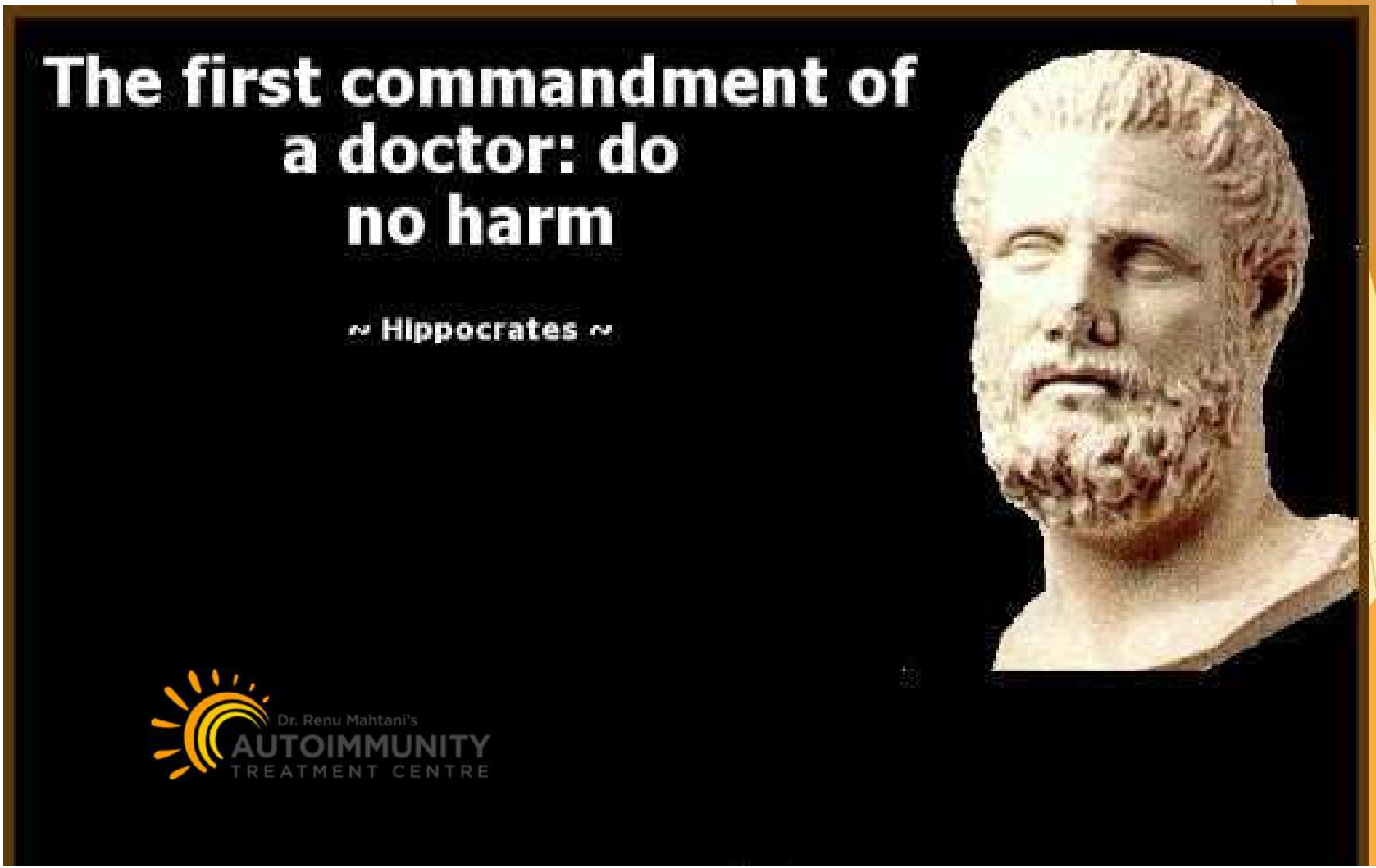
Answers to the questions

Vitamin D Therapy for Autoimmunity

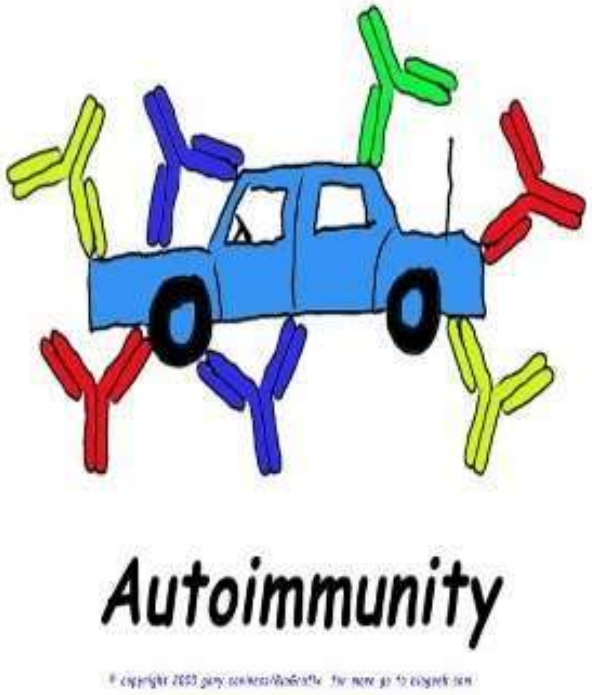
Dr. Renu Mahtani MD FMNM
www.renumahtani.com

The Doctor's Oath
Father of Medicine



DISORDERS OF THE IMMUNE SYSTEM

* **Immunodeficiency**
  - **Too little**
* **Hypersensitivity**
  - **Too much**
* **Autoimmunity**
  - **Misdirected**



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Pick an organ, any organ . . .

Autoimmunity can affect ANY organ/organ system in the human

Autoimmune Uveitis

Multiple Sclerosis

Sjogren's Syndrome

Pemphigus

Rheumatic Fever

Goodpasture's Syndrome

Autoimmune Hepatitis

Diabetes

Addison's Disease

Autoimmune Oophoritis

Ulcerative Colitis

Rheumatoid Arthritis

Autoimmune hemolyt

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Treatment Options

- Anti-inflammatory drugs
  - NSAIDS, Corticosteroids
- Immunosuppressant drugs
  - Methotrexate
- Radiation
- Plasmapheresis
- Cell Blocking Reagents
  - aCD20 (Rituxan)
  - aCD3 (Teplizumab)
- Cytokine Blocking Reagents
  - TNF (Humira, Enbrel)

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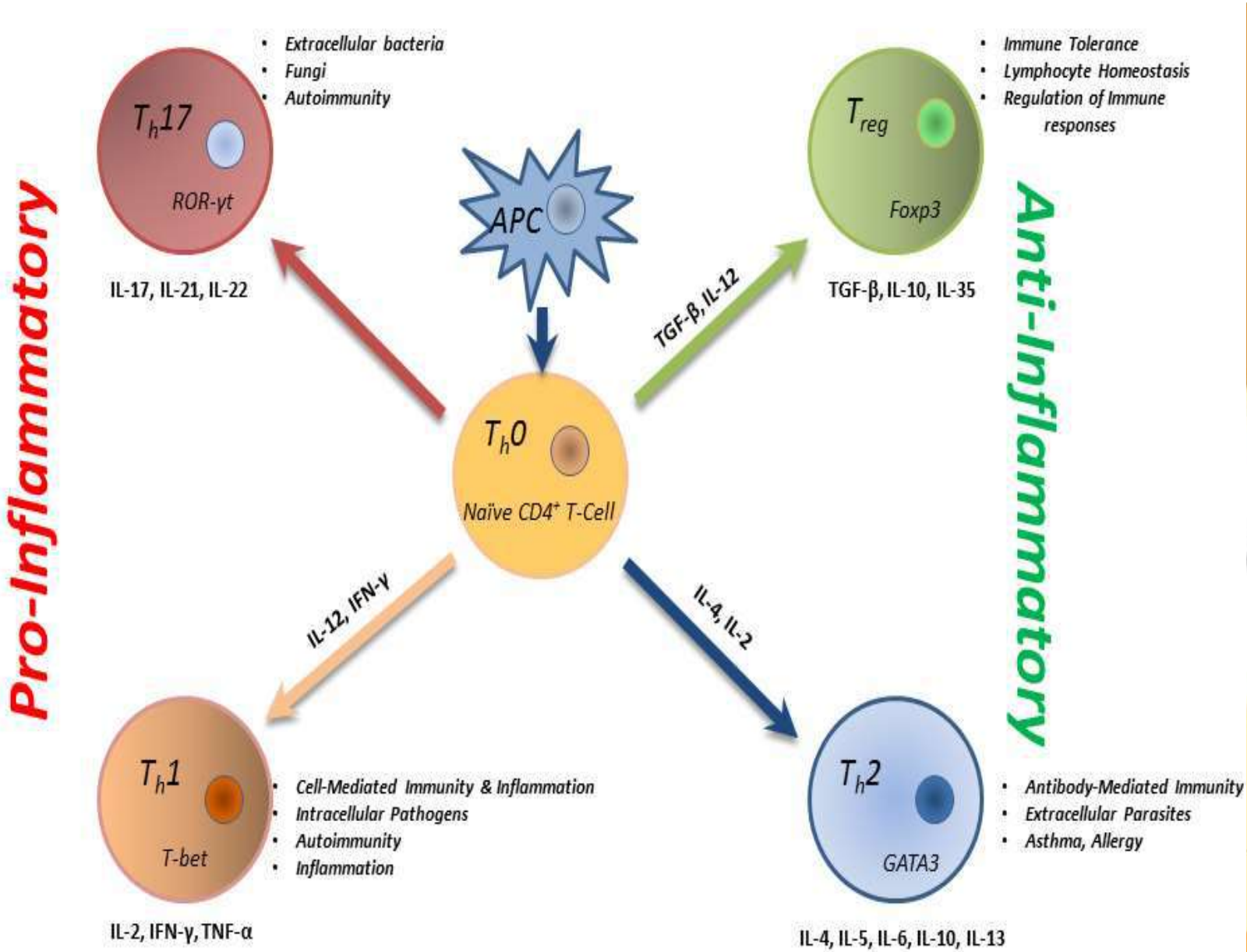
Conventional Therapies

Steroids, Anti-inflammatory, Immunosuppresants, Biologicals...

- Suppress the manifestations
- Help to slow down the progression of disease but do not control it
- Do not help correct the root cause – deviant immune system



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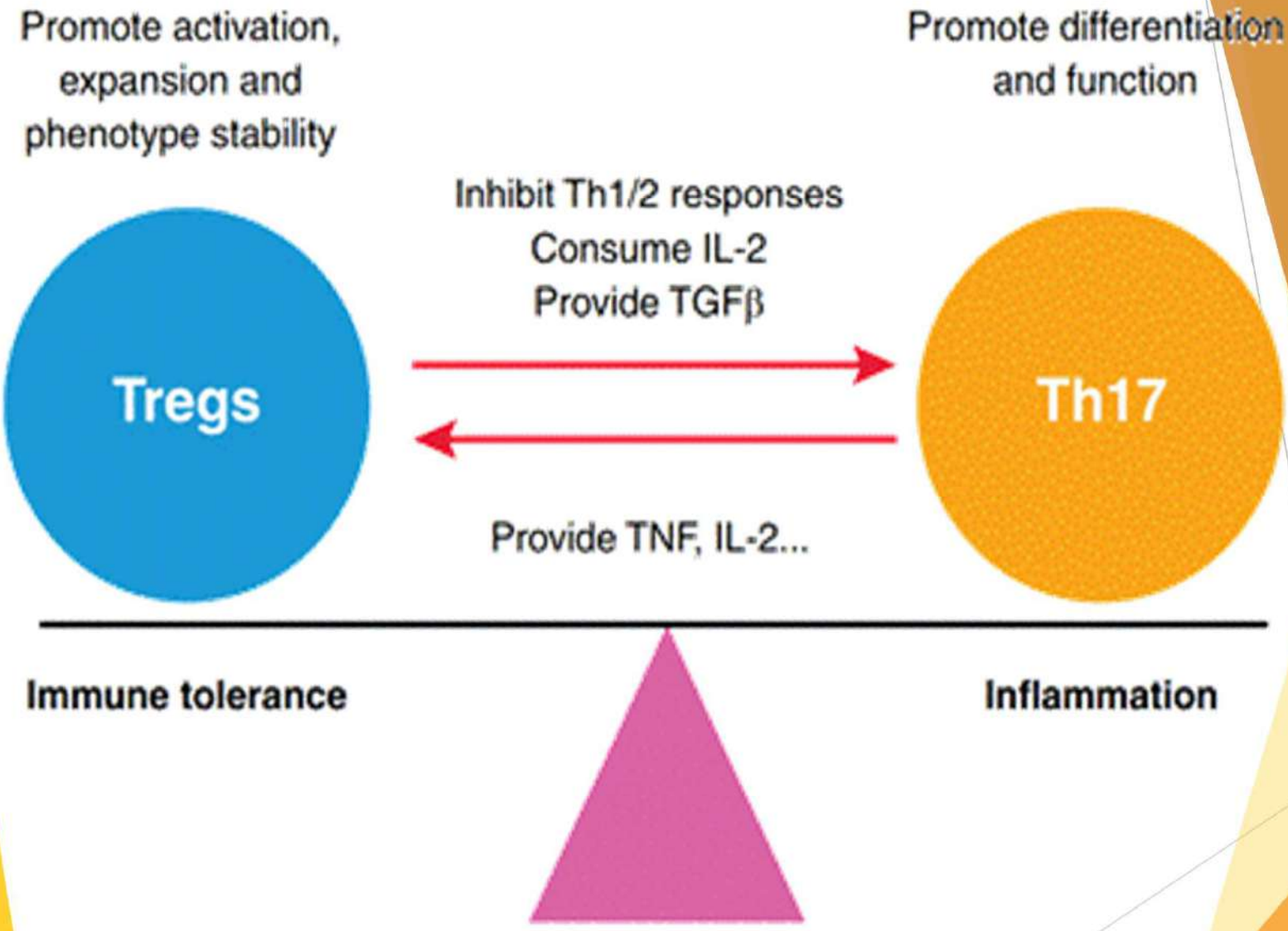

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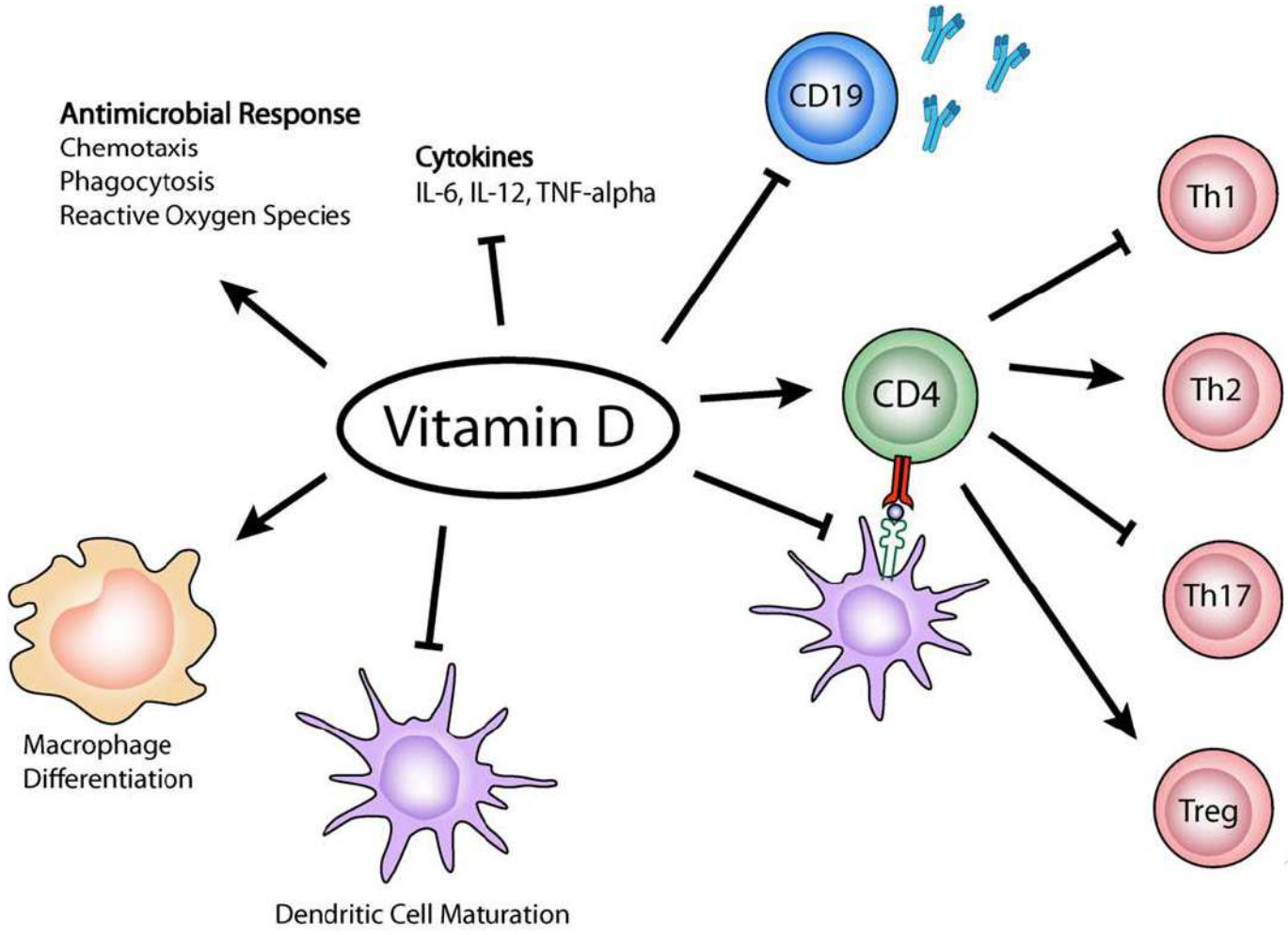
Vitamin D as Immune-modulator



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Vitamin D Suppresses Interleukin-17 Production

REPORT

Vitamin D Suppresses Th17 Cytokine Production by Inducing C/EBP Homologous Protein (CHOP) Expression*

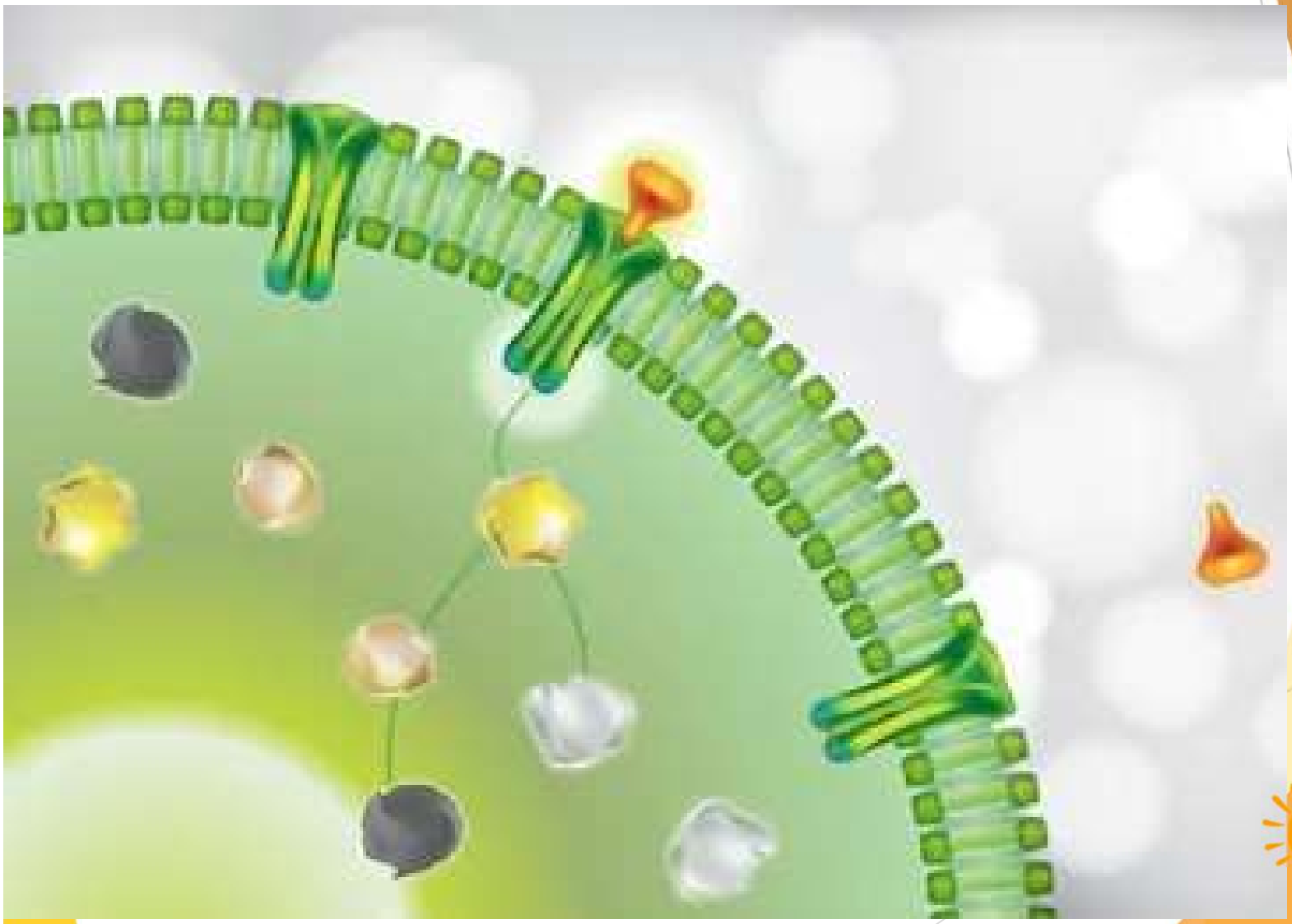
Received for publication, September 16, 2010, and in revised form, October 22, 2010
Published, JBC Papers in Press, October 25, 2010, DOI 10.1074/jbc.C110.185777

Seon Hee Chang, Yeonseok Chung[1], and Chen Dong[2]

From the Department of Immunology and Center for Inflammation and Cancer, The University of Texas, MD Anderson Cancer Center, Houston, Texas 77054

"THE JOURNAL OF BIOLOGICAL CHEMISTRY VOL. 285, NO. 50, pp. 38751–38755, December 10, 2010"

VDR
Vitamin D Receptors



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Autoimmune Disorders

Vitamin D Deficiency

and/or

Vitamin D Resistance

due to genetic polymorphism of Vit D Receptors (VDR)

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Vitamin D Receptor Polymorphism is Associated with Psoriasis

Byung-Soon Park, Jeong-Soo Park,* Dong-Youn Lee, Jai-Il Youn, and In-Gyu Kim*

Departments of Dermatology and *Biochemistry and Molecular Biology, Seoul National University College of Medicine, Seoul, Korea

Vitamin D receptor is a trans-acting transcriptional factor that mediates 1α,25-dihydroxyvitamin D_3 action in the regulation of target gene expression. Recent studies have shown that clinical response of psoriasis to 1α,25-dihydroxyvitamin D_3 is correlated with the vitamin D receptor mRNA expression level, which may be influenced by the genotype of the vitamin D receptor. In this study, we have explored a possible association between psoriasis and the polymorphism in the gene encoding the vitamin D receptor. We examined the allelic frequencies of the vitamin D receptor in psoriasis patients (n = 104) and in healthy controls (n = 104) by analyzing the restriction pattern of the polymerase chain reaction products. A significant increase in the frequency of the A allele (absence of the restriction site at intron 8) by *Apa*I restriction fragment length polymorphism was observed in psoriasis patients compared with that of the control group, and the tendency was more accentuated in early onset psoriasis. Odds ratios (95% confidence interval) for psoriasis of AA and Aa genotypes were 5.0 (1.3–19.1) and 2.4 (1.3–4.3), and odds ratios for early onset of AA and Aa genotypes were 6.4 (1.6–25.0) and 3.1 (1.7–5.9), respectively. Allele frequencies for A and a alleles were 0.317 and 0.683 in the psoriasis group and 0.168 and 0.832 in the control group ($p = 0.001$). A significant association between vitamin D receptor genotypes and the mean age at onset was observed ($p < 0.05$). Our findings suggest that allelic variance in the vitamin D receptor gene itself or other genes in linkage disequilibrium with this gene, could predispose to the development of psoriasis. *J Invest Dermatol 112:113–116, 1999*

VDR resistance in Multiple Sclerosis

Contents lists available at ScienceDirect

Autoimmunity Reviews

journal homepage: www.elsevier.com/locate/autrev

The relevance of vitamin D receptor gene polymorphisms for vitamin D research in multiple sclerosis

Joost Smolders [a,b,*], Evelyn Peelen [a,b], Mariëlle Thewissen [b], Paul Menheere [c], Jan Willem Cohen Tervaert [a,b], Raymond Hupperts [a,d], Jan Damoiseaux [b]

[a] School for Mental Health and Neuroscience, Maastricht University Medical Center, Maastricht, the Netherlands
[b] Department of Internal Medicine, Division of Clinical and Experimental Immunology, Maastricht University Medical Center, Maastricht, The Netherlands
[c] Department of Clinical Chemistry, Maastricht University Medical Center, Maastricht, The Netherlands
[d] Department of Neurology, Orbis Medical Center, Sittard, The Netherlands

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Genetic Polymorphisms
Vitamin D
25-hydroxyvitamin D
Multiple Sclerosis

ABSTRACT

A poor vitamin D status has been associated with several autoimmune diseases, including multiple sclerosis (MS). The receptor for the biologically active metabolite of vitamin D appears to be a key player in these associations, not only as a mediator of the biological effects of vitamin D, but also as a mediator of the regulation of vitamin D metabolism itself. In this concise review, we will discuss the mostly investigated genetic polymorphisms of the vitamin D receptor (VDR), and their consequences for VDR functionality and immune regulation. Next, we will discuss the association of these polymorphisms with MS, and their relation with vitamin D metabolism. We conclude that polymorphisms of the VDR have major effects on vitamin D function and metabolism, and should therefore be assessed in studies on vitamin D and MS.

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VDR Resistance in thyroid disorders & type 1 Diabetes

European Journal of Endocrinology (2002) 146 777–781 ISSN 0804-4643

CLINICAL STUDY

Vitamin D 1α-hydroxylase (*CYP1α*) polymorphism in Graves' disease, Hashimoto's thyroiditis and type 1 diabetes mellitus

Michael A Pani, Karoline Regulla, Maria Segni[1], Maren Krause, Stefan Hofmann[3], Michael Hüfner[3], Jürgen Herwig[2], Anna Maria Pasquino[1], Klaus-H Usadel and Klaus Badenhoop

Department of Internal Medicine I, Division of Endocrinology, University Hospital Frankfurt, Frankfurt am Main, Germany, [1]Department of Paediatrics, Endocrinology Unit, University 'La Sapienza', Rome, Italy, [2]Department of Paediatrics, University Hospital Frankfurt, Frankfurt am Main, Germany and [3]Department of Medicine, Division of Endocrinology, University Hospital Göttingen, Göttingen, Germany

(Correspondence should be addressed to K Badenhoop, Department of Internal Medicine I, Division of Endocrinology, University Hospital Frankfurt, Theodor-Stern-Kai 7, D-60596 Frankfurt am Main, Germany; Email: badenhoop@em.uni-frankfurt.de)

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Prof. Dr. Cícero Galli Coimbra

MD, PHD Neurologist, Internal medicine
Federal University of São Paulo, Brazil

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Coimbra Protocol Team (120 doctors)
Autoimmune diseases practice

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"Replenishing vitamin D in the doses required to achieve its beneficial effects implies restoring a natural mechanism, which allows patients to resume a normal life. It's a mechanism that nature took millions of years to develop, and even if the pharmaceutical industry spent 400 years working on this issue, they would not get close to the benefits that vitamin D can provide to these patients."

Dr. Cicero Coimbra, Neurologist, PhD.
- On the comparison between conventional drugs for autoimmune diseases and Vitamin D.

Coimbra Protocol

- **Vitamin D** has a potent **immune regulatory** role
- Autoimmunity is found to be associated with **resistance to effects of vitamin D due to genetic polymorphism**
- To compensate for the resistance to its effects-
  - **Higher levels of Vitamin D needed**
  - **Has to be taken on daily basis**
- Individual requirement of Vitamin D varies based on the **degree** of vitamin D resistance
  - Vit D & PTH (Parathyroid Hormone)
  - Ionised Calcium

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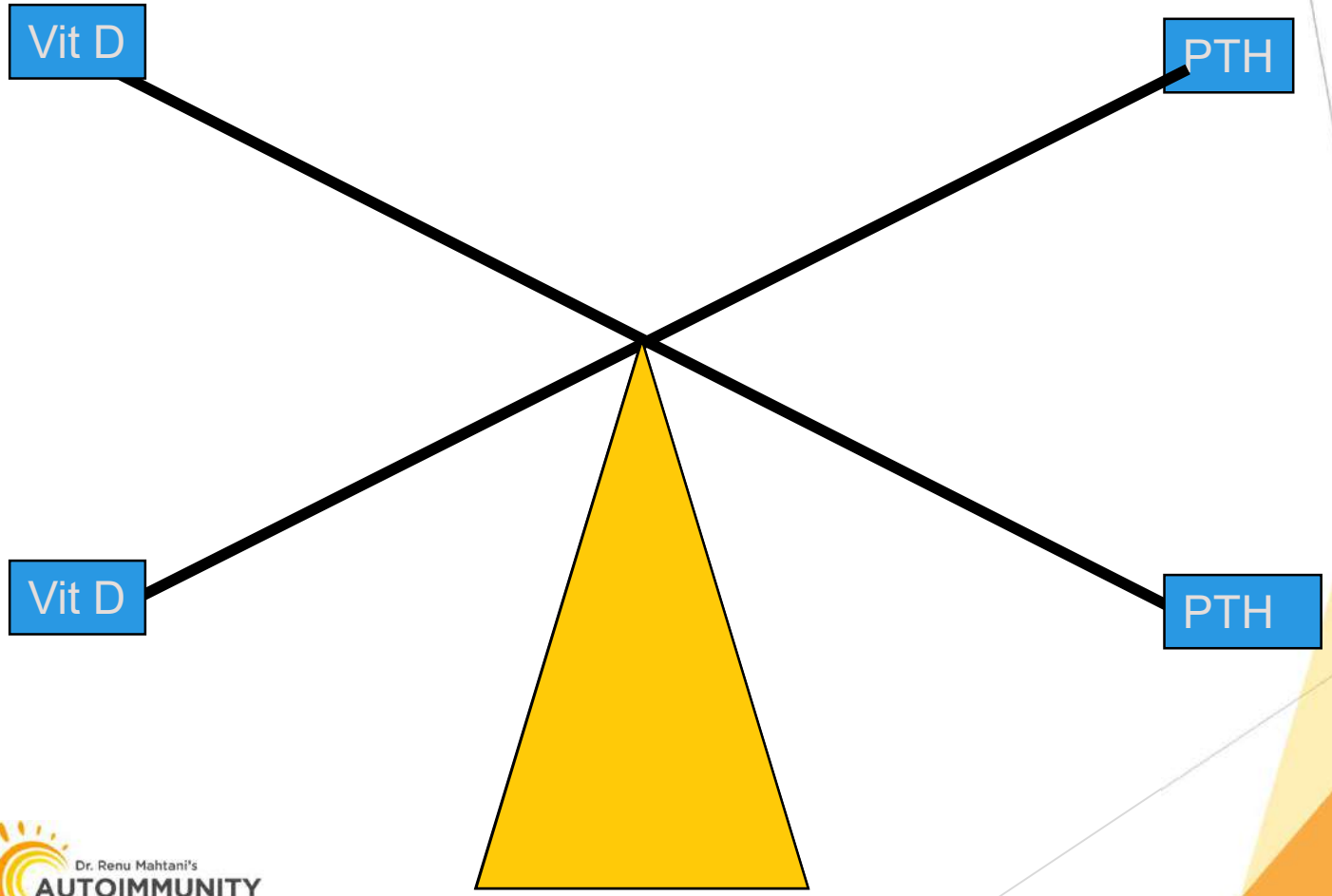
Individual tailoring of doses based on the extent of PTH inhibition



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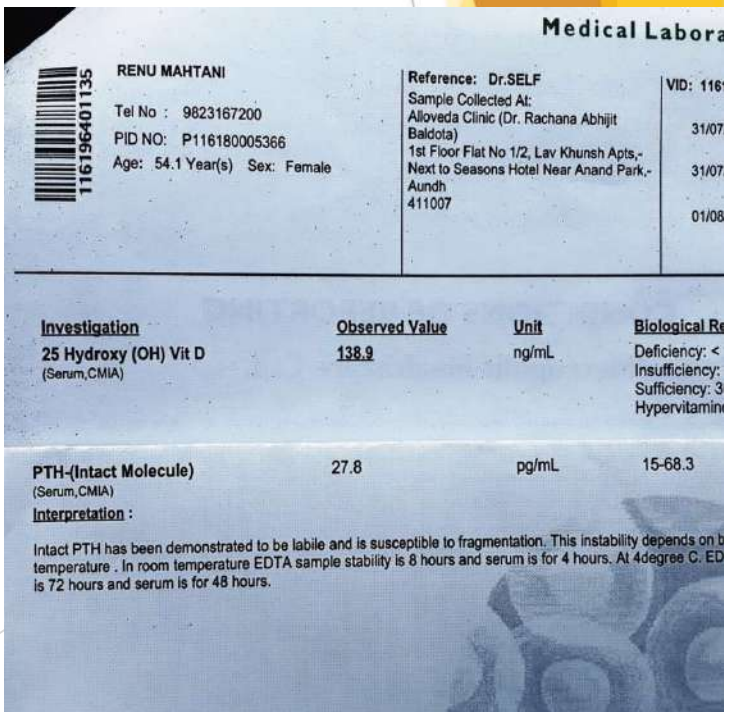
PTH suppression by Vitamin D: Index of vitamin D utilisation

- How much vitamin D is used by the body is important rather than how much is supplemented
- If PTH levels are not dropping – the body is not making proper use of vitamin D due to vit D resistance
- Shows the individual level of Vitamin D resistance



Medical Labora

RENU MAHTANI
Tel No : 9823167200
PID NO: P116180005366
Age: 54.1 Year(s) Sex: Female
116196401135

Reference: Dr.SELF
Sample Collected At:
Alloveda Clinic (Dr. Rachana Abhijit Baldota)
1st Floor Flat No 1/2, Lav Khunsh Apts,- Next to Seasons Hotel Near Anand Park,- Aundh
411007

VID: 116
31/07
31/07
01/08

Investigation	Observed Value	Unit	Biological Re
25 Hydroxy (OH) Vit D (Serum,CMIA)	138.9	ng/mL	Deficiency: < Insufficiency: Sufficiency: 3 Hypervitamin
PTH-(Intact Molecule) (Serum,CMIA)	27.8	pg/mL	15-68.3

Interpretation :

Intact PTH has been demonstrated to be labile and is susceptible to fragmentation. This instability depends on b temperature . In room temperature EDTA sample stability is 8 hours and serum is for 4 hours. At 4degree C. ED is 72 hours and serum is for 48 hours.

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PTH level monitoring

- Within the reference range but not yet at the lowest value – vit D dose can be increased
- At the lowest value but still within the reference range – maintain the same dose of vit D
- Dropped to below the normal lowest reference value – vit D dose should be reduced

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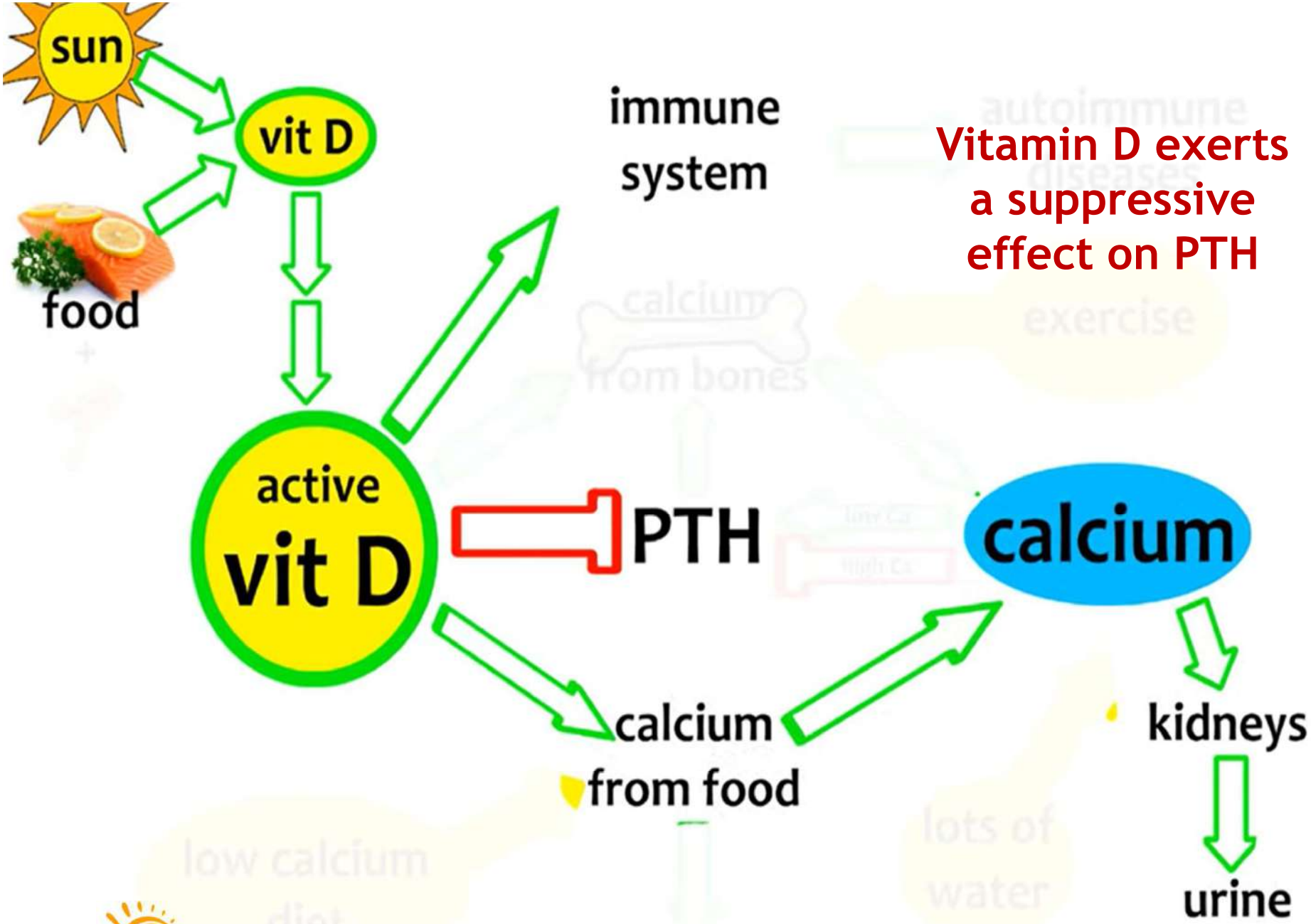

Vitamin D exerts a suppressive effect on PTH

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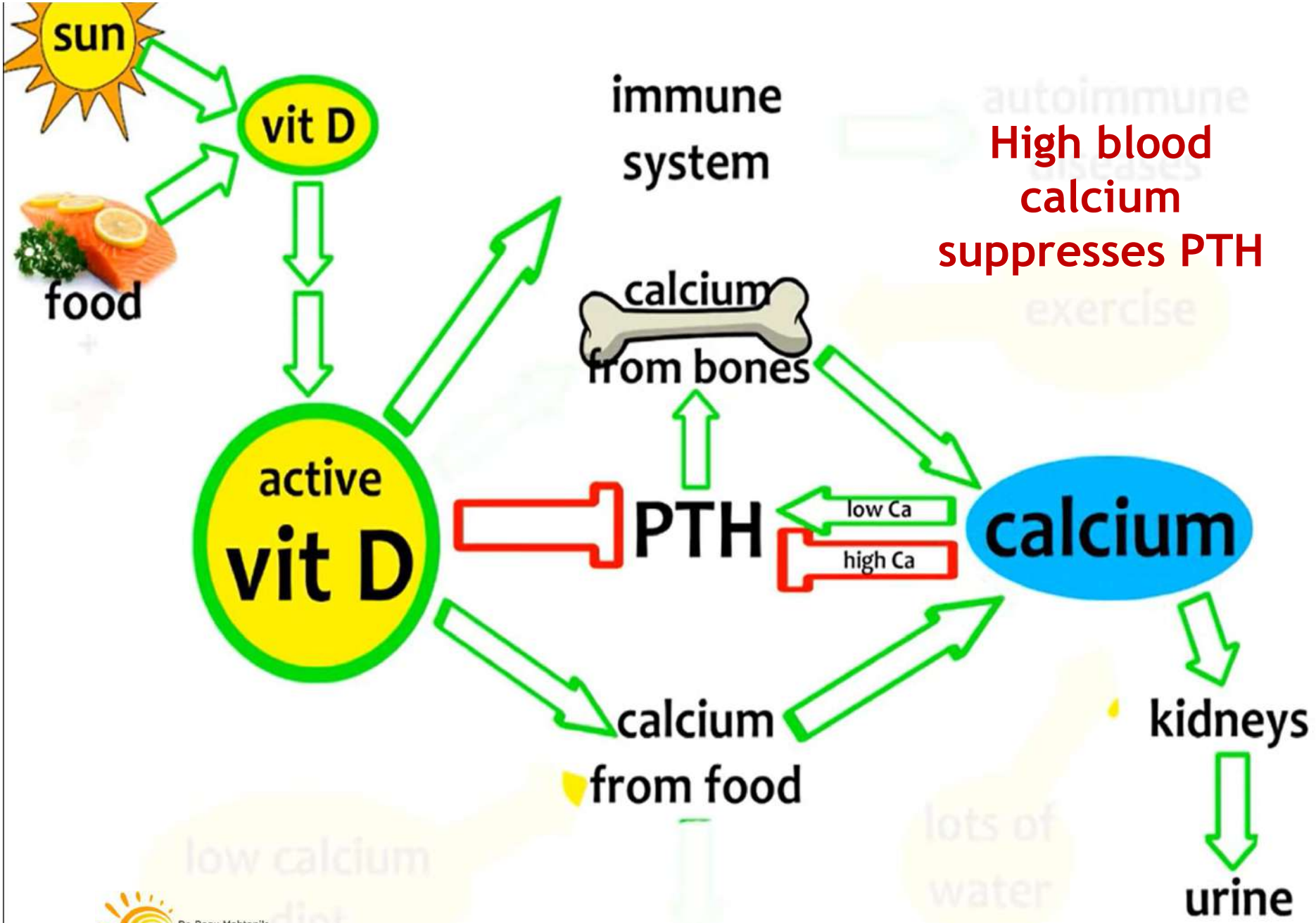

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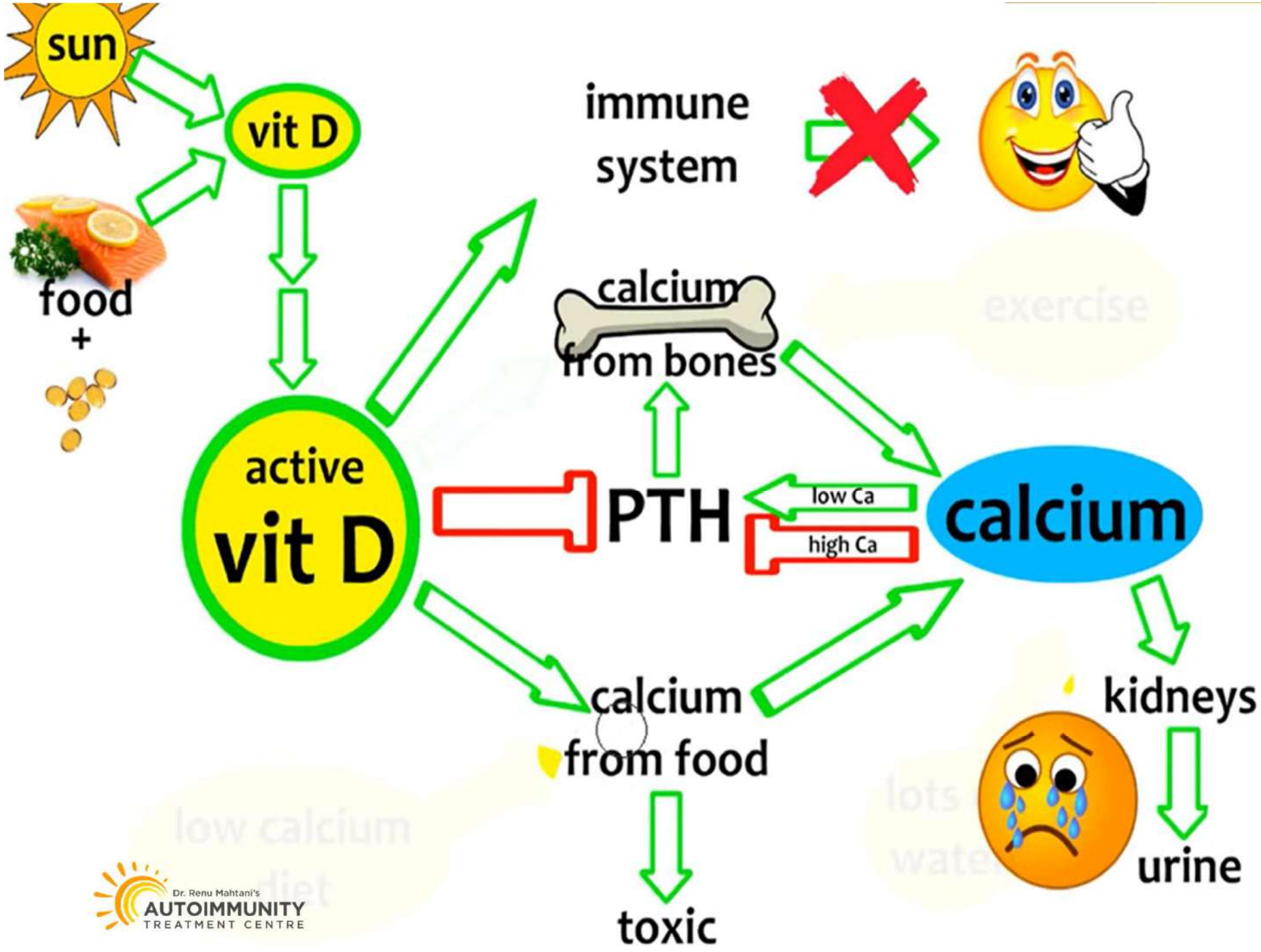
sun
vit D
food
+
immune
system
calcium
from bones
active
vit D
PTH
low Ca
high Ca
calcium
calcium
from food
kidneys
urine
toxic
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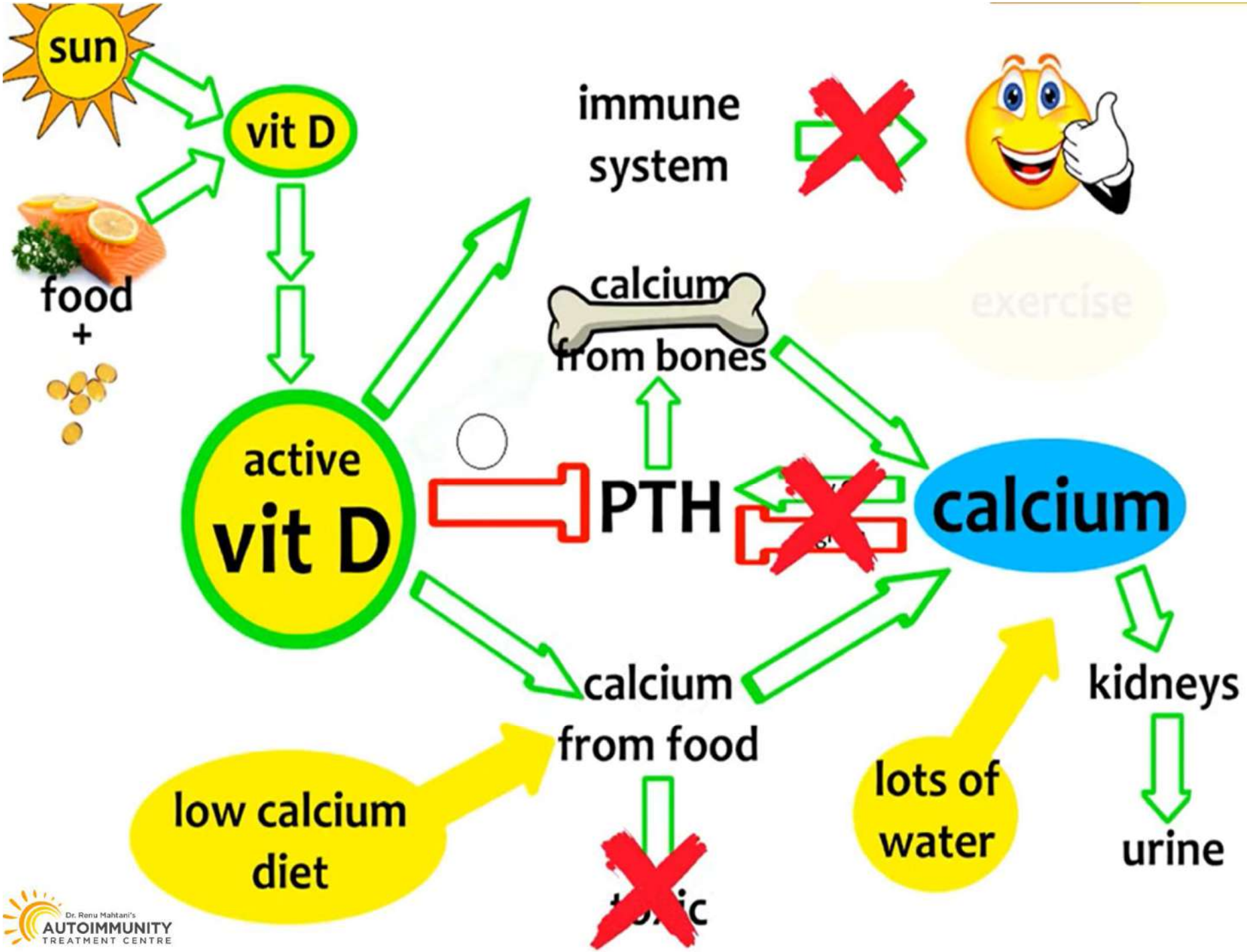
sun
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system
calcium
from bones
exercise
active
vit D
PTH
calcium
calcium
from food
kidneys
low calcium
diet
lots of
water
urine
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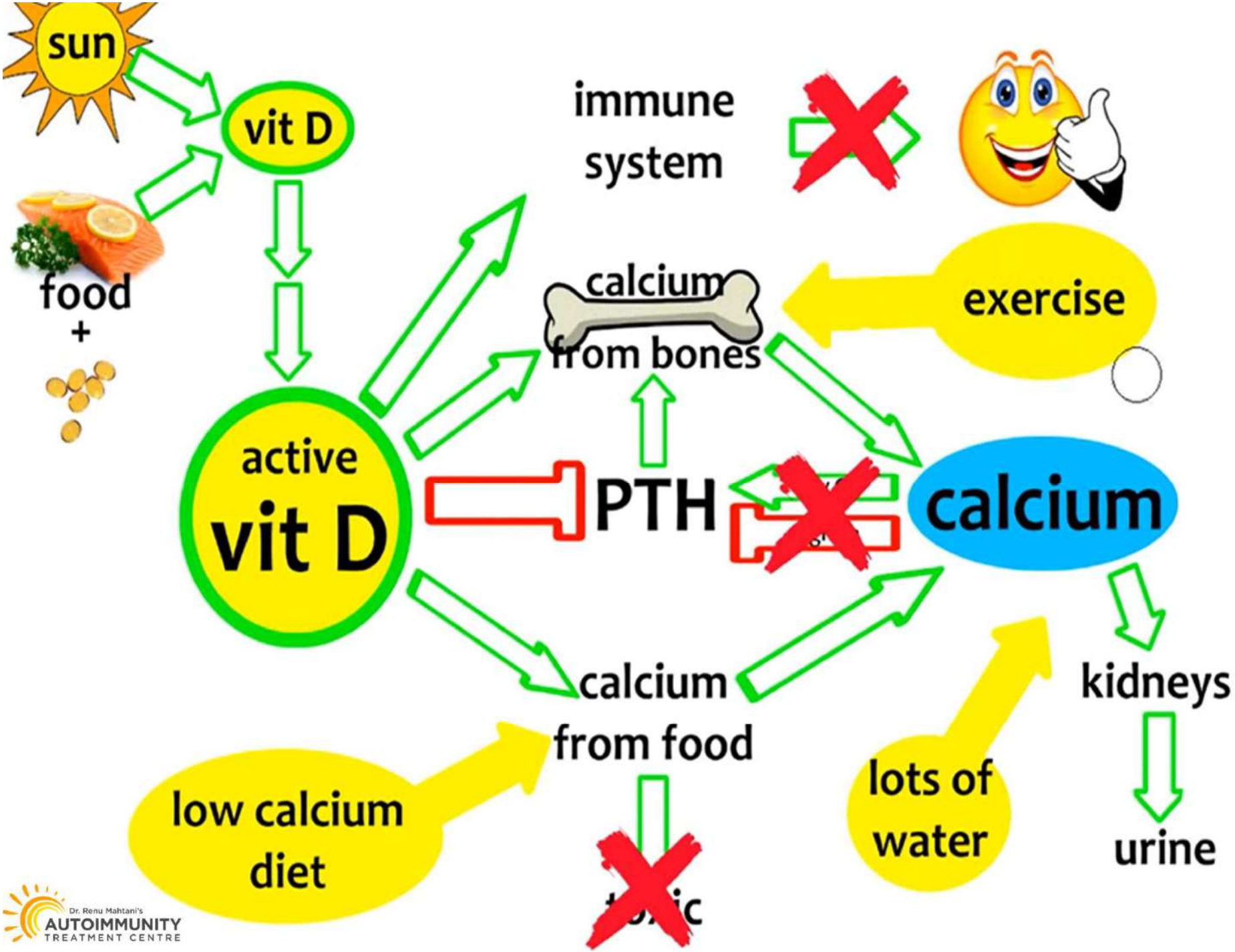
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lots of
water
urine
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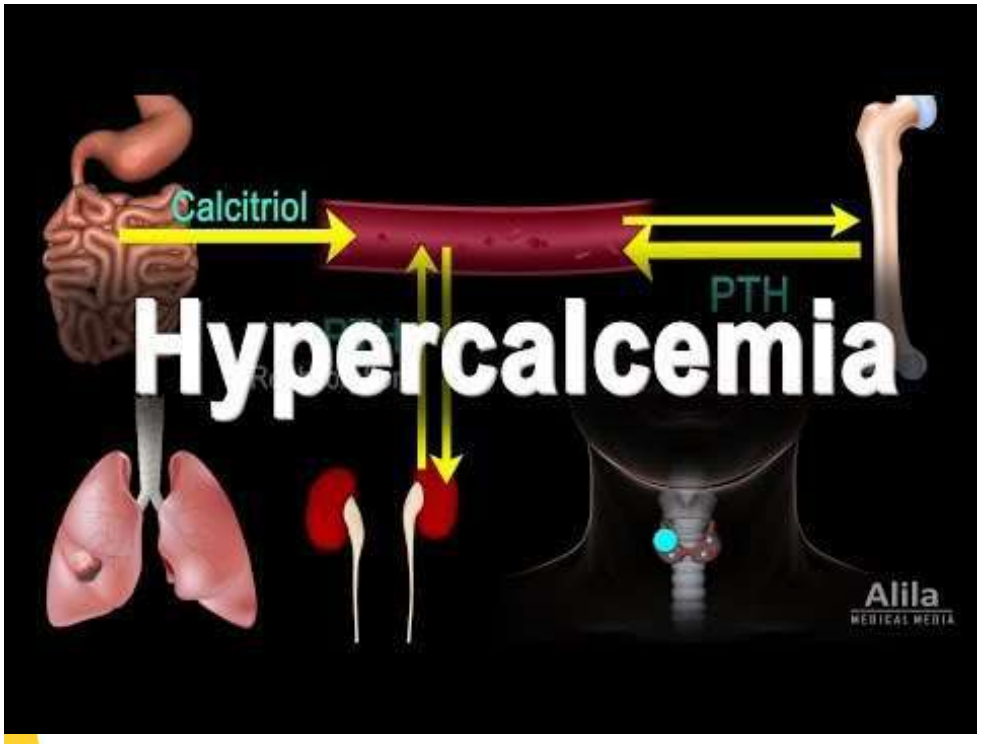
Vitamin D Toxicity

"WORRYING ABOUT VITAMIN D TOXICITY IS LIKE WORRYING ABOUT DROWNING WHEN YOU'RE DYING OF THIRST."

-DR. JOHN CANNELL, VITAMIN D RESEARCHER

FEAR OF VITAMIN D TOXICITY IS UNMERITED



Elevated levels of 25(OH)D do not correlate with clinical vitamin D toxicity

Blood levels above 100 or 150 ng/ml alone do not mean Vitamin D Toxicity

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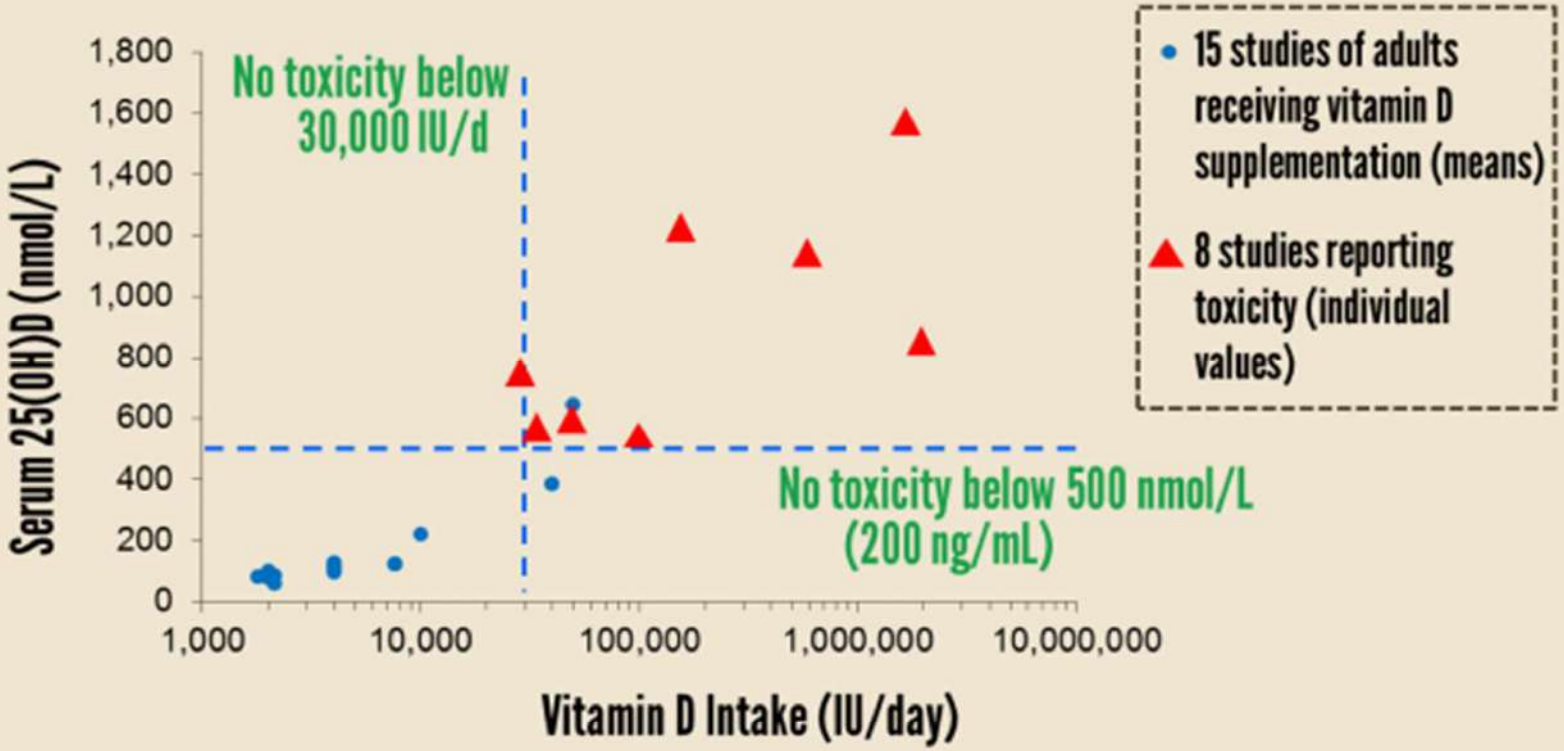
VITAMIN D INTAKE & TOXICITY*



* Hathcock JN et al. *Am J Clin Nutr.* 2007;85:6–18.

Presented by Dr. Robert Heaney,
Vitamin D for Public Health Seminar, 12/2014

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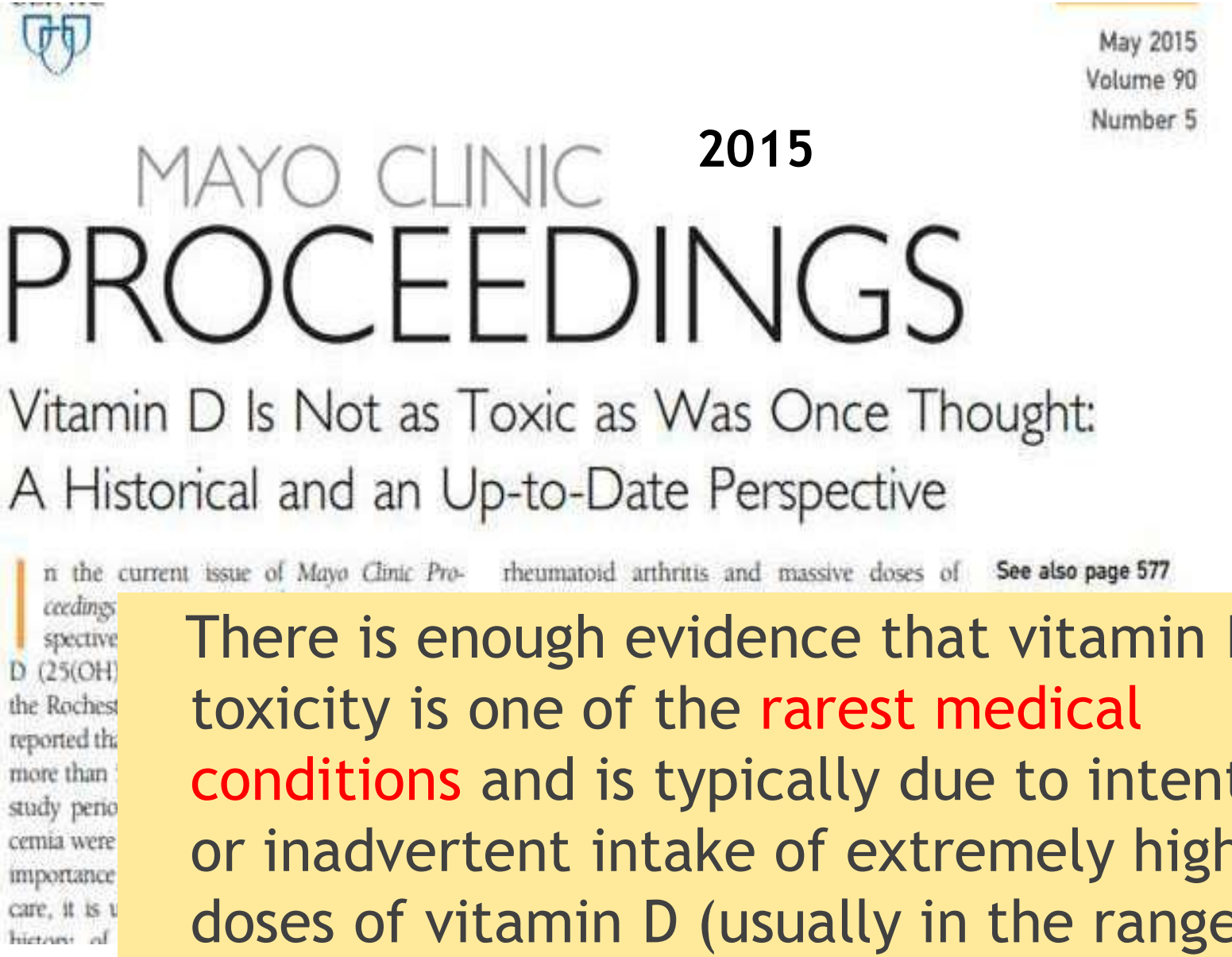
Moving Research into Practice
www.grassrootshealth.net



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2015

MAYO CLINIC
PROCEEDINGS

Vitamin D Is Not as Toxic as Was Once Thought:
A Historical and an Up-to-Date Perspective

n the current issue of *Mayo Clinic Pro-* rheumatoid arthritis and massive doses of See also page 577
ceedings
spective
D (25(OH)
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There is enough evidence that vitamin D toxicity is one of the rarest medical conditions and is typically due to intentional or inadvertent intake of extremely high doses of vitamin D (usually in the range of >50,000-100,000 IU/d for months to years) without monitoring for hypercalcemia

To Avoid Toxicity

Monitoring -

- **PTH**
  - Should not be below its lowest limit
- **Ionised Calcium**
  - Should be within limits

Balancing -

- Magnesium
- K2
- Hydration
- Limited dietary calcium intake

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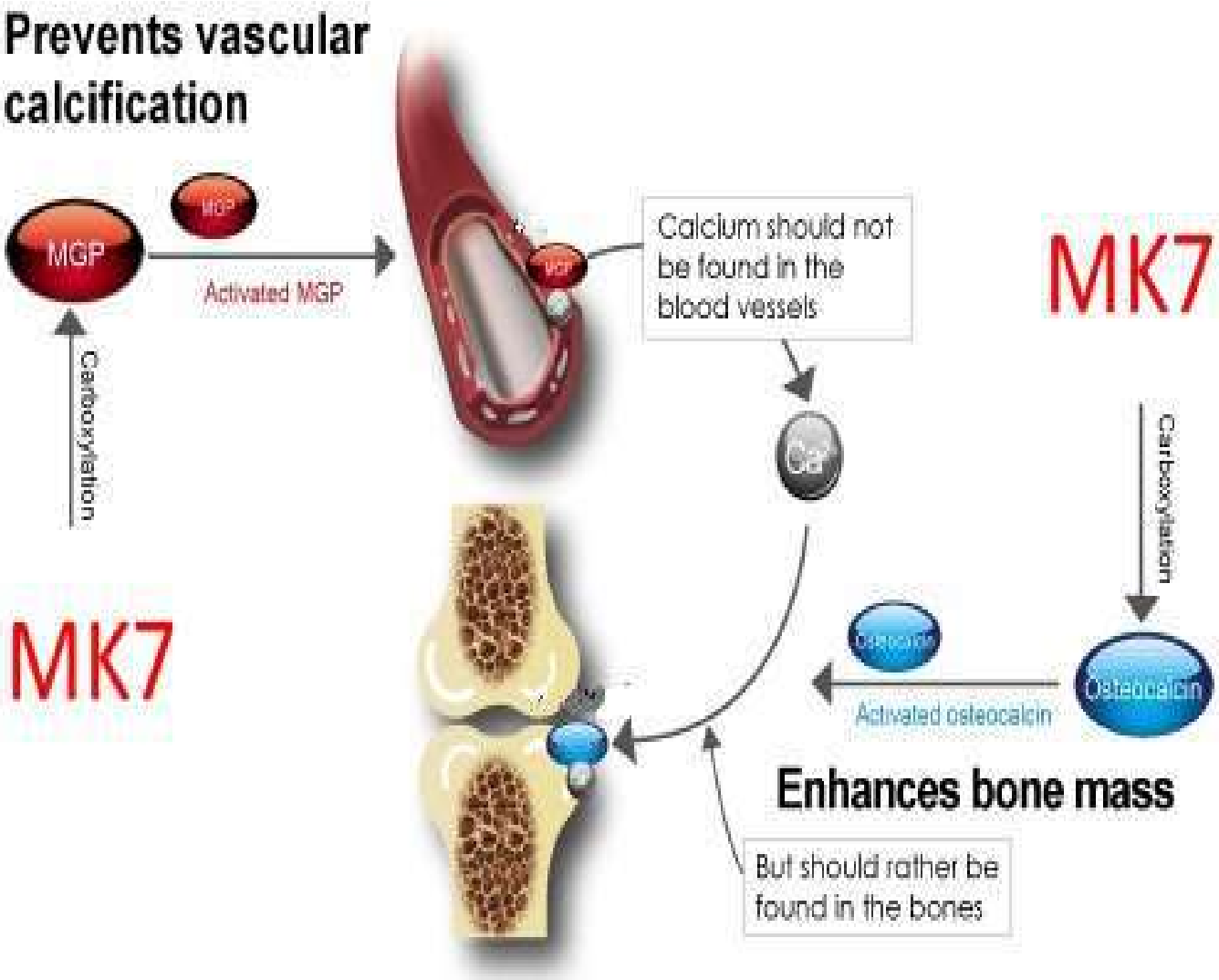

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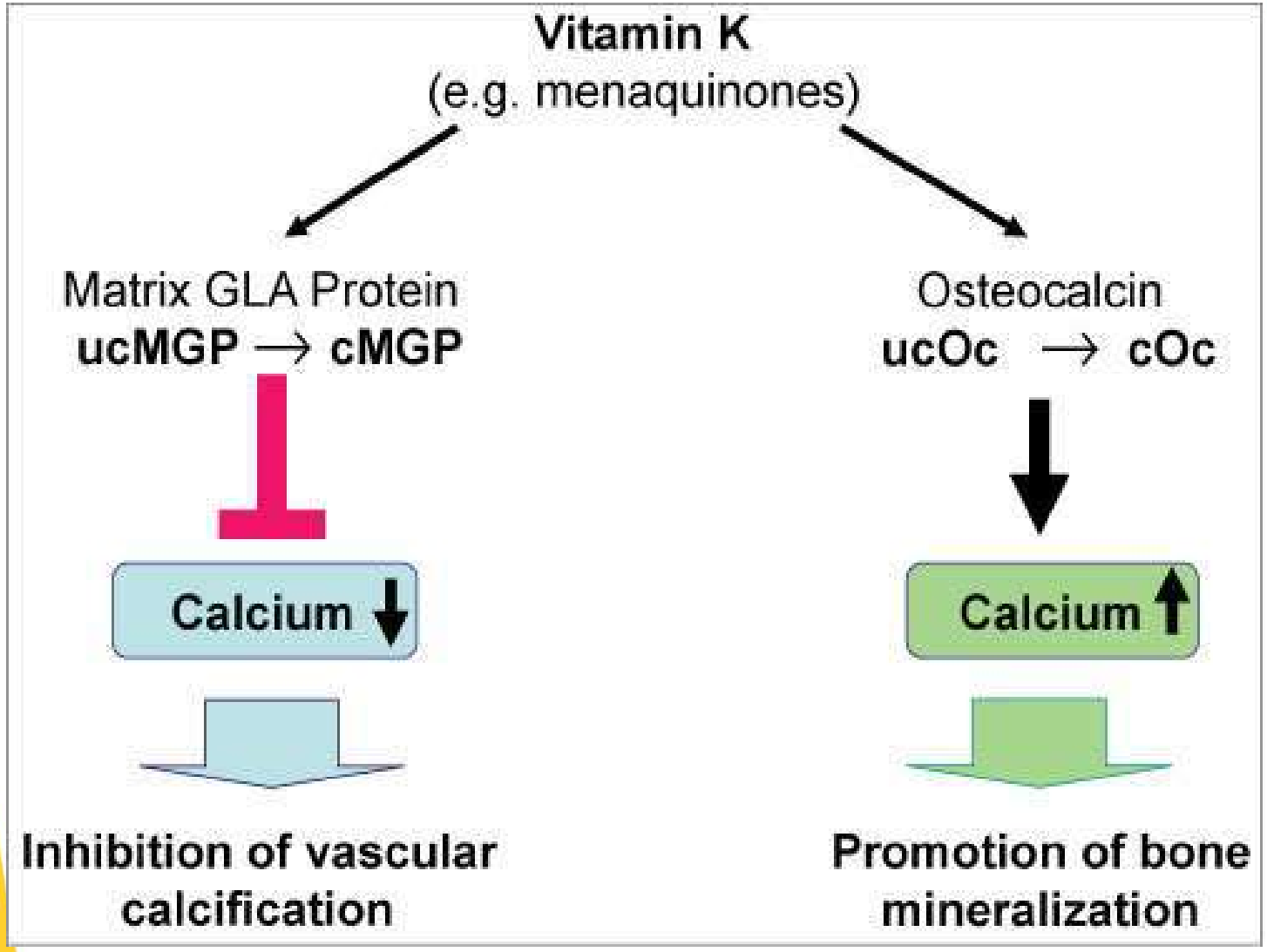

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Micronutrients to improve efficacy of vitamin D and dose reduction

- Vital Minerals (raw material)
  - Magnesium
  - Selenium
  - Zinc
- Riboflavin B2
- Methyl-cobalamin - B12
- Omega 3 Fatty Acid

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Remission of AID with Vitamin D

- Permanent remission – 60 – 70% patients provided that keep taking the appropriate, person specific dose of vitamin D
- Remaining get partial relief
- The worst that can happen is control of
  - progression
  - reoccurrences (frequency and intensity)

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Why partial / poor response

- Older damages already present
- Steroids, immuno-suppresants
- Infections & inflammation
- Poor gut health
- Lifestyle factors – alcohol, smoking, certain foods
- Individual attitude and mindset
- Emotional balancing skills

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Why dont doctors agree / use this effective method which is safe too?

Renu Mahtani <paramhealth@gmail.com> Thu, Oct 29, 3:59 PM (21 hours ago)

to Bharati

THis challenge is everywhere. As long as you know the scientific fundamentals, it does not matter.

If you want to stop the vitamin D, its your decision, but we take care and know and share the actual facts and treat the root cause rather than just the manifestations.

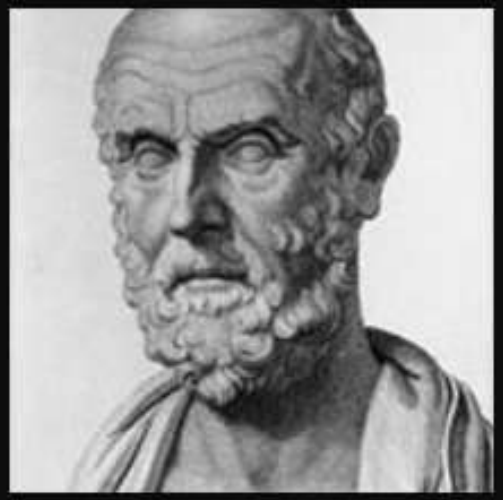
Sincerely
DRM

...

Bharati Bhagnari 12:25 PM (39 minutes ago)

to me

Good day doctor / Renu maam
No way am I stopping without your consultation, as mentioned earlier I have been my savior which no dermatologist could do ..
just a challenge I have with other doctors what do we tell them.
Hope u understand my predicament.
Thank you
And waiting for this travel to get easier to come and meet u.
Kind regards
Bharati / Komal



Wherever the art of Medicine is loved, there is also a love of Humanity.

~ Hippocrates

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Autoimmunity Treatment Centre
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