

## Selección de Resúmenes de Menopausia

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### **Dynapenia and Low Cognition: A Cross-Sectional Association in Postmenopausal Women**

Julie A Pasco<sup>1 2 3 4</sup>, Amanda L Stuart<sup>1</sup>, Sophia X Sui<sup>1</sup>, Kara L Holloway-Kew<sup>1</sup>, Natalie K Hyde et al. Dynapenia is a key contributor to physical frailty. Cognitive impairment and dementia accompany frailty, yet links between skeletal muscle and neurocognition are poorly understood. We examined the cross-sectional relationship between lower limb muscle strength and global cognitive function. Participants were 127 women aged 51-87 years, from the Geelong Osteoporosis Study. Peak eccentric strength of the hip-flexors and hip abductors was determined using a hand-held dynamometer, and dynapenia identified as muscle strength t-scores < -1. Cognition was assessed using the Mini-Mental State Examination (MMSE), and MMSE scores below the median were rated as low. Associations between dynapenia and low cognition were examined using logistic regression models. Hip-flexor dynapenia was detected in 38 (71.7%) women with low cognition and 36 (48.7%) with good cognition ( $p = 0.009$ ); for hip abductor dynapenia, the pattern was similar (21 (39.6%) vs. 9 (12.2%);  $p < 0.001$ ). While the observed difference for hip-flexor strength was attenuated after adjusting for age and height (adjusted Odds Ratio (OR) 1.95, 95%CI 0.86-4.41), low cognition was nearly 4-fold more likely in association with hip abductor dynapenia (adjusted OR 3.76, 95%CI 1.44-9.83). No other confounders were identified. Our data suggest that low strength of the hip abductors and low cognition are associated and this could be a consequence of poor muscle function contributing to cognitive decline or vice versa. As muscle weakness is responsive to physical interventions, this warrants further investigation.

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### **Milk consumption and multiple health outcomes: umbrella review of systematic reviews and meta-analyses in humans**

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In order to recapitulate the best available evidence of milk consumption and multiple health-related outcomes, we performed an umbrella review of meta-analyses and systematic reviews in humans. Totally, 41 meta-analyses with 45 unique health outcomes were included. Milk consumption was more often related to benefits than harm to a sequence of health-related outcomes. Dose-response analyses indicated that an increment of 200 ml (approximately 1 cup) milk intake per day was associated with a lower risk of cardiovascular disease, stroke, hypertension, colorectal cancer, metabolic syndrome, obesity and osteoporosis. Beneficial associations were also found for type 2 diabetes mellitus and Alzheimer's disease. Conversely, milk intake might be associated with higher risk of prostate cancer, Parkinson's disease, acne and Fe-deficiency anaemia in infancy. Potential allergy or lactose intolerance need for caution. Milk consumption does more good than harm for human health in this umbrella review. Our results support milk consumption as part of a healthy diet. More well-designed randomized controlled trials are warranted.

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### **The significance of height loss in postmenopausal women. The results from GO Study**

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The aim of the study was the assessment of clinical significance of height loss (HL) in female population. Material: The study cohort was recruited from GO Study. Data from 1735 postmenopausal women aged over 55 years (mean age  $68.15 \pm 8.16$  years) were analyzed. Methods: Data on clinical risk factors for osteoporosis and fractures were collected. Bone densitometry at hip was performed using a device Prodigy (GE, USA). Height was established using stadiometer and was compared with maximal height in early adulthood. Results: The mean HL was  $3.9 \pm 3.2$  cm. HL was significantly higher in women with fractures in comparison to those without fracture ( $4.9 \pm 3.6$  cm vs.  $3.4 \pm 2.8$  cm;  $p < 0.0001$ ). HL increased with the number of fractures, and was  $4.1 \pm 3.2$  cm,  $5.3 \pm 3.5$  cm and  $6.7 \pm 4.1$  cm in women with one, two and three or more fractures, respectively. Women with spine fractures presented with HL higher in comparison to all the

other subjects ( $6.3 \pm 3.9$  versus  $3.6 \pm 2.9$  cm,  $p < 0.0001$ ) and women with all non-spine fractures ( $6.3 \pm 4.0$  versus  $4.0 \pm 3.0$  cm,  $p < 0.0001$ ). In women with steroid use and falls HL was significantly greater than in subjects without this factor. HL correlated significantly with age and BMI (positively) and current height (negatively). Mean T-score for FN BMD was  $-1.75 \pm 0.9$  and correlate significantly with HL ( $r = -0.21$ ,  $p < 0.0001$ ). For the HL threshold above 4 cm, the fracture incidence was above 50%. Conclusion: Height loss value is a simple and very informative measure describing fracture risk and functional status in postmenopausal women. HL exceeding 4 cm is related to fracture probability above 50%.

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### **Association between body mass index and the risk of falls: a nationwide population-based study**

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**Purpose:** This study examined the sex-specific association between body mass index (BMI) and falls in Korean adults using data from a large population-based survey. **Methods:** We analyzed 113,805 men and women (age  $\geq 50$  years) who participated in the Korean Community Health Survey in 2013. Logistic regression was used to assess the relationship between BMI and falls. **Results:** The mean ( $\pm$  standard deviation) age and BMI of all participants were  $63.8 \pm 9.6$  years and  $23.2 \pm 2.9$  kg/m<sup>2</sup>, respectively. Among the 113,805 subjects, 19.1% and 6.7% had histories of falls and recurrent falls, respectively. The association of BMI with recurrent falls differed between men and women. The multivariable-adjusted odd ratios (ORs) for recurrent falls were 0.98 (95% confidence interval [CI] 0.86-1.12), 1.23 (1.14-1.32), and 1.51 (1.26-1.81) in women with BMIs of  $< 18.5$ , 25-29.9, and  $\geq 30$  kg/m<sup>2</sup>, respectively, relative to those with BMIs of 18.5-24.9 kg/m<sup>2</sup>. The corresponding ORs for men were 1.20 (95% CI 1.01-1.42), 1.05 (0.96-1.14), and 0.97 (0.69-1.38), respectively. Older age and low economic level were associated independently with higher ORs of recurrent falls in men and women, respectively. In addition, comorbidities, including diabetes, stroke, arthritis, osteoporosis, and asthma, correlated significantly with an increased risk of recurrent falls (all  $p < 0.001$ ). **Conclusions:** Obesity was associated with a greater risk of recurrent falls in women, whereas underweight seemed to be associated with a greater risk of falls in men.

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### **The diabetes-fracture association in women with type 1 and type 2 diabetes is partially mediated by falls: a 15-year longitudinal study**

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**Purpose:** Skeletal fragility is associated with diabetes mellitus, while limited estrogen exposure during the reproductive years also predisposes to lower bone mass and higher fracture risk. We aimed to determine osteoporosis diagnosis, fall and fracture rates in women with type 1 (T1D) and type 2 (T2D) diabetes mellitus, and explore mediators of the diabetes-fracture relationship. **Methods:** Prospective observational data drawn from the Australian Longitudinal Study in Women's Health (ALSWH) from 1996 to 2010. Women were randomly selected from the national health insurance database. Standardized data collection occurred at six survey time points, with main outcome measures being self-reported osteoporosis, incident fracture, falls, and reproductive lifespan. Mediation analyses were performed to elucidate relevant intermediaries in the diabetes-fracture relationship. **Results:** Exactly 11,313 women were included at baseline (T1D,  $n = 107$ ; T2D,  $n = 333$ ; controls,  $n = 10,873$ ). A total of 885 new cases of osteoporosis and 1099 incident fractures were reported over 15 years. Women with T1D or T2D reported more falls and fall-related injuries; additionally, women with T1D had a shorter reproductive lifespan. While fracture risk was increased in women with diabetes (T1D: OR 2.28, 95% CI 1.53-3.40; T2D: OR 2.40, 95% CI 1.90-3.03), compared with controls, adjustment for falls attenuated the risk of fracture by 10% and 6% in T1D and T2D, respectively. In women with T1D, reproductive lifespan modestly attenuated fracture risk by 4%. **Conclusion:** Women with T1D and T2D have an increased risk of fracture, which may be partially explained by increased falls, and to a lesser extent by shorter reproductive lifespan, in T1D.

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### **Hormone replacement therapy - where are we now?**

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Hormone replacement therapy (HRT) was the standard of care for menopause management until 2002, when perceptions changed following release of the initial results from the Women's Health Initiative (WHI) trial. Fears of breast cancer

and heart attacks engendered by that report were not supported by the data, especially for recently menopausal women. Clinically, HRT is usually initiated near menopause. The WHI tested something different - the effects of HRT started a decade or more after menopause. As it turned out, age at starting HRT is critical in determining benefit/risk. HRT use plummeted following the WHI in 2002 and has remained low, prompting strong interest in alternative treatments. None provide the range of benefits across multiple organ systems offered by estrogen. Most have concerning adverse effects in their own right. HRT can provide effective relief for a wide range of health conditions, potentially avoiding the need for multiple treatments for separate problems. Unfortunately, among many women and clinicians, the perception of HRT benefit/risk is distorted, and its use avoided, leading to unnecessary distress. Following the WHI, many clinicians have not received adequate training to feel comfortable prescribing HRT. When initiated within 10 years of menopause, HRT reduces all-cause mortality and risks of coronary disease, osteoporosis, and dementias.

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## **Bariatric Surgery and Osteoporosis**

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It has been increasingly acknowledged that bariatric surgery adversely affects skeletal health. After bariatric surgery, the extent of high-turnover bone loss is much greater than what would be expected in the absence of a severe skeletal insult. Patients also experience a significant deterioration in bone microarchitecture and strength. There is now a growing body of evidence that suggests an association between bariatric surgery and higher fracture risk. Although the mechanisms underlying the high-turnover bone loss and increase in fracture risk after bariatric surgery are not fully understood, many factors seem to be involved. The usual suspects are nutritional factors and mechanical unloading, and the roles of gut hormones, adipokines, and bone marrow adiposity should be investigated further. Roux-en-Y gastric bypass (RYGB) was once the most commonly performed bariatric procedure worldwide, but sleeve gastrectomy (SG) has now become the predominant bariatric procedure. Accumulating evidence suggests that RYGB is associated with a greater reduction in BMD, a greater increase in markers of bone turnover, and a higher risk of fracture than SG. These findings should be taken into consideration in determining the most appropriate bariatric procedure for patients, especially those at higher fracture risk. Before and after all bariatric procedures, sufficient calcium, vitamin D and protein intake, and adequate physical activity, are needed to counteract negative impacts on bone. There are no studies to date that have evaluated the effect of osteoporosis treatment on high-turnover bone loss after bariatric surgery. However, in patients with a diagnosis of osteoporosis, anti-resorptive agents may be considered.

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## **Early and surgical menopause associated with higher Framingham Risk Scores for cardiovascular disease in the Canadian Longitudinal Study on Aging**

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**Objective:** In women, the risk of cardiovascular disease (CVD) is higher in the postmenopausal period. The effect that menopausal type, natural versus surgical, or the age at natural menopause has on CVD needs further investigation. To this end, we assessed the association between menopausal type and timing and the 10-year office-based Framingham Risk Score (FRS) in women from the Canadian Longitudinal Study on Aging. **Methods:** We included women aged 45 to 85 years from the Canadian Longitudinal Study on Aging Comprehensive cohort of seven Canadian provinces who were menopausal at the time of recruitment and had no prior CVD. Poisson regressions were used to evaluate the association between menopausal characteristics and the FRS. Natural menopause was defined as the cessation of menstrual periods for at least 1 year in women with no history of hysterectomy. Surgical menopause was defined as hysterectomy with or without oophorectomy prior to natural menopause. As main covariates, we examined age, education, province of residency, and hormone therapy. **Results:** A total of 10,090 women (8,200 natural menopausal and 1,890 surgical menopausal) were eligible for the study. In the multivariable model, surgical menopause was associated with a higher mean FRS compared with natural menopause (CVD risk 12.4% vs 10.8%,  $P < 0.001$ ). Compared with women with age at natural menopause from 50 to 54 years (CVD risk 10.2%), natural menopause before age 40, 40 to 44, or 45 to 49 had a higher CVD risk (12.2%, 11.4%, and 10.6%, respectively,  $P < 0.001$ ). **Conclusions:** Our study supports an association between menopausal type and timing on CVD risk prediction and highlights the need to be judicious about surgical menopause. Preventative interventions for CVD should be considered in surgical menopausal women and women with an age at natural menopause less than 45 years.

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## **Possible association of early menopause with worse physical function: a systematic review**

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**Importance:** Menopause at younger ages is associated with a greater risk of adverse health outcomes such as osteoporosis, chronic diseases, and death. However, the association with physical function has not been well established. **Objective:** Assess the association between timing of menopause and different measures of physical function. **Evidence review:** Searches on the PubMed, Cochrane Library, SciELO, LILACS, and Web of Science databases were conducted. Observational studies on the association between age at menopause and measures of physical function were included, with no restriction for publication date or language. Methodological quality was assessed by the "Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies." **Findings:** Four cross-sectional studies were included, totaling 13,846 participants. These investigated five measures of physical function: gait speed, grip strength, standing balance, chair stand, and self-reported functional limitations. Poor physical function was associated with premature (<40 y) or early menopause (<45 y) in all the studies, with significant results only for grip strength, gait speed, and functional limitation. Premature and early menopause were associated with weaker grip strength [between 2.58 kg (95% CI = 0.74 to 4.43) and 5.21 kg (2.18 to 8.25)], and lower gait speed [between 0.03 m/s (0.01 to 0.06) and 0.06 m/s (0.02 to 0.09)]. Menopause after the age of 50 is associated with less likelihood of functional limitation [OR between 0.52 (95% CI = 0.29 to 0.95) and 0.61 (0.40 to 0.95)] compared with premature and early menopause. Two measures of physical function (chair stand test and standing balance) were not significantly associated with age at menopause. **Conclusion:** Only four cross-sectional studies showed that earlier ages at menopause are associated with poor physical function (grip strength, gait speed, and self-reported functional limitations), but given the high heterogeneity of the studies, no consensus is possible. Longitudinal studies are needed to explore the association between age at menopause and different measures of physical function as well as the influence of different socioeconomic conditions between countries on functioning.