12º ENDO SUL

Vitamina D para TODOS?

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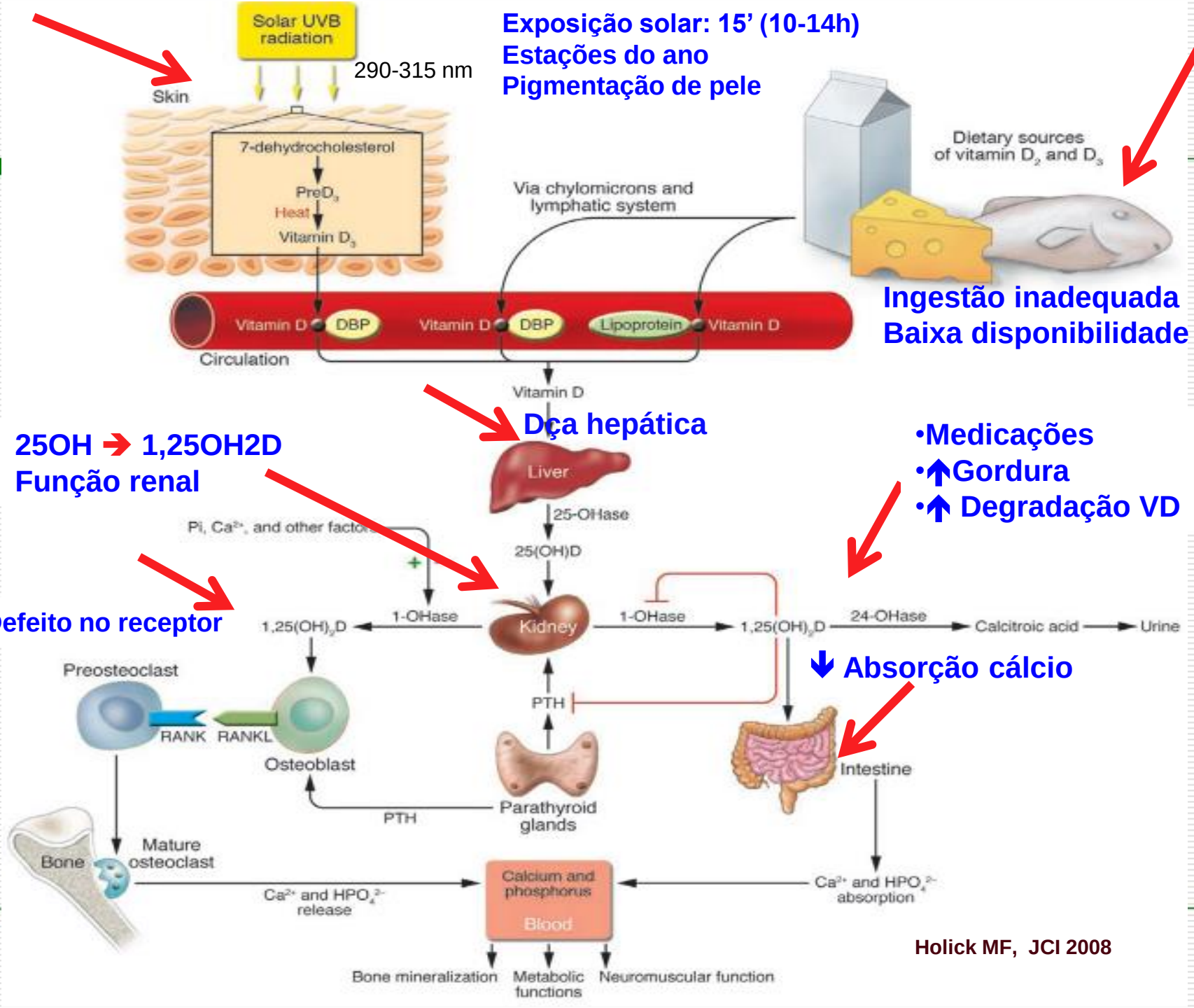
SEMPR

Conflitos de Interesse

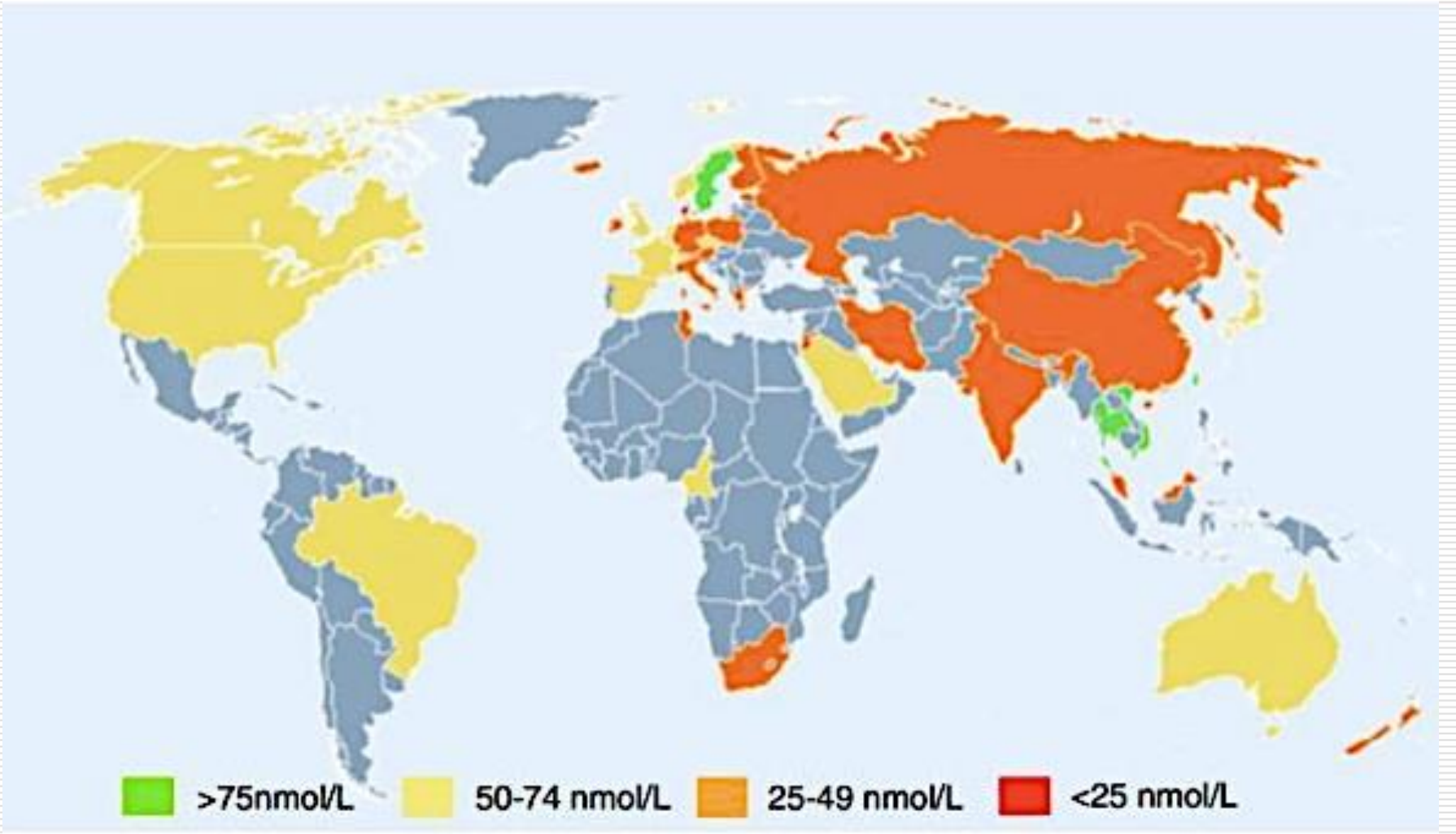
- Board Laboratórios:
  - Mantecorp
  - Lilly
  - Sandoz
- Palestrante para os Laboratórios:
  - Mantecorp
  - Lilly



Holick MF, JCI 2008

População Geral

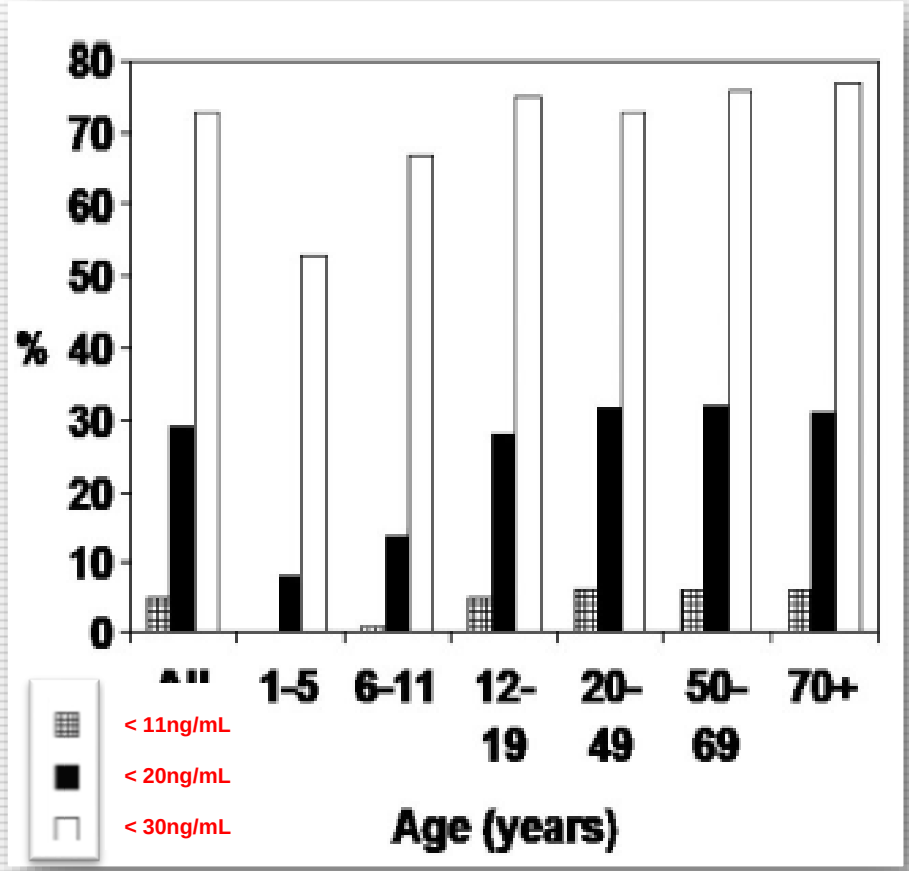
Vitamina D ao redor do mundo após o inverno



Best Practice & Research Clinical Endocrinology & Metabolism 25 (2011) 671-680
The Journal of Steroid Biochemistry and Molecular Biology, Available online 12 November 2013

Assessing the vitamin D status of the US population

Elizabeth A Yetley



Am J Clin Nutr 2008;88(suppl):558S– 64S

Vitamin D status in central Europe

Pludowski P

Europa Central

- Pessoas saudáveis da comunidade
- Inverno 25OHD = 21–23 ng/mL ➔ todos os grupos idade

⑩ ↑ verão

- 42 ng/mL (0–9 anos)
- **21 ng/mL (80-89 anos)**

Intern J of Endocrinol, 2014

Fontes alimentares são pobres em Vitamina D

Necessidades diárias: 400 a 2000 UI

Tabela 1. Fontes alimentares de vitamina D

		Conteúdo de vitamina D por
Cogumelos secos ao sol	100 g	~ 1.000 UI de vitamina D_2

Recomendação diária: 400 a 2000 UI

ESTUDO BRAZOS:

Recordatório alimentar de 24 hs - 2344 indivíduos
≥ 40 anos, todas regiões brasileiras

Ingestão média= 80 UI/dia

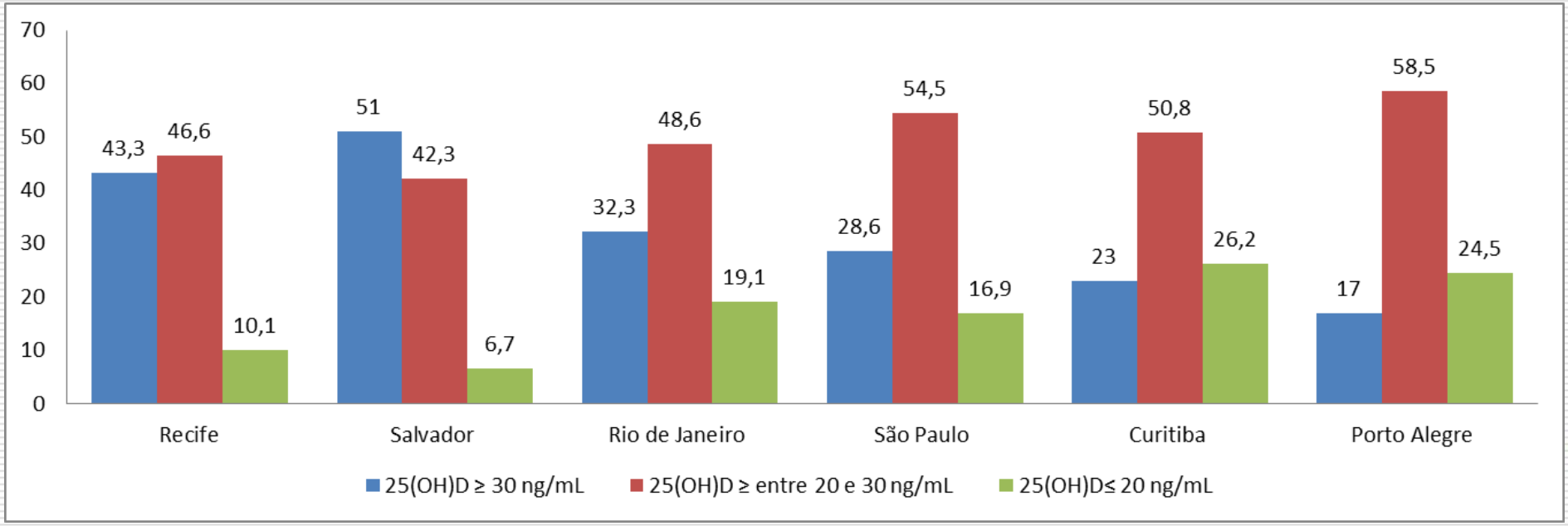
(Pinheiro e col, Nutrition J 2009)

Osteoporos Int
DOI 10.1007/s00198-013-2366-x

ORIGINAL ARTICLE

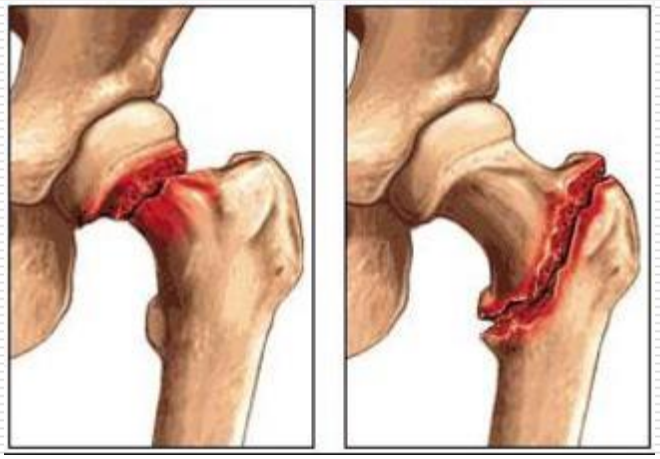
Correlation between 25-hydroxyvitamin D levels and latitude in Brazilian postmenopausal women: from the Arzoxifene Generations Trial

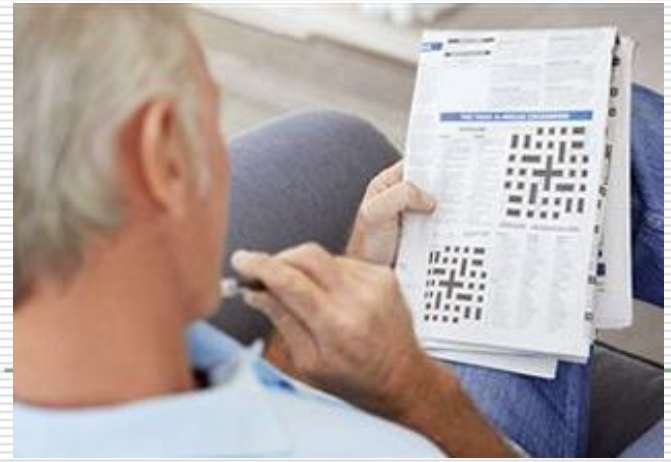
H. P. Arantes · C. A. M. Kulak · C. E. Fernandes · C. Zerbini · F. Bandeira · I. C. Barbosa · J. C. T. Brenol · L. A. Russo · V. C. Borba · A. Y. Chiang · J. P. Bilezikian · M. Lazaretti-Castro

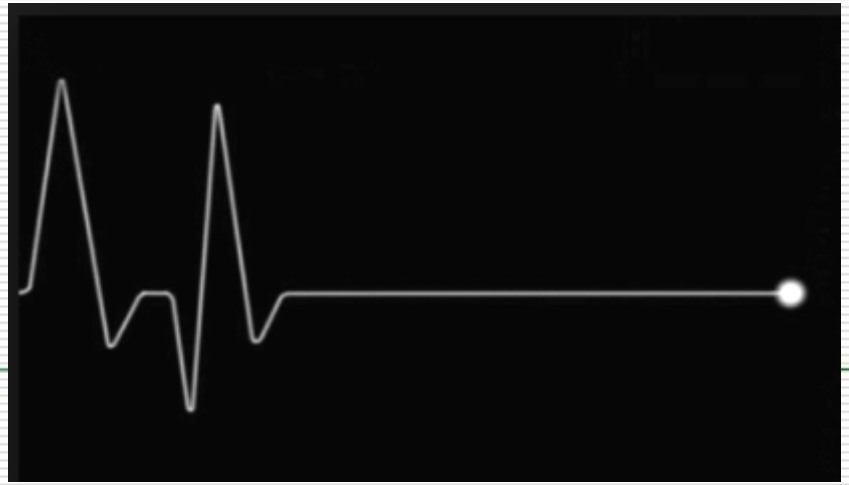


Consequências para saúde ……..

Consequências…….







Doentes Crônicos

Furuie IN, Mauro MJJ, Petruzziello S, Riechi SC, Petterle RR, Boguszewski CL, Borba VZC. **Two threshold levels of vitamin D and the prevalence of comorbidities in outpatients of a tertiary hospital.** Osteoporos Int. 2018 Feb;29(2):433-440.

Pereira CP, Amaral DJC, Funke VAM, Borba VZC. **Pre-sarcopenia and bone mineral density in adults submitted to hematopoietic stem cell transplantation**. Rev Bras Hematol Hemoter. 2017 Oct - Dec;39(4):343-348.

Costa TL, Paganotto M, Radominski RB, Kulak CM, Borba VC. **Calcium metabolism, vitamin D and bone mineral density after bariatric surgery.** Osteoporos Int. 2015 Feb;26(2):757-64. doi: 10.1007/s00198-014-2962-4. Epub 2014 Nov 12. PubMed PMID: 25388022.

Campos DJ, Biagini GL, Funke VA, Bonfim CM, Boguszewski CL, Borba VZ. **Vitamin D deficiency in children and adolescents submitted to hematopoietic stem cell transplantation**. Rev Bras Hematol Hemoter. 2014 Mar;36(2):126-31.

Campos DJ, Boguszewski CL, Funke VA, Bonfim CM, Kulak CA, Pasquini R, Borba VZ. **Bone mineral density, vitamin D, and nutritional status of children submitted to hematopoietic stem cell transplantation**. Nutrition. 2014 Jun;30(6):654-

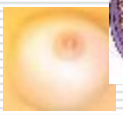
Franco CB, Paz-Filho G, Gomes PE, Nascimento VB, Kulak CA, Boguszewski CL, Borba VZ. **Chronic obstructive pulmonary disease is associated with osteoporosis and low levels of vitamin D.** Osteoporos Int. 2009 Nov;20(11):1881-7.

Souza HN, Lora FL, Kulak CA, Mañas NC, Amarante HM, Borba VZ. [**Low levels of 25-hydroxyvitamin D (25OHD) in patients with inflammatory bowel disease and its correlation with bone mineral density].** Arq Bras Endocrinol Metabol. 2008 Jun;52(4):684-91.

Borba VZ, Vieira JG, Kasamatsu T, Radominski SC, Sato EI, Lazaretti-Castro M. **Vitamin D deficiency in patients with active systemic lupus erythematosus**. Osteoporos Int. 2009 Mar;20(3):427-33.

Kulak CA, Borba VZ, Bilezikian JP, Silvado CE, Paola Ld, Boguszewski CL. **Bone mineral density and serum levels of 25 OH vitamin D in chronic users of antiepileptic drugs.** Arq Neuropsiquiatr. 2004 Dec;62(4):940-8

25OHD
Maior metabolito circulante



$1,25(OH)_2D$
Biologicamente Ativa

Possível Efeito

$1,25(OH)_2D$
Biologicamente Ativa

Saúde Óssea

Homeostase
Ca e P

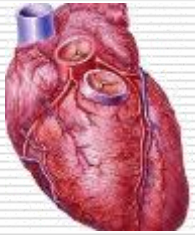
Efeitos neuromusculares

Massa muscular
Força
Equilíbrio

Efeitos Imunomoduladores

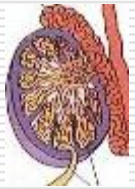
Esclerose Múltipla
DM 1
Psoríase
AR
DII
Periodontite

Efeitos Cardiovasculares

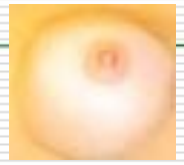


↓ Risco
HAS
DM 2
ICC

Crescimento e Regulação



Antiproliferativo
Prodiferenciação
Apoptotico
Anti-angiogênico



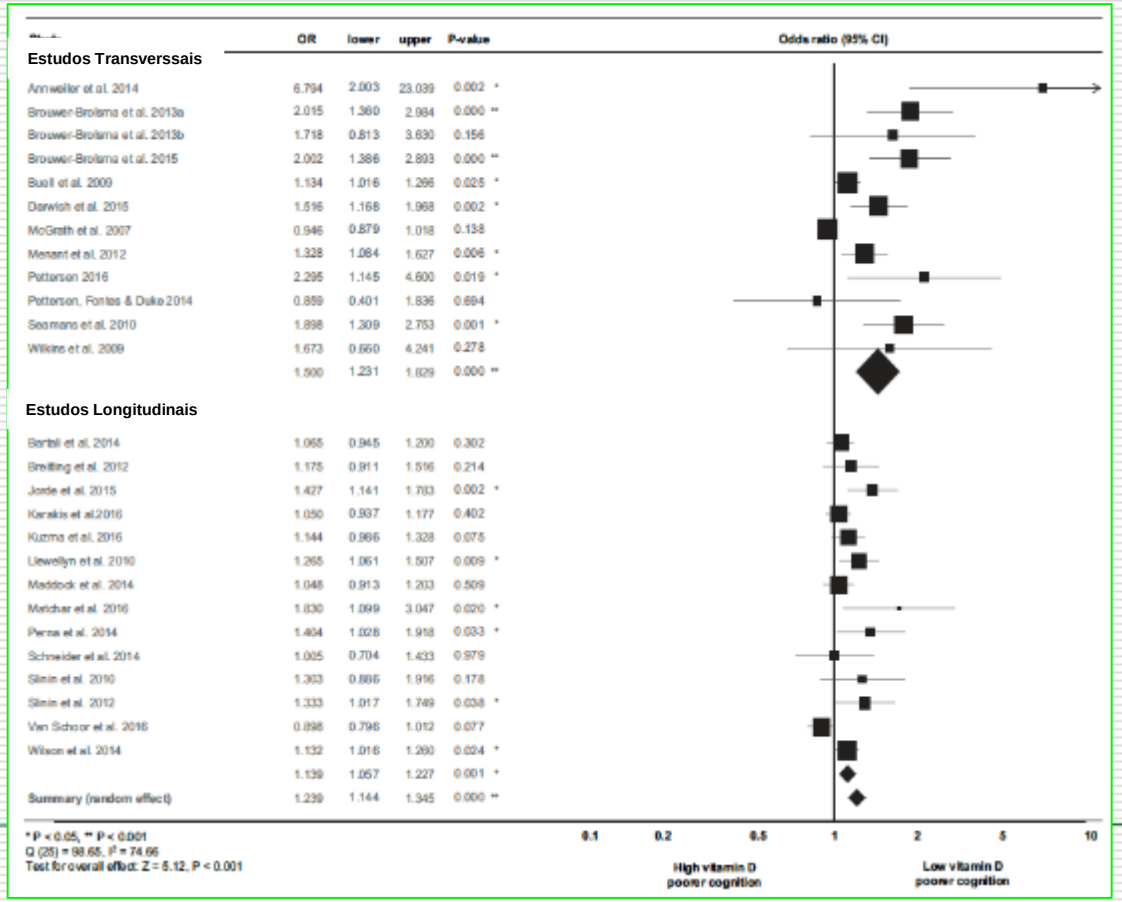
Câncer
Próstata
Cólon
Mama

Cognição…….

A Systematic Review and Meta-Analysis of The Effect of Low Vitamin D on Cognition

Goodwill A M, J Am Geriatr Soc 2017

9556 indivíduos
29 estudos

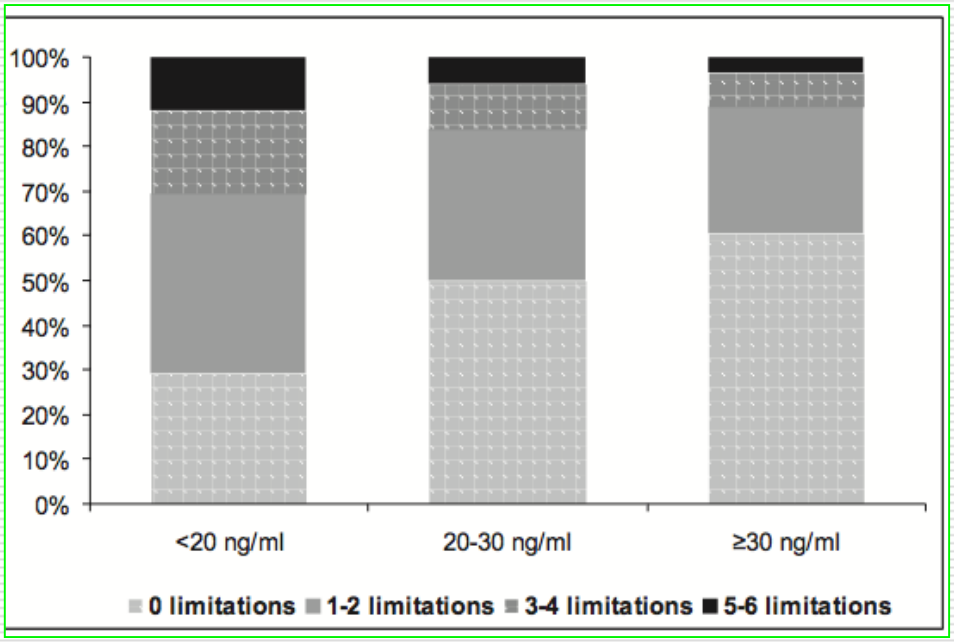


Quedas e Fraturas

Vitamin D Status Is Associated With Functional Limitations and Functional Decline in Older Individuals

E. Sohl e cols JCEM, July 2013

1237, 65-88 anos



Fatores de risco para quedas recorrentes (≥2/ano) em idosos brasileiros da comunidade (SPAH study, seguimento: 4 anos)

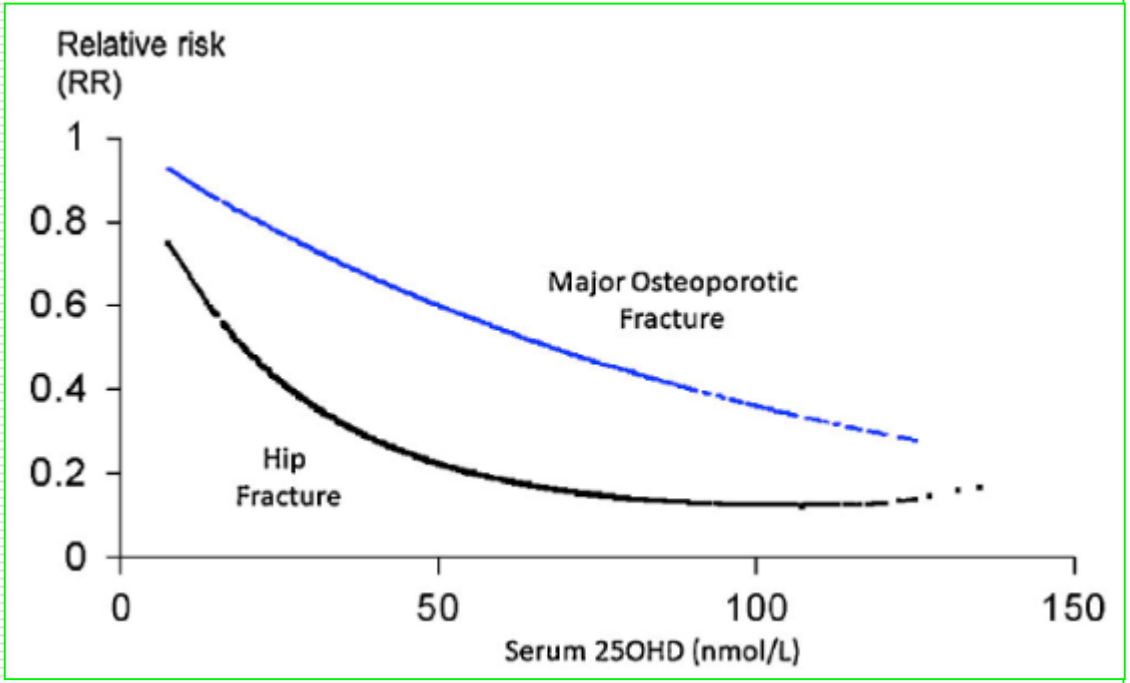
Machado KL e cols. Osteoporosis Int 2015

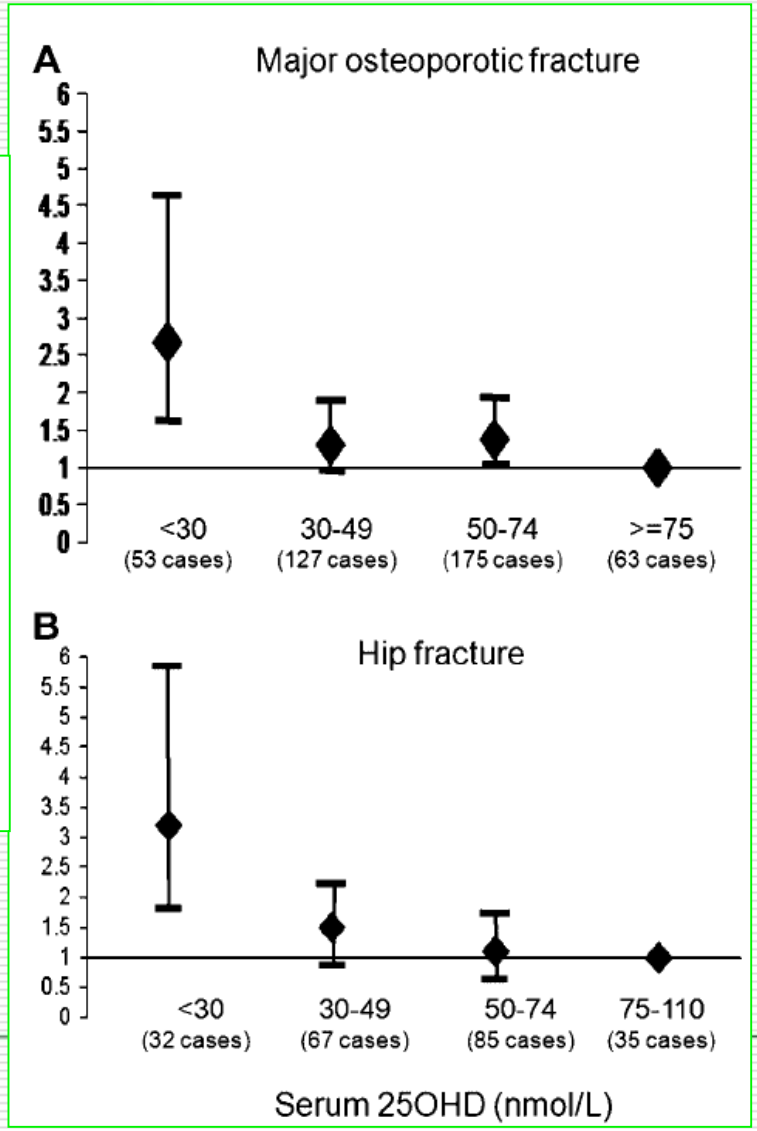
Risk factors	OR	95 % CI	*p* value
Visual impairment	2.49	1.30–4.74	0.006
Use of psychotropic drugs	2.47	1.36–4.49	0.003
Clinical fracture	2.78	1.48–5.20	0.001
Persistent 25OHD<20 ng/mL	1.71	1.10–2.64	0.016
Loss of total hip BMD	1.21	1.17–1.25	0.035

Serum 25-Hydroxyvitamin D and Risk of Major Osteoporotic Fractures in Older U.S. Adults

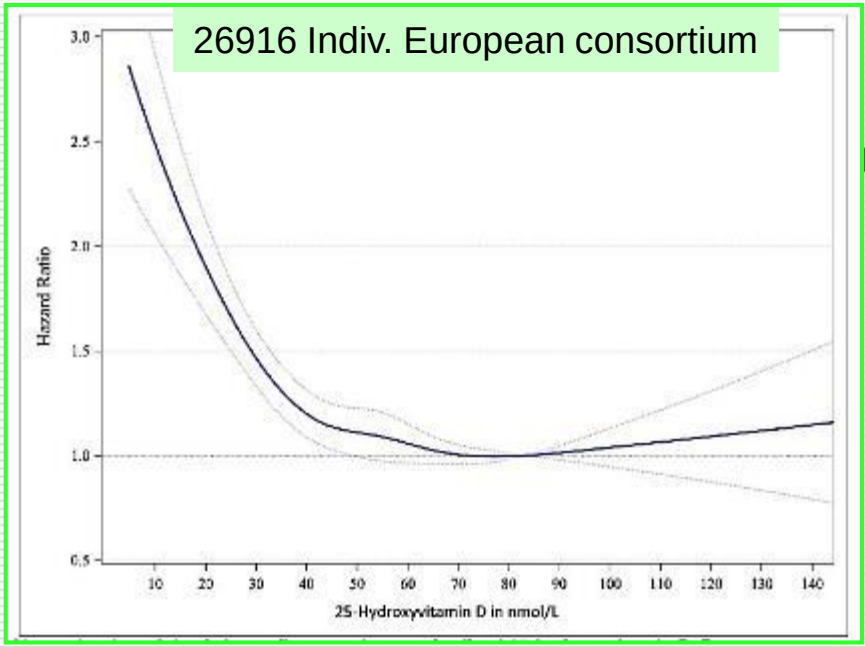
Anne C Looker

JBMR May, 2013



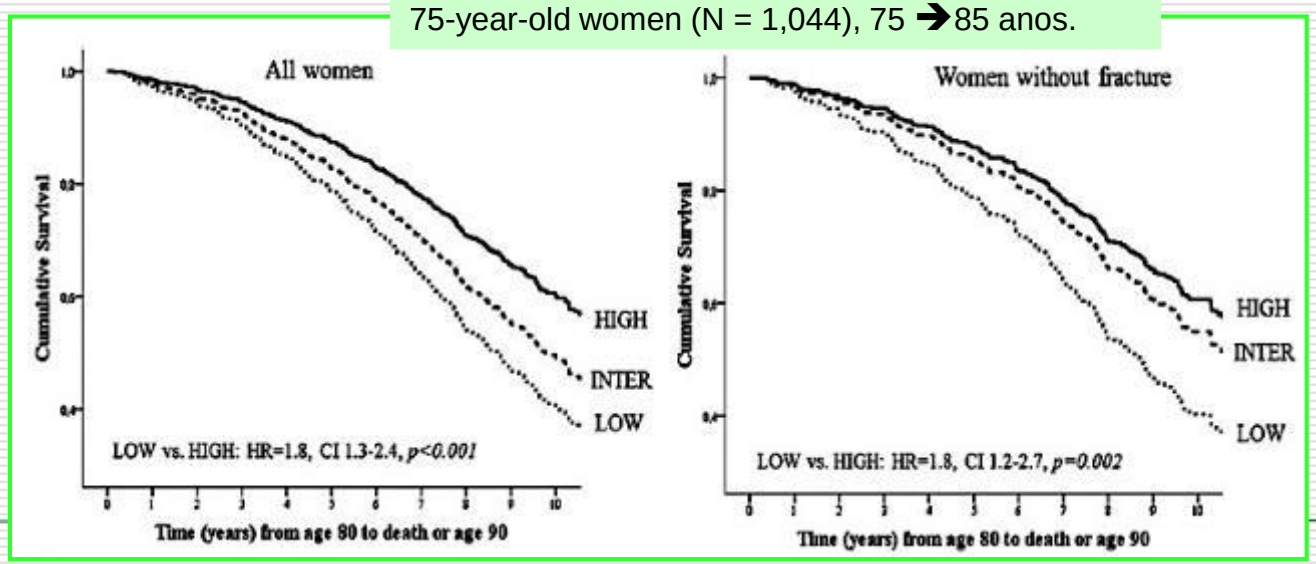


Mortalidade ……..



Martin Gaksch, PLOS ONE February 16, 2017

75-year-old women (N = 1,044), 75 ➔85 anos.



David Buchebner, J Am Geriatr Soc 64:990–997, 2016.

Vitamina D e Mortalidade em População Japonesa

UMEHARA K et al. *Circ J* 2017; doi:10.1253/circj.CJ-16-0954

- 3292 japoneses > 40 anos
- Avaliação de 1,25-OH-VD e mortalidade geral e específica em 10 anos de follow up

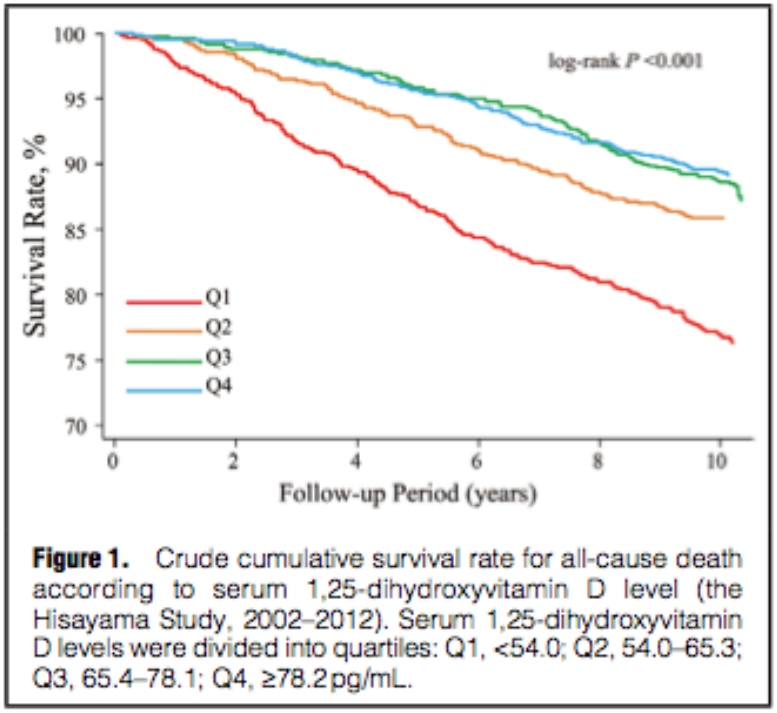
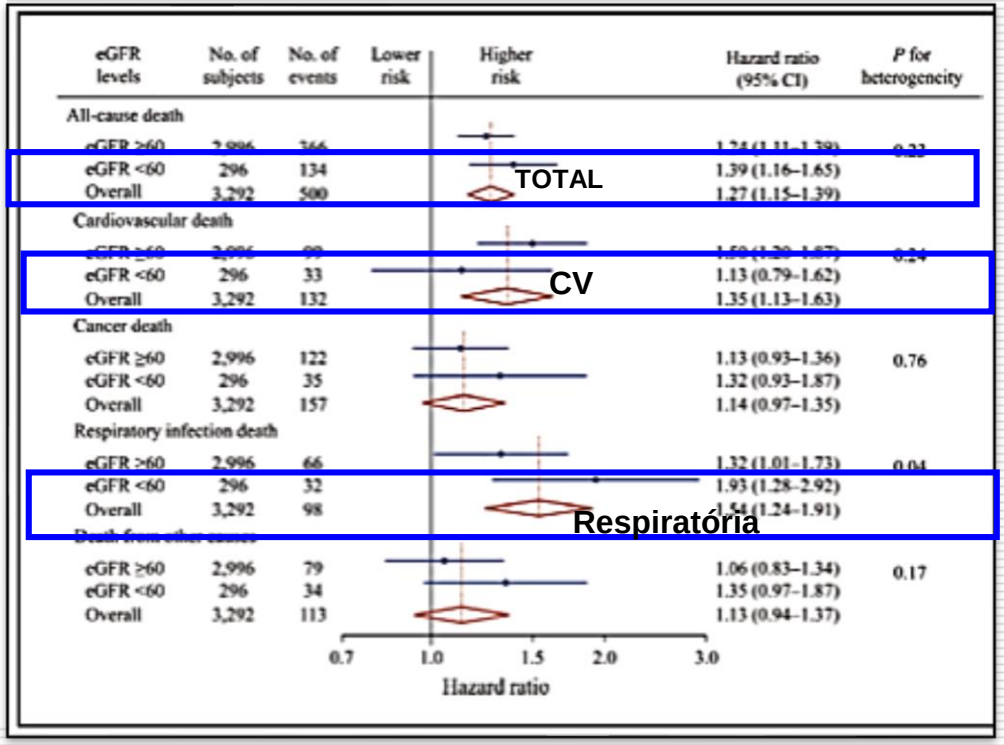


Figure 1. Crude cumulative survival rate for all-cause death according to serum 1,25-dihydroxyvitamin D level (the Hisayama Study, 2002–2012). Serum 1,25-dihydroxyvitamin D levels were divided into quartiles: Q1, <54.0; Q2, 54.0–65.3; Q3, 65.4–78.1; Q4, ≥78.2 pg/mL.



- Aumento de mortalidade geral, CV e respiratória;
- Não verificaram aumento de morte por câncer ou outras causas

Vitamina D vs. Câncer,

Doenças autoimunes e metabólicas

- Expressão e Ação: receptores em diversos tecidos: mama, cólon, próstata, cérebro, etc...;
- Controle direto/indireto da 1,25-OH-VD - > 200 genes proliferação celular; angiogênese, apoptose;
- 1,25-OH-VD: ação imuno-moduladora (exposição de monócitos e macrófagos – TBC)
  inibição da síntese de renina; estimulação da secreção de insulina e
  estimulação da contratilidade miocárdica
- Deficiência de Vit. D vs. Doenças inflamatórias, metabólicas e neoplásicas
  - ✓ Aumento de 30-50% risco de CA de mama, cólon e próstata
  - ✓ WHI: risco 253% maior de CA colo-retal (8 anos de follow up)
  - ✓ DM2: reposição de VD e cálcio = < risco de 33%
  - ✓ **Esclerose Múltipla = reduziu o risco em 41% com > de 20ng/dl na 25(OH)**
  - ✓ **Artrite reumatóide e osteoartrite = achados semelhantes**
  - ✓ **DM1 → 1º ano de vida (2000UI de VD) – redução do risco de 80%**
  - ✓ **DM1 → crianças deficientes de 25(OH)VD - < risco de 200%**
  - ✓ **DCV: elevação de marcadores inflamatórios (PCR e IL) e ICC**

Arch Intern Med 2007; 167(16):1730-1737; Holick MF. N Engl J Med 2007; 357(3):266-281

Plasma 25-hydroxyvitamin D concentration and subsequent risk of total and site specific cancers in Japanese population: large case-cohort study within Japan Public Health Center-based Prospective Study cohort.

Budhathoki S1, et al
Japan Public Health Center-based Prospective Study Group.

BMJ. 2018 Mar 7;360:k671.

Hazard ratios (HRs) for total and site specific* cancer according to quarters of plasma vitamin D

	Quarters of plasma vitamin D				
	1 (low)	2 (second)	3 (third)	4 (high)	P for trend
All cancer					
No of cases	840	792	795	874	
HR (95% CI)†	1 (reference)	0.84 (0.73 to 0.97)	0.79 (0.68 to 0.91)	0.80 (0.69 to 0.93)	0.003
HR (95% CI)‡	1 (reference)	0.81 (0.70 to 0.94)	0.75 (0.65 to 0.87)	0.78 (0.67 to 0.91)	0.001
Liver cancer					
No of cases	47	43	41	34	
HR (95% CI)†	1 (reference)	0.72 (0.46 to 1.13)	0.65 (0.41 to 1.04)	0.45 (0.27 to 0.77)	0.004
HR (95% CI)‡	1 (reference)	0.70 (0.44 to 1.13)	0.65 (0.40 to 1.06)	0.45 (0.26 to 0.79)	0.006
Lung cancer					
No of cases	109	87	88	112	
HR (95% CI)†	1 (reference)	0.70 (0.51 to 0.96)	0.65 (0.47 to 0.89)	0.75 (0.55 to 1.03)	0.08
HR (95% CI)‡	1 (reference)	0.63 (0.45 to 0.87)	0.56 (0.40 to 0.79)	0.72 (0.52 to 1.00)	0.06
Prostate cancer					
No of cases	67	65	69	62	
HR (95% CI)†	1 (reference)	0.81 (0.54 to 1.22)	0.79 (0.53 to 1.20)	0.64 (0.41 to 1.00)	0.06
HR (95% CI)‡	1 (reference)	0.81 (0.53 to 1.23)	0.81 (0.53 to 1.25)	0.64 (0.41 to 1.02)	0.07
Breast cancer					
No of cases	72	59	46	62	
HR (95% CI)†	1 (reference)	0.82 (0.57 to 1.18)	0.61 (0.41 to 0.92)	0.75 (0.51 to 1.11)	0.08
HR (95% CI)§ ¶	1 (reference)	0.98 (0.66 to 1.47)	0.69 (0.45 to 1.05)	0.78 (0.51 to 1.21)	0.12
Premenopausal:					
No of cases	35	27	12	12	
HR (95% CI)**	1 (reference)	1.14 (0.62 to 2.09)	0.42 (0.20 to 0.90)	0.56 (0.25 to 1.24)	0.03
Postmenopausal:					
No of cases	29	28	31	40	
HR (95% CI)**	1 (reference)	0.91 (0.51 to 1.60)	0.94 (0.54 to 1.64)	0.97 (0.56 to 1.71)	0.98

Níveis de Vit.D após 10 anos da Cirurgia bariátrica

- **Estudo prospectivo 10 anos (1993 – 2003) – Suécia**
- **537 pacientes submetidos à Y-Roux (“bypass”)**
- **65%: deficiência de Vitamina D após 10 anos**
- **69% PTH elevado (Hiperpara 2º)**
- **IMC > 43 kg/m^2: preditor independente**

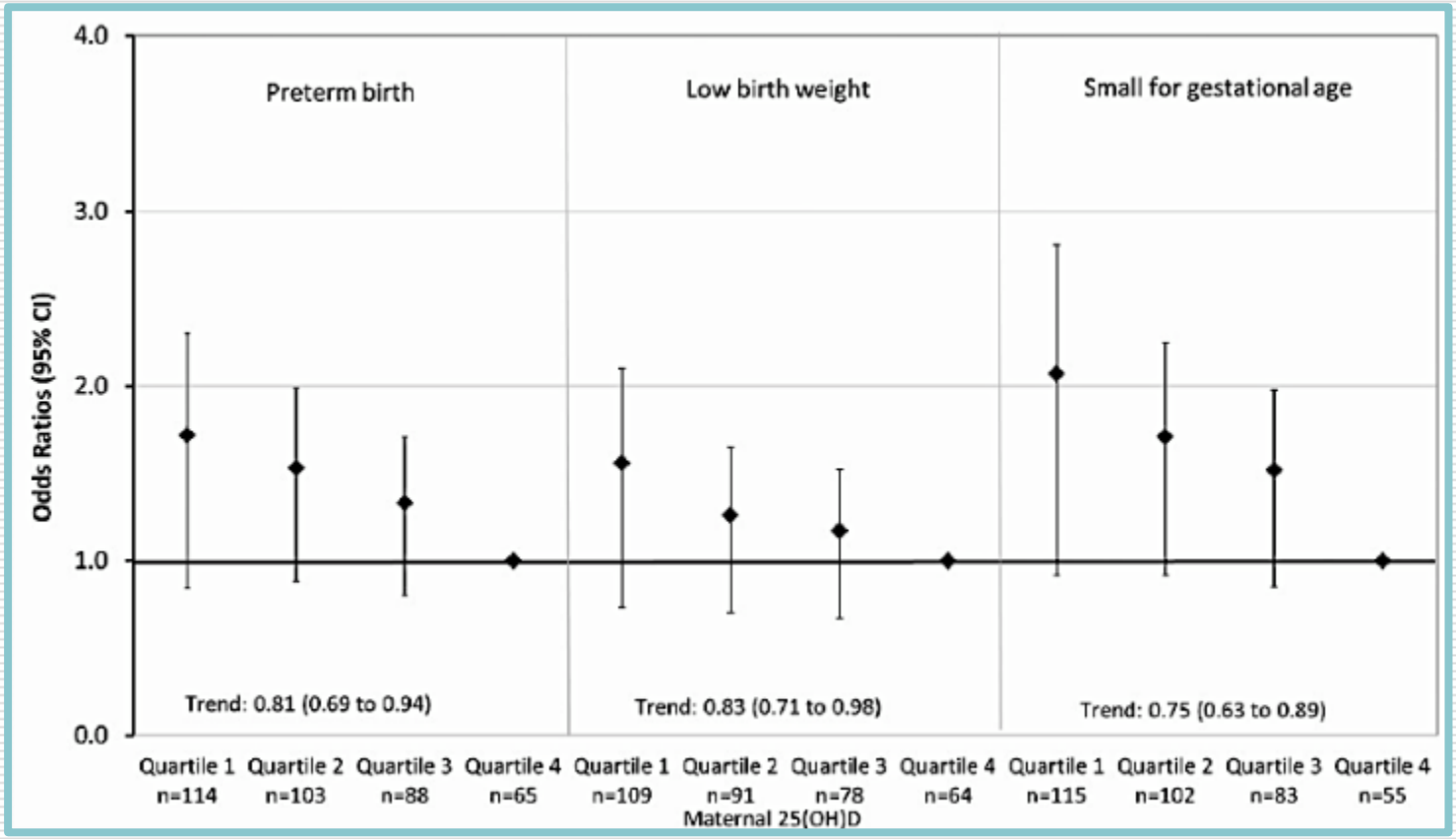
Recomendações SBEM

Cirurgia bariátrica: obesos são população de risco para deficiência e **após a cirurgia bariátrica isso se agrava, levando a hiperparatiroidismo secundário e ↑ no risco de fraturas** (Evidência A). A avaliação da 25(OH)D é útil para titulação das doses diárias de vitamina D, que podem chegar a até 10 vezes as doses habituais (Evidência D).

Obes Surg. 2014 Mar;24(3):343-8.

Maternal vitamin D concentrations during pregnancy, fetal growth patterns, and risks of adverse birth outcomes

Holanda – 7098 gestantes e RN 25(OH)D - 20.3 sem (range:18.5–23.3 sem)

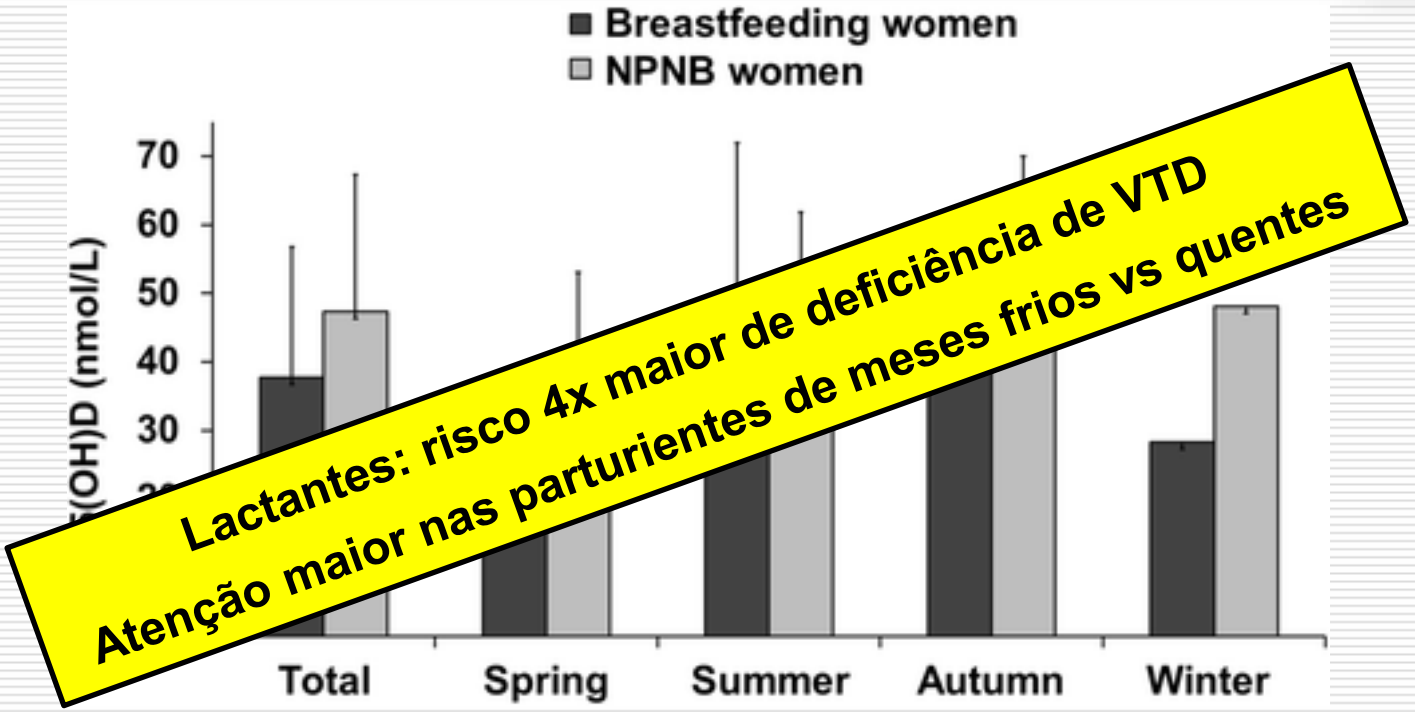


Miliku et cols, Am J Clin Nutr 2016;103:1514–22.

Vitamin D status in Breastfeeding woman

Gellert S, et al. **Int Breastfeed J 2017 Apr 19;12:19.**

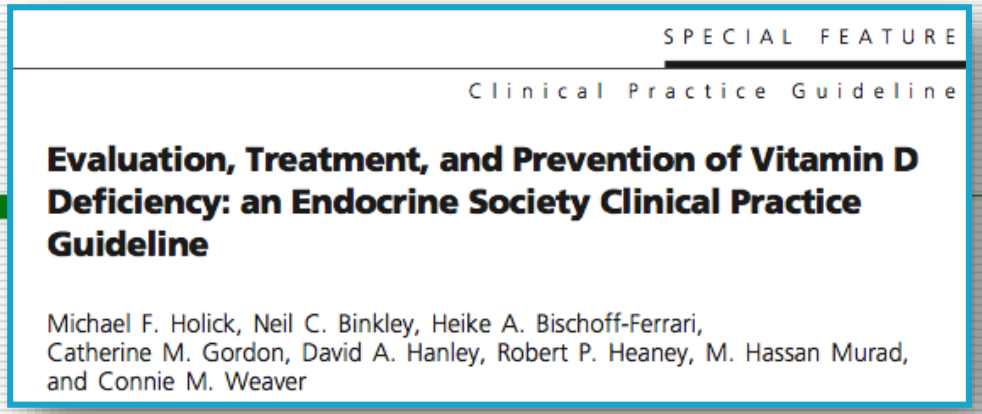
Results



- **Breastfeeding women: 4.0-fold higher OR for vitamin D deficiency than NPNB women.**
- **The risk of vitamin D deficiency was higher in the winter and spring months.**

E a Reposição.....

Melhor resposta é para quem precisa!!!!



Group	US RDA	Endocrine Society Daily requirement	Maximum dose tolerable
RN (bebês) < 1 ano	400ui	400 - 1000 ui	2000 ui
Crianças (1-8 anos)	600 ui	600 – 1000 ui	4000 ui
Homens/mulheres (9-18 anos)	600 ui	600 - 1000 ui	4000 ui
Homens/mulheres (> 19-70 anos)	600 ui	1500 - 2000 ui	10.000 ui
Homens/mulheres (>70 anos)	800 ui	1500 - 2000 ui	10.000 ui
Gestante / Lactante	600 ui	1500 - 2000 ui	10.000 ui

National Osteoporosis Foundation:

50 years and older: at least 800 – 1000 units (20-25 mcg) /day, for goal 25OHD > 30 ng/mL (75 nmol/L)

J *Clin Endocrinol Metab* 96: 1911–1930, 2011

Impacto da Suplementação de VD nos níveis de 25OHVD após 8 semanas

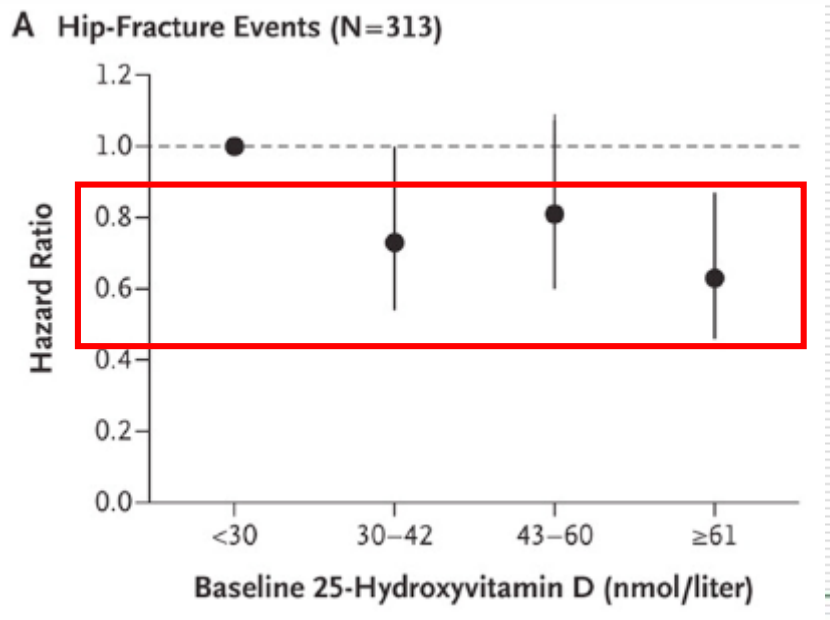
- **116 homens adultos, saudáveis; média de 70 kg.**
- **25OHVD basal 27 ng/mL em média**

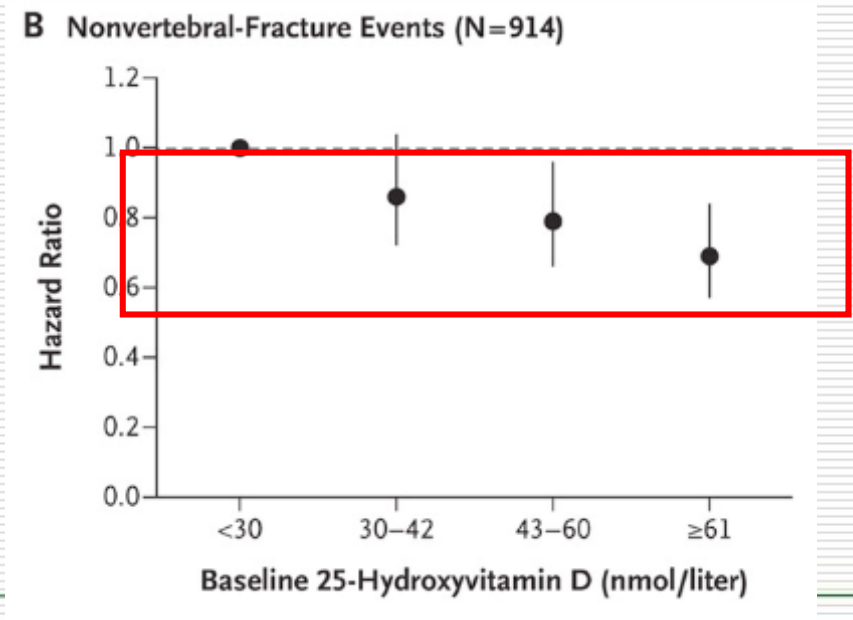
Dose de VITAMINA D	Elevação esperada no nível de 25OHVD sérico
400 ui / dia	4 ng/mL
800 ui / dia	9 ng/mL
1700 ui /dia	12 ng/mL
2400 ui / dia	23 ng/mL
4000 ui / dia	22 ng/mL
100.000 ui / dose única*	4.9 → 30.8 ng/mL

Barger-Lux MJ, et al. Osteop Int 1998; 8:222; *Ilani et al. Am J Clin Nutr *87:* 688-691, 2008.

Prevenção de Fratura

- 31.022 pacientes; Metanálise de 11 RCTs
- 1.111 fraturas de fêmur; 3770 fraturas não-vertebrais
- Vitamina D 800UI dia
- → Redução de 30% fratura de fêmur;
- → Redução de 10% fraturas não-vertebrais

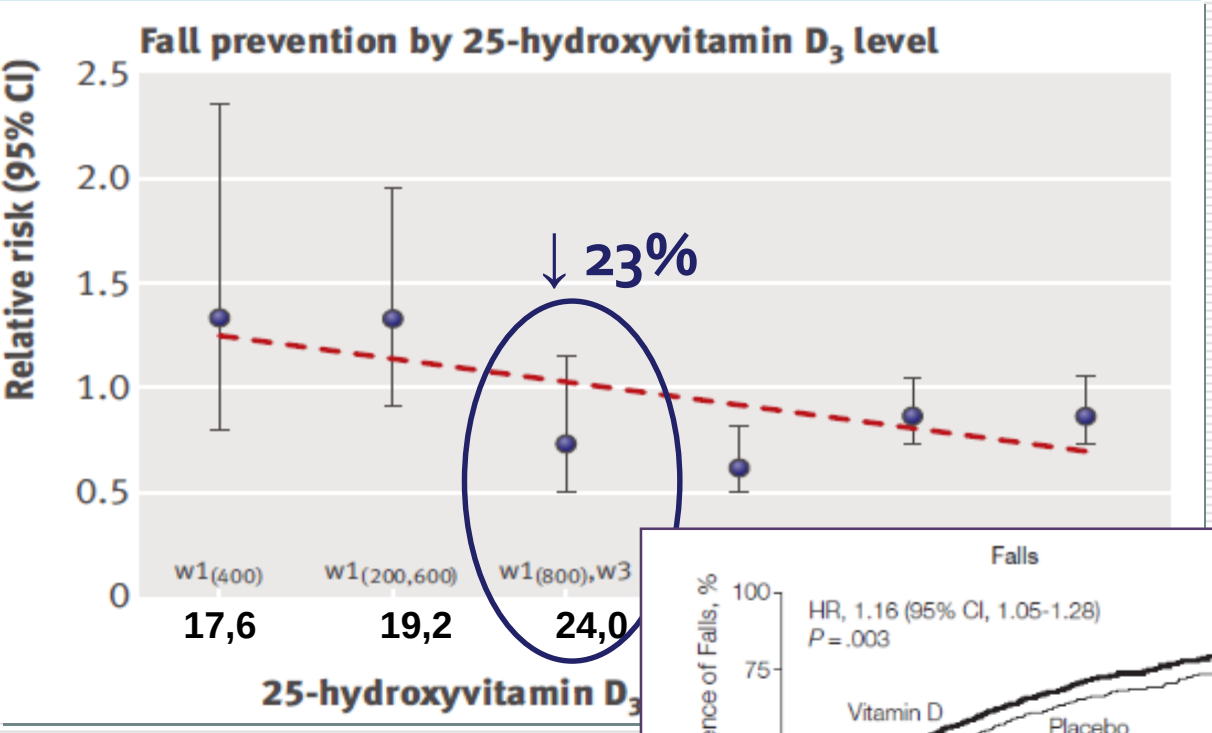




Bischoff-Ferrari et al. N Engl J Med 2012; 367:40-49

Prevenção Quedas……

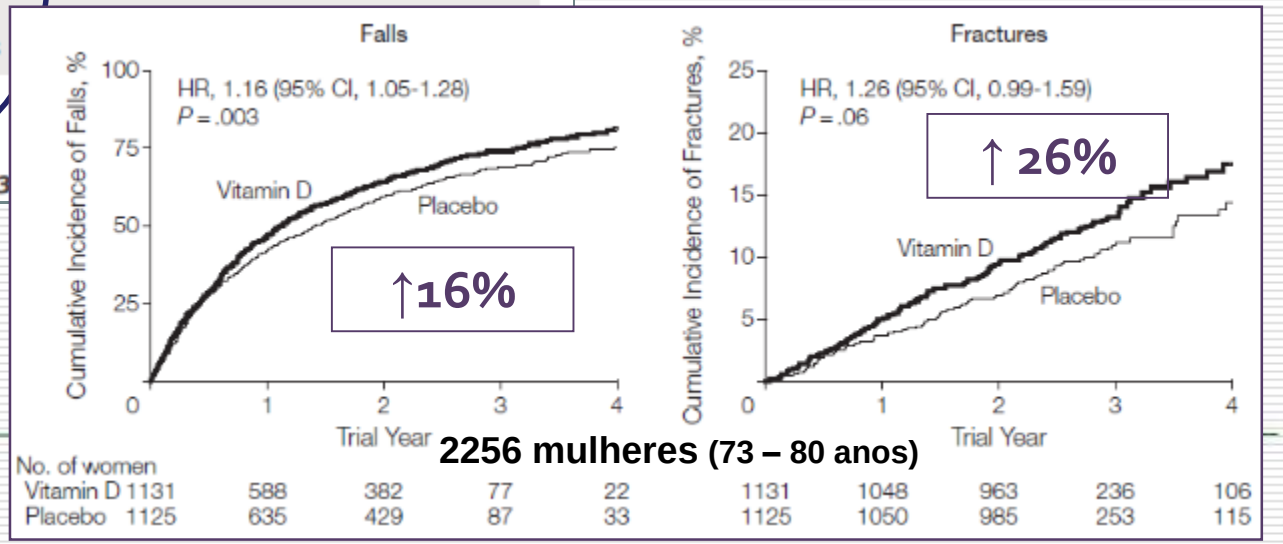
Quedas



Bischoff HA et al. BMJ 2009

MEDIDA CERTA

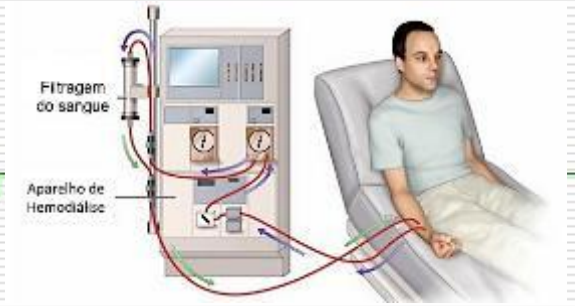
Dose Alta 500.000UI VD oral
1 x ao ano vs. placebo (3-5 anos)



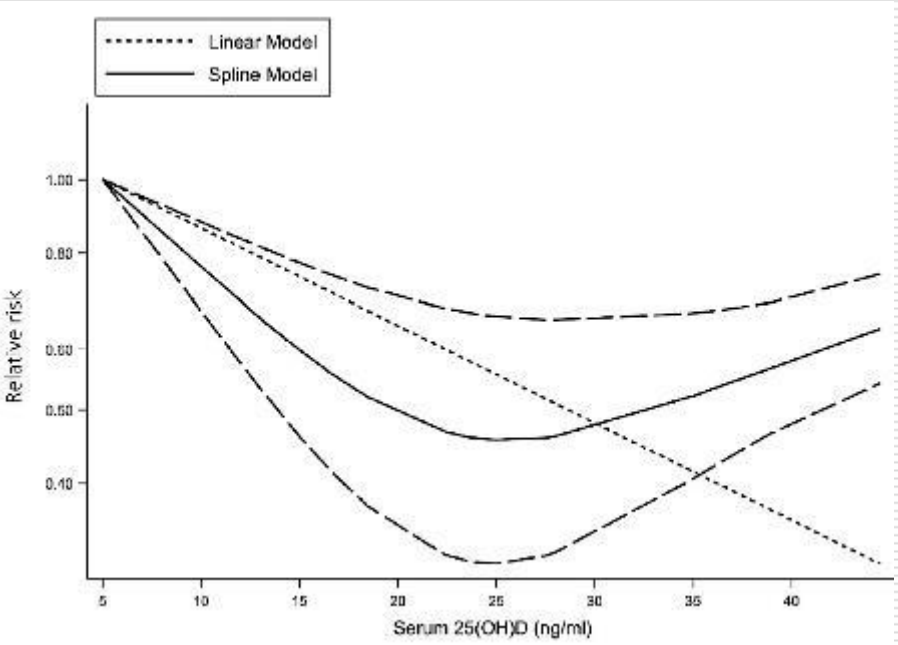
2256 mulheres (73 – 80 anos)

Sanders KM et al. JAMA 2010

25OHVD e Mortalidade na IRC



- 13 coortes prospectivos; 2 retrospectivos; 1 caso-controle;
- 17.053 participantes → 7517 mortes
- Risco de morte em pacientes com DRC:
  - 25OHVD < 10 ng/ml → 1.63 (95%CI: 1.32, 1.94)
  - 25OHVD 10-20 ng/ml → 1.22 (95%CI: 1.09, 1.35)
  - 25OHVD 20-30 ng/ml → 1.12 (95%CI: 1.06, 1.18)
- Maior risco de morte em pacientes em diálise



J Clin Endocrinol Metab. 2017 Apr 27. doi: 10.1210/jc.2017-00105

Cochrane Library
Cochrane Database of Syst

Vitamin D supplementation for prevention of mortality in adults (Review)

Bjelakovic G, Gluud LL, Nikolova D, Whitfield K, Wetterslev J, Simonetti RG, Bjelakovic M, Gluud C

- 56 RCTs incluindo 95.286 participantes
- Idade variando de 18 a 107 anos; maioria acima de 70a
- Vitamina D usada por 4.4 anos em média
- Vitamina D reduziu morte em 56 trials; RR 0.97
- Redução de 12% de morte por câncer (RR 0.88) (4 trials)
- Risco de nefrolitíase na associação Cálcio + VTD (RR 1.17)

Cochrane Database Syst Rev. 2014 Jan 10;(1):CD007470. doi: 10.1002/14651858.CD007470.pub3.

Vitamin D Supplementation and Small for Gestational Age (SGA)

- 5405 participantes
- Doses: 800-5.000UI/d; 35000-50.000UI/sem; 60.000- 200UI/mês ou 2/2/meses
- ↓ SGA (RR, 0.72; 95% CI, 0.52 to 0.99) sem risco para RN

- RN > nível de 25(OH)D - 13.50 ng/mL; 95%CI, 10.12 a 16.87 ng/mL), cálcio (0.19mg/dL; 95%CI, 0.003 a 0.38mg/dL),
    - **> peso**
        - nascer (75.38 g; 95%CI, 22.88 a 127.88 g)
        - 3 m (0.21 kg; 95%CI, 0.13 a 0.28 kg)
        - 6 m (0.46 kg; 95%CI, 0.33 a 0.58 kg)
        - 9 m (0.50 kg; 95%CI, 0.01 a 0.99 kg)
        - 12 m (0.32 kg; 95%CI, 0.12 a 0.52 kg)

Wei Guang, *JAMA Pediatr*. 2018

Vitamin D Supplementation and Small for Gestational Age (SGA)

A Timing of vitamin D supplementation

Source	Experimental Group, No. Events	Experimental Group, No. Total	Control Group, No. Events	Control Group, No. Total	RR (95% CI)	Weight, %
During pregnancy: initiation at <20 weeks of gestation						
Dawodu et al,[15] 2013	5	84	4	42	0.63 (0.18-2.21)	7.6
Subtotal		**84**		**42**	**0.63 (0.18-2.21)**	**7.6**
Total events	5		4			
Heterogeneity: not applicable						
Test for overall effect: $z = 0.73$; $P = .47$						
During pregnancy: initiation at ≥20 weeks of gestation						
Brooke et al,[12] 1980	9	59	19	67	0.54 (0.26-1.10)	25.4
Hashemipour et al,[19] 2014	0	55	1	54	0.33 (0.01-7.86)	2.2
Hossain et al,[21] 2014	19	86	18	89	1.09 (0.62-1.94)	25.2
Sablok et al,[31] 2015	9	108	11	57	0.43 (0.19-0.98)	20.5
Yu et al,[36] 2009	17	120	10	59	0.84 (0.41-1.71)	19.1
Subtotal		**428**		**326**	**0.72 (0.52-1.01)**	**92.4**
Total events	54		59			
Heterogeneity: $\chi^2_4 = 4.57$; $P = .33$; $I^2 = 13\%$						
Test for overall effect: $z = 1.89$; $P = .06$						
Total		**512**		**368**	**0.72 (0.52-0.99)**	**100.0**
Total events	59		63			
Heterogeneity: $\chi^2_5 = 4.63$; $P = .46$; $I^2 = 0\%$						
Test for overall effect: $z = 2.02$; $P = .04$						
Test for subgroup differences: $\chi^2_1 = 0.05$; $P = .83$; $I^2 = 0\%$						

Favors Vitamin D | Favors Control

0.01 0.1 1.0 10

RR (95% CI)

Iniciou ≥ 20 sem gestação

Source	Experimental Group, No. Events	Experimental Group, No. Total	Control Group, No. Events	Control Group, No. Total	RR (95% CI)	Weight, %
Dose >2000 IU/d						
Dawodu et al,[15] 2013	5	43	4	42	1.22 (0.35-4.24)	5.5
Hashemipour et al,[19] 2014	0	55	1	54	0.33 (0.01-7.86)	2.1
Hossain et al,[21] 2014	19	86	18	89	1.09 (0.62-1.94)	24.1
Sablok et al,[31] 2015	9	108	11	57	0.43 (0.19-0.98)	19.6
Yu et al,[36] 2009	17	120	10	59	0.84 (0.41-1.71)	18.3
Subtotal		**412**		**301**	**0.83 (0.57-1.19)**	**69.6**
Total events	50		44			
Heterogeneity: $\chi^2_4 = 4.02$; $P = .40$; $I^2 = 1\%$						
Test for overall effect: $z = 1.02$; $P = .31$						
Dose ≤2000 IU/d						
Brooke et al,[12] 1980	9	59	19	67	0.54 (0.26-1.10)	24.3
Dawodu et al,[15] 2013	0	41	4	42	0.11 (0.01-2.05)	6.1
Subtotal		**100**		**109**	**0.45 (0.23-0.90)**	**30.4**
Total events	9		23			
Heterogeneity: $\chi^2_1 = 1.10$; $P = .29$; $I^2 = 9\%$						
Test for overall effect: $z = 2.27$; $P = .02$						
Total		**512**		**410**	**0.71 (0.52-0.98)**	**100.0**
Total events	59		67			
Heterogeneity: $\chi^2_6 = 6.86$; $P = .33$; $I^2 = 12\%$						
Test for overall effect: $z = 2.07$; $P = .04$						
Test for subgroup differences: $\chi^2_1 = 2.30$; $P = .13$; $I^2 = 56.5\%$						

Favors Vitamin D | Favors Control

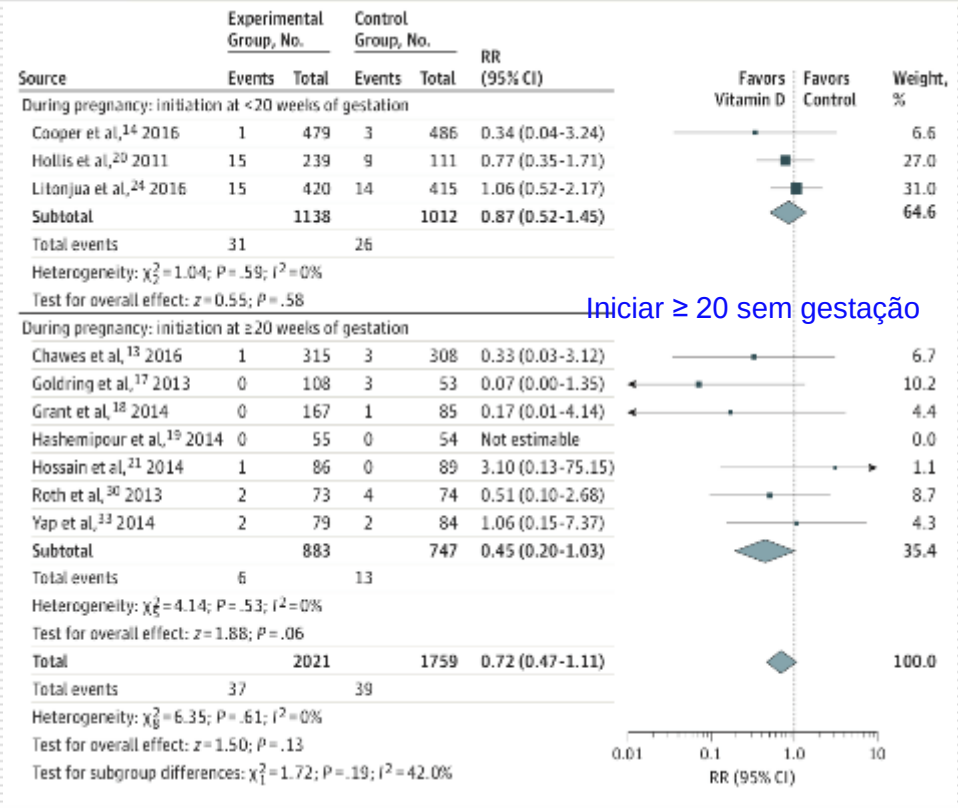
0.01 0.1 1.0 10

RR (95% CI)

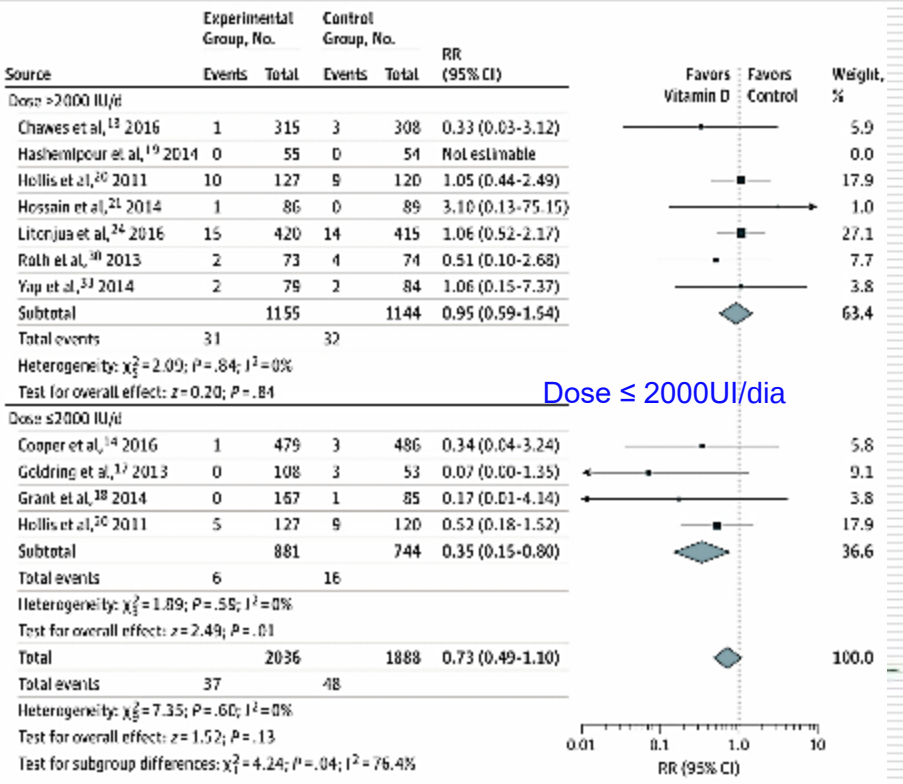
Dose ≤ 2000UI/dia

Wei Guang, *JAMA Pediatr*. 2018

Association Between Vitamin D Supplementation and Fetal or Neonatal Mortality



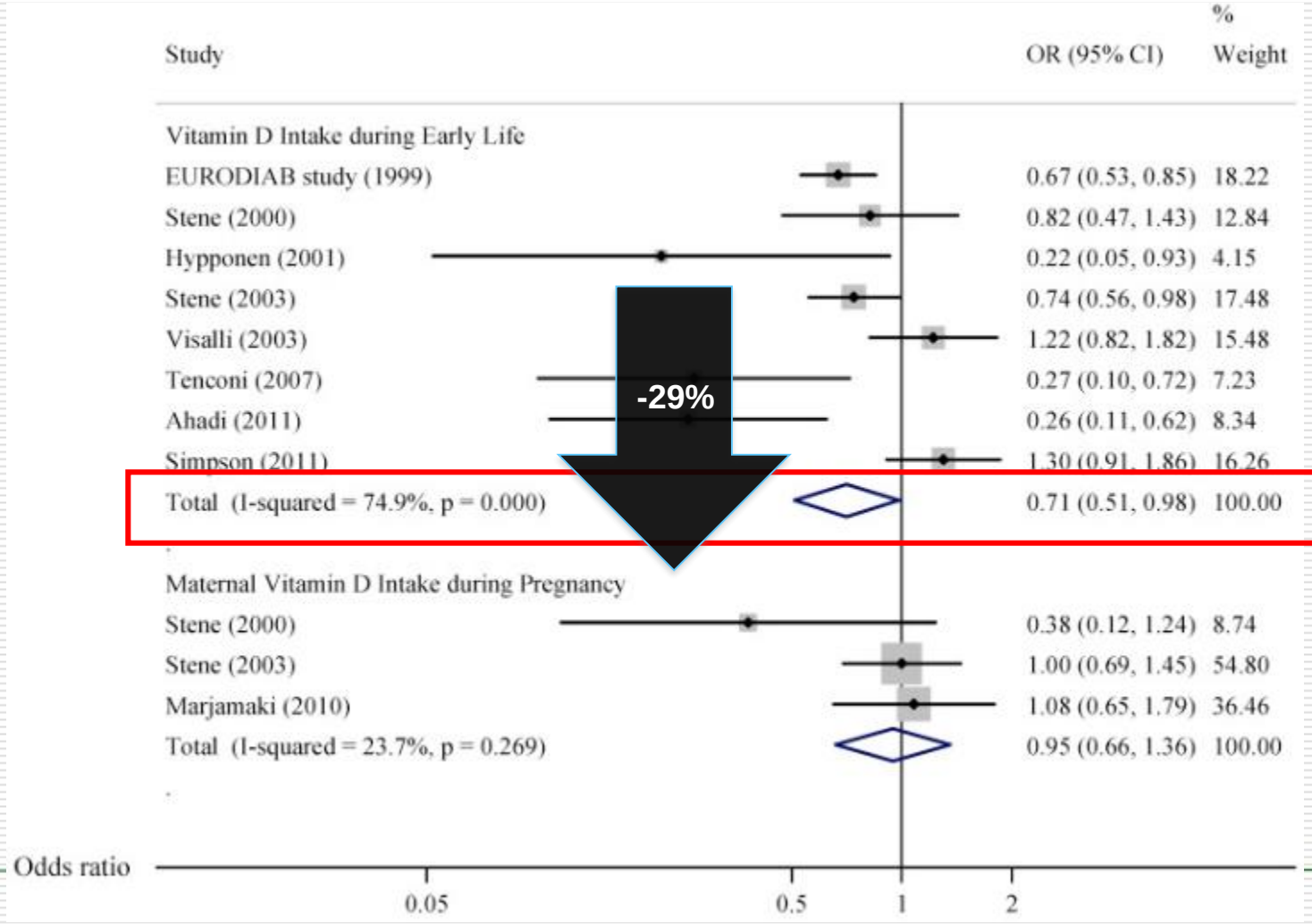
Iniciar ≥ 20 sem gestação



Dose ≤ 2000UI/dia

Wei Guang, *JAMA Pediatr*. 2018

Suplementação precoce de Vit.D 2000ui/dia em crianças reduziu risco de DM1



Dong JY et al. Nutrients. 2013 Sep 12;5(9):3551-62.

The Effect of Improved Serum 25-Hydroxyvitamin D Status on Glycemic Control in Diabetic Patients: A Meta-Analysis

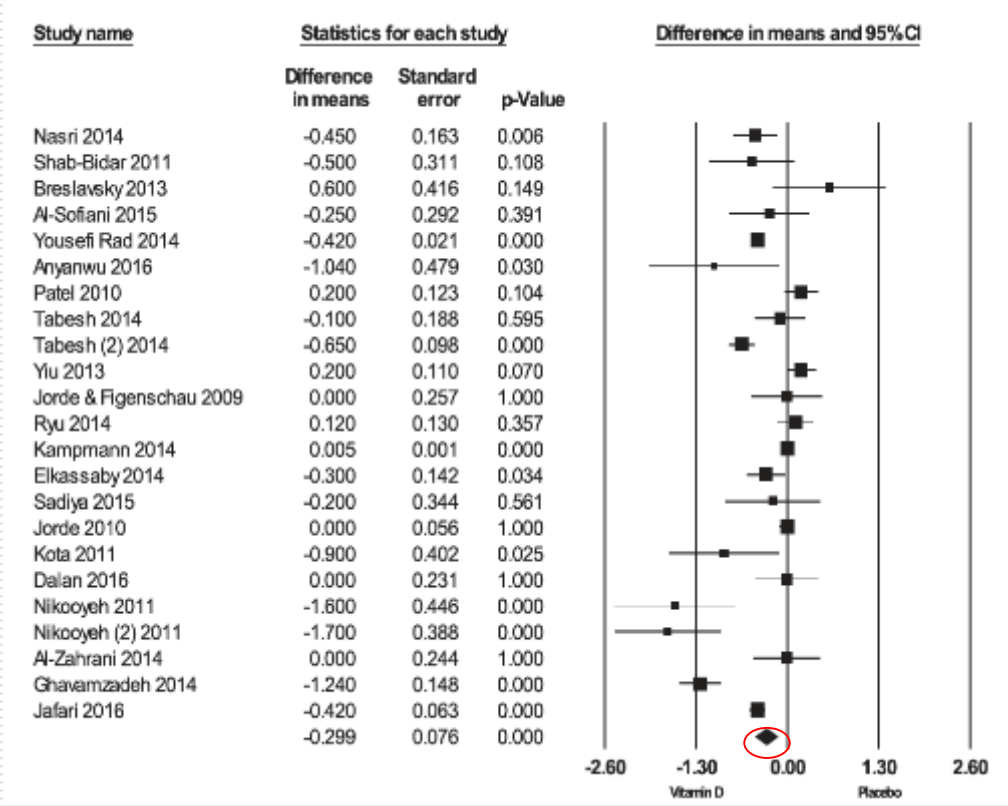
N. Mirhosseini

- 1528 indivíduos DM2 40-67 anos
- VD doses variáveis
  - ↑17. 6 ± 2.4 ng/mL
  - 4000UI /dia

↓

- HbA1c ↓ 0.3% (0.45 - 0.15)
- Gl jejum ↓4.9 mg/dL (8.1 - 1.6)
- HOMA –IR ↓0.66; (1.06 - 0.26)

HbA1c



J Clin Endocrinol Metab 102: 3097–3110, 2017)

The efficacy of vitamin D in multiple sclerosis: a meta-analysis

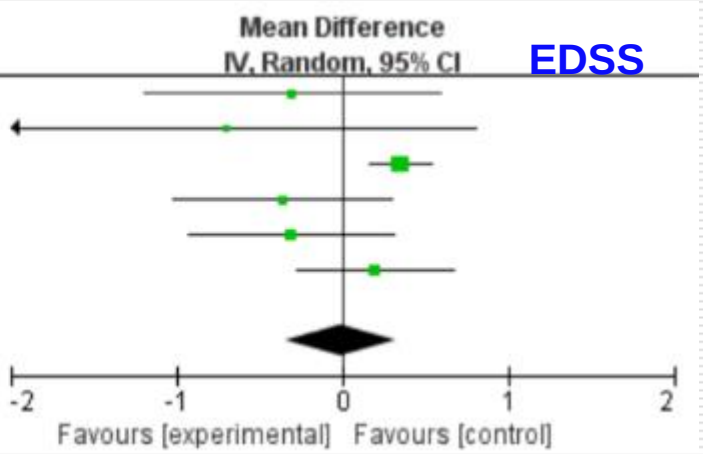
Chao Zheng , Liang He , Lingling Liu , Jie Zhu , Tao Jin

January 2018

Expanded Disability Status Scale (EDSS) score and annual relapse rate (ARR) → **sem diferença**

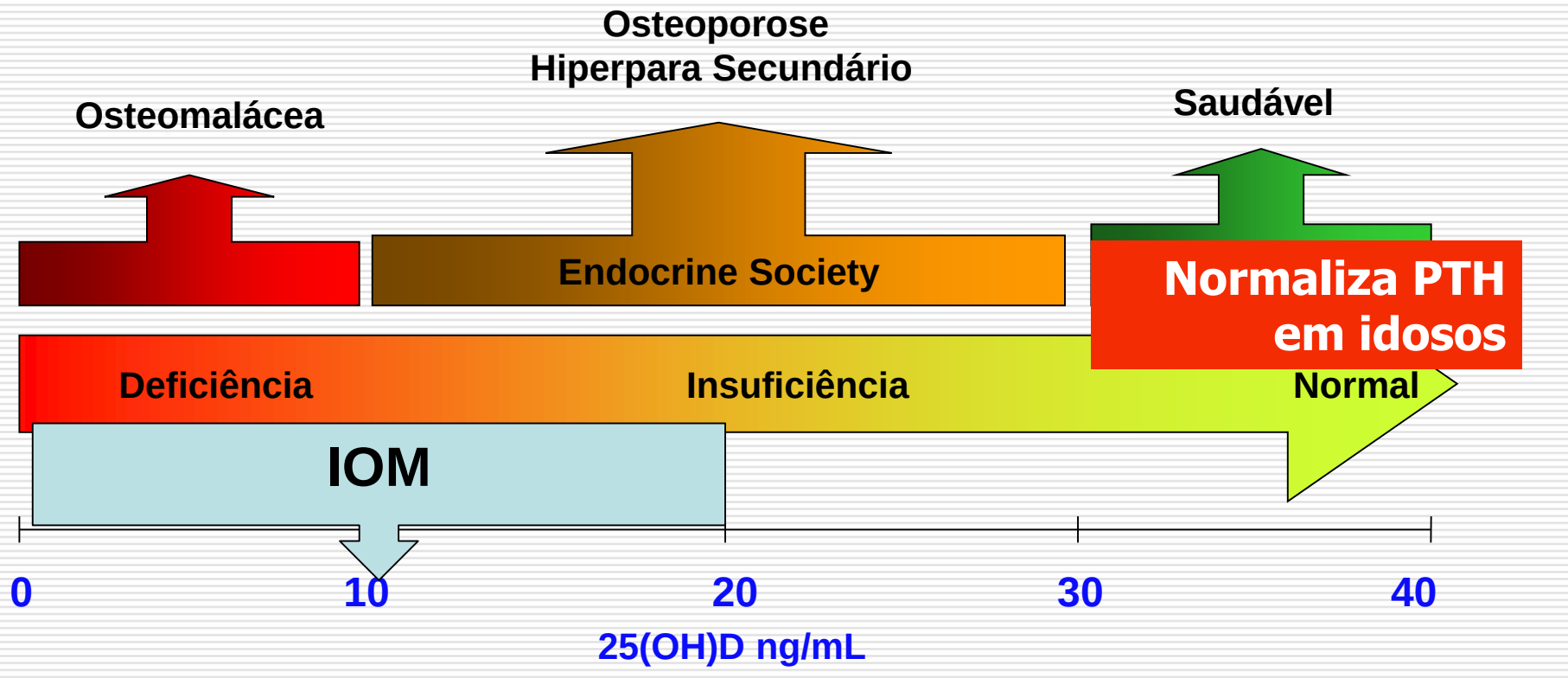
Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
Burton, J 2010	1.15	1.39	25	1.45	1.78	24	10.0%	-0.30 [-1.20, 0.60]
Golan, D 2013	2.9	2	15	3.6	2.2	15	4.3%	-0.70 [-2.20, 0.80]
Kampman, M. T 2012	2.77	0.39	35	2.42	0.4	33	33.2%	0.35 [0.16, 0.54]
Mosayebi, G 2011	2.31	1.3	26	2.67	1.25	33	15.1%	-0.36 [-1.02, 0.30]
Shaygannejad, V 2012	1.63	0.7	25	1.94	1.41	25	16.2%	-0.31 [-0.93, 0.31]
Soilu-Hanninen, M 2012	1.8	0.2	32	1.6	1.3	30	21.2%	0.20 [-0.27, 0.67]
Total (95% CI)			**158**			**160**	**100.0%**	**-0.01 [-0.34, 0.33]**

Heterogeneity: Tau² = 0.08; Chi² = 10.40, df = 5 (P = 0.06); I² = 52%
Test for overall effect: Z = 0.04 (P = 0.97)



Quanto de Vitamina D?

Metas recomendadas pelas Endocrine Society e Soc. Bras Endocrinol e Metabolismo (SBEM) para as concentrações plasmáticas de 25OHD em populações de risco



Nota para conversão:

_____ng/ml x 2,5= _____nmol/l

_____µg/dia x 40= UI/dia

Holick e col, J Clin Endocrinol Metab 2011 96(7):1911-30

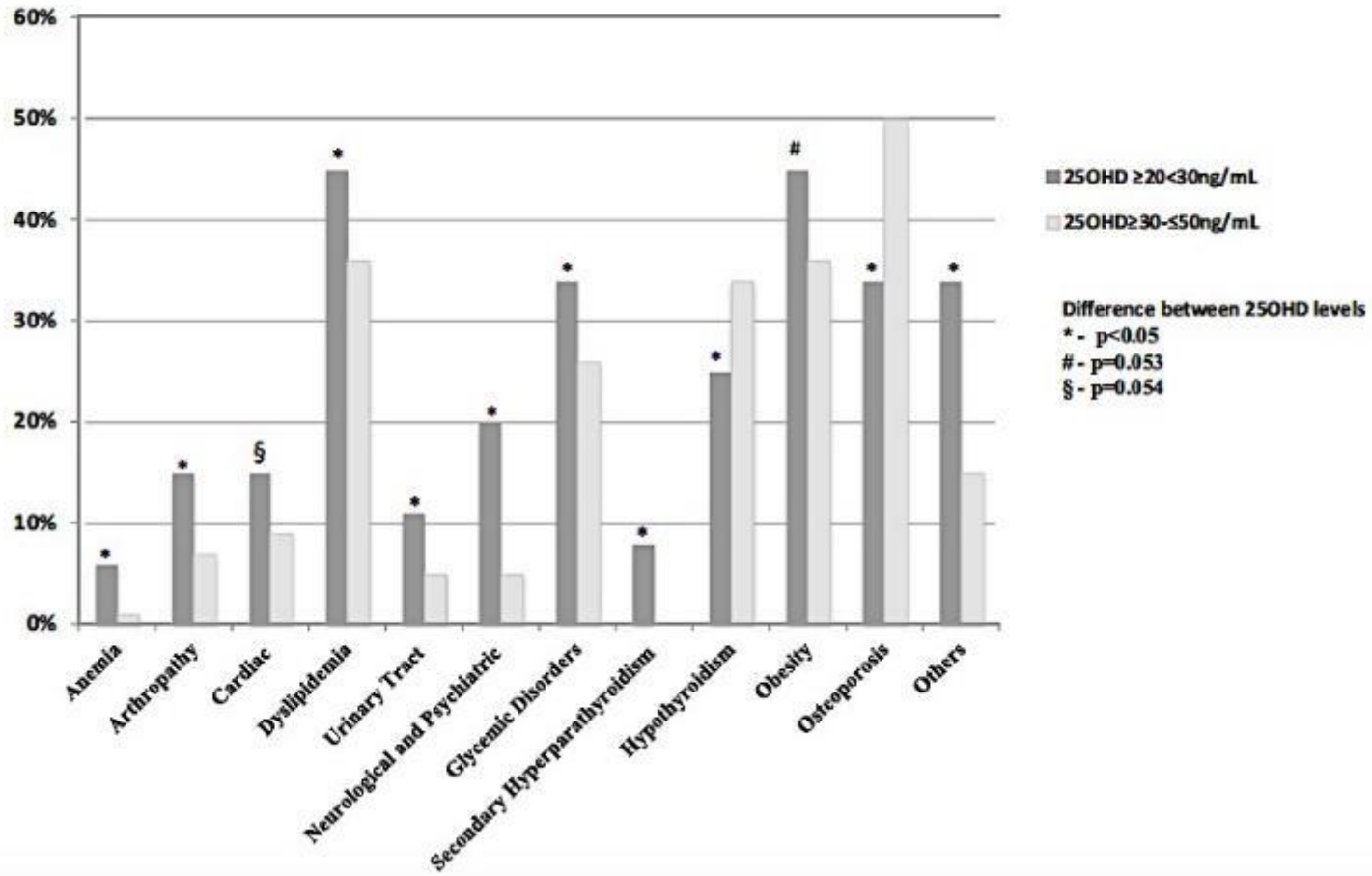
Maeda, Borba, Lazaretti-Castro e col. Arq Brasil Endocrinol Metab 2014, 58/5

Osteoporos Int
https://doi.org/10.1007/s00198-017-4299-2

ORIGINAL ARTICLE

Two threshold levels of vitamin D and the prevalence of comorbidities in outpatients of a tertiary hospital

I. N. Furuie[1] · M. J. J. Mauro[1] · S. Petruzziello[1] · S. C. Riechi[2] · R. R. Petterle[3] · C. L. Boguszewski[4] · V. Z. C. Borba[4]



ORIGINAL ARTICLE

J Bras Patol Med Lab, v. 53, n. 6, p. 377-391, December 2017

Consensus – reference ranges of vitamin D [25(OH)D] from the Brazilian medical societies. Brazilian Society of Clinical Pathology/Laboratory Medicine (SBPC/ML) and Brazilian Society of Endocrinology and Metabolism (SBEM)

Posicionamento oficial da Sociedade Brasileira de Patologia Clínica/Medicina Laboratorial (SBPC/ML) e da Sociedade Brasileira de Endocrinologia e Metabologia (SBEM) sobre intervalos de referência da vitamina D [25(OH)D]

Carlos Eduardo S. Ferreira[1,2]; Sergio S. Maeda[2]; Marcelo G. Batista[1]; Marise Lazaretti-Castro[1]; Leonardo S. Vasconcellos[3]; Miguel Madeira[4,5]; Lilian M. Soares[6]; Victória Z. C. Borba[7]; Carolina A. Moreira[7]

- **Idosos >60 anos**
- **Sem exposição solar**
- **Quedas e /ou fraturas recorrentes**
- **Grávidas e lactantes**
- **Osteoporose**
- **Doença óssea metabólica**
- **IRC**
- **Malabsorção (Cgia bariátrica, Dça inflamatória intestinal)**
- **Uso de medicações que interferem com metabolismo VD(Anticonvulsivantes, TARV, GCT)**

Em resumo...

- Existe alta prevalência de deficiência de 25OHD
- 25OHD deve ser administrada para individuos em risco de hipovitaminose D
- 25OHD faz diferença:
  - Gestantes e RN
  - Osteoporose
  - IRC
  - DM
  - Doentes crônicos

ABRASSO
ASSOCIAÇÃO BRASILEIRA DE AVALIAÇÃO ÓSSEA E OSTEOMETABOLISMO

Reserve a data!

Obrigada !
vzcborba@gmail.com

10 A 13 DE OUTUBRO DE 2018
3º BRADOO
CONGRESSO BRASILEIRO DE DENSITOMETRIA OSTEOPOROSE E OSTEOMETABOLISMO
SHOPPING FREI CANECA / SP

10 a 13 de outubro de 2018
Centro de Convenções Frei Caneca
São Paulo

www.abrasso.org.br