Prof. Māris Taube

Rīgas Stradiņa universitāte

Rīgas Psihiatrijas un narkoloģijas centrs

Latvijas Osteoporozes un kaulu metabolo slimību asociācija

SAGITUS

WORLD VITAMIN D DAY NOVEMBER 2

D vitamīns un depresija

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Saturs

- Depresijas cēloņi un izpausmes
- D vitamīna loma depresijas izcelsmē un ārstēšanā
- Pētījumu un to apkopojumu dati
- Kopsavilkums

Depresijas etioloģija

Biopsihosociāla koncepcija

- Ģenētiski faktori,
- Bioloģiska ievainojamība,
- Psiholoģiski faktori (ģimenes attiecības, hroniskas stresa situācijas)
- Sieviešu dzimums
- Sociāli ekonomiskie faktori
- Neirotransmitteru darbības traucējumi
- Neiroendokrīni traucējumi, vairogdziedzera disfunkcija

Semple D, Smyth R. Oxford Handbook of Psychiatry, 4th Edition, 2019

Depresijas simptomi (SSK 10)

- **Pazemināts (depresīvs) garastāvoklis**
- **Interešu un prieka trūkums (anhedonija)**
- **Enerģijas, spēka trūkums pat pie minimālas piepūles (anerģija)**

- Vainas apziņa
- Pašpārliecinātības un pašvērtējuma pazemināšanās
- Miega traucējumi
- Koncentrēšanās grūtības
- Psihomotorās aktivitātes izmaiņas (ažitācija vai kavēšana)
- Apetītes izmaiņas
- Pašnāvības domas

1. Semple D, Smyth R. Oxford Handbook of Psychiatry, 4th Edition, 2019
2. Boland R, Verduin M.L. Kaplan@Sadock's Synopsis of Psychiatry, Twelfth edition, 2022

D vitamīna loma

- D vitamīna receptori atrodas galvas smadzenēs (prefrontālais korteks, hipokampā, amigdala, thalamus, hipotalamus, gyrus cingulus un substantia nigra)
- Iespaido neironu un glijas šūnu darbību, to integritāti

1. I Sayeed; N Turan; DG Stein; B Wali. Vitamin D deficiency increases bloodbrain barrier dysfunction after ischemic stroke in male rats. Exper neuro 312, 63- 71 (2019) DOI: 10.1016/j.expneurol.2018.11.005 2. J Sarris; AC Logan; TN Akbaraly; GP Amminger; V Balanzá-Martínez; MP Freeman; J Hibbeln; Y Matsuoka; D Mischoulon; T Mizoue; A Nanri; D Nishi; D Ramsey; J Rucklidge; A SanchezVillegas; A Scholey; KP Su; F Jacka. Nutritional medicine as mainstream in psychiatry. The Lancet 2, 271-274 (2015) DOI: 10.1016/S2215-0366(14)00051-0

Depresijas neiropsiholoģiskie traucējumi

- Darba atmiņa, paškontrole, plānošana
- Uzmanības noturība
- Atmiņa

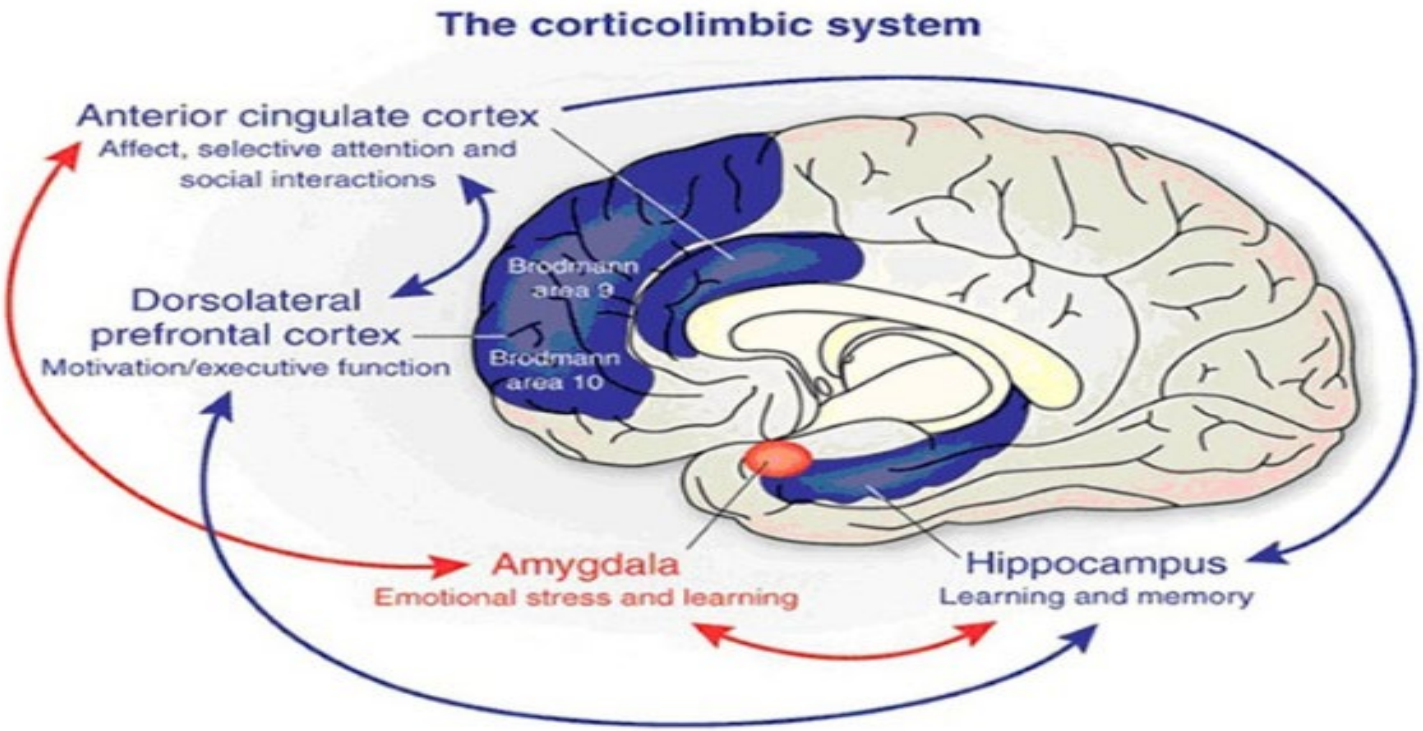
1. JR Sneed; SP Roose; JG Keilp; KR Krishnan; GS Alexopoulos; HA Sackeim. Response inhibition predicts poor antidepressant treatment response in very old depressed patients. Am J Geriat Psychi 15, 553–563 (2007) DOI: 10.1097/JGP.0b013e3180302513 2. SM McClintock; MM Husain; TL Greer; CM Cullum. Association between depression severity and neurocognitive function in major depressive disorder: a review and synthesis. Neuropsycho 24 (1), (2010)

Depresijas neiropsiholoģisko traucējumu izcelsmē iesaistītās sistēmas

- Limbiskā-frontālās daivas sistēma
- Amigdala (atmiņa, izmēru mainība, spējas labāk atcerēties emocionālus notikumus)
- Hipokampus-prefrontālais loks (atmiņas un augstāko funkciju (plānošana, paškontrole) integritāte)
- Kateholamīnu sistēma (norepinefrīns, serotonīns, dopamīns)

1. DA Seminowicz; HS Mayberg; AR McIntosh; K Goldapple; S Kennedy; Z Segal; S Rafi-Tari. Limbic–frontal circuitry in major depression: a path modeling metanalysis. Neuroimage 22 (1), 409-18 (2004) DOI: 10.1016/j.neuroimage.2004.01.015 2. E Sibille; Y Wang; J Joeyen-Waldorf; C Gaiteri; A Surget; S Oh; C Belzung; GC Tseng; DA Lewis. A molecular signature of depression in the amygdala. Am J Psychiatry 166 (9), 1011-24 (2009) DOI: 10.1176/appi.ajp.2009.08121760 3. M Li; C Long; L Yang. HippocampalPrefrontal Circuit and Disrupted Functional Connectivity in Psychiatric and Neurodegenerative Disorders. Biomed Res Int. (2015) DOI: 10.1155/2015/810548 4. P Tremblay; P Blier. Catecholaminergic strategies for the treatment of major depression. Curr Drug Targets 7 (2), 149- 58 (2006) DOI: 10.2174/138945006775515464

Garozas-limbiskā sistēma



Leisman G, Machado C, Melillo R, Mualem R. Intentionality and "free-will" from a neurodevelopmental perspective. Front Integr Neurosci. 2012 Jun 27;6:36. doi: 10.3389/fnint.2012.00036. PMID: 22754510; PMCID: PMC3385506.

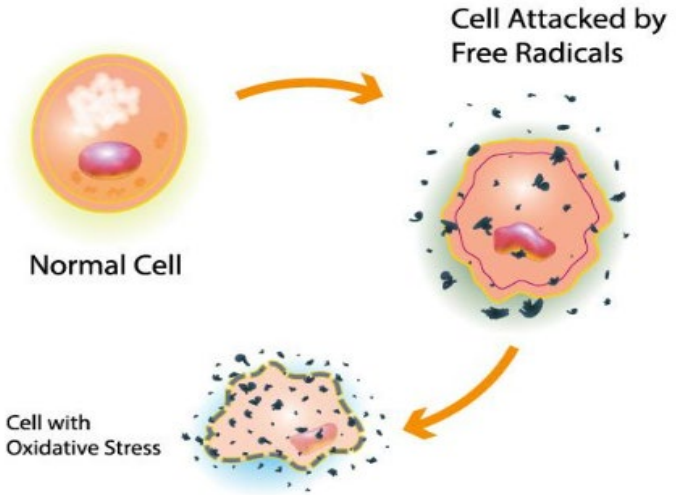
D vitamīna un depresijas saikne

- Valstīs ar zemu saules gaismas intensitāti – izplatītāka depresija
- Reģionos, kur daudz saules – arī sastopama depresija – pamato ar «izvairīšanās uzvedību»
- Depresijas simptomi mazinās, ja papildus lieto D vitamīnu (sievietes pētītas)
- Afro – amerikāņu populācijā smagāka kognitīvo spēju pasliktināšanās D vitamīna trūkuma gadījumā

1.IM van der Meer; NS Karamali; AJ Boeke; P Lips; BJ Middelkoop; I Verhoeven; JD Wuister. High prevalence of vitamin D deficiency in pregnant non-Western women in The Hague, Netherlands. Am J Phys Anthropol 132 (1), 67-79 (2007) DOI: 10.1093/ajcn/84.2.350 2. A Huotari; KH Herzig. Vitamin D and living in northern latitudes--an endemic risk area for vitamin D deficiency. Int J Circump Health 67 (2-3), 164-78 (2008) DOI: 10.3402/ijch.v67i2-3.18258 3. MJ Szpunar. Association of antepartum vitamin D deficiency with postpartum depression: a clinical perspective. Pub Health Nutr. 1-6 (2019) DOI: 10.1017/S136898001800366X 4. MG Biersack; M Hajdukiewicz; R Uebelhack; L Franke; H Piazena; P Klaus; V Höhne-Zimmer; T Braun; F Buttgereit; GR Burmester; J Detert. Sustained Increase of 25-Hydroxyvitamin D Levels in Healthy Young Women during Wintertime after Three Suberythemal UV Irradiations-The MUVY Pilot Study. PLoS One 11 (7), (2016) DOI: 10.1371/journal.pone.0159040 5. CH Wilkins; YI Sheline; CM Roe; SJ Birge; JC Morris. Vitamin D deficiency is associated with low mood and worse cognitive performance in older adults. Am J Geriatr Psychiatry 14 (12), 1032-40 (2006)

D vitamīna un depresijas saikne (patoģenēze)

- Oksidatīvais stress
- Neiroinfekcija



1.F Vellekkatt; V Menon. Efficacy of vitamin D supplementation in major depression: A meta-analysis of randomized controlled trials.J Postgrad Med 65 (2), 74-80 (2019) DOI: 10.4103/jpgm.JPGM_571_17 2. C Annweiler; M Montero-Odasso; DJ Llewellyn; S Richard-Devantoy; G Duque; O Beauchet. Meta-analysis of memory and executive dysfunctions in relation to vitamin D. J Alzh Dis. 37, 147– 171 (2013) DOI: 10.3233/JAD-130452

D vitamīna papildus lietošana ir efektīva depresijas simptomu mazināšanai pieaugušajiem, ja 25(OH)D līmenis ir virs 50 nmol/l

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> J Affect Disord. 2023 Oct 16:S0165-0327(23)01226-0. doi: 10.1016/j.jad.2023.10.021. Online ahead of print.

The effect of vitamin D supplementation on primary depression: A meta-analysis

Rui Wang [1], Feng Xu [1], Xuedi Xia [1], An Xiong [1], Dexing Dai [1], Yali Ling [1], Ruoman Sun [1], Lei Qiu [1], Ya Ding [1], Zhongjian Xie [2]

Affiliations + expand

PMID: 37852593 DOI: 10.1016/j.jad.2023.10.021

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Depresijas simptomu smagums korelē ar kaulu blīvumu (ietekmē fiziskā aktivitāte, bet ne D vitamīna līmenis vai iekaisums) 7273 dalībnieki

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J Affect Disord. 2023 Oct 11:344:277-283. doi: 10.1016/j.jad.2023.10.062. Online ahead of print.

Link between depression and bone mineral density in Cooper Center Longitudinal Study: Indirect effects of vitamin D, inflammation, and physical activity

Chengxi Li [1], Jayme M Palka [1], Nora Abdullah [1], Adrienne Adler-Neal [1], Barbara Banner [1], Brayden Efseroff [1], Cassandra Jones [1], Isabel Clark [1], Marisela Munoz-Puga [1], Nicholas Boswell [1], Brittany Karlay [1], Rija Siddiqui [1], Sarah Hergert [1], Scott Newton [1], Sravan Narapureddy [1], Vincent Tran [1], David Leonard [2], Laura F DeFina [2], Carolyn E Barlow [2], E Sherwood Brown [3]

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PMID: 37827262 DOI: 10.1016/j.jad.2023.10.062

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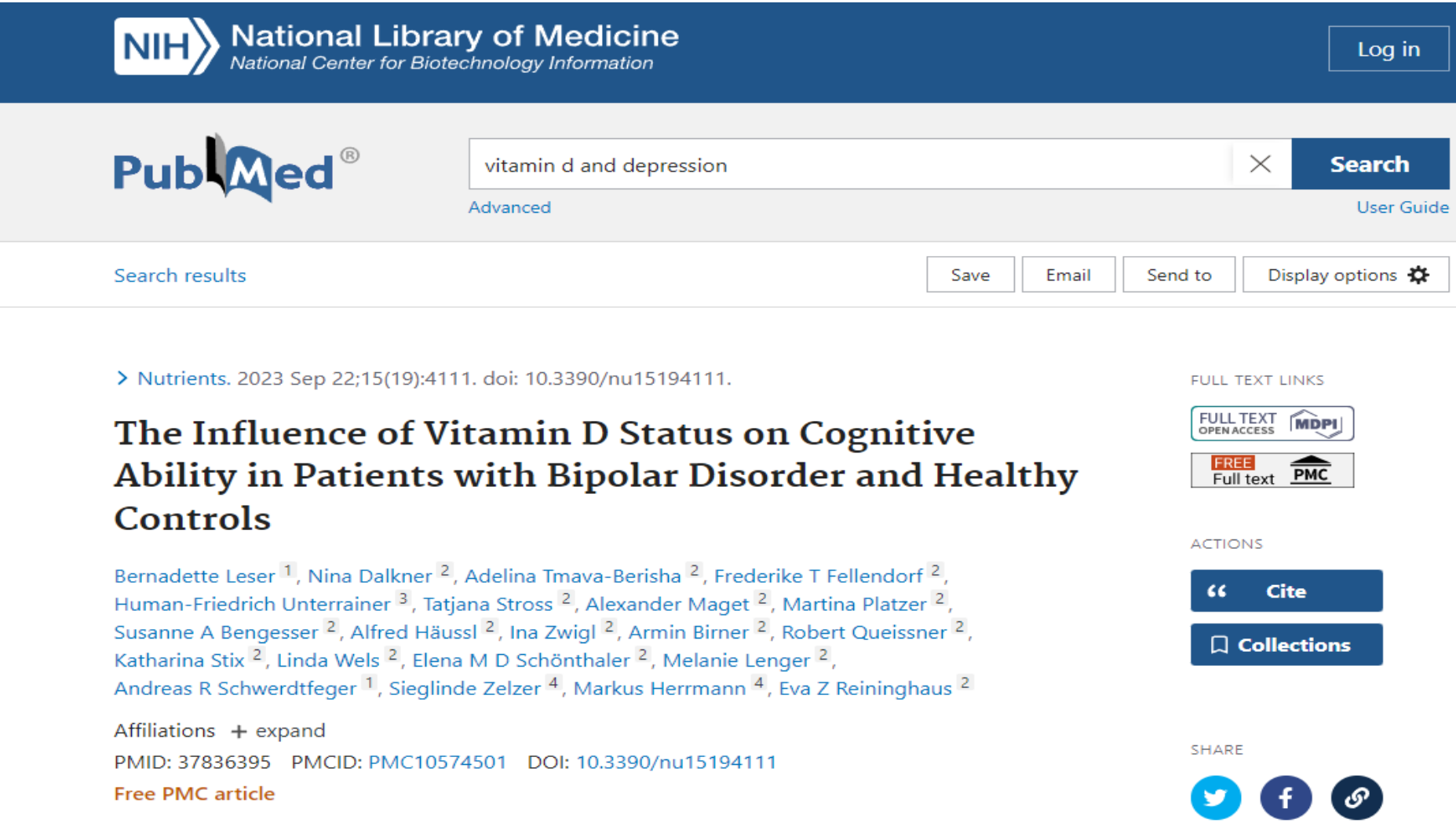
Nav saistības D vitamīna līmenim un bipolāras depresijas kognitīviem domēniem (86 pacienti/93 kontroles grupa)



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> Nutrients. 2023 Sep 22;15(19):4111. doi: 10.3390/nu15194111.

The Influence of Vitamin D Status on Cognitive Ability in Patients with Bipolar Disorder and Healthy Controls

Bernadette Leser [1], Nina Dalkner [2], Adelina Tmava-Berisha [2], Frederike T Fellendorf [2], Human-Friedrich Unterrainer [3], Tatjana Stross [2], Alexander Maget [2], Martina Platzer [2], Susanne A Bengesser [2], Alfred Häussl [2], Ina Zwigl [2], Armin Birner [2], Robert Queissner [2], Katharina Stix [2], Linda Wels [2], Elena M D Schönthaler [2], Melanie Lenger [2], Andreas R Schwerdtfeger [1], Sieglinde Zelzer [4], Markus Herrmann [4], Eva Z Reininghaus [2]

Affiliations + expand

PMID: 37836395 PMCID: PMC10574501 DOI: 10.3390/nu15194111

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D vitamīna augstāks līmenis sekmē zemāku depresijas risku pusaudžiem (1807 jaunieši, 12 gadi vidējais vecums). Labāks efekts vīriešiem. D vitamīna papildus lietošana efektīva depresijas riska mazināšanai

Psychol Med. 2023 Sep;53(12):5852-5860. doi: 10.1017/S0033291722003117. Epub 2022 Oct 18.

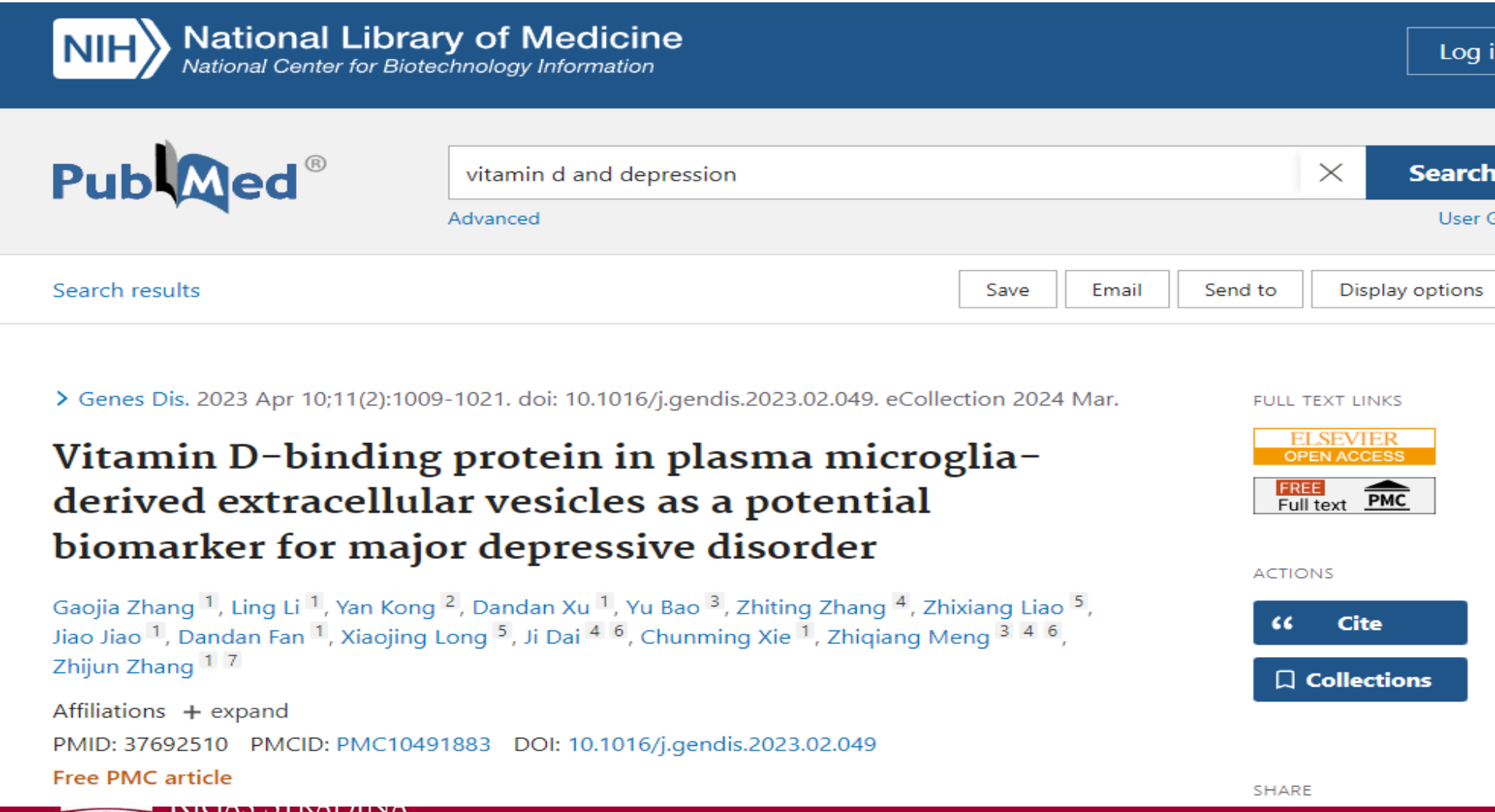
Vitamin D and depressive symptoms in an early adolescent cohort

Gengfu Wang [1 2 3], Mengyuan Yuan [1], Junjie Chang [1], Yonghan Li [1], Robert Blum [4], Puyu Su [1 2 3]

Affiliations + expand

PMID: 37795689 DOI: 10.1017/S0033291722003117

Vitamīnu D saistošais proteīns varētu būt kandidāts bio marķerim depresijas diagnostikai (plazmā) (20 pacienti/20 kontroles grupa



D vitamīna papildus lietošana uzlabo psihisko veselības stāvokli, mazina depresijas simptomus

Review > Healthcare (Basel). 2023 Aug 1;11(15):2183. doi: 10.3390/healthcare11152183.

Influence of Nutrition on Mental Health: Scoping Review

Lara María Suárez-López [1], Lluna Maria Bru-Luna [2], Manuel Martí-Vilar [1]

Affiliations + expand

PMID: 37570422 PMCID: PMC10418505 DOI: 10.3390/healthcare11152183

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Vitamīns D sekmē serotonīna izstrādi

MINI REVIEW article

Front. Physiol., 27 July 2023

Sec. Gastrointestinal Sciences

Volume 14 - 2023 | https://doi.org/10.3389/fphys.2023.1152958

Vitamin D may alleviate irritable bowel syndrome by modulating serotonin synthesis: a hypothesis based on recent literature

 Xiao-Lan Yu  Cui-Ping Li  Lian-Ping He*

School of Medicine, Taizhou University, Jiaojiang, Zhejiang, China

A number of studies found that serotonin plays a vital role in the development of depression and irritable bowel syndrome. Recent studies showed that vitamin D was associated with regulating the synthesis of serotonin. This review focuses on the recent progress in the relationship between vitamin D and serotonin synthesis.

Vitamīna D trūkums un lielāks vecums asociējas ar augstāku depresijas risku (15156 pieaugušie) vecāka gadagājuma pacientiem

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BMC Psychiatry. 2023 Jul 24;23(1):534. doi: 10.1186/s12888-023-04685-0.

The association of vitamin D deficiency, age and depression in US adults: a cross-sectional analysis

Hongfei Mo [# 1 2], Jipeng Zhang [# 2], Chiwei Huo [2], Mengying Zhang [2], Jiang Xiao [2], Junge Peng [2], Guirong Wang [3], Changhong Wang [4], Yan Li [5 6]

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PMID: 37488550 PMCID: PMC10367360 DOI: 10.1186/s12888-023-04685-0

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Cochrane secinājumi, D vitamīns un psihiskie traucējumi

- Nav pietiekamu pierādījumu, lai secinātu, ka vitamīni sekmētu kognitīvo funkciju saglabāšanu veseliem cilvēkiem virs 40 gadiem

Rutjes AWS, Denton DA, Di Nisio M, Chong LY, Abraham RP, Al-Assaf AS, Anderson JL, Malik MA, Vernooij RWM, Martínez G, Tabet N, McCleery J. Vitamin and mineral supplementation for maintaining cognitive function in cognitively healthy people in mid and late life. Cochrane Database of Systematic Reviews 2018, Issue 12. Art. No.: CD011906. DOI: 10.1002/14651858.CD011906.pub2. Accessed 28 October 2023.

Kopsavilkums

- D vitamīnam ir loma CNS darbībā
- Depresijas patoģenēzē un ārstēšanā D vitamīnam var būt nozīmīga loma
- Pētījumu rezultāti šobrīd nesniedz pietiekamu informāciju D vitamīna iekļaušanai klīniskajās vadlīnijās, bet rezultāti ir cerīgi.

Paldies!

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