Selección de Resúmenes de Menopausia

Semana del 3 a 9 de agosto 2022

María Soledad Vallejo. Clínica Quilín. Universidad de Chile

Pol Arch Intern Med. 2022 Aug 4;16311. doi: 10.20452/pamw.16311. Online ahead of print.

Unravelling the relationship between serum 25-hydroxyvitamin D levels and trabecular bone score in U.S. adults

Shih-Wei Yang, Yu-Jen Lin, Yung-Wen Cheng, Yuan-Yuei Chen, Wei-Liang Chen

Introduction: The trabecular bone score (TBS) is a novel way for clinicians to evaluate bone quality. It is directly associated with bone mechanical strength and helps predict fracture. Vitamin D, a secosteroid that enhances calcium absorption, is commonly used to strengthen the skeletal system. Objectives: The present analysis aimed to determine the relationship between vitamin D levels and TBS by analyzing data from the National Health and Nutrition Examination Survey (NHANES). Patients and methods: We enrolled 4,464 people, including 2,148 males and 2,316 females, in our study. Subjects were analyzed by sex, obesity, and T-score subgroups using regression models. Results: We noted a remarkably positive relationship between serum 25(OH)D levels and TBS after the results were fully adjusted (β:0.319; 95% CI: 0.145-0.494; P <0.001). T-score analysis showed that serum 25(OH)D levels were related to TBS in the normal (T-score > -1) group with 0.311 (95% CI: 0.097-0.525; P = 0.005). However, in the osteopenia (-2.5 < T-score < -1) and osteoporosis (T-score < -2.5) groups, there was no significant association between serum 25(OH)D levels and TBS (P > 0.05). Conclusions: Our study suggests that low serum 25(OH)D levels may decrease the TBS, which represents skeletal microarchitecture and is a fracture risk factor in individuals with normal T scores.

Front Aging Neurosci. 2022 Jul 19;14:948219. doi: 10.3389/fnagi.2022.948219. eCollection 2022.

Ovarian steroid hormones: A long overlooked but critical contributor to brain aging and Alzheimer's disease

Steven Jett, Eva Schelbaum, Grace Jang, Camila Boneu, Jonathan Dyke, Silky Pahlajani, Roberta Diaz Brinton, et al.

Ovarian hormones, particularly 17β-estradiol, are involved in numerous neurophysiological and neurochemical processes, including those subserving cognitive function. Estradiol plays a key role in the neurobiology of aging, in part due to extensive interconnectivity of the neural and endocrine system. This aspect of aging is fundamental for women's brains as all women experience a drop in circulating estradiol levels in midlife, after menopause. Given the importance of estradiol for brain function, it is not surprising that up to 80% of peri-menopausal and post-menopausal women report neurological symptoms including changes in thermoregulation (vasomotor symptoms), mood, sleep, and cognitive performance. Preclinical evidence for neuroprotective effects of 17β-estradiol also indicate associations between menopause, cognitive aging, and Alzheimer's disease (AD), the most common cause of dementia affecting nearly twice more women than men. Brain imaging studies demonstrated that middle-aged women exhibit increased indicators of AD endophenotype as compared to men of the same age, with onset in perimenopause. Herein, we take a translational approach to illustrate the contribution of ovarian hormones in maintaining cognition in women, with evidence implicating menopause-related declines in 17β-estradiol in cognitive aging and AD risk. We will review research focused on the role of endogenous and exogenous estrogen exposure as a key underlying mechanism to neuropathological aging in women, with a focus on whether brain structure, function and neurochemistry respond to hormone treatment. While still in development, this research area offers a new sex-based perspective on brain aging and risk of AD, while also highlighting an urgent need for better integration between neurology, psychiatry, and women's health practices.

J Obstet Gynaecol India. 2022 Aug;72(4):322-329. doi: 10.1007/s13224-021-01518-6. Epub 2021 Jul 12.

Correlation of Menopausal Symptoms with Serum Estradiol: A Study in Urban Indian Postmenopausal Women

Renuka Malik 1, Chanderkala Pokeria 1, Swati Singh 1

Background: Menopause is a hypoestrogenic state. Menopausal symptoms like hot flushes, depression, joint pains and urinary symptoms all correlate with falling estrogen levels. Material and methods: Four hundred postmenopausal women who underwent natural menopause were included in the study conducted from Nov 2018 to March 2020.

Surgical menopause, premature menopause and those on hormone replacement were excluded. Serum estradiol was measured and assessment of severity of menopausal symptoms was done using MRS questionnaire. MRS score of 0-4, 5-8, 9-15 and more than 16 were taken as none/minimal, mild, moderate and severe postmenopausal symptoms, respectively. Correlation between serum estradiol and symptoms was analyzed statistically. Results: Mean age of menopause in our study population was found to be 47.2 ± 3.96 years. Somatic symptoms were found maximum out of all 3 subscales in study population. Psychological subscale which included depression and mood changes was found to have the strongest correlation with serum estradiol level compared to other two subscales (somatic and genito-urinary). Discussion: Psychological symptoms, somatic symptoms and genitor urinary symptoms at menopause show correlation with falling estrogen levels. We found maximum correlation of psychological symptoms with low serum estradiol level. Conclusion: There is an inverse correlation of serum estradiol value with menopausal symptoms, with psychological symptoms (depression, anxiety, mood changes) showing highest correlation with low estrogen levels.

BMC Geriatr. 2022 Aug 3;22(1):639. doi: 10.1186/s12877-022-03313-y.

Low appendicular skeletal muscle mass index is associated with the anthropometric variables of post-menopausal women

Geise Ferreira da Cruz 1, Tatiana Mion Lunz 2, Tatielle Rocha de Jesus 2, Mariana Braga Costa 2, et al.

Background: Skeletal muscle mass is a central component of body composition and its decline is enhanced during aging. We verified the association between the appendicular skeletal muscle mass index (ASMI) with the anthropometric variables, biochemical variables, and lifestyle of postmenopausal women. Methods: Cross-sectional observational study conducted with postmenopausal women. Sociodemographic, clinical, lifestyle, physical activity level, biochemical, and anthropometric markers were collected. Body composition was assessed by dual-energy densitometry. Multivariate logistic regression analysis was applied. Results: One hundred fourteen women aged in average 66.0 ± 5.8 years were evaluated. There was a significant association between ASMI and age ($p = 0.004$), body mass ($p < 0.001$), body mass index (BMI) ($p < 0.001$), adductor pollicis muscle thickness (APMT) ($p < 0.001$), plasma calcium levels ($p = 0.003$), calf circumference (CC), and waist circumference (WC) ($p < 0.001$ for both). Adjusted regression analyses revealed the influence of BMI, CC, and APMT in the 1st tertile of ASMI ($p < 0.05$), BMI and CC in the 2rd tertile of ASMI. Conclusions: ASMI was associated with BMI and muscle mass reserve indicators such as CC and DAPMT. In clinical practice, this indicates that simple, low-cost measures with good applicability can be used to predict and track the risk of depletion of skeletal muscle mass and consequent sarcopenia.

Front Aging Neurosci. 2022 Jul 14;14:800278. doi: 10.3389/fnagi.2022.800278. eCollection 2022.

Sex Hormones, Sleep, and Memory: Interrelationships Across the Adult Female Lifespan

Yasmin A Harrington, Jeanine M Parisi, Daisy Duan, Darlynn M Rojo-Wissar, Calliope Holingue, Adam P Spira.

As the population of older adults grows, so will the prevalence of aging-related conditions, including memory impairments and sleep disturbances, both of which are more common among women. Compared to older men, older women are up to twice as likely to experience sleep disturbances and are at a higher risk of cognitive decline and Alzheimer's disease and related dementias (ADRD). These sex differences may be attributed in part to fluctuations in levels of female sex hormones (i.e., estrogen and progesterone) that occur across the adult female lifespan. Though women tend to experience the most significant sleep and memory problems during the peri-menopausal period, changes in memory and sleep have also been observed across the menstrual cycle and during pregnancy. Here, we review current knowledge on the interrelationships among female sex hormones, sleep, and memory across the female lifespan, propose possible mediating and moderating mechanisms linking these variables and describe implications for ADRD risk in later life.

Clin Imaging. 2022 Jul 26;90:26-31. doi: 10.1016/j.clinimag.2022.06.023. Online ahead of print.

Coronary artery calcium and bone mineral density by serial CTA: Does menopausal hormone therapy modify the association?

Lavanya Cherukuri, April Kinninger, Divya Birudaraju, Eranthi Jayawardena, Venkat Sanjay Manubolu, et al.

Introduction: Both osteoporosis and cardiovascular disease (CVD) increase in women after menopause. Estrogen deficiency is thought to be an underlying mechanism for both these conditions. Methods: Healthy menopausal women

(n = 374, age 42-58 years) underwent cardiac CT scans over four years as participants in the Kronos Early Estrogen Prevention Study (KEEPS), a randomized, controlled trial to Women randomized to either oral conjugated equine estrogens (o-CEE, n = 104), transdermal 17β-estradiol (t-E2, n = 119) or placebo (n-115). CAC (Agatston units, AU), and BMD (mg/cm3) were measured from thoracic vertebrae at baseline and at the 4 years of the study using validated software. ANOVA and multiple linear regression analyzed the association between incident CAC or progression of CAC and BMD among the treatment groups. Results: At baseline 374 women, 40 participants with CAC >0 had greater decrements in BMD than the 334 participants with CAC = 0 at baseline, The average change in BMD in o-CEE group with CAC was -9.6 ± 13.3 versus -3.1 ± 19.5 in those with zero CAC, p = 0.0018. With t-E2, BMD changed by -11.7 ± 26.2 in those with CAC versus +5.7 ± 26.2 in the zero CAC group, p ≤ 0. 0001. Similarly in the 66 participants that showed progression of CAC >1, had more BMD loss, than those with stable CAC regardless of the treatment. Conclusion: Progression of bone loss is reduced among women treated with o-CEE or t-E2. Progression of CAC is associated w ith greater BMD loss, a relationship that is differentially modified by t-E2 and o-CEE.

Sports Med. 2022 Jul 30. doi: 10.1007/s40279-022-01733-9. Online ahead of print.

Mechanisms of Estrogen Influence on Skeletal Muscle: Mass, Regeneration, and Mitochondrial Function

Andrea Pellegrino 1 2 3, Peter M Tiidus 1 2, Rene Vandenboom 4 5 6

Human menopause is widely associated with impaired skeletal muscle quality and significant metabolic dysfunction. These observations pose significant challenges to the quality of life and mobility of the aging population, and are of relevance when considering the significantly greater losses in muscle mass and force-generating capacity of muscle from post-menopausal females relative to age-matched males. In this regard, the influence of estrogen on skeletal muscle has become evident across human, animal, and cell-based studies. Beneficial effects of estrogen have become apparent in mitigation of muscle injury and enhanced post-damage repair via various mechanisms, including prophylactic effects on muscle satellite cell number and function, as well as membrane stability and potential antioxidant influences following injury, exercise, and/or mitochondrial stress. In addition to estrogen replacement in otherwise deficient states, exercise has been found to serve as a means of augmenting and/or mimicking the effects of estrogen on skeletal muscle function in recent literature. Detailed mechanisms behind the estrogenic effect on muscle mass, strength, as well as the injury response are beginning to be elucidated and point to estrogen-mediated molecular cross talk amongst signalling pathways, such as apoptotic signaling, contractile protein modifications, including myosin regulatory light chain phosphorylation, and the maintenance of muscle satellite cells. This review discusses current understandings and highlights new insights regarding the role of estrogen in skeletal muscle, with particular regard to muscle mass, mitochondrial function, the response to muscle damage, and the potential implications for human physiology and mobility.