

# Disability prevalent conditions in women

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## SUMMARY

Women and men can have the same illnesses, but with different prevalence and reactions to symptoms.

**OBJECTIVE:** This study aimed to emphasize that distinct traits between men and women require a different approach for each of them.

**METHODS:** PubMed and Google Scholar were searched using the following terms: Disability Evaluations, Women's health, Osteoporosis, Osteoarthritis, and Lymphedema, Pregnancy.

**RESULTS/CONCLUSION:** Disease management can go beyond the symptoms, assessing the long-term consequences and possibly the disabilities they can generate, compromising the quality of life of the person, his/her family members, and eventually caregivers.

**KEYWORDS:** Disability evaluations. Women's health. Osteoporosis. Osteoarthritis. Lymphedema. Pregnancy.

## INTRODUCTION

Men and women respond differently to illness and pain. Most people around the world with chronic pain are women<sup>1</sup>, with a higher prevalence of disable conditions in adults between 25 and 44 years<sup>2</sup>. The fact that women take on greater responsibilities in caring for home, children, and older family members may not only increase stress, but also intensify the progression of diseases<sup>3</sup>. Women feel more pain and experience painful stimuli more intensely than men. They also have a lower pain threshold and lower pain tolerance from mechanical, thermal, and electrical stimuli. Men perceive pain at lower intensities but have more anxiety related to this condition. The causes of this difference between both sexes are unknown, but hormonal and psychological characteristics, with an emphasis on anxiety, can have a great influence<sup>1</sup>.

## OSTEOPOROSIS

People with osteoporosis can become progressively disabled, and those who have mobility limitations and pain will become more osteoporotic.

Osteoporosis is characterized by low bone mass, alteration, or disruption of bone microarchitecture, which leads to increased skeletal fragility, decreased bone strength, and consequently increased risk of fracture.

The lifetime risk of any osteoporotic fracture is remarkably high and ranges from 40 to 50% in women and 13 to 22% in men<sup>4</sup>.

Fractures are associated with pain and decreased physical function, social relationship, well-being, and quality of life.

Women have approximately twice as many hip fractures as men<sup>5</sup>. One year after a hip fracture, 40% of patients are still unable to walk independently, 60% have difficulty with at least one essential activity of daily living, and 80% have difficulty driving and shopping<sup>6</sup>.

Women have far more Colles fractures (fractures of the distal third of the radius) than men, in a ratio greater than 10:1 by the age of 75 years<sup>7</sup>. More than 1 million postmenopausal women will have a spinal fracture each year<sup>7</sup>. When compared to men, women have twice as many spine fractures. Symptomatic and radiographic (morphometric) fractures are significantly associated with greater morbidity and disability<sup>5</sup>.

Chronic pain is quite common in a more advanced state of osteoporosis. Pain is associated not only with fractures, but also with postural changes or sequelae of fractures, which may include sensory, affective, and cognitive aspects. Patients with chronic pain can become disabled and dependent, requiring long-term care, especially when older. The prevention and treatment of pain are linked to adequate treatment of osteoporosis, which includes, in addition to specific medication to

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improve bone mass, pain management in a multidimensional, pharmacological, and non-pharmacological approach aimed at improving bone mass and quality of life<sup>8</sup>.

Surgical treatment for fracture stabilization, such as arthroplasty, vertebra, or kyphoplasty, may be indicated, as well as exercises for increasing bone mass and gaining coordination, balance, and muscle strength. All exercises must be performed safely with a gradual progression of difficulty. Pharmacological treatment includes medications to improve bone quality, pain, and quality of life.

## OSTEOARTHRITIS

Osteoarthritis (OA) is a disorder involving movable joints characterized by cell stress and extracellular matrix degradation initiated by micro and/or macro injuries that activate maladaptive repair responses, including pro-inflammatory pathways of innate immunity. The disease manifests first as a molecular derangement (abnormal joint tissue metabolism), followed by anatomic and/or physiological derangements (cartilage degradation, bone remodeling, osteophyte formation, joint inflammation, and loss of normal joint function) that can culminate in illness.

Osteoarthritis is the most prevalent rheumatic disease and the leading cause of physical disability and reduced quality of life in the population aged over 65 years. Patients experience limited function in daily life: 25% cannot do normal activities, and 80% are limited with movement. OA also increases the risk of cardiovascular disease, diabetes, hypertension, and death<sup>9</sup>. It is a common and growing disease, affecting 240 million people worldwide, and women are twice as affected as men. Research suggests that women are more likely to experience joint pain, aching, and stiffness caused by OA. For example, women aged 50–60 years may be three times more likely to develop hand OA than men in the same age group<sup>10</sup>, and they are 40% more likely to develop knee OA than men.

One possible reason for such a difference between men and women is hormonal<sup>1</sup>. During stages of the menstrual cycle, increased hormone levels may cause joint laxity, which is associated with instability and injury. The relationship between menstruation, joint laxity, and OA is perhaps most clear in the case of female athletes and knee OA: women are two to eight times more likely than men to tear the anterior cruciate ligament (ACL), and ACL injury leads to a much higher risk of developing knee OA in the affected side<sup>11</sup>. Women's risk of developing OA increases significantly after menopause, and women may notice joint pain appears or worsens during this time. Estrogen levels drop during menopause. This drop may contribute to changes in the body that accelerate the OA process.

Another important reason could be the excess body weight. According to the National Institutes of Health, women in the United States (US) are more likely to be obese or extremely obese than men. The percentage of women who have severe obesity (11.5%) is higher than that of men who have severe obesity (6.9%)<sup>12</sup>. Obesity increases the risk of OA because the extra weight puts more stress on load-bearing joints, such as the hips, knees, and ankles, and it is associated with low-grade systemic inflammation and insulin and leptin resistance. Studies found that high levels of leptin have inflammatory characteristics and can change articular homeostasis, leading to cartilage degeneration. This inflammation may contribute to OA development in any joint, including non-weight-bearing joints, such as the hands. Obesity is currently considered a major public health problem around the world, already reaching epidemic characteristics, and it is the major risk factor for type 2 diabetes, hypertension, dyslipidemia, and osteometabolic diseases, including osteoporosis and OA<sup>13</sup>. It becomes increasingly clear that the link between obesity and OA transcends excessive loading.

The third reason could be the differences in biomechanics and musculoskeletal system, because they modify how women stand, walk, and run and how their joint surfaces move in relation to one another (joint articulation). Evidence suggests that women's knees contain less cartilage when compared to men's knees, and women are more likely to suffer from cartilage degeneration than men<sup>14</sup>. Over time, these anatomical differences and the associated joint strain may contribute to the development of OA.

Despite this innate vulnerability, women can take steps to feel healthier and decrease their joint pain. Physical activity and changes in diet composition can reverse the inflammatory and leptin resistance, reducing the progression or preventing the onset of OA. Walking, physical therapy, and gentle exercises are generally considered safe because they help maintain and build muscle with minimal joint strain.

To promote individual well-being for each patient, holistic mind-body exercises are recommended (e.g., tai chi and yoga), as well as aquatic exercises, because of the benefits of warm water in relaxing and pain relief, and the possibility of cardiovascular improvement without articular overload. Everyone should receive education to be active, exercise, and manage body weight<sup>15</sup>.

## LYMPHEDEMA

An increase in breast cancer survival has been achieved due to advances in surgical, radiotherapy, chemotherapy, and biological treatments of neoplasms. However, patients experience

discomfort from the treatment, and numerous complications can arise, including lymphedema related to breast cancer and after mastectomy. This is mainly characterized by local lesions to the normal lymphatic vessel and an increase in limb volume greater than 10%<sup>16</sup>. Breast cancer survivors have risk of developing lymphedema in the short and long term, with a mean onset of 14 months after starting treatment and a 14–40% risk of occurrence after completing cancer treatment. Currently, there is no precise way to distinguish which patients have a higher risk of developing lymphedema after cancer, but there is a consensus regarding some risk factors, such as wide dissection of axillary lymph nodes, use of radiotherapy, the presence of a high body mass index, a high number of cancer cell-positive lymph nodes, and tumor capsular invasion<sup>17</sup>.

Clinical manifestations of lymphedema vary widely and include local discomfort, pain, swelling, decreased hand function, hardening and fibrosis of affected tissues, reduced motor dexterity, as well as an increased risk of infections caused by the protein-rich fluid environment of static lymph. Symptoms vary according to the severity and evolution of lymphedema, and this process ranges from a mild initial condition to progressive structural changes, often occurring over a period of several weeks or months. Lymphedema after cancer severely affects the quality of life of patients and their occupational activities and functional status, as well as producing psychosocial and professional changes<sup>18</sup>.

Despite having a strong impact on the quality of life, today there are numerous treatments for lymphedema<sup>18</sup>. Although lymphedema can lead to changes in various aspects of life and lead to adaptations and changes in routine, it does not necessarily prevent a habitual lifestyle or complete and productive activities. In addition, although the way in which lymphedema affects a woman's quality of life depends greatly on its degree and location, numerous other long-term physical and psychological conditions related to post-cancer treatment also impact and interfere negatively with the edema's evolution. In this sense, the treatment of lymphedema demands an interdisciplinary therapy that acts in the different spheres of a woman's life and health.

Active surveillance of this condition during cancer treatment is essential and can be used to identify and diagnose subclinical disease in the early stages, providing opportunities for early intervention and treatment, as well as optimizing costs and reducing its incidence in the medium term. In addition, the use of complex decongestive therapy, numerous lymphatic physiotherapeutic intervention techniques, including manual lymphatic drainage, skin care, compression bandages and gloves, and long-term education on self-management of lymphedema,

are widely used with good results. Moreover, it is widely known that a sedentary lifestyle leads to overweight or obesity, factors that are strongly associated with an increase or worsening of the incidence of lymphedema. Therefore, physical exercise during and after breast cancer treatment can improve psychosocial and physical conditions, resulting in an active lifestyle that improves cancer survival and reduces complications of its treatment, such as lymphedema<sup>19</sup>. Patients with lymphedema commonly reduce exercise because of worries about exacerbating the condition. But studies have already shown that physical exercise does not cause lymphedema or make the disease worse. Quite the contrary, it is a key support element to treat the complications of cancer treatment at all stages of neoplasm follow-up<sup>20</sup>.

Therefore, lymphedema is a chronic condition but not necessarily a disability. Its treatment presupposes a new vision of life, possibilities, and limits. Coordinated multidisciplinary therapies that include behavioral measures and physical exercise can reduce the volume of lymphedema and its complications, maintaining the functionality and quality of life of patients and their families.

## DISABILITY AND PREGNANCY

It is noted that one-tenth of women aged 18–49 years has a disability<sup>21</sup>. In Brazil, the prevalence of women with disabilities in reproductive age is near 8.4% and it increases as socioeconomic status decreases<sup>22</sup>.

There are data showing that the number of pregnant women with some previous chronic disability that affects their mobility is increasing worldwide. It is estimated that one in four women in the USA lives with a functional impairment<sup>23</sup>.

The most prevalent disabled conditions in pregnant US women were arthritis and back or neck problems<sup>24</sup>.

While disabilities vary in their causes and impacts, they all cause activity limitations. Pregnancy in women with disabilities has dramatically changed in the past 20 years – for example, pregnancy in women with multiple sclerosis (MS) was extensively studied, and nowadays counseling is scientifically based<sup>21</sup>. In the past, stigma associated with disability and sexuality and medical factors limited childbearing to women with disabilities. Recent surveys showed similar proportions of women with and without disabilities getting pregnant<sup>21</sup>.

Disability conditions like paraplegia or MS affect neither the fertility nor the course of pregnancy itself; however, there is evidence that any maternal disability is associated with increased risk for perinatal complications<sup>21</sup>.

Caregivers for women need to reinforce their knowledge about reproductive and gestational particularities. It is also important

to recognize the double vulnerability that implies being a woman and a person with a disability and to know their rights<sup>25</sup>.

Women with disabilities experience barriers to obstetric care, including physically inaccessible health care facilities and care protocols that do not consider their singular needs. Research in this special area is growing<sup>21</sup>, but it is necessary to develop public health care guidelines and offer educational programs that can help health care professionals find easy access to informational material.

The integral care of women with disabilities and the special approach certainly influence the quality of care and are better for families and community.

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**PGP:** Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. **RBC:** Data curation, Formal Analysis, Investigation, Writing – original draft, Writing – review & editing. **MDS:** Data curation, Formal Analysis, Investigation, Writing – original draft, Writing – review & editing. **FM:** Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing.

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