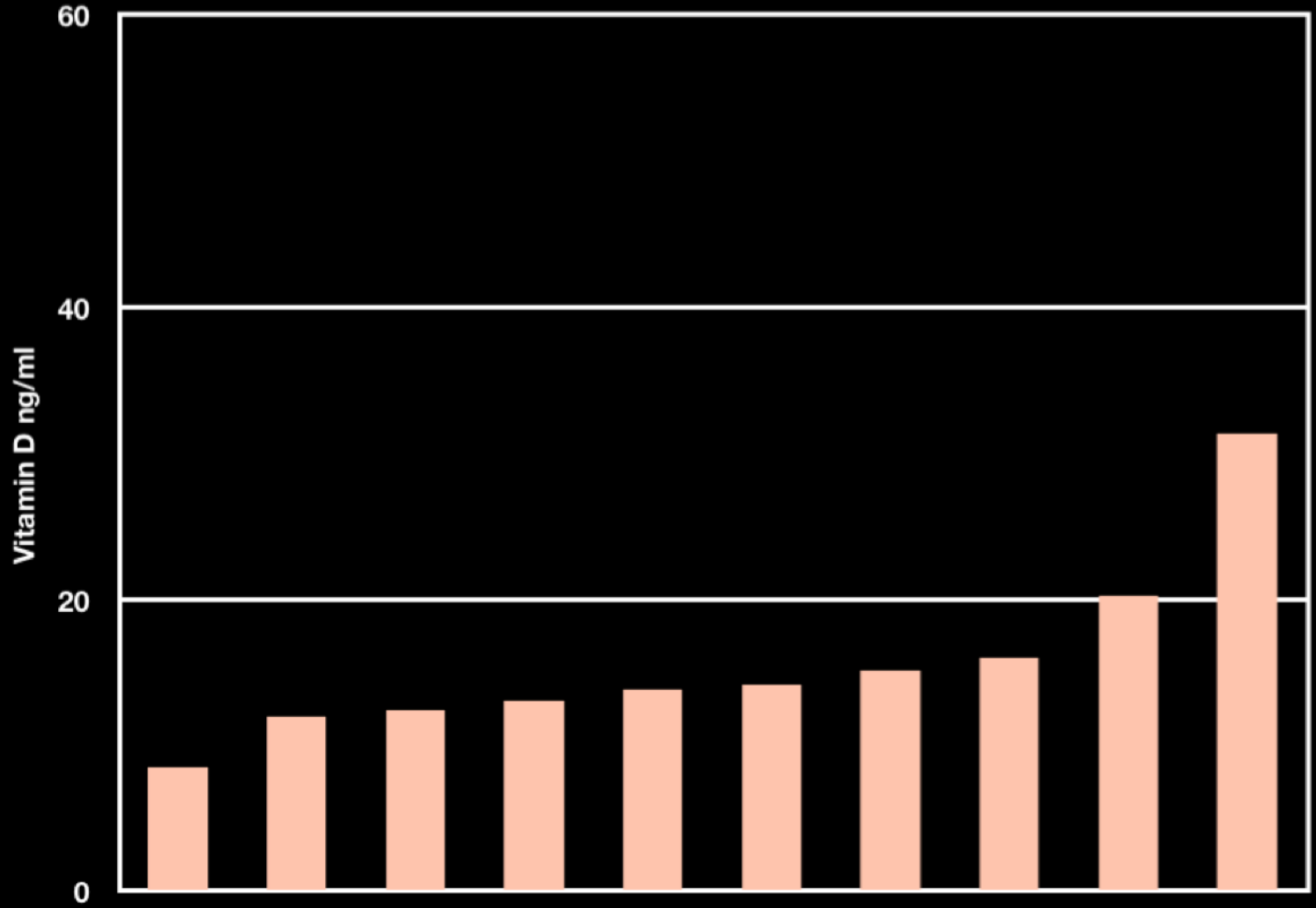
Coeliac disease



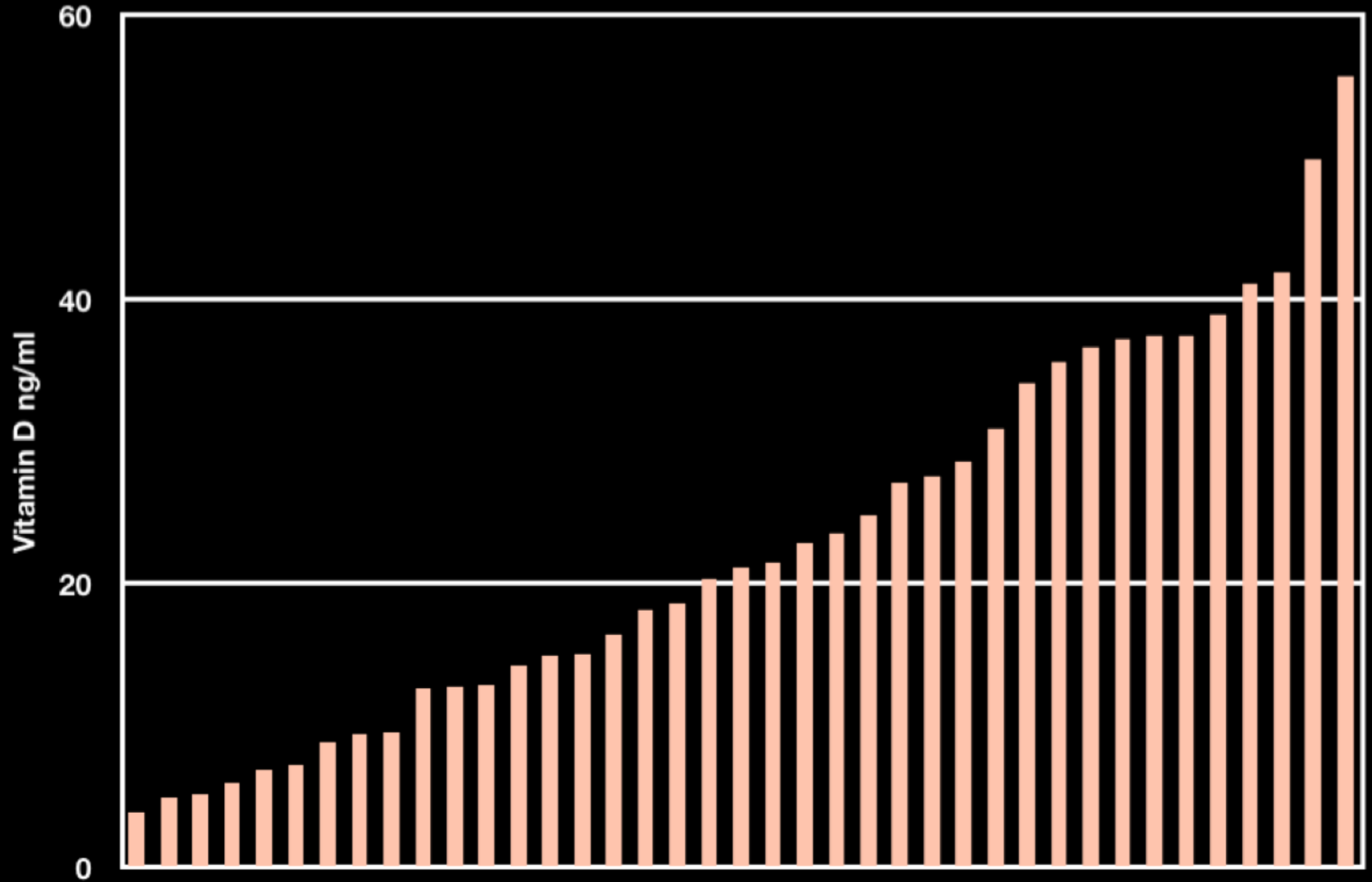
Chronic pancreatitis



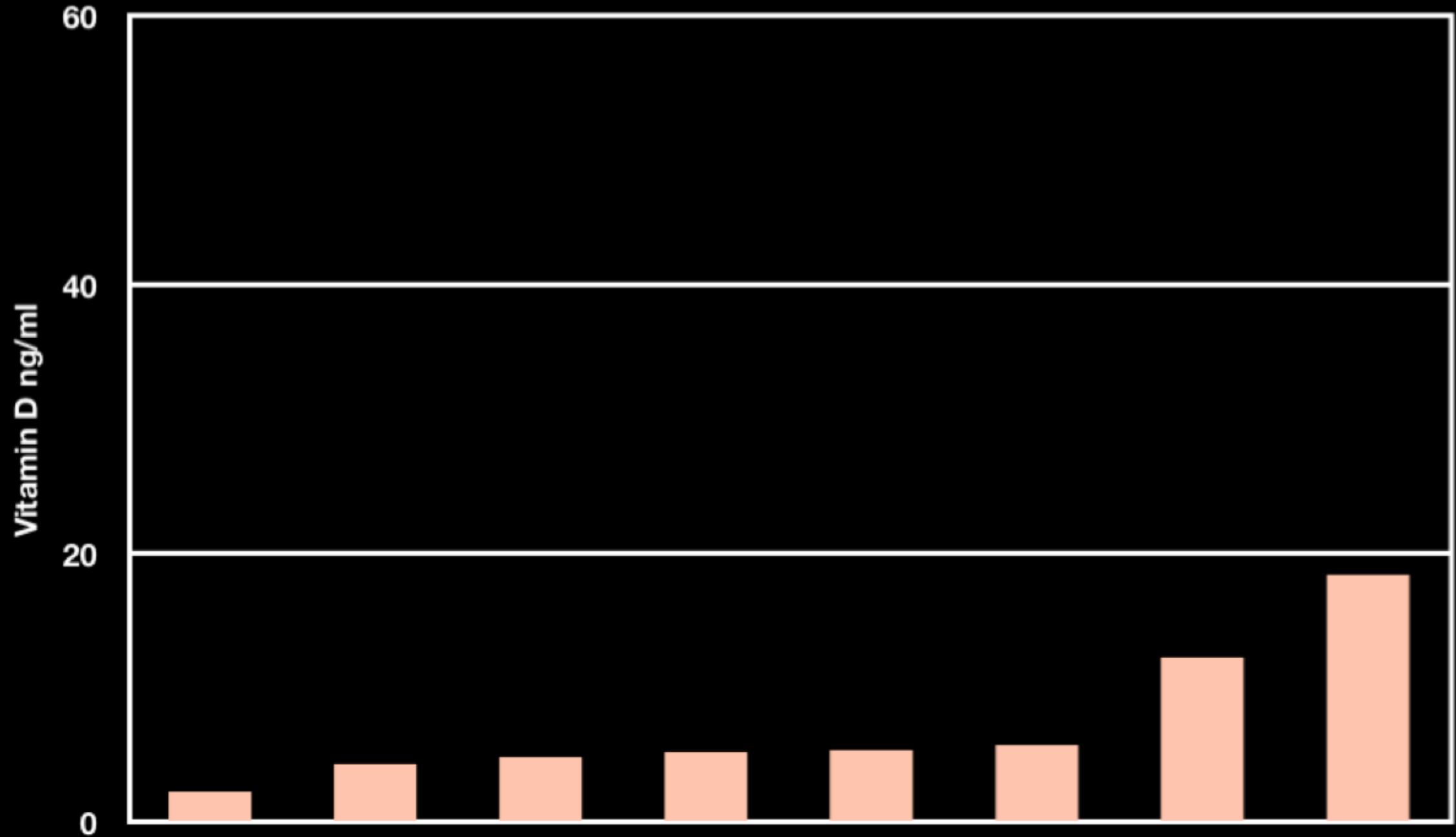
COPD



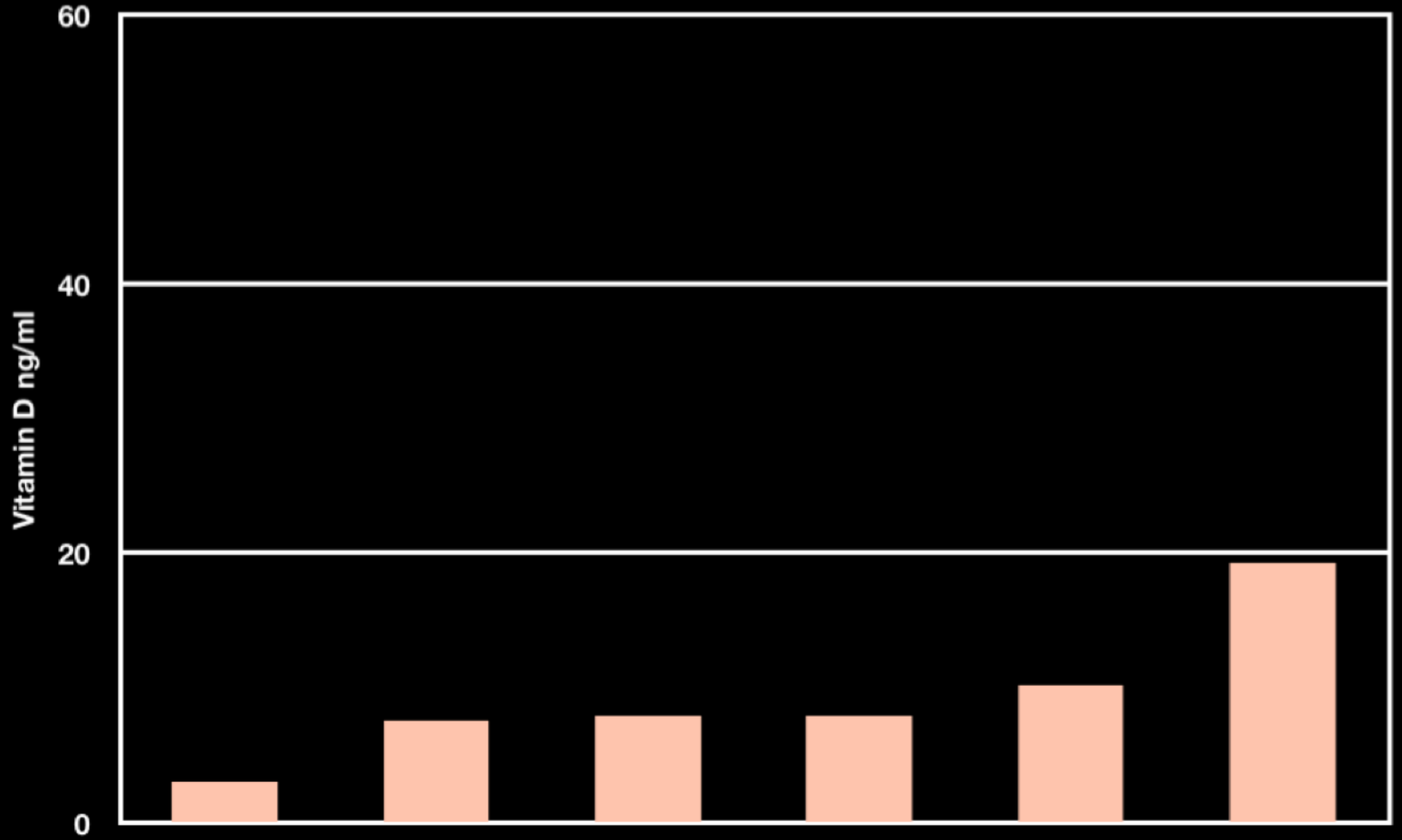
Ulcerative colitis



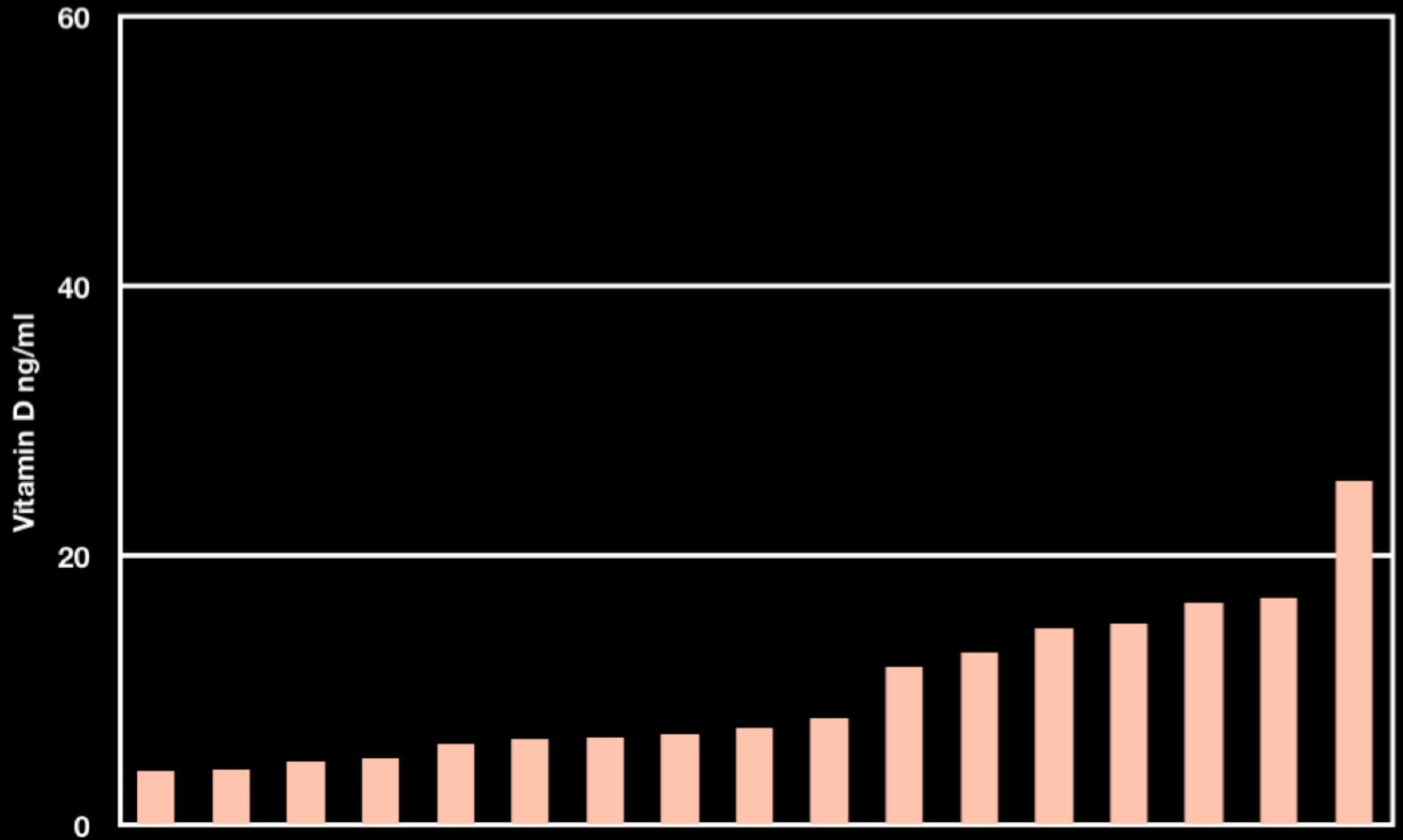
Abdominal pain - no pathology



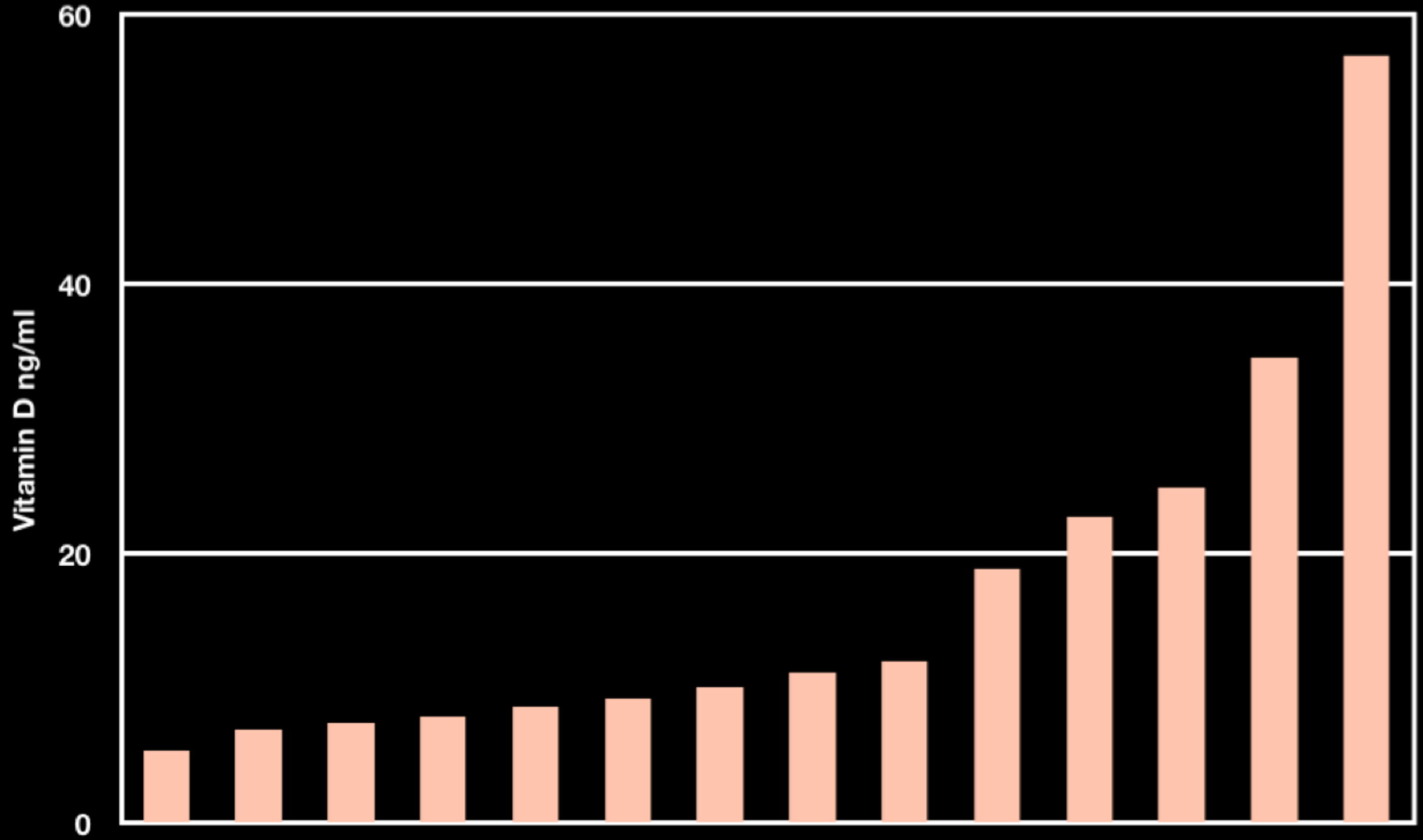
Low weight for height



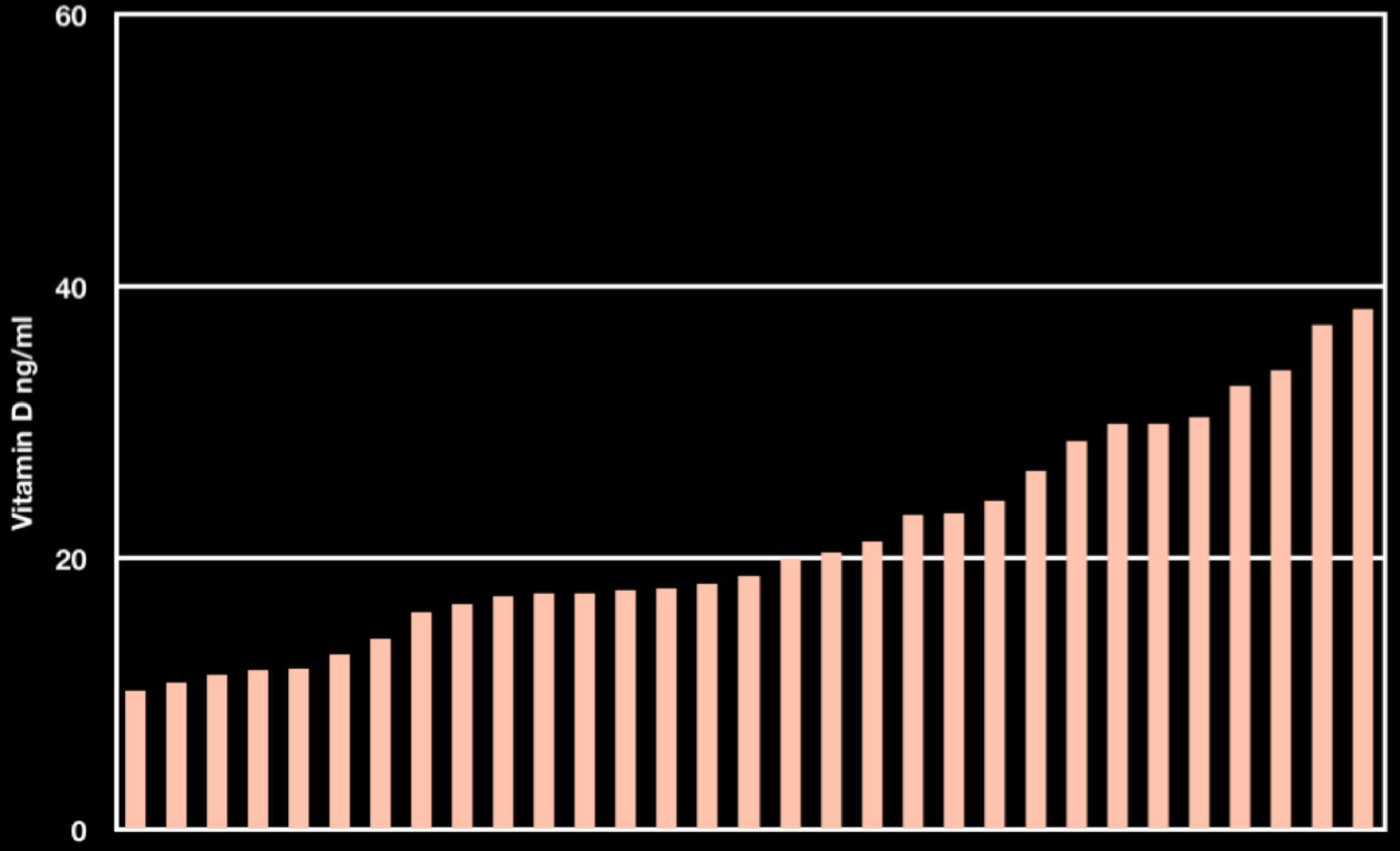
Iron deficiency anaemia



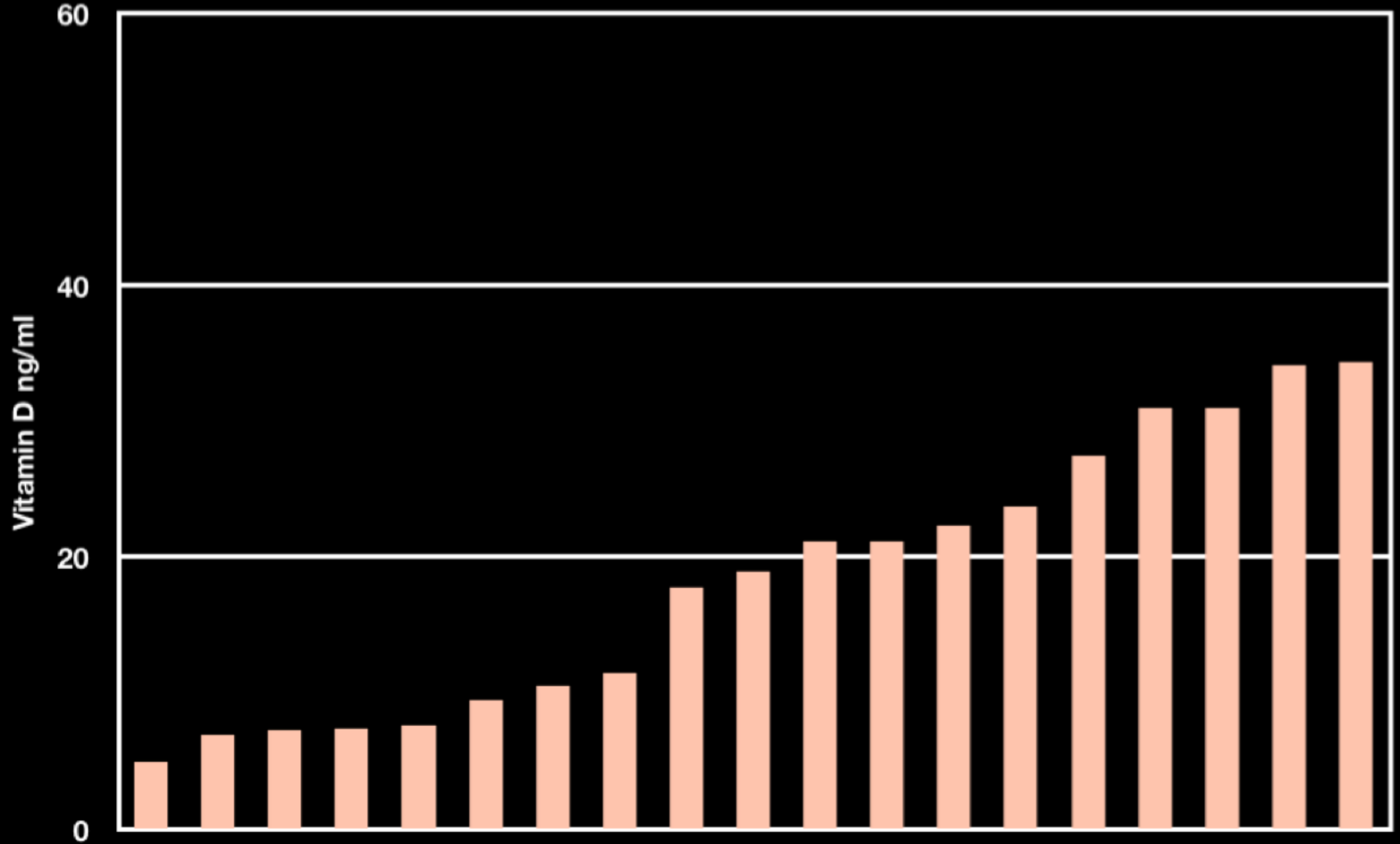
Diabetes



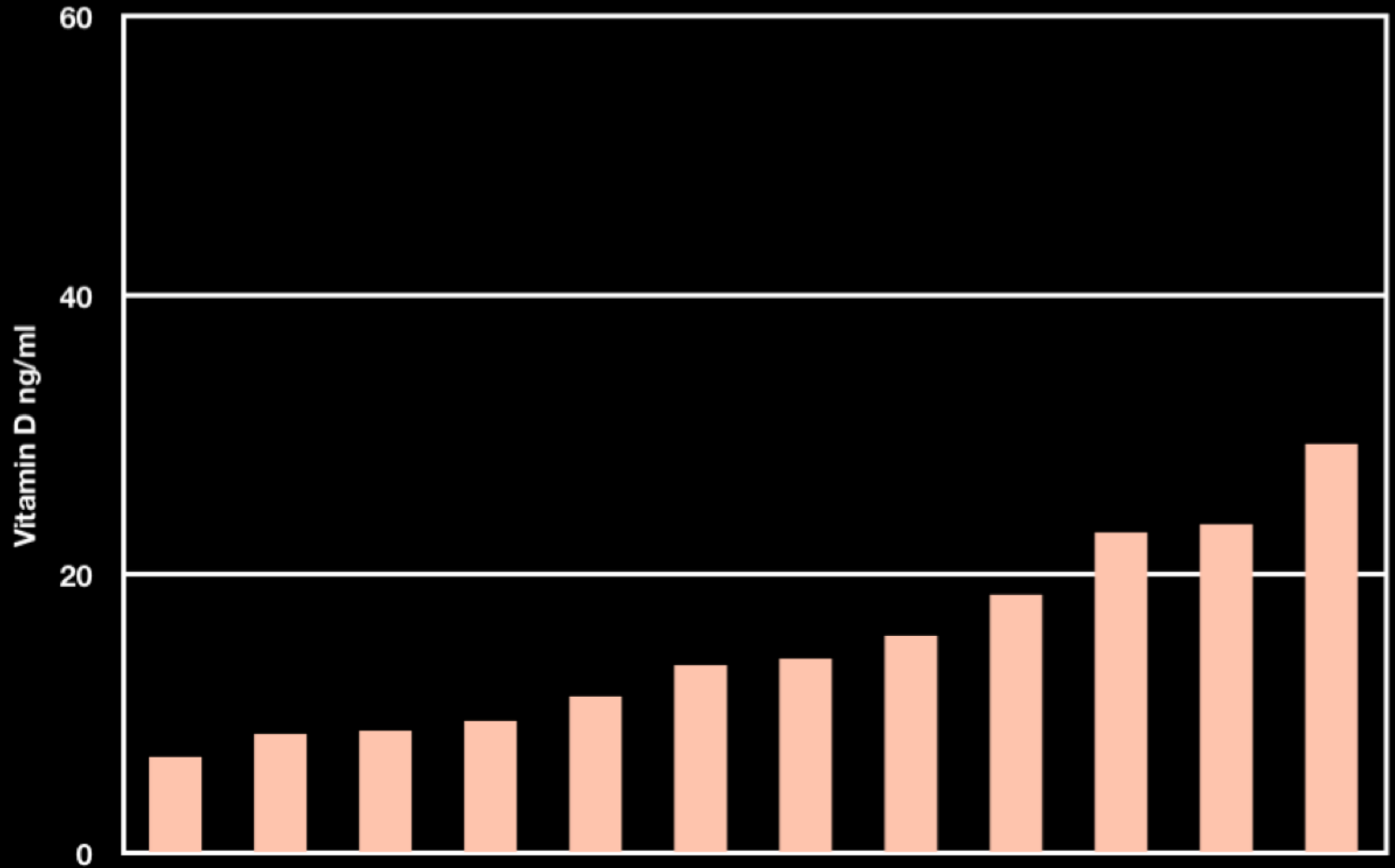
Cancers



Chronic fatigue syndrome



Chronic renal failure



Vitamin D deficiency

-

the significance

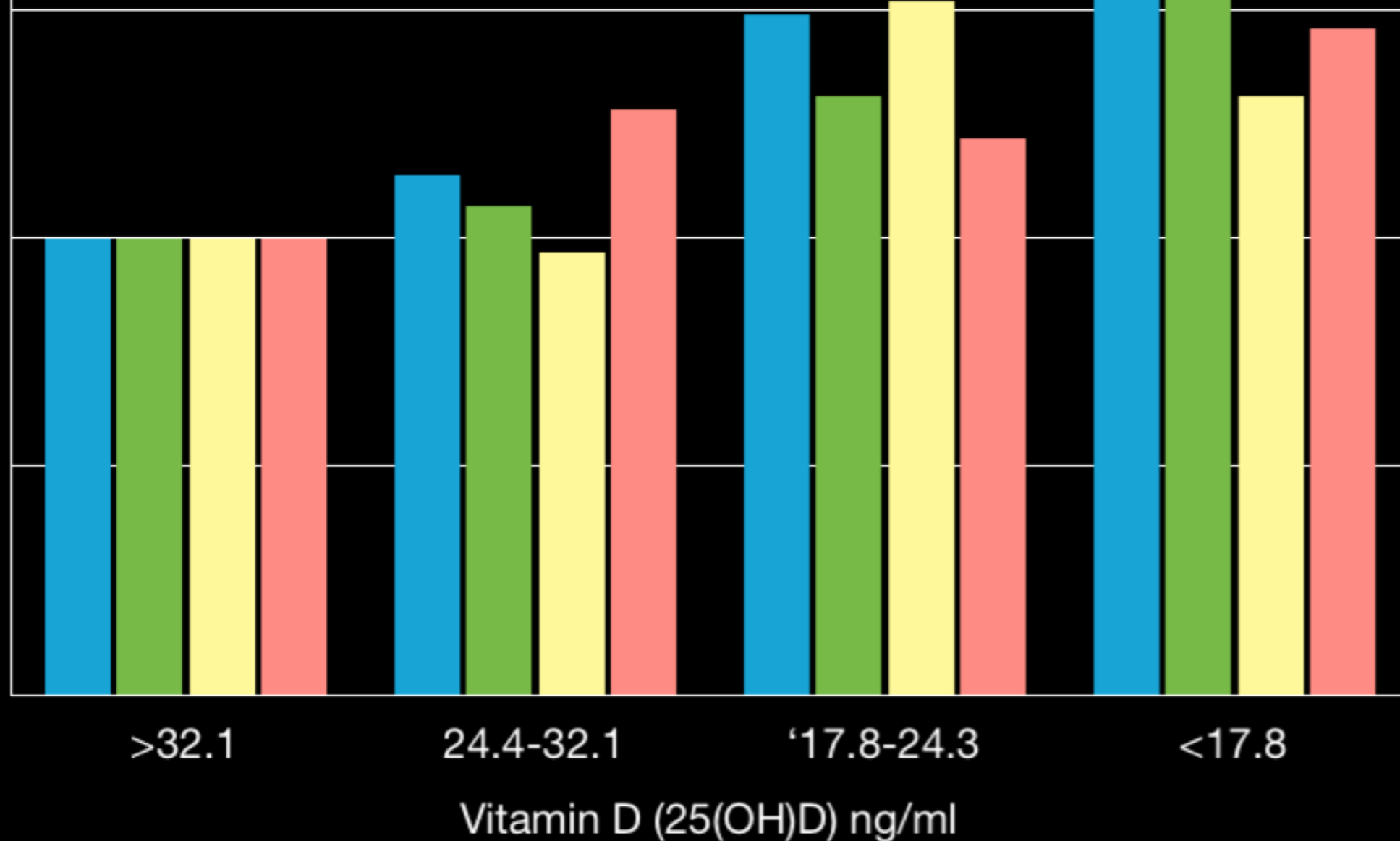
Vitamin D and mortality risk

Melamed ML, Michos ED, Post W, Astor B.

25-Hydroxyvitamin D levels and the risk of mortality in the general population.

Arch Int Med 2008; 168: 1629-1637.

Relative mortality risk



All causes

CVD

Cancer

Infectious diseases

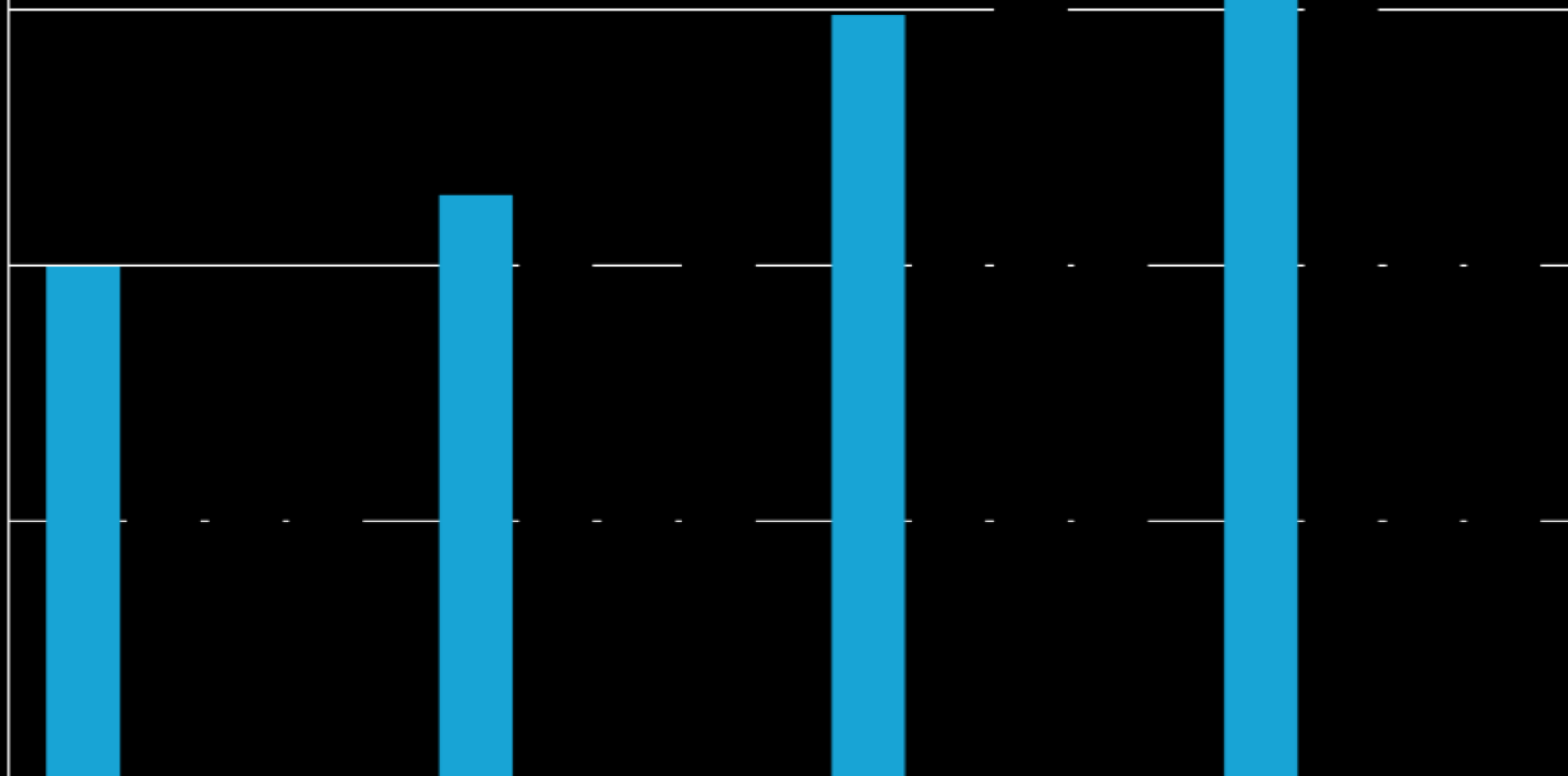
Vitamin D and mortality risk

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Relative mortality risk



■ All causes

■ CVD

■ Cancer

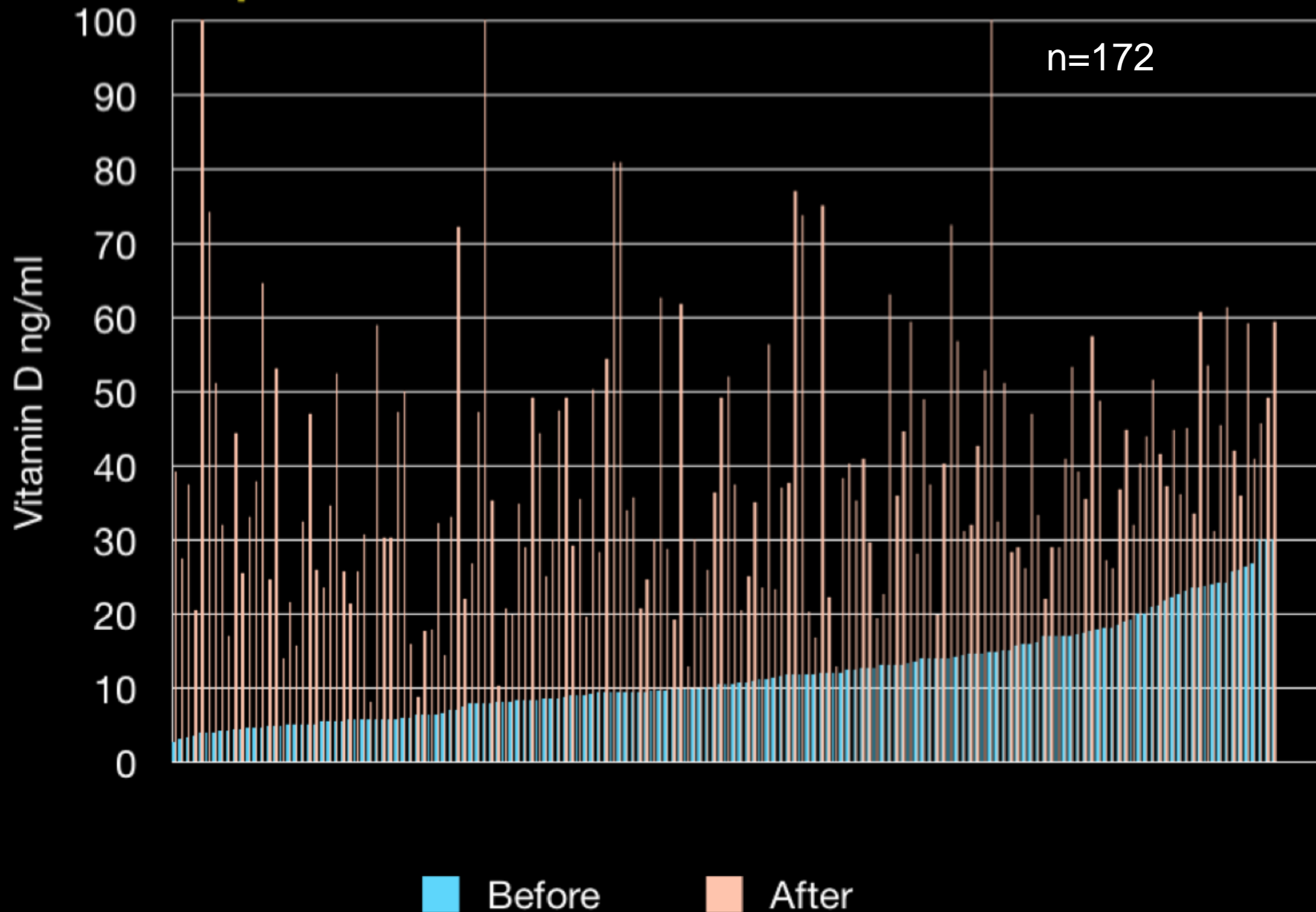
■ Infectious diseases

Vitamin D

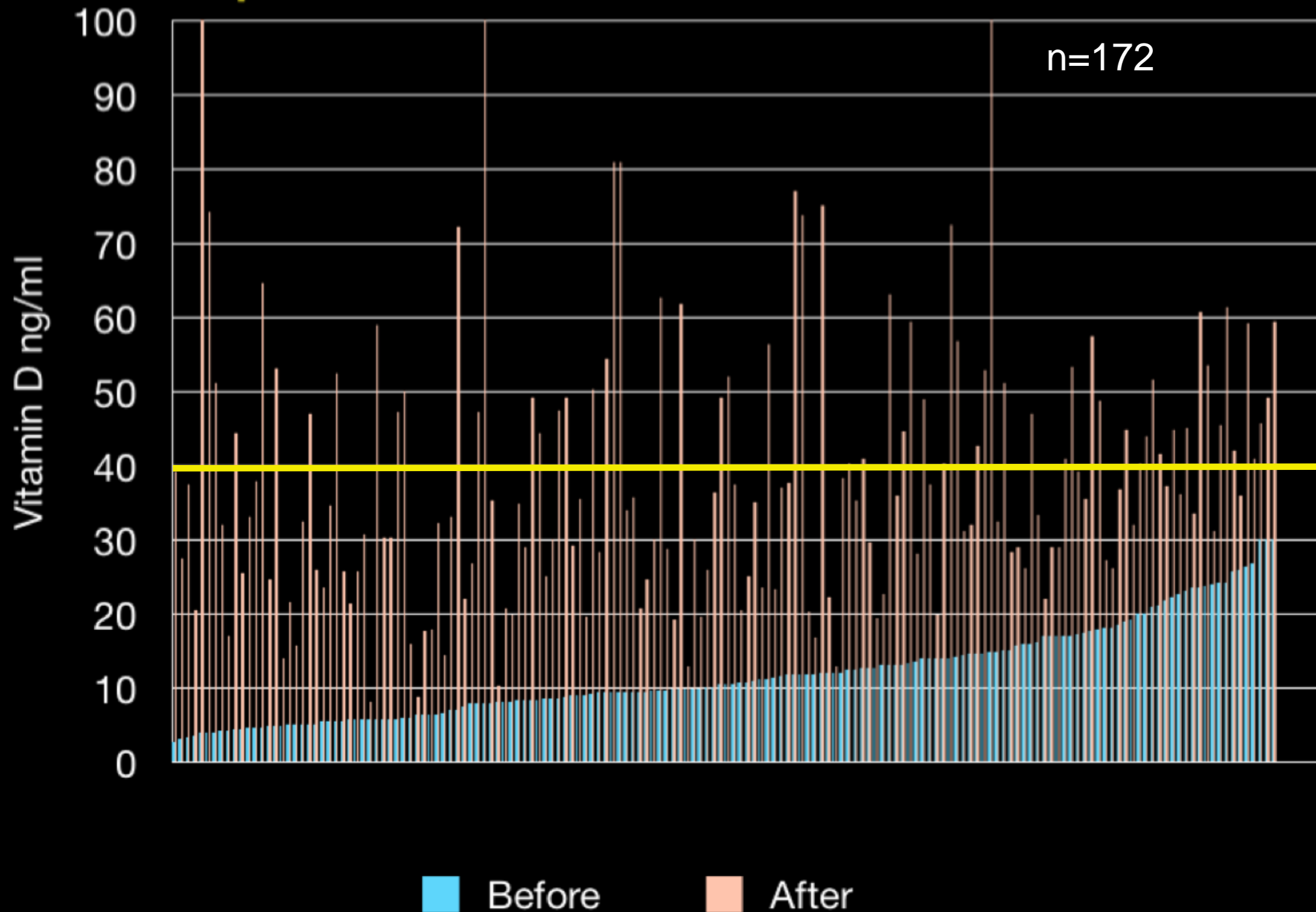
supplement

20,000 u per week

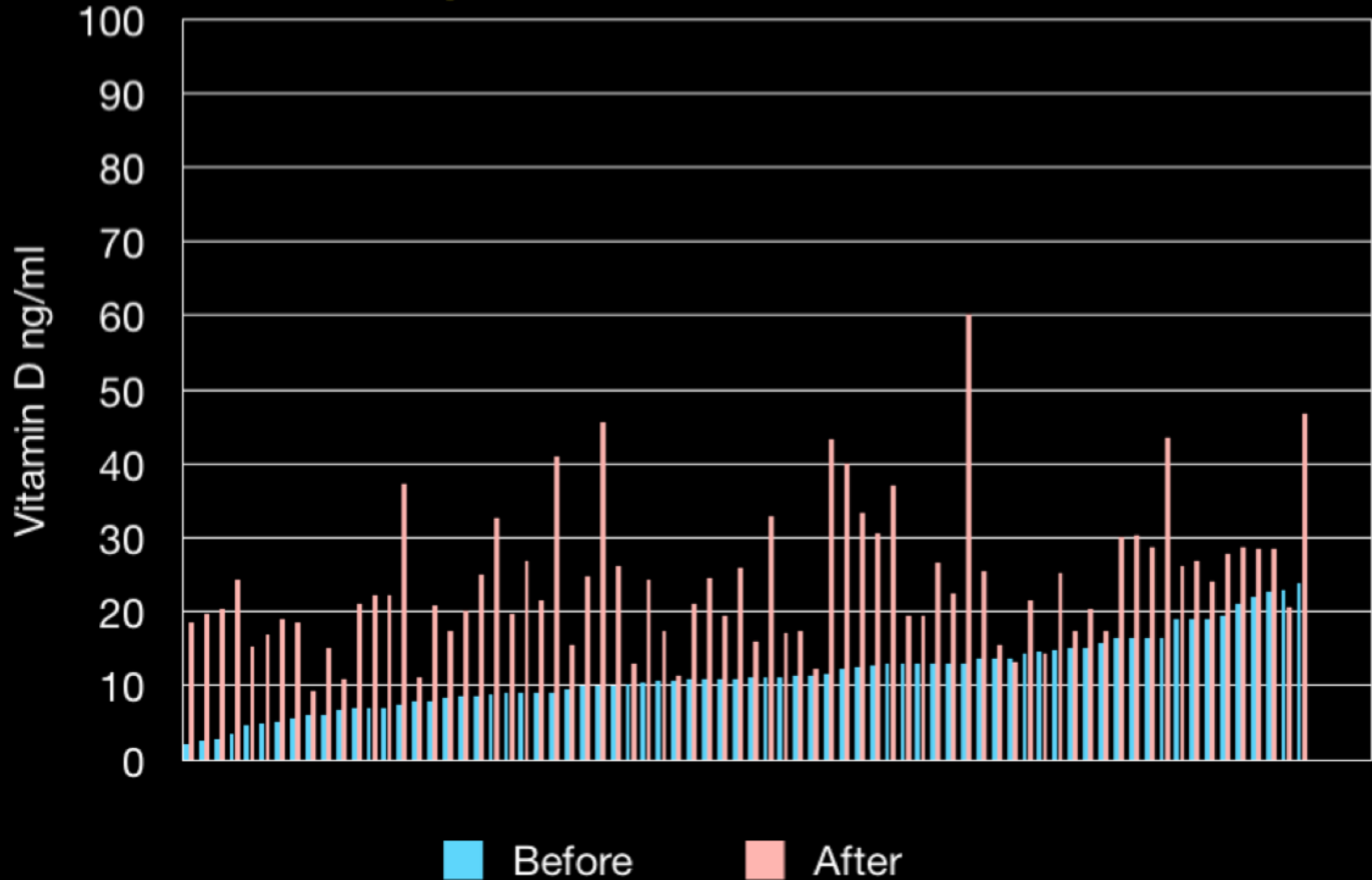
Response to oral vitamin D treatment



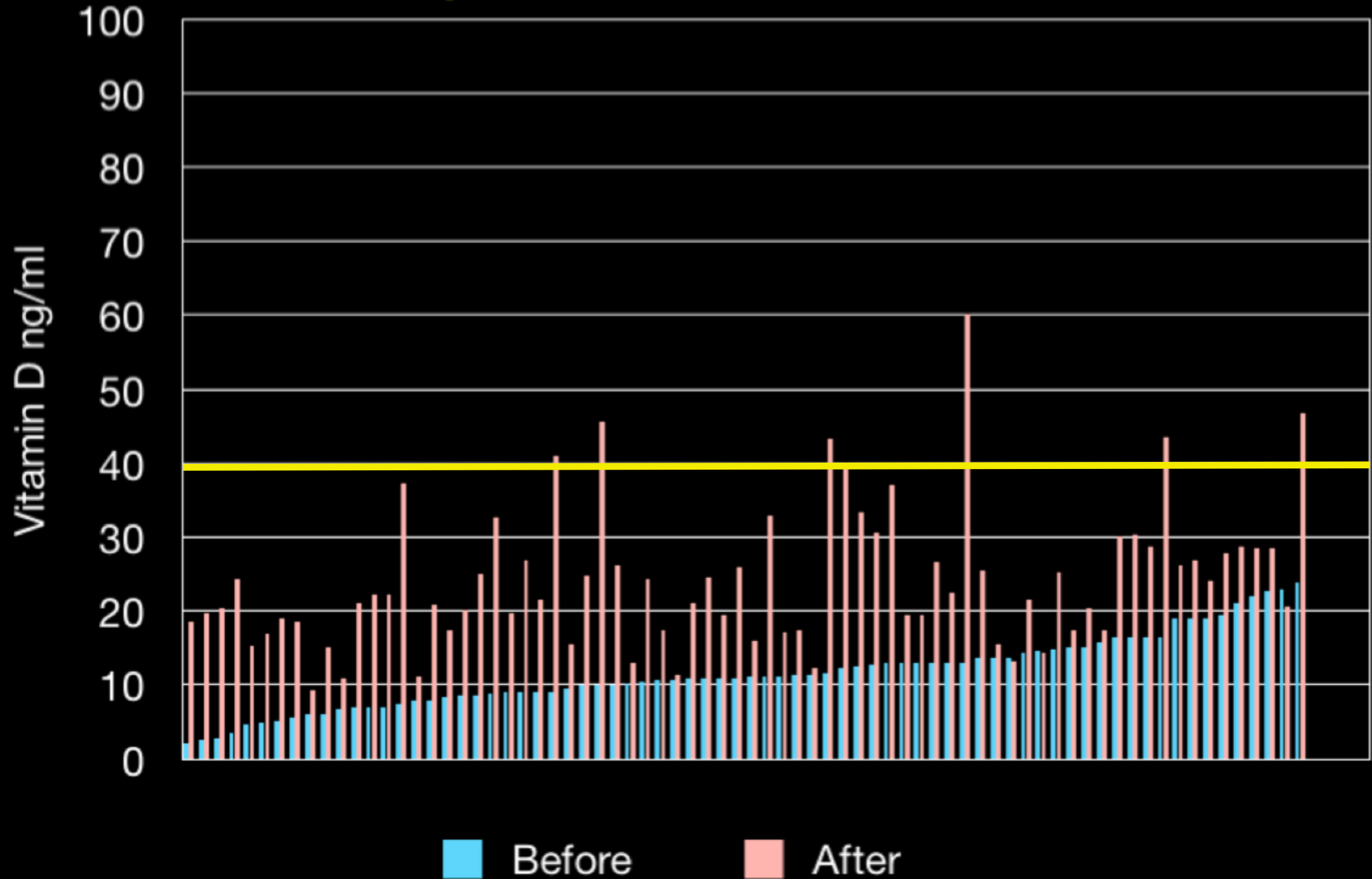
Response to oral vitamin D treatment



Response to im Vitamin D



Response to im Vitamin D

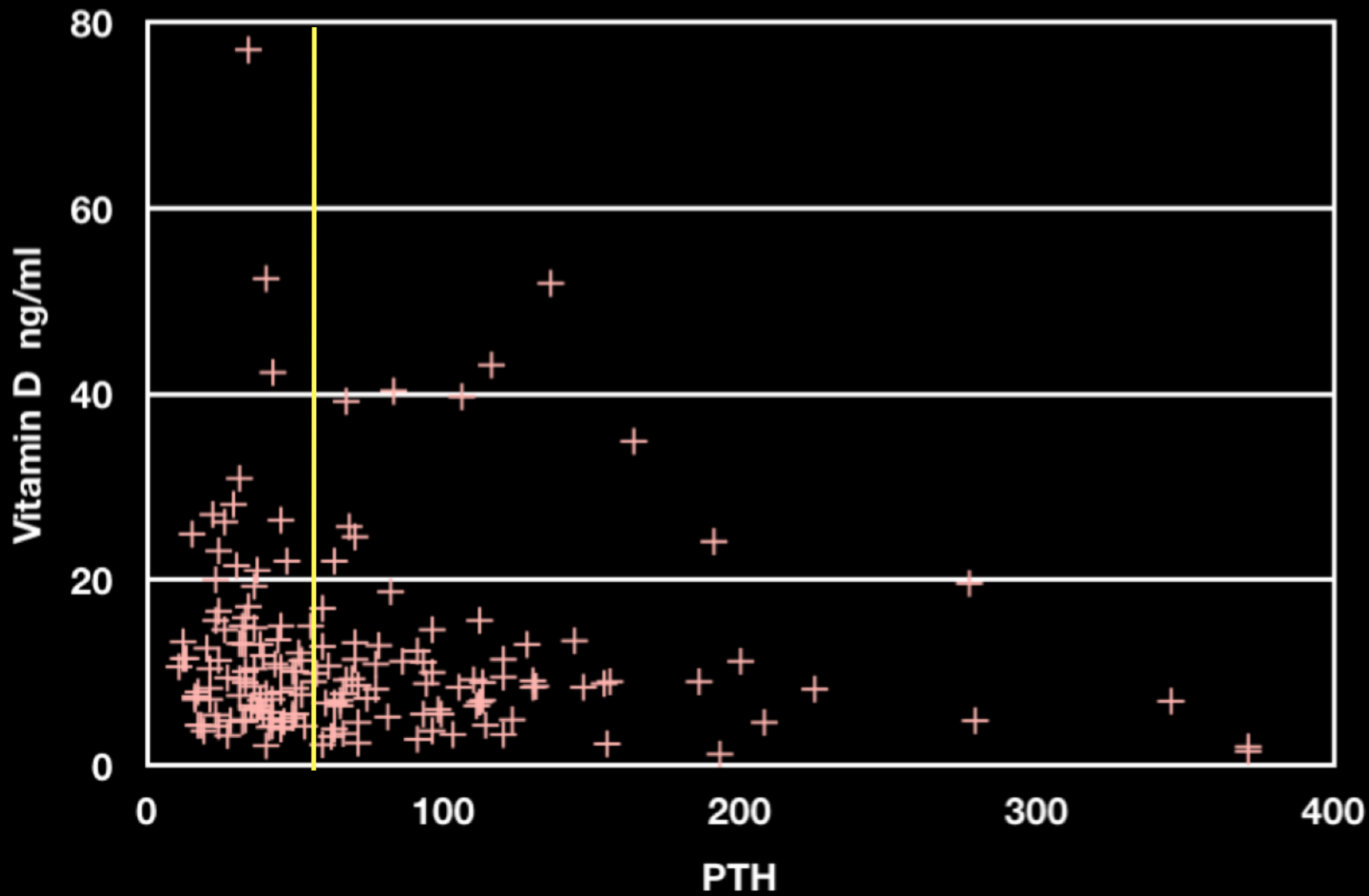


Vitamin D deficiency

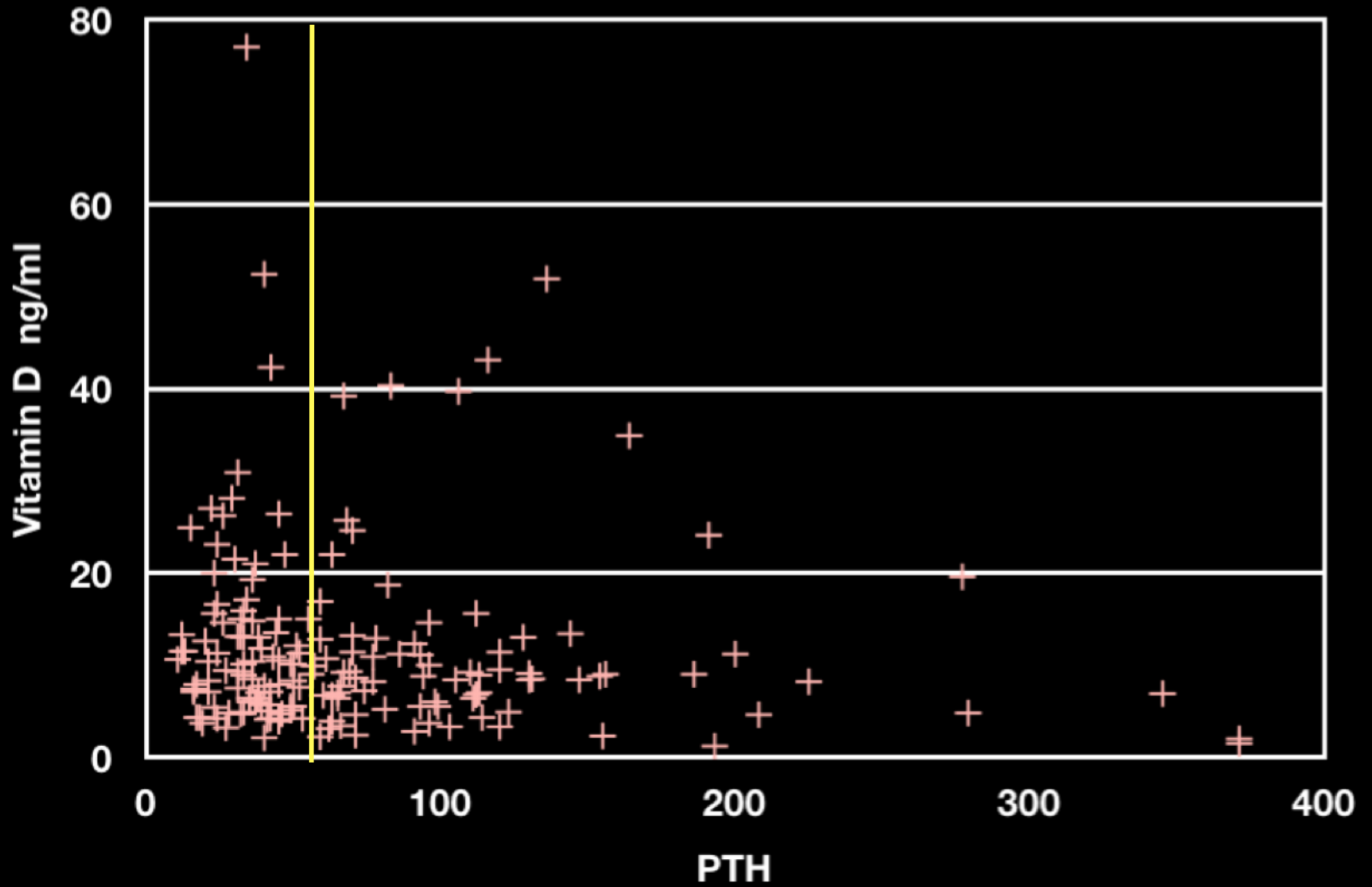
Vitamin D deficiency

at what level

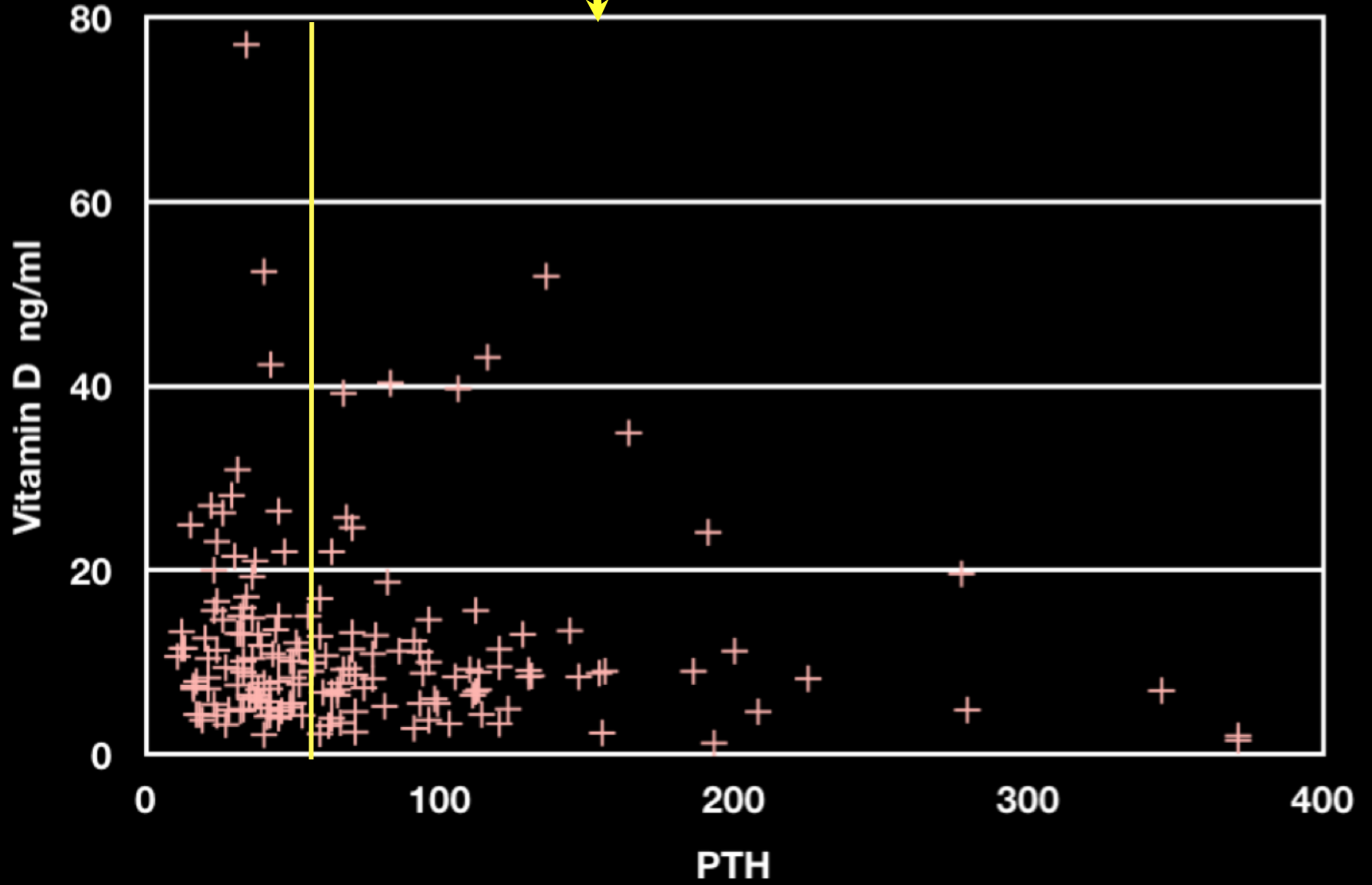
does osteomalacia occur ?



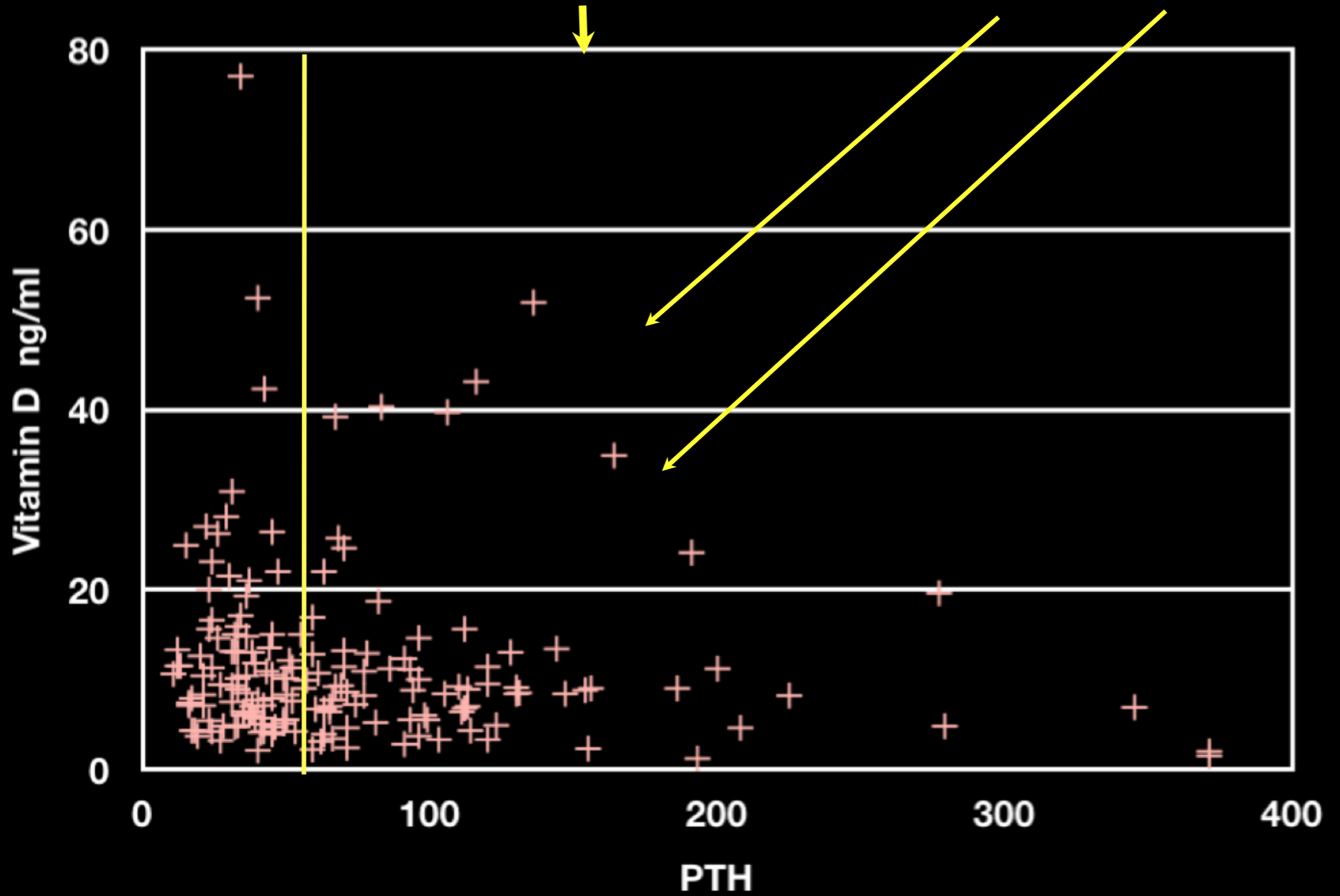
Serum Calcium normal



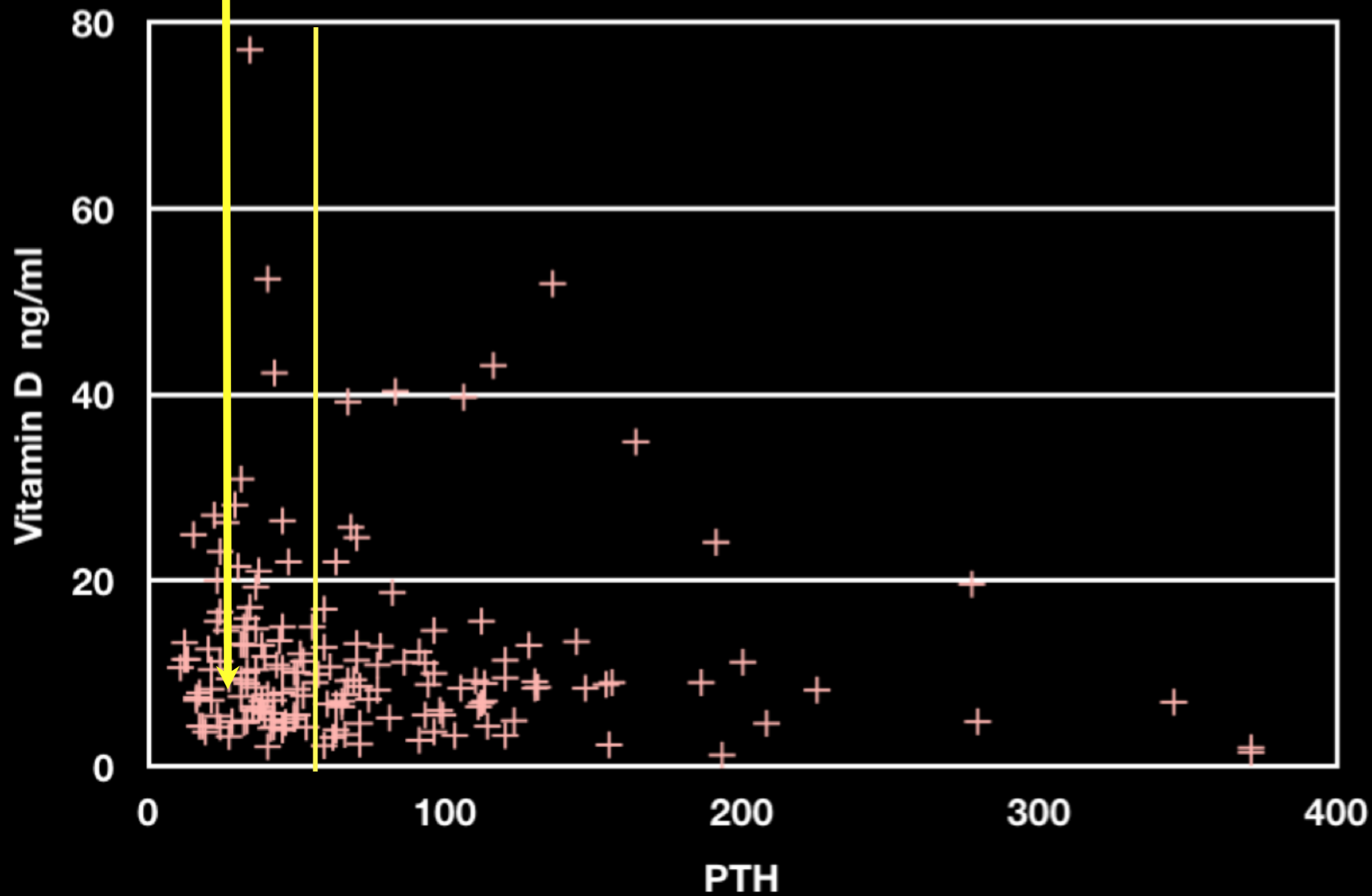
osteomalacia



osteomalacia vitamin D resistant

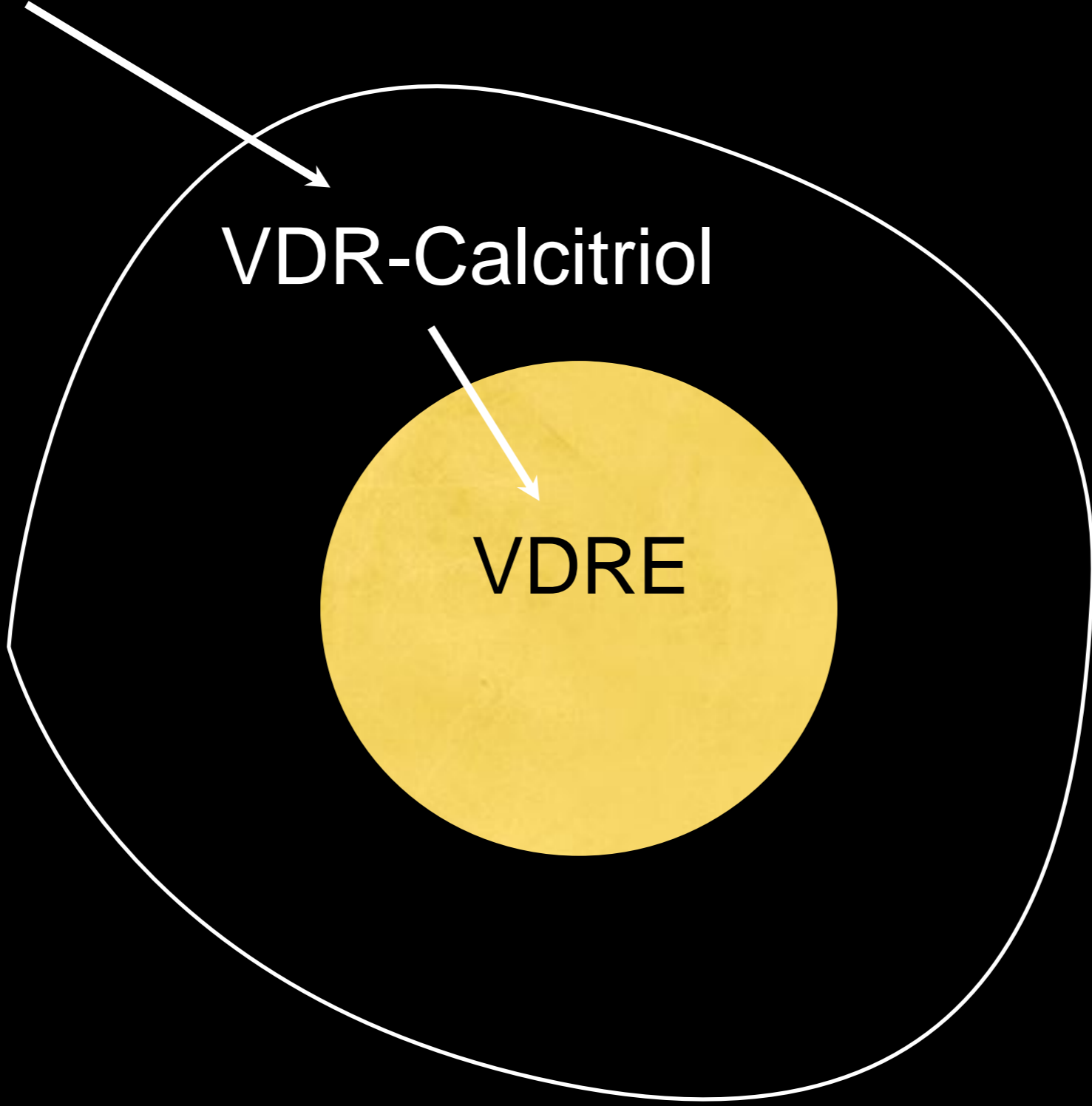


very efficient VDRs



osteomalacia can occur
when
vitamin D level is
less than
20 ng/ml 50nmol/L

Calcitriol
Vitamin D



VDR-Calcitriol

VDRE

Sunshine Clinic



Thank-you for your
attention

davidgrimes1@mac.c

om

www.vitamindandcholesterol.com

(lecture available shortly)