

# WYTYCZNE W SUPLEMENTACJI I LECZENIU WITAMINĄ D W EUROPIE ŚRODKOWEJ

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**Wprowadzenie.** Wyniki badań opublikowanych w ostatnich latach sugerują korzyści zdrowotne działania witaminy D na organizm człowieka na wszystkich etapach jego życia. Przeważająca ilość badań epidemiologicznych wskazuje na powszechność występowania niedoborów witaminy D w społeczeństwach Europy Środkowej.  $1\alpha,25$ -dihydroksywitamina D

[1,25(OH)<sub>2</sub>D] – aktywna forma witaminy D – reguluje ekspresję 3-5% genomu. Jej synteza ograniczana jest przez dostępność substratu – 25(OH)D. Stężenie 25(OH)D jest miernikiem stanu zaopatrzenia w witaminę D, a podstawowym celem suplementacji witaminą D jest uzyskanie i utrzymanie odpowiedniego stężenia tego substratu dla zapewnienia potencjalnych korzyści zdrowotnych wynikających z szerokiego spektrum działania witaminy D.

**Metody.** Polski Zespół Wielodyscyplinarny, opierając się na analizie wyników przeglądu literatury, opracował tezy dotyczące zasad suplementacji witaminą D. Opracowane tezy przesłano do członków Komitetu Naukowego konferencji „Witamina D – minimum, maksimum, optimum”, 19-20 października 2012, Warszawa. W trakcie powyższej konferencji omówiono i przedyskutowano propozycje wytycznych suplementacji witaminą D populacji Europy Środkowej.

**Wyniki.** Międzynarodowy Zespół Ekspertów opracował rekomendacje dotyczące a) schematu suplementacji witaminą D i b) dawek witaminy D dla wszystkich grup wiekowych populacji Europy Środkowej. Określono kryteria diagnostyczne charakteryzujące stan zaopatrzenia organizmu w witaminę D: deficyt witaminy D ustalono jako stężenie 25(OH)D <20 ng/mL (<50 nmol/L), suboptymalne zaopatrzenie jako stężenie 25(OH)D wynoszące 20-30 ng/mL (50-75 nmol/L), a stężenie 30-50 ng/mL (75-125 nmol/L) uznano za docelowe dla zapewnienia efektu plejotropowego witaminy D.

**Wnioski.** Poprawa obecnego stanu zaopatrzenia witaminy D w grupach dzieci, młodzieży, osób aktywnych zawodowo i seniorów powinna zostać włączona do priorytetów polityki zdrowotnej społeczeństw Europy Środkowej.

## RECOMMENDATIONS ON VITAMIN D SUPPLEMENTATION IN CENTRAL EUROPE

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**Background.** Adequate vitamin D intake and its concentration in serum are important for bone health and calcium-phosphate metabolism as well as for optimal function of many organs and tissues. Documented trends in lifestyle, nutritional habits and physical activity appear to be associated with moderate or severe vitamin D deficits resulting in health problems. Most epidemiological studies suggest that vitamin D deficiency is prevalent among Central European populations.  $1\alpha,25$ -dihydroxyvitamin D [ $1\alpha,25(\text{OH})_2\text{D}$ ], an active form of vitamin D regulates 3-5% of genome. Its synthesis is permanently limited by substrate shortage 25(OH)D. Therefore, proper serum 25(OH)D concentration is the primary target, and achievement and maintenance of proper vitamin D status is crucial for vitamin D effectiveness and health benefits.

**Methods.** After reviewing the epidemiological evidence and relevant literature, Polish multidisciplinary group formulated theses on recommendations for vitamin D screening and supplementation in the general population. These theses were subsequently sent to Scientific Committee members of the "Vitamin D – minimum, maximum, optimum" conference for evaluation based on a 10-point scale. With numerous international attendees, the meeting "Vitamin D – minimum, maximum, optimum" was held on October 19-20 2012 in Warsaw (Poland). Most recent scientific evidence of both skeletal and non-skeletal effects of vitamin D as well as results of

panelists' voting were reviewed and discussed during eight plenary sessions and two workshops.

**Results.** The international Panel of Experts established recommendations on a) vitamin D supplementation scheme and b) vitamin D doses for general population of Central Europe. The key opinion leaders established ranges of serum 25-hydroxyvitamin D concentration indicating vitamin D deficiency [ $<20$  ng/mL ( $<50$  nmol/L)], suboptimal status [20-30 ng/mL (50-75 nmol/L)] and target concentration for optimal vitamin D effects [30- 50 ng/mL (75-125 nmol/L)].

**Conclusions.** General practical guidelines regarding supplementation and updated recommendations for prophylactic vitamin D intakes in Central European neonates, infants, children and adolescents as well as in adults (including recommendations for pregnant and breastfeeding women and the elderly) were developed. Improving the vitamin D status of children, adolescents, adults and seniors must be included in the priorities of physicians, healthcare professionals and healthcare regulating bodies.