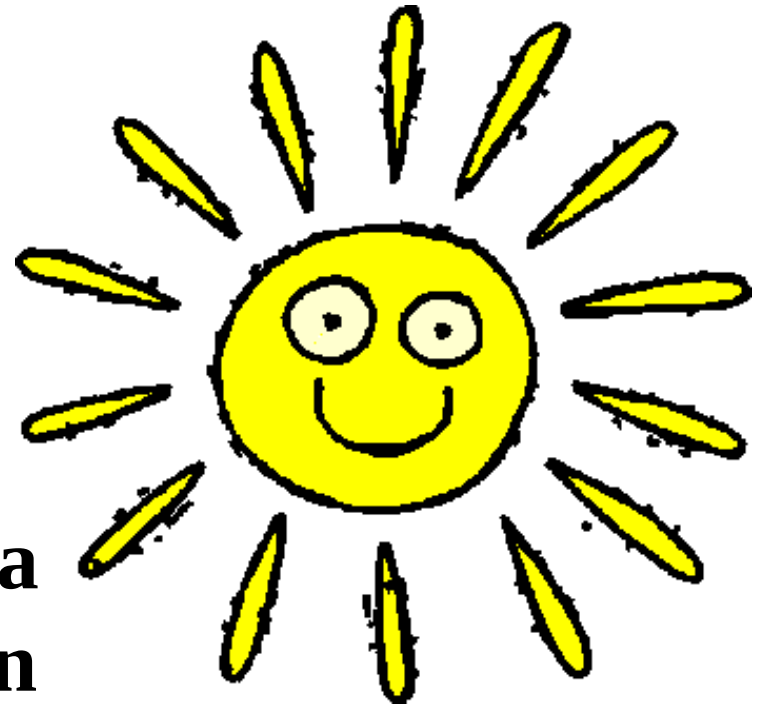
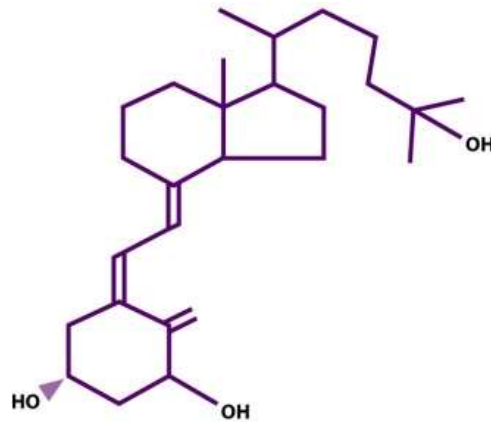




Actualités sur la supplémentation en vitamine D





La vitamine D chez l'adulte : recommandations du GRIO

Claude-Laurent Benhamou¹, Jean-Claude Souberbielle², Bernard Cortet³,
Patrice Fardellone⁴, Jean-Bernard Gouvain⁵, Thierry Thomas⁶, pour le Groupe de
recherche et d'information sur les ostéoporoses (GRIO)

Selon l'**IOM**
(*Ross et al JCEM 2011*),

-Une concentration de
25OHD > 20 ng/mL (50 nmol/L)
est suffisante pour 95%
de la population générale.

- Une concentration de
25OHD < 10-12 ng/mL (25-30 nmol/L)
correspond à un déficit sévère
(une carence)

**Ces définitions sont pour
la population générale**

Elles sont basées sur les effets
« musculo-squelettiques » de la
vitamine D

Selon l'**Endocrine Society**
(*Holick et al JCEM 2011*)

-Le déficit en vitamine D est
défini par une concentration de
25OHD < 20 ng/mL (50 nmol/L)

-Une concentration de 25OHD entre
20 et 30 ng/mL (50 à 75 nmol/L)
correspond à une
insuffisance en vitamine D

**Ces définitions sont destinées
à la prise en charge des patients**
(en particulier OP, IRC, malabsorptions)

elles sont basées sur les effets
« musculo-squelettiques » de la
vitamine D

Quelle concentration maximale de 25OH pour un statut vitaminique D optimal ?

**Pas d'intoxication à la vitamine D (hypercalcémie/urie, PTH basse, calcifications extra-osseuses)
pour des concentrations de 25OH < 150 ng/mL (375 nmol/L)**



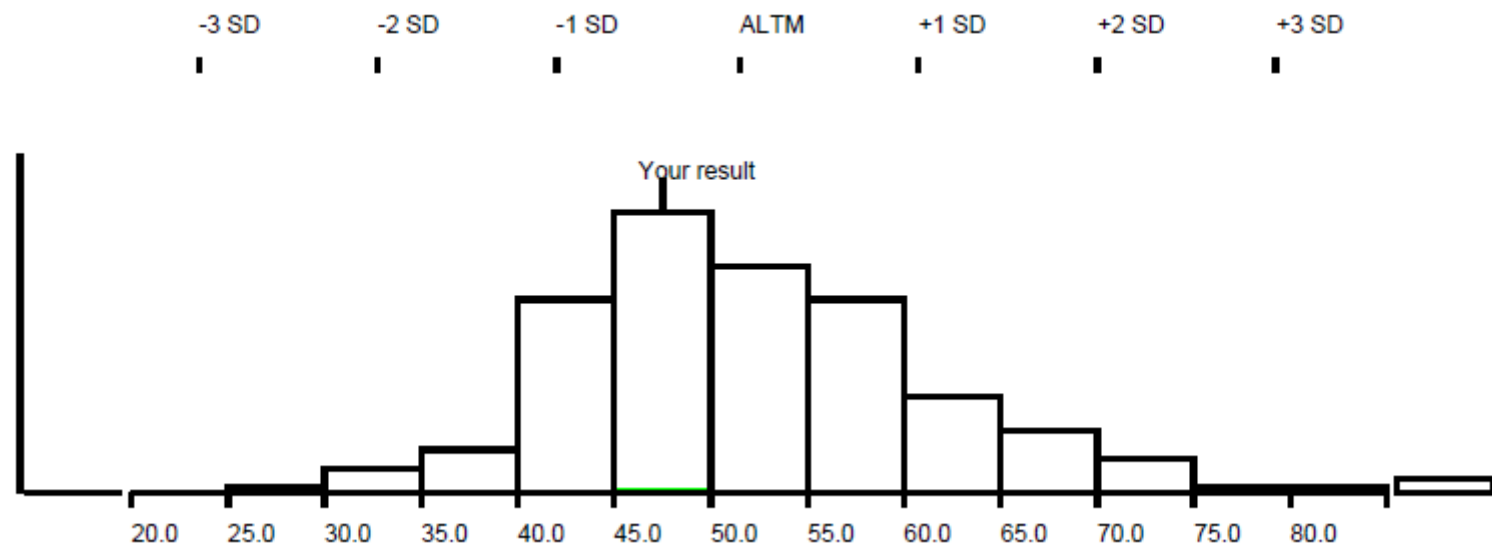
**Luxwolda M et al
Traditionally living populations in East Africa
have a mean serum 25-hydroxyvitamin D
concentration of 115 nmol/L.
British Journal of Nutrition 2012; 23: 1-5
(115 nmol/L = 46 ng/mL)**

**-Pas de données à long terme (plusieurs années) sur l'innocuité de concentrations de
25OHD > 60-70 ng/mL (nombreuses données rassurantes à court terme par contre)**

**-Pas de preuves via des essais contrôlés de l'avantage d'avoir des concentrations
de 25OHD > 60-70 ng/mL par rapport à 30-60 ng/mL**

**-Quelques (très rares) études observationnelles rapportent une relation en U (ou plutôt en J « inversé »)
entre la concentration de 25OHD et la fréquence de certaines pathologies**

**À partir des données ci-dessus, les valeurs souhaitables de 25OHD chez les patients
ostéoporotiques (ou à risque d'ostéoporose) sont, dans notre labo, de 30-60 ng/mL**



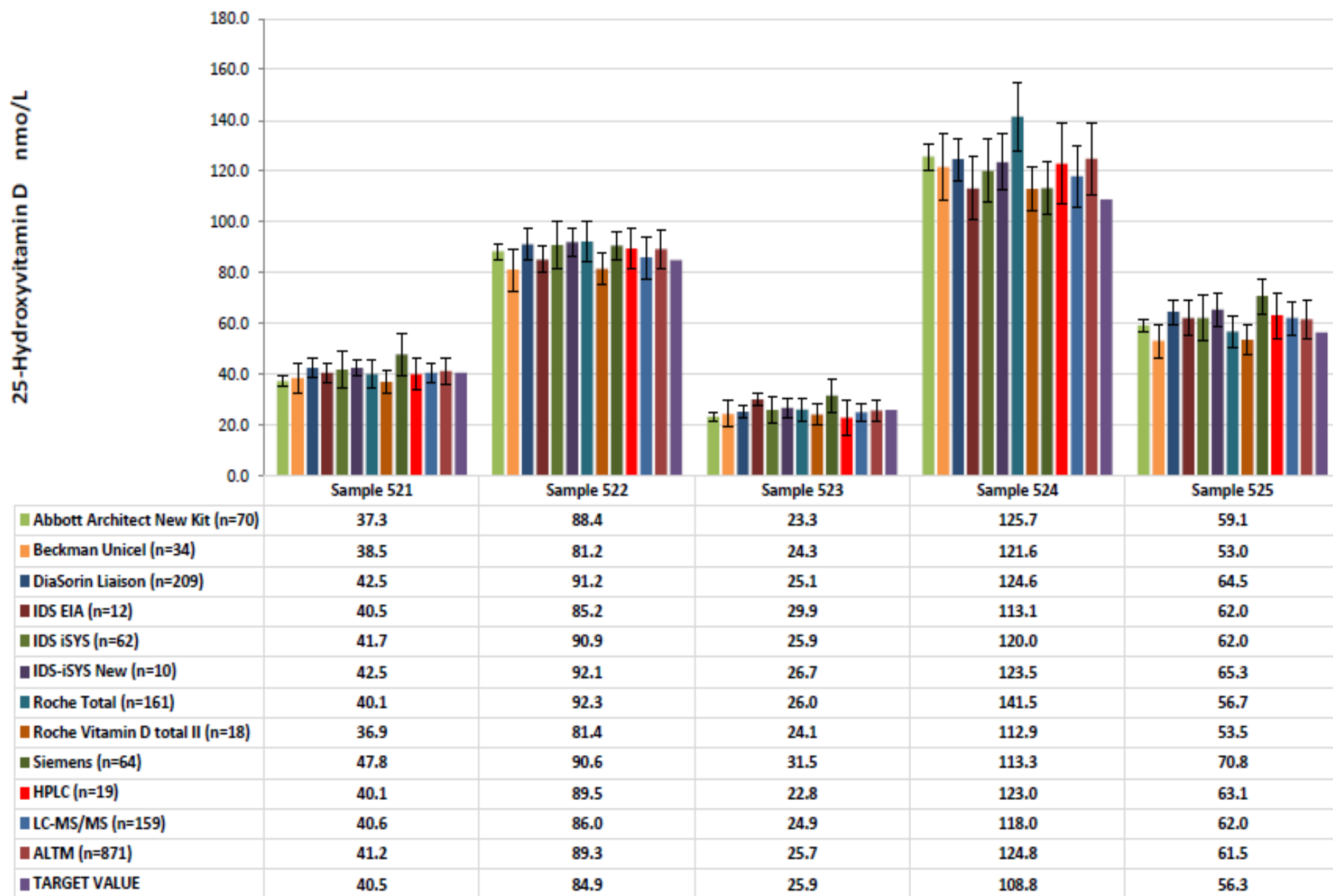
Clinical Chemistry 57:3
441-448 (2011)

Automation and Analytical Techniques

Candidate Reference Measurement Procedures for Serum 25-Hydroxyvitamin D₃ and 25-Hydroxyvitamin D₂ by Using Isotope-Dilution Liquid Chromatography–Tandem Mass Spectrometry

Hedwig C.M. Stepmán,¹ An Vanderroost, Katleen Van Uytvanghe,¹ and Linda M. Thienpont^{1*}

DEQAS October 2017 - 25-OHD Method Means (+/-1SD) for Major Method Groups*



* Methods with 10 or more results returned

Vitamin D deficiency in Europe: pandemic?^{1,2}

Kevin D Cashman,^{3,4*} Kirsten G Dowling,³ Zuzana Škrabáková,³ Marcela Gonzalez-Gross,^{6,7} Jara Valtueña,⁶ Stefaan De Henauw,⁸ Luis Moreno,⁹ Camilla T Damsgaard,¹⁰ Kim F Michaelsen,¹⁰ Christian Mølgaard,¹⁰ Rolf Jorde,¹¹ Guri Grimnes,¹¹ George Moschonis,¹² Christina Mavrogianni,¹² Yannis Manios,¹² Michael Thamm,¹³ Gert BM Mensink,¹³ Martina Rabenberg,¹³ Markus A Busch,¹³ Lorna Cox,¹⁴ Sarah Meadows,¹⁴ Gail Goldberg,¹⁴ Ann Prentice,¹⁴ Jacqueline M Dekker,¹⁵ Giel Nijpels,¹⁶ Stefan Pilz,¹⁸ Karin M Swart,¹⁵ Natasja M van Schoor,¹⁵ Paul Lips,¹⁷ Gudny Eiriksdottir,¹⁹ Vilmundur Gudnason,^{19,20} Mary Frances Cotch,²¹ Seppo Koskinen,²³ Christel Lamberg-Allardt,²⁴ Ramon A Durazo-Arvizu,²⁵ Christopher T Sempos,²² and Mairead Kiely^{3,5}

Am J Clin Nutr 2016;103:1033–44.



nutrients



Article

Improved Dietary Guidelines for Vitamin D: Application of Individual Participant Data (IPD)-Level Meta-Regression Analyses

Kevin D. Cashman ^{1,2,*}, Christian Ritz ³, Mairead Kiely ^{1,4} and ODIN Collaborators



Ostéopathies fragilisantes,
maladie rénale chronique,
malabsorptions, anomalies biologiques
du métabolisme phosphocalcique :
les bonnes indications
pour un remboursement raisonné
du dosage de vitamine D*

Les mots soulignés sont les indications que l'Uncam propose de prendre en charge. Nos propositions (ce qui n'est pas souligné) sont en fait des extensions de ces propositions basées sur les recommandations internationales et nationales, elles-mêmes fondées sur les données scientifiques.

Suspicion de rachitisme ou d'ostéomalacie et, plus largement, toute situation de fragilité osseuse caractérisée par des fractures non traumatiques, ou une densité minérale osseuse basse.

Suivi ambulatoire de l'adulte transplanté rénal au-delà de trois mois après transplantation et insuffisants rénaux chroniques au stade 3b et au-delà ($\text{DFGe} < 45 \text{ mL/min/1,73 m}^2$) y compris les patients traités par dialyse chronique.

Avant et après chirurgie bariatrique et plus largement dans toute situation de malabsorption.

Évaluation et prise en charge des patients présentant des signes cliniques compatibles avec une carence en vitamine D (personnes âgées sujettes aux chutes répétées sans explication ; patients souffrant de douleurs musculo-squelettiques diffuses sans explication) ou une surcharge en vitamine D (patients présentant des lithiases rénales, une néphrocalcinose ou des calcifications extra-squelettiques).

Lors d'un bilan phospho-calcique incluant le dosage de l'hormone parathyroïdienne (PTH).

Respect des RCP des médicaments qui préconisent le dosage de vitamine D.

Ce dosage est inutile lors de la mise en route ou le suivi d'un traitement par la vitamine D en dehors des situations décrites ci-dessus et de l'instauration d'un traitement anti-ostéoporotique.

TABLE 2. Score Loading: Attribution of Points for Each Selected Individual Characteristic*

Characteristics	Points
Sex	
Male	0
Female	1.5
Weight status; BMI, kg/m ²	
<25	0
between 25 and 30	1.5
≥30	2.5
Physical activity	
Irregular	1.5
<1h/d walking equivalent	1.5
≥1h/d walking equivalent	0
Residential latitude	
<48°N (in France: South of a line from mid-Brittany to mid-Alsace)	0
≥48°N (in France: North of a line from mid-Brittany to mid-Alsace)	2
Season	
June–November	0
December–January	1.5
February–March	2.5
April–May	2
Usual sun exposure	
Low/very low	3
Moderate	1.5
High	0
Fitzpatrick phototype	
I: always burns easily, never tans	1.5
II: burns easily, tans minimally	1.5
III: burns moderately, tans gradually	0
IV: burns minimally, tans well	0
V: burns rarely, tans profusely [†]	1.5
VI: never burns, deep pigmentation [†]	1.5
Total[‡]	

Medicine[®]

DIAGNOSTIC ACCURACY STUDY

OPEN

Quick and Easy Screening for Vitamin D Insufficiency in Adults

A Scoring System to Be Implemented in Daily Clinical Practice

Mélanie Deschasaux, MSc, Jean-Claude Souberbielle, MD, PhD, Valentina A. Andreeva, PhD, Angela Sutton, MD, PhD, Nathalie Charnaux, MD, PhD, Emmanuelle Kesse-Guyot, PhD, Paule Latino-Martel, PhD, Nathalie Druetne-Pecollo, PhD, Fabien Szabo de Edelenyi, PhD, Pilar Galan, MD, PhD, Serge Hercberg, MD, PhD, Khaled Ezzedine, MD, PhD, and Mathilde Touvier, PhD

(Medicine 95(7):e2783)

Question :

Peut-on prescrire indifféremment de la vitamine D en doses journalières et en doses « espacées » ?

L'exemple des chutes chez le sujet âgé

Bischoff-Ferrari HA. BMJ
2009;339:b3692
doi:10.1136/bmj.b3692



Kerrie M. Sanders, PhD
Amanda L. Stuart, BappSc
Elizabeth J. Williamson, MA, PhD
Julie A. Simpson, PhD
Mark A. Kotowicz, MBBS, FRACP
Doris Young, MD, MBBS, FRACGP
Geoffrey C. Nicholson, PhD, FRACP

Annual High-Dose Oral Vitamin D and Falls and Fractures in Older Women

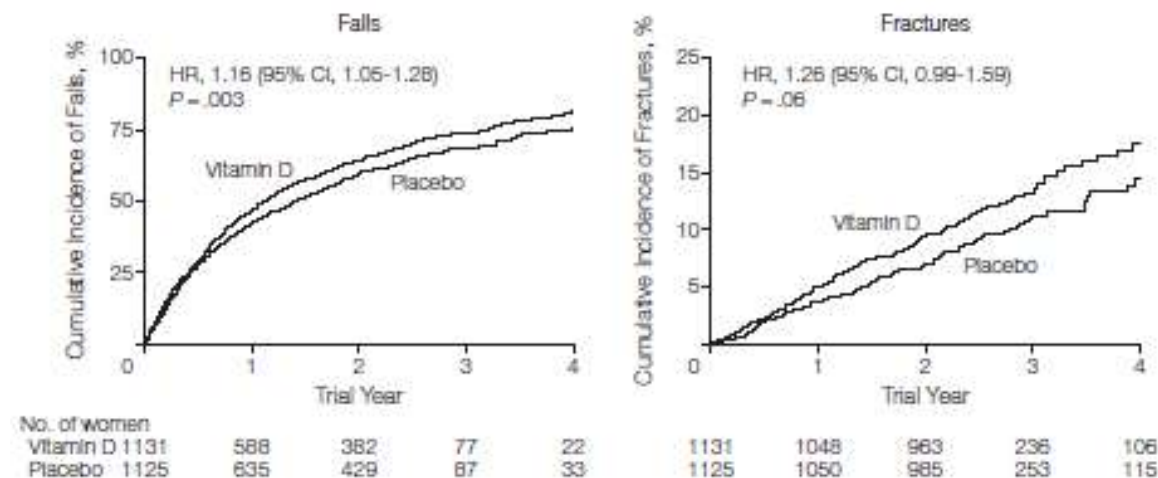
A Randomized Controlled Trial

JAMA. 2010;303(18):1815-1822

Design, Setting, and Participants A double-blind, placebo-controlled trial of 2256 community-dwelling women, aged 70 years or older, considered to be at high risk of fracture were recruited from June 2003 to June 2005 and were randomly assigned to receive cholecalciferol or placebo each autumn to winter for 3 to 5 years. The study concluded in 2008.

Intervention 500 000 IU of cholecalciferol or placebo.

Figure 2. Kaplan-Meier Plots of Cumulative Incidence of Time to First Fracture and First Fall



This analysis censors data after first fall or fracture. Time to first fracture and fall was analyzed using Cox proportional hazards models. CI indicates confidence intervals; HR, hazard ratio.

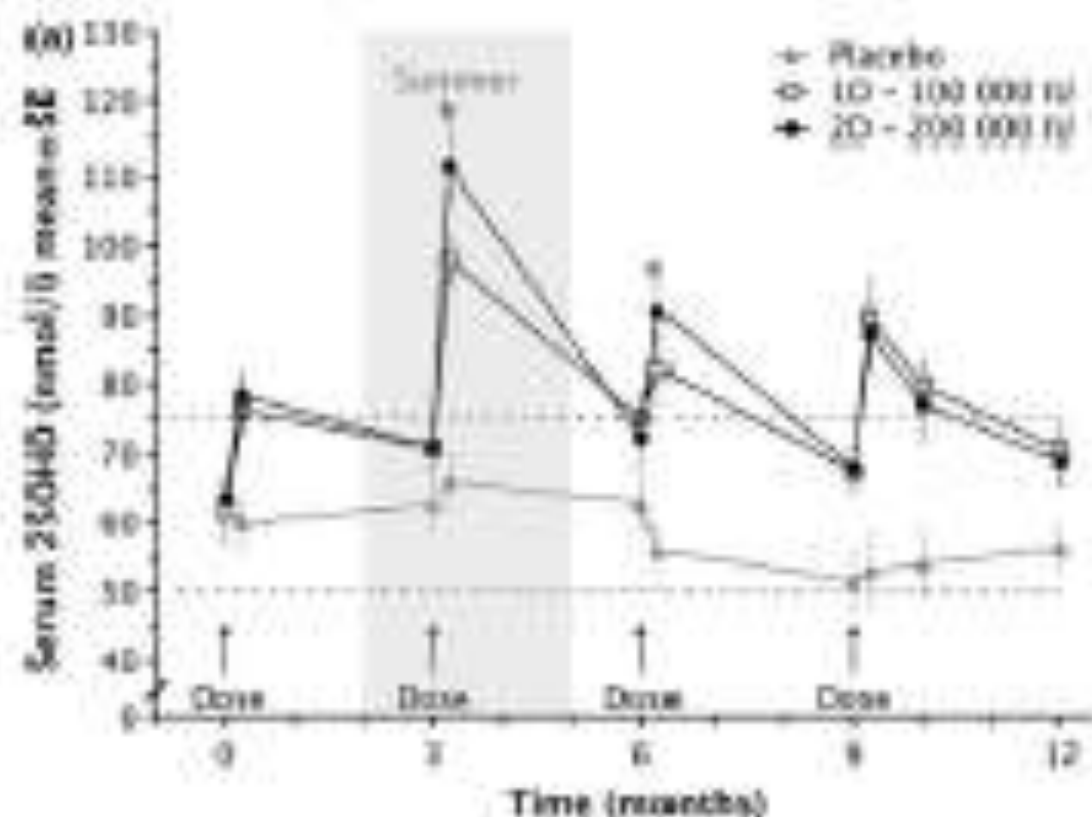
Conclusion Among older community-dwelling women, annual oral administration of high-dose cholecalciferol resulted in an increased risk of falls and fractures.

ORIGINAL ARTICLE

How well are the optimal serum 25OHD concentrations reached in high-dose intermittent vitamin D therapy? a placebo-controlled study on comparison between 100 000 IU and 200 000 IU of oral D₃ every 3 months in elderly women

Ville-Valtteri Välimäki*, Elin Löytty-Järvi†, Tuula Pekkarinen‡ and Matti J. Välimäki§

4 V.-V. Välimäki et al.



ORIGINAL ARTICLE

Mutations in *CYP24A1* and Idiopathic Infantile Hypercalcemia

Karl P. Schlingmann, M.D., Martin Kaufmann, Ph.D., Stefanie Weber, M.D., Andrew Irwin, B.Sc., Caroline Goos, Ulrike John, M.D., Joachim Misselwitz, M.D., Günter Klaus, M.D., Eberhard Kuwertz-Bröking, M.D., Henry Fehrenbach, M.D., Anne M. Wingen, M.D., Tülay Güran, M.D., Joost G. Hoenderop, Ph.D., René J. Bindels, Ph.D., David E. Prosser, Ph.D., Glenville Jones, Ph.D., and Martin Konrad, M.D.

DE GRUYTER

Clin Chem Lab Med 2017; aop

Lanja Saleh*, Jonathan Tang, Joanna Gawinecka, Lukas Boesch, William D Fraser, Arnold von Eckardstein and Albina Nowak

Impact of a single oral dose of 100,000 IU vitamin D3 on profiles of serum 25(OH)D3 and its metabolites 24,25(OH)₂D3, 3-epi-25(OH)D3, and 1,25(OH)₂D3 in adults with vitamin D insufficiency

Greater seasonal cycling of 25-hydroxyvitamin D is associated with increased parathyroid hormone and bone resorption

A. L. Darling • K. H. Hart • M. A. Gibbs • F. Gossiel •
T. Kantermann • K. Horton • S. Johnsen • J. L. Berry •
D. J. Skene • R. Eastell • R. Vieth • S. A. Lanham-New

Conclusions These findings suggest a possible detriment to bone health via increased levels of sPTH and sCTX in individuals with a larger seasonal change in 25(OH)D concentration. Further larger cohort studies are required to further investigate these preliminary findings.

Comparison of Daily, Weekly, and Monthly Vitamin D3 in Ethanol Dosing Protocols for Two Months in Elderly Hip Fracture Patients

Sophia Ish-Shalom, Elena Segal, Tina Salganik, Batia Raz, Irvin L. Bromberg, and Reinhold Vieth

Conclusions: Supplementation with vitamin D can be achieved equally well with daily, weekly, or monthly dosing frequencies. Therefore, the choice of dose frequency can be based on whichever approach will optimize an individual's adherence with long-term vitamin D supplementation. (*J Clin Endocrinol Metab* 93: 3430–3435, 2008)

Monthly High-Dose Vitamin D Treatment for the Prevention of Functional Decline

A Randomized Clinical Trial

Helke A. Bischoff-Ferrari, MD, DrPH; Bess Dawson-Hughes, MD; E. John Orav, PhD; Hannes B. Staehelin, MD; Otto W. Meyer, MD; Robert Theller, MD; Walter Dick, MD; Walter C. Willett, MD, DrPH; Andreas Egli, MD

JAMA Intern Med. doi:10.1001/jamainternmed.2015.7148
Published online January 4, 2016.

INTERVENTIONS Three study groups with monthly treatments, including a low-dose control group receiving 24 000 IU of vitamin D₃ (24 000 IU group), a group receiving 60 000 IU of vitamin D₃ (60 000 IU group), and a group receiving 24 000 IU of vitamin D₃ plus 300 µg of calcifediol (24 000 IU plus calcifediol group).

200 participants (134 femmes, 66 hommes)

78 ans en moyenne

Au moins une chute dans l'année précédente

CONCLUSIONS AND RELEVANCE Although higher monthly doses of vitamin D were effective in reaching a threshold of at least 30 ng/mL of 25-hydroxyvitamin D, they had no benefit on lower extremity function and were associated with increased risk of falls compared with 24 000 IU.

**Bischoff-Ferrari H, Dawson-Hughes B, Platz A, Orav E,
Stähelin H, Willett W, Can U, Egli A, Mueller N, Looser S
Bretscher B, Minder E, Vergopoulos A, Theiler R
Effect of high-dosage cholecalciferol and extended physiotherapy
on complications after hip fracture
Arch Intern Med 2010; 170:813-820**

**Vitamine D3 : 800 UI/J versus 2000 UI/J pendant 1 an
(+ 1 g de calcium dans les 2 groupes)
Pas de différence dans le nombre de chutes entre les 2 groupes
Moins de ré-hospitalisations dans le groupe 2000 UI vs 800 UI
(-55% en analyse multivariée, CI : -79%,-2%)
car
moins de complications post chute (-60% ;CI : -80%,3%)
moins d'infections (-90%; CI: -99%, -13%)**

High-Dose Monthly Vitamin D for Prevention of Acute Respiratory Infection in Older Long-Term Care Residents: A Randomized Clinical Trial

JAGS 2016

Adit A. Ginde, MD, MPH, Patrick Blatchford, PhD,^{†‡} Keith Breese, MA,* Lida Zarrabi, MPH,* Sunny A. Linnebur, PharmD,^{§¶} Jeffrey I. Wallace, MD, MPH,[¶] and Robert S. Schwartz, MD[¶]*

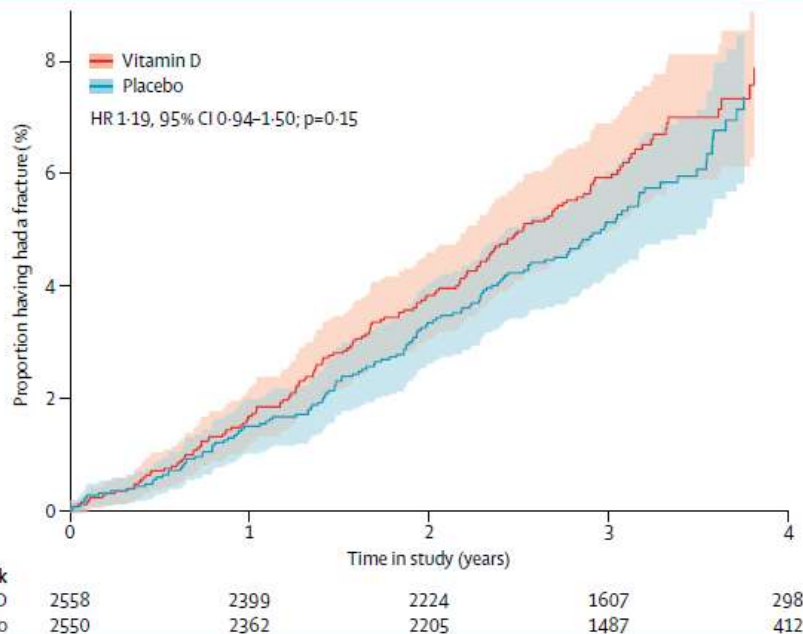
INTERVENTION: The high-dose group received monthly supplement of vitamin D₃ 100,000 IU, the standard-dose group received a monthly placebo (for participants taking 400–1,000 IU/d as part of usual care) or a monthly supplement of 12,000 IU of vitamin D₃ (for participants taking <400 IU/d as part of usual care).

CONCLUSION: Monthly high-dose vitamin D₃ supplementation reduced the incidence of ARI in older long-term care residents but was associated with a higher rate of falls without an increase in fractures. J Am Geriatr Soc 2016.

Effect of monthly high-dose vitamin D supplementation on falls and non-vertebral fractures: secondary and post-hoc outcomes from the randomised, double-blind, placebo-controlled ViDA trial

Kay-Tee Khaw, Alistair W Stewart, Debbie Waayer, Carlene M M Lawes, Les Toop, Carlos A Camargo Jr, Robert Scragg

www.thelancet.com/diabetes-endocrinology Published online April 28, 2017 [http://dx.doi.org/10.1016/S2213-8587\(17\)30103-1](http://dx.doi.org/10.1016/S2213-8587(17)30103-1)



Added value of this study

Results from the ViDA trial indicate that a monthly dose of 100 000 IU colecalciferol, with good compliance in a healthy, middle-aged, older, ambulatory population, showed no reduced risk of falls or fractures over 4 years.

Implications of all the available evidence

These findings, taken in conjunction with results from other trials, suggest that large monthly bolus doses of vitamin D do not confer overall benefit either in frail elderly people or in a healthy, ambulatory, general population.

Effect of Vitamin D Supplementation on Muscle Strength, Gait and Balance in Older Adults: A Systematic Review and Meta-Analysis

Susan W. Muir, PhD,* and Manuel Montero-Odasso, MD, PhD, AGSF*†‡ J Am Geriatr Soc 59:2291–2300, 2011.

PARTICIPANTS: Older adults (≥ 60) participating in randomized controlled trials of the effect of supplemental vitamin D without an exercise intervention on muscle strength, gait, and balance.

RESULTS: Of 714 potentially relevant articles, 13 met the inclusion criteria. In the pooled analysis, vitamin D supplementation yielded a standardized mean difference of -0.20 (95% confidence interval (CI) = -0.39 to -0.01 , $P = .04$, $I^2 = 0\%$) for reduced postural sway, -0.19 (95% CI = -0.35 to -0.02 , $P = .03$, $I^2 = 0\%$) for decreased time to complete the Timed Up and Go Test, and 0.05 (95% CI = -0.11 to 0.20 , $P = .04$, $I^2 = 0\%$) for lower extremity strength gain. Regarding dosing frequency regimen, only one study demonstrated a beneficial effect on balance with a single large dose. All studies with daily doses of 800 IU or more demonstrated beneficial effects on balance and muscle strength.

Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data

Adrian R Martineau, David A Jolliffe, Richard L Hooper, Lauren Greenberg, John F Aloia, Peter Bergman, Gal Dubnov-Raz, Susanna Esposito, Davaasambuu Ganmaa, Adit A Ginde, Emma C Goodall, Cameron C Grant, Christopher J Griffiths, Wim Janssens, Ilkka Laaksi, Semira Manaseki-Holland, David Mauger, David R Murdoch, Rachel Neale, Judy R Rees, Steve Simpson, Iwona Stelmach, Geeta Trilok Kumar, Mitsuyoshi Urashima, Carlos A Camargo Jr
BMJ 2017;356:i6583

WHAT IS ALREADY KNOWN ON THIS TOPIC

Randomised controlled trials of vitamin D supplementation for the prevention of acute respiratory tract infection have yielded conflicting results

Individual participant data (IPD) meta-analysis has the potential to identify factors that may explain this heterogeneity, but this has not previously been performed

WHAT THIS STUDY ADDS

Meta-analysis of IPD from 10 933 participants in 25 randomised controlled trials showed an overall protective effect of vitamin D supplementation against acute respiratory tract infection (number needed to treat (NNT)=33)

Benefit was greater in those receiving daily or weekly vitamin D without additional bolus doses (NNT=20), and the protective effects against acute respiratory tract infection in this group were strongest in those with profound vitamin D deficiency at baseline (NNT=4)

These findings support the introduction of public health measures such as food fortification to improve vitamin D status, particularly in settings where profound vitamin D deficiency is common

Korean Society for Bone and Mineral Research Task Force Report: Perspectives on Intermittent High-dose Vitamin D Supplementation

Han Seok Choi¹, Yong-Ki Min², Dong Won Byun³, Myung Hoon Hahn⁴, Kyoung Min Kim⁵, Beom Jun Kim⁶, Ki-Won Oh⁷

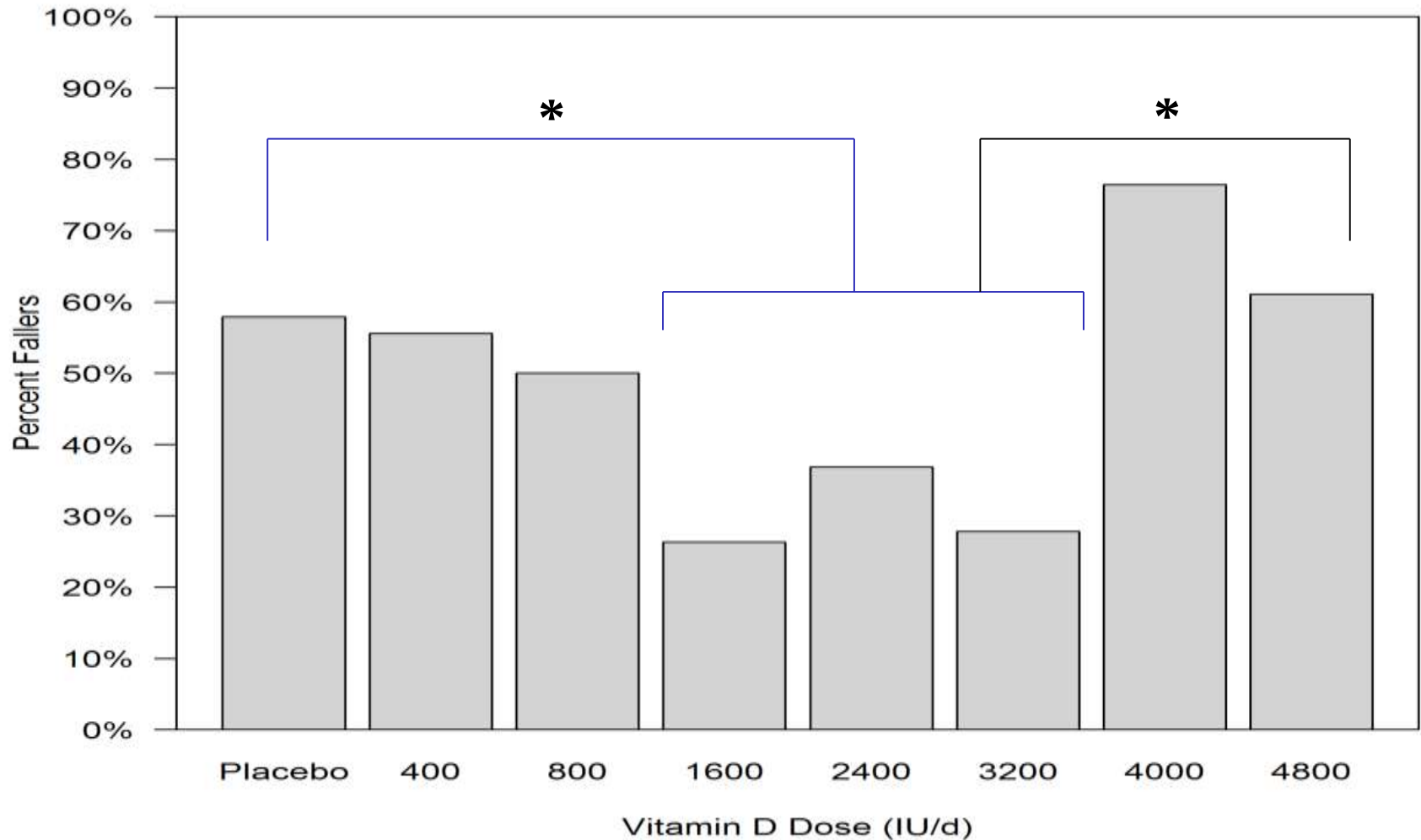
Clinicians should be careful regarding the routine use of intermittent high-dose vitamin D, considering the results of large-scale clinical trials that showed increased risk of falls or fractures after high-dose vitamin D administration. We recommend intermittent high-dose vitamin D supplementation only in cases of malabsorption or when oral administration is not suitable.

Editorial February 2016

Vitamin D Supplementation and Increased Risk of Falling: A Cautionary Tale of Vitamin Supplements Retold

**Steven R. Cummings; Douglas P. Kiel; Dennis M. Black.
JAMA Intern Med. 2016 Feb;176(2):171-2.**

273 women (163 Caucasians, 110 African-American) aged 66 yrs in mean were randomized to received various daily doses of VD3 or placebo for one year





**Merci pour
votre attention**