Selección de Resúmenes de Menopausia

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Coenzyme Q10 ameliorates obesity by promoting white adipose tissue browning and preserving mitochondrial dynamics in ovariectomized rats fed a high-fat diet

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Estrogen deficiency caused by menopause leads to obesity in women. In obesity, excessive visceral fat accumulation induces a chronic, low-grade inflammatory response, thereby increasing the risk of cardiovascular disease, insulin resistance, and type 2 diabetes mellitus. Browning of white adipose tissue (WAT) has emerged as a promising strategy to counteract obesity and related metabolic disorders. Coenzyme Q10 (CoQ10) has been reported to reduce oxidative stress, enhance mitochondria function and improve metabolic syndrome in obese and diabetic animals and patients. In this study, we evaluated whether long-term CoQ10 supplementation could induce WAT browning to ameliorate obesity in ovariectomized (OVX) rats fed a high-fat diet (HFD), and explored the underlying mechanisms. Supplementation with CoQ10 (20 and 40 mg/kg, once daily by gavage) for 12 weeks in OVX rats significantly reduced weight gain, excessive visceral fat accumulation, white adipocyte hypertrophy, plasma triglyceride levels, and glucose intolerance, while increasing energy expenditure compared to OVX rats treated with vehicle ($p < 0.05$). High dose CoQ10 (40 mg/kg) significantly lowered plasma insulin levels, reduced HIF-1α, MCP-1 and IL-6 protein expression, and increased phosphorylated AKT in retroperitoneal WAT ($p < 0.05$). In inguinal WAT (iWAT), CoQ10 enhanced the expression of browning-related proteins including UCP-1, CIDEA, PRDM16, PGC-1α, and phosphorylated AMPK, and elevated plasma irisin levels ($p < 0.05$). CoQ10 also regulated mitochondria dynamics of iWAT, as evidenced by increased MFN1, MFN2, and OPA1, and decreased FIS1 protein expression compared with the OVX group ($p < 0.05$). In 3T3-L1 adipocytes, CoQ10-induced expression of browning markers (UCP-1, TBX1 and PRDM16) was significantly suppressed by dorsomorphin, an AMPK inhibitor, and by AMPK knockdown ($p < 0.05$). In conclusion, long-term CoQ10 supplementation ameliorates weight gain, white adipocyte hypertrophy and inflammation in WAT, and metabolic disorders caused by combined estrogen deficiency and HFD, likely through its WAT browning effect. AMPK activation is suggested to contribute to the browning effect and enhance the expression of proteins involved in mitochondrial dynamics. Therefore, CoQ10 supplementation could be an effective intervention for preventing postmenopausal obesity.

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Resilience and Burnout in Middle-Aged Climacteric Women: A Cross-Sectional Study

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Background: Adverse symptoms associated with menopause can resemble burnout symptoms. Resilience and menopausal symptom-related burnout have not been addressed in middle-aged climacteric women. Objectives: The aim of the study is to investigate the association between resilience and burnout in middle-aged climacteric women. Methods: Two hundred middle-aged women aged 44-55 years were recruited through an online survey panel developed by a survey company. Data were collected using Korean versions of the Copenhagen Burnout Inventory's Personal Burnout Instrument and Brief Resilience Scale. Results: Resilience, living alone, and the absence of menopausal symptoms were significantly associated with reduced burnout. In contrast, the perception of oneself as unhealthy and a body mass index range representing underweight were significantly associated with increased burnout. Findings using mean analysis showed that the more severe the menopausal symptoms are, the higher the burnout score is. Conclusions: Resilience, menopausal symptoms, living alone, the perception of unhealthiness, and a very low body weight should be considered important factors when addressing burnout among middle-aged climacteric women in community and clinical practice. Implications for Nursing: The relationships among burnout, menopausal symptoms, and resilience should be considered in clinical practice.

Ageing Res Rev. 2025 Nov 19:102950. doi: 10.1016/j.arr.2025.102950. Online ahead of print. (FREE)

Aging in Women - the Microbiome Perspective

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Menopause is a hallmark of women's aging and is frequently portrayed as a medical issue. It also encompasses social and biological aspects often neglected and not well-understood, leaving women with insufficient support and attention. With the decline in estrogen levels, starting years before menopause is fully established, women experience various physical symptoms, and the risk of many age-related diseases increases sharply soon after these hormonal changes occur. Notably, these hormonal shifts also significantly impact the vaginal and gut microbiomes, contributing to dysbiosis and influencing the onset and progression of several diseases. Here, we examined the complex and dynamic relationship among aging, menopause, and microbiome changes with a particular focus on the vaginal and gut ecosystems. Emerging research highlights diet as a potential modulator for maintaining microbiome health during menopause. A deeper understanding of microbiome changes across life stages suggests the potential for microbiome-targeted strategies to support well-aging in women.

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Menopause and Mental Health

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Menopause is more than simply the end of menstrual cycles or having hot flushes-it marks a time of profound hormonal change which can cause a range of symptoms from poor sleep to anxiety, low mood, cognitive decline and difficulties with memory. These effects can be life-altering and can lead to social withdrawal, relationship strain and reduced capacity to work. With key neurotransmitter systems including serotonin, allopregnanolone and gamma-aminobutyric acid (GABA) being modulated by fluctuating levels of oestradiol, progesterone and testosterone, some women experience severe hormonally related depression and suicidality, as evidenced by the peak of women's suicide rates in midlife. Despite National Institute of Clinical Excellence (NICE) guidance recommending hormone replacement therapy (HRT) as a first-line treatment for perimenopausal mood disturbance, inconsistencies in clinical knowledge and lack of clinician awareness and confidence in prescribing HRT leave many women feeling unsupported and struggling to improve. By providing individualised menopause management through a biopsychosocial lens, supported by improved clinician training and further research, and offering treatment such as HRT alongside lifestyle and psychological support, there is potential not only to transform the lives of affected women but also to safeguard their long-term health. With nearly 40% of women's lives spent post-menopause, combined with the extensive amount of time women sometimes spend in perimenopause (up to 12%), when mental health challenges are noted to be most acute, effective menopause management should be an urgent public health priority.

Meta-Analysis Front Endocrinol (Lausanne). 2025 Nov 5:16:1703116. doi: 10.3389/fendo.2025.1703116.

The effect of vitamin K2 supplementation on bone turnover biochemical markers in postmenopausal osteoporosis patients: a systematic review and meta-analysis

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Background: Osteoporosis is a metabolic bone disease characterized by decreased bone mass and increased fracture risk. Bone turnover markers, such as osteocalcin (OC), undercarboxylated osteocalcin (ucOC), and other biochemical indicators, are important for assessing bone metabolism. Vitamin K2 influences bone metabolism by enhancing osteocalcin γ-carboxylation. Methods: This study followed PRISMA guidelines and included randomized controlled trials on the effects of vitamin K2 supplementation on bone turnover biomarkers in postmenopausal osteoporosis patients. Key outcomes included changes in OC, ucOC, and other bone metabolism markers. Results: Nine studies with 2,570 participants were included. Vitamin K2 (VK2) increased osteocalcin (OC; MD 1.86, 95% CI 1.17-2.56) and bone-specific alkaline phosphatase (BAP; MD 1.49, 95% CI 0.98-2.00). It reduced undercarboxylated OC (ucOC; WMD -1.54, 95% CI -2.44 to -0.64) and tartrate-resistant acid phosphatase (TRAP; MD -0.83, 95% CI -1.21 to -0.46). C-terminal telopeptide (CTX) showed a small, statistically significant reduction (MD -0.09, 95% CI -0.14 to -0.05) with uncertain clinical relevance. N-telopeptide (NTX) showed no significant change. Conclusions: Vitamin K2 supplementation improves key bone turnover biomarkers, particularly OC and ucOC. These findings support its role in bone metabolism, though further long-term studies are needed to confirm clinical benefits, such as increased bone mineral density.

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Impact of menopausal hormone therapy and physical activity on sexual function among postmenopausal women

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Objectives: This study investigated the association between sexual function and both menopausal hormone therapy and physical activity among postmenopausal women. Methods: In this cross-sectional study, postmenopausal women who had used menopausal hormone therapy for at least three years were recruited as the intervention group, and those who had never used menopausal hormone therapy served as controls. Additionally, women were further categorized based on physical activity levels. All women were requested to complete the Female Sexual Function Index and the International Physical Activity Short Questionnaire for the Elderly surveys to evaluate their sexual function and physical activity levels. Application of the inclusion and exclusion criteria led to a sample size of 260 for the two study groups combined, 109 in the intervention group (who had used menopausal hormone therapy) and 151 in the control group (who had never used it). Our study revealed that menopausal hormone therapy was effective in alleviating sexual discomfort, with higher scores on the Female Sexual Function Index in the menopausal hormone therapy group compared with the control group (43.73 vs. 37.46, $P < 0.05$). Specifically, users of menopausal hormone therapy experienced notable improvements in lubrication, orgasm, and overall satisfaction. Intriguingly, increased physical activity was associated with reduced sexual discomfort. Improved lubrication and pain relief were observed in the moderate- and high-exercise group receiving hormone therapy compared with controls. Conclusions: Both menopausal hormone therapy and physical exercise were related to less sexual discomfort among women in this demographic. Additionally, menopausal hormone therapy appears to enhance the benefits of exercise in addressing sexual discomfort.

Diabetol Metab Syndr. 2025 Nov 17;17(1):430. doi: 10.1186/s13098-025-01964-6.

The association between metabolic syndrome and incidence of endometrial cancer: a meta-analysis

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Background: Metabolic syndrome (MetS), a cluster of metabolic abnormalities, has been increasingly linked to hormone-related cancers, including endometrial cancer (EC). However, the overall magnitude and consistency of this association remain unclear. We performed a meta-analysis to evaluate whether MetS is associated with an increased incidence of EC in women. Methods: PubMed, Embase, and Web of Science were systematically searched from inception to June 8, 2025. Eligible studies were longitudinal cohort or nested case-control studies that reported the association between baseline MetS and incident EC in the general female population. Risk ratios (RRs) and 95% confidence intervals (CIs) were pooled using a random-effects model accounting for possible influence of heterogeneity. Results: Nine studies involving 11 datasets and over 9.1 million women were included. MetS was associated with a significantly increased risk of EC (pooled RR = 2.00, 95% CI: 1.67–2.40, $p < 0.00001$; $I^2 = 93\%$). The association was stronger in prospective cohort and nested case-control studies (RR = 2.30 and 2.02, respectively) than in retrospective cohort studies (RR = 1.42; p for subgroup difference < 0.001). The results were not significantly affected by menopausal status of the women, diagnostic criteria of MetS, follow-up durations, EC validation methods, or study quality scores (p-values for subgroup difference all > 0.05). Conclusions: MetS is associated with a two-fold increased risk of EC in women. These findings underscore the importance of metabolic health management in strategies for EC prevention.