

Obesity associated with increased risk of fibromyalgia

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Researchers at the Norwegian University of Science and Technology have found an association between the level of leisure time physical exercise and a future risk of developing fibromyalgia. The research team also identified BMI as an independent risk factor for fibromyalgia. Details of the study appear in the May issue of *Arthritis Care & Research*, a journal published by Wiley-Blackwell on behalf of the American College of Rheumatology.

Fibromyalgia (FM) is a chronic pain syndrome characterized by widespread pain lasting more than 3 months, and tender point sites in the neck, shoulders, back, hips, arms, and legs. Associated features often include unexplained fatigue, sleep disturbances, headache, cognitive difficulty, and mood disturbances. The prevalence of FM increases with age and is considerably higher among women than men. Although the etiology of FM is poorly understood, many authors have suggested that a dysfunctional autonomic nervous system involving deficiencies in the hypothalamic-pituitary-adrenal (HPA) axis and sympathetic nervous system contributes to the development of FM by altering pain perception and endogenous pain inhibition.

According to the National Institute of [Arthritis](#) and Musculoskeletal and Skin Diseases, FM has been linked to stressful or traumatic events, such as car accidents, repetitive injuries, illness, certain diseases, or FM can occur spontaneously. Some scientists speculate that a gene or genes might be involved in [fibromyalgia](#) that could make a person react strongly to things that other people would not find painful.

Longitudinal studies have shown that physical exercise is associated with less musculoskeletal pain and stiff or painful joints among aging women. The Norwegian researchers, led by Paul Mork, D.Phil., proposed that first, there is an association between levels of [leisure time](#) physical exercise and future risk of FM and, second, being overweight/obese may represent an independent risk factor for future development of FM. Data for the study was collected from the Nord-Trøndelag Health (HUNT) Study, the first part conducted in 1984 (HUNT 1) and the second in 1995 (HUNT 2). During the 11 years between HUNT 1 and HUNT 2, 380 cases of incident FM were reported among 15,990 women who provided information on relevant variables at both surveys and who reported no FM or physical impairment at HUNT 1.

"Women who reported exercising 4 times per week had a 29% lower risk of FM compared with inactive women," says Dr. Mork. "Similar results were found in the analysis of the summary score combining information on frequency, duration, and intensity of exercise; women with the highest exercise level had a somewhat lower risk than inactive women. The study further shows that a high BMI (i.e., being overweight or obese) is a strong and independent risk factor for future development of FM. Moreover, the higher relative risks for the combined effect of being overweight/obese and inactive, relative to being overweight/obese alone, point to a further disadvantage for overweight women who do not exercise."

While the causal relationship between obesity and FM remains unknown, there are some etiologic factors in common. Studies suggest that proinflammatory cytokines play a role in FM and the relationship between FM and obesity. Other studies point to dysregulation of the HPA axis, which has been observed in both FM and obesity. Finally, increased sympathetic tonus and reduced sympathetic reactivity, as recorded by heart rate variability, has been observed in patients with FM as well as in overweight and obese subjects. Dr. Mork concludes, "These

findings, together with the current study, indicate that regular [physical exercise](#), and thereby improved physical fitness, may serve as a buffer against the perpetuation of musculoskeletal symptoms that eventually lead to the development of FM."

More information: "Association Between Physical Exercise, Body Mass Index, and Rise of Fibromyalgia: Longitudinal Data From the Norwegian Nord-Trøndelag Health Study." Paul J. Mork, Ottar Vasseljen, and Tom I.L. Nilsen. Arthritis Care and Research; Published Online: April 29, 2010 ([DOI: 10.1002/acr.20118](#)); Print Issue Date: May 2010.

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