



## Selección de Resúmenes de Menopausia

Semana del 1 al 7 de agosto de 2018

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### **Effect of a 12-month exercise intervention on leukocyte telomere length: Results from the ALPHA Trial.**

Friedenreich CM, Wang Q, Ting NS, Brenner DR, Conroy SM, McIntyre JB, Mickle A, Courneya KS, Beattie T.

**BACKGROUND:** Short telomeres may indicate a higher risk of cancer and other chronic diseases. Some observational studies show positive associations between leukocyte telomere length (LTL) and physical activity levels. We hypothesized, therefore, that exercise may be one strategy for slowing telomere attrition. **METHODS:** We conducted an ancillary analysis of blood from a year-long, two-centred, two-armed (1:1) randomized controlled trial of aerobic exercise versus usual inactivity. The analysis included 212 physically inactive, disease-free, non-smoking, postmenopausal women (n=99 exercisers, n=113 controls) in Alberta, Canada (2003-2006). The exercise prescription was aerobic exercise five days/week (supervised three days/week), 45 min/session, achieving 70-80% heart rate reserve. Baseline and 12-month LTL were analyzed using quantitative real-time polymerase chain reactions (qPCR). The primary statistical analysis was intention-to-treat, comparing the ratio of mean LTLs (12-months: baseline) for exercisers versus controls from a general linear model. Secondary analyses included a per-protocol analysis ( $\geq 90\%$  adherence) and analyses stratified by baseline LTL, age, body mass index, and fitness level, respectively. **RESULTS:** Participants were overweight at baseline (mean BMI = 29 kg/m<sup>2</sup>). The primary analysis showed no evidence that LTL change differed between groups (12-month mean LTL change for the exercise group: -13% (95% CI: -32%, 11%) versus controls: -8% (95% CI: -27%, 15%); treatment effect ratio (TER, Exercise/Control) = 0.95 (95% CI: 0.68, 1.32). Per-protocol results were similar (TER = 0.87, 95% CI: 0.59, 1.30). In stratified models, TERs ranged from 0.68 to 1.35 across strata and P-interaction > 0.05). **CONCLUSION:** We found no evidence to suggest that one year of aerobic exercise alters telomere attrition significantly in healthy postmenopausal women.

**J Orthop Surg Res. 2018 Aug 2;13(1):194. doi: 10.1186/s13018-018-0865-3.**

### **Denosumab compared to bisphosphonates to treat postmenopausal osteoporosis: a meta-analysis.**

Wu J, Zhang Q, Yan G, Jin X.

**BACKGROUND:** The standard treatment for osteoporosis was controversial. Denosumab and bisphosphonates were two most common drugs. The purpose of this study was to compare the efficacy and safety of denosumab with bisphosphonates to treat osteoporosis. **METHODS:** Published literatures, only including randomized controlled trials (RCTs), were searched in the following electronic databases: PubMed, Embase, Web of Science, Cochrane Library, and Google database from inception to April 20 2018. Studies that compared denosumab with bisphosphonates to treat osteoporosis were included. Random-effect model was used for meta-analysis due to the unavoidable clinical heterogeneity. We used the risk of fracture as the primary outcome. Stata 12.0 was used for meta-analysis. **RESULTS:** Eleven studies involving 5446 patients (denosumab = 2873, bisphosphonates = 2573) were included in the present meta-analysis. There was no significant difference between the risk of fracture (risk ratio (RR), 1.13; 95% confidence interval (CI), 0.82-1.55; P = 0.466), adverse events (AEs) (RR 1.00; 95% CI 0.96-1.04; P = 0.957) and withdrawn due to AEs (RR 0.68; 95% CI 0.34-1.37; P = 0.280). Denosumab compared with bisphosphonates significantly increased change in total hip, femoral neck, lumbar spine, and one-third radius bone mineral density (BMD) for postmenopausal osteoporosis patients (P < 0.05). **CONCLUSIONS:** Our meta-analysis suggested that denosumab but not bisphosphonates significantly increased change in total hip, femoral neck, lumbar spine, and one-third radius BMD for postmenopausal osteoporosis patients. Current evidence suggested no benefit of denosumab for reducing risk of fracture than bisphosphonates. More long-term follow-up RCTs are needed to identify the potential complications of denosumab.

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## **Relationship between age, osteoporosis and coronary artery calcification detected by high-definition computerized tomography in Chinese elderly men.**

Liu Y, Fu S, Bai Y, Luo L, Ye P.

**BACKGROUND:** Few studies have analyzed the relationship between bone mineral density (BMD) and coronary artery calcification (CAC) in older men, and it remains subject to debate. The present study was designed to evaluate the age-related acceleration of osteoporosis and CAC, as well as the relationship between BMD and CAC in Chinese elderly men. **METHODS:** Participants included 120 men older than 60 years. CAC was measured with high-definition computerized tomography. It is a highly sensitive technique for detecting the CAC and provides the most accurate CAC scores up to date. **RESULTS:** Mean (standard deviation) age was 73 (8.5) years. For osteoporosis, there was a strongly inverse correlation between age and BMD of all scanned body parts ( $p < 0.05$  for all) except the lumbar spine 1-4 ( $p > 0.05$  for all). For CAC, there was a moderately positive correlation of agatston, volume and mass scores with age. CAC was present in 67% of participants. There was no significant correlation between all kinds of CAC scores including agatston, volume and mass scores, and BMD of all scanned body parts including lumbar spine 1-4, femoral neck, femoral trochanter and total femur ( $p > 0.05$  for all). BMD of all these body parts had no ability to identify the CAC ( $p > 0.05$  for all). Furthermore, on multiple linear regression analysis, the relationship between CAC scores and BMD remained statistically non-significant. **CONCLUSIONS:** Age constituted an important factor common for loss of BMD and development of CAC detected by HDCT, and no direct relationship was observed between osteoporosis and CAC in Chinese elderly men.

**Obes Surg. 2018 Aug 1. doi: 10.1007/s11695-018-3430-6. [Epub ahead of print]**

## **Serum 25-Hydroxyvitamin D in Obese Spanish Adults: the Camargo Cohort Study.**

Olmos JM, Hernández JL, Pariente E, Martínez J, González-Macías J.

**OBJECTIVES:** To describe the 25(OH)D status in Spanish obese postmenopausal women and men  $\geq 50$  years, to compare their results with those of the overweight or normal weight population, and to determine whether differences are observed between both sexes and with seasonal variation throughout the year. **PATIENTS AND METHODS:** We studied 2597 subjects (1826 postmenopausal women and 771 men  $\geq 50$  years). Serum concentrations of 25(OH)D, intact parathyroid hormone (PTH), aminoterminal propeptide of type I collagen (PINP), and C-terminal telopeptide of type I collagen (CTX) were determined by electrochemiluminescence (Elecsys 2010, Roche). Bone mineral density (BMD) was measured by DXA. Participants were divided according to body mass index (BMI) groups (normal  $\geq 20$  and  $< 25$  kg/m<sup>2</sup>, overweight  $\geq 25$  and  $< 30$  kg/m<sup>2</sup>, or obese  $\geq 30$  kg/m<sup>2</sup>). **RESULTS:** Obese people had lower serum 25(OH)D values ( $20.9 \pm 8.2$  ng/ml) than overweight ( $23.3 \pm 8.8$  ng/ml;  $p < 0.0001$ ) or normal-weight subjects ( $24.4 \pm 8.9$  ng/ml;  $p < 0.0001$ ). They have also lower levels of both PINP and CTX. In contrast, PTH concentrations and BMD values were higher in obese individuals. When stratifying by sex, the difference in serum concentration of 25(OH)D remained significant in women, but not in men, persisted throughout the year, and was inversely correlated with BMI and waist circumference. **CONCLUSIONS:** Despite lower serum 25(OH)D concentrations and higher PTH levels, obese and overweight women have higher lumbar spine and hip BMD and lower bone remodeling markers than normal weight women, suggesting that low serum 25(OH)D levels do not negatively affect bone health.

**Cancer Epidemiol Biomarkers Prev. 2018 Aug 1. pii: cebp.0468.2018. doi: 10.1158/1055-9965.EPI-18-0468. [Epub ahead of print]**

## **Can dietary and physical activity modifications reduce breast density in postmenopausal women? The DAMA study, a randomized intervention trial in Italy.**

Masala G, Assedi M, Sera F, Ermini I, Occhini D, Castaldo M, Pierpaoli E, Caini S, Bendinelli B, et al.

**BACKGROUND:** Few randomized trials have been carried out to evaluate the effect of lifestyle modifications on mammographic breast density (MBD). The randomized 2x2 factorial DAMA trial aimed to evaluate whether MBD can be reduced in post-menopausal women with high baseline MBD by a 24-months dietary and/or physical activity (PA) interventions. **METHODS:** We randomized healthy post-menopausal women, attending the Florence (Italy) mammographic screening program, aged 50-69 years, non-smokers, with MBD  $> 50\%$  and no recent hormone

therapy, to: a) a dietary intervention focused on plant-foods, with a low glycemic load, low in saturated fats and alcohol; b) a PA intervention combining daily moderate intensity activities and one weekly supervised session of more strenuous activity; c) both interventions; d) general recommendations. We evaluated changes in MBD based on Volpara™ estimates comparing baseline and follow-up digital mammograms by an intention-to-treat-analysis. RESULTS: MBD measures were available for 226 participants. An interaction emerged between treatments and thus we run analyses by arms. A decrease in volumetric percent density emerged for women in the dietary intervention (ratio 0.91; 95%CI 0.86-0.97;  $p=0.002$ ) and in the PA intervention arm (0.93; 95%CI 0.87-0.98;  $p=0.01$ ) in comparison with controls. No clear effect emerged in the double intervention arm. CONCLUSIONS: This intervention trial suggests that a 24-months dietary or PA intervention may reduce MBD in postmenopausal women. IMPACT: A modification of dietary habits or an increase in PA in postmenopausal women may reduce MBD. Further studies are needed to confirm these findings for planning breast cancer preventive strategies.

**Prev Med Rep. 2018 May 9;11:15-22. doi: 10.1016/j.pmedr.2018.05.007. eCollection 2018 Sep.**

## **Body composition and physical function in the Women's Health Initiative Observational Study.**

Bea JW, Going SB, Wertheim BC, Bassford TL, LaCroix AZ, Wright NC, Nicholas JS, Heymsfield SB, Chen Z.

Physical function is critical for mobility and quality of life. We hypothesized that higher total lean mass is associated with higher physical function, and body fat inversely associated, among postmenopausal women. Women's Health Initiative Observational Study participants at Pittsburgh, PA; Birmingham, AL; and Tucson-Phoenix, AZ (1993-1998) completed dual-energy X-ray absorptiometry scans and the Rand SF-36 questionnaire at baseline and 3 y (N = 4526). Associations between quartiles (Q1-4) of lean or fat mass and physical function were tested using linear regression, adjusted for demographics, lifestyle factors, medical history, and scanner serial number. At baseline, participants had a mean  $\pm$  SD age of  $63.4 \pm 7.4$  y and BMI of  $27.4 \pm 5.8$  kg/m<sup>2</sup>. Higher percent lean mass was positively associated with physical function at baseline (Q4,  $83.6 \pm 0.6$  versus Q1,  $74.6 \pm 0.7$ ;  $p < 0.001$ ), while fat mass (kg and %) was inversely associated (e.g., Q4,  $73.7 \pm 0.7$  versus Q1,  $84.2 \pm 0.7$  kg;  $p_{\text{trend}} < 0.001$ ). Physical function had declined across the cohort at 3 y; the highest relative lean mass quartile at baseline conferred a lesser decline in physical function than the lowest (Q4,  $-3.3 \pm 0.6$  versus Q1  $-7.0 \pm 0.6$ ;  $p_{\text{trend}} < 0.001$ ), while the highest fat mass quartile (% and kg) conferred greater decline (ex. Kg Q4,  $-6.7 \pm 0.7$  versus Q1  $-2.8 \pm 0.6$ ;  $p_{\text{trend}} < 0.001$ ). Increased fat mass ( $\geq 5\%$ ), but not lean mass, was associated with lower physical function at 3 y ( $p < 0.001$ ). Adiposity, as well as lean mass, requires consideration in the prediction of physical function among postmenopausal women over time.

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## **Contribution of Android and Gynoid Adiposity to Bone Mineral Density in Healthy Postmenopausal Thai Women.**

Namwongprom S, Rojanasthien S, Wongboontan C, Mangklabruks A.

Dual-energy X-ray absorptiometry (DXA) is one of the major tools for assessing the whole body and regional body composition and body adiposity. Various body composition parameters including android fat mass (AFM), gynoid fat mass (GFM), and android-to-gynoid fat ratio (AG fat ratio) obtained from whole body DXA can be used as a reliable surrogate marker for regional body composition analysis. This study aimed to explore the contribution of android and gynoid adiposity to bone mineral density (BMD) in healthy postmenopausal Thai women. This cross-sectional study enrolled 1448 healthy Thai women, ages 40-90 without medication history or known disease affecting the BMD. Lumbar spine (LS), total femur, and femoral neck BMDs, AFM, GFM, and AG fat ratio were measured by DXA. To evaluate the contribution of android and gynoid adiposity with various measures of BMDs, univariable and multivariable linear regression analyses were used to estimate the regression coefficients. AFM, GFM, and AG fat ratio had a significant positive association with BMD of all measured sites ( $p < 0.001$ ) in the univariate analysis. The strongest association was found between AG fat ratio and LS BMD ( $\beta = 0.156$ ,  $p \leq 0.001$ ). In multivariate linear regression analysis, the results continued to show a positive association between AFM and GFM at all skeletal sites after adjusting for age, height, and total body lean mass. Relationship between AG fat ratio and BMD was found only in LS region. GFM had a strongest positive effect with BMD at the LS, total femur, and femoral neck regions. Higher android and gynoid adiposity was associated with higher BMD. GFM rather than AFM shows the strongest positive association with BMDs in postmenopausal Thai women.

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## **Impact of Osteoporosis on the Risk of Dementia in Almost 60,000 Patients Followed in General Practices in Germany.**

Kostev K, Hadji P, Jacob L.

**BACKGROUND:** There has been in recent decades a growing interest in the relationship between osteoporosis and cognitive decline. **OBJECTIVE:** The goal of this study was to analyze the impact of osteoporosis on the risk of dementia in patients followed for up to 20 years in general practices in Germany. **METHODS:** This study included patients who received an initial diagnosis of osteoporosis and were followed by 1,215 general practitioners in Germany between January 1993 and December 2012 (index date). Controls were matched (1:1) to osteoporosis patients using propensity scores based on age, gender, index year, comorbidities, and co-therapies. Kaplan-Meier curves were performed to study the development of dementia separately in men and women with or without osteoporosis within 20 years of the index date. Cox proportional regression models were used to estimate the relationship between osteoporosis and dementia in men and women. **RESULTS:** The present study included 29,983 cases and 29,983 controls. After 20 years of follow-up, 20.5% of women with osteoporosis and 16.4% of controls had been diagnosed with dementia (log-rank p-value <0.001). At the end of the follow-up period, dementia was found in 22.0% of men previously diagnosed with osteoporosis and 14.9% of men without this chronic condition (log-rank p-value <0.001). Osteoporosis was associated with a 1.2-fold increase in the risk of being diagnosed with dementia in women and a 1.3-fold increase in the risk of being diagnosed with dementia in men. **CONCLUSIONS:** There was a positive association between osteoporosis and dementia in patients followed in general practices in Germany.