

# Rates of Postmenopausal Low Back Pain Have Nearly Doubled in 30 Years

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## STORY AT-A-GLANCE

- › Low back pain is projected to affect over 800 million people worldwide by 2050. Among women over 55, cases nearly doubled from 89.9 million in 1990 to 176.8 million in 2021
- › Aging populations are the main driver of this increase, but postmenopausal women face a greater risk due to bone loss, muscle decline, fat redistribution, and immune and inflammatory changes
- › Hormonal shifts during and after menopause alter bone density, disc health, and tissue repair, making the spine more vulnerable to stress and chronic pain
- › Persistent low back pain is linked to multiple chronic conditions, including cardiovascular disease, metabolic disorders, mental health issues, and long-term functional decline
- › Regular movement, stronger core and pelvic floor muscles, improved posture, quality sleep, and stress management are among the most effective ways to lower pain risk and protect your spine

Low back pain is the most common musculoskeletal disorder and the leading cause of disability worldwide. As populations grow older, the number of people affected continues to climb. According to the Global Burden of Disease (GBD) Study, more than 800 million people are projected to be living with low back pain by 2050,<sup>1</sup> putting their mobility, independence, and long-term health at risk.

If you're a woman past midlife, your chances of developing postmenopausal low back pain are even higher. To gain a better understanding of this trend, a new global analysis published in *Frontiers in Endocrinology*<sup>2</sup> examined the burden of low back pain in postmenopausal women, emphasizing the importance of earlier recognition, targeted care, and long-term strategies to support healthy aging.

## **What the New Data Shows About Postmenopausal Low Back Pain**

To determine the number of postmenopausal women living with chronic low back pain, researchers drew from the GBD Study 2021, a long-running project that compiles standardized estimates of disease incidence, prevalence, and disability across 204 countries and territories. This dataset covers the years 1990 through 2021, making it one of the most comprehensive sources of information available for global health trends.<sup>3</sup>

- **Population focus and study design** – The study focused on women aged 55 and older, representing the postmenopausal population. The researchers looked at how often new cases developed each year, how many women were living with chronic low back pain overall, and how much disability the condition caused. Disability was measured in disability-adjusted life years (DALYs), which indicates both the years lost to early death and the years lived with pain or limited mobility.
- **Sharp rise in total cases** – The total number of women over 55 living with low back pain rose sharply between 1990 and 2021. In 1990, there were an estimated 89.9 million prevalent cases worldwide. By 2021, that number had nearly doubled to 176.8 million.

The number of new cases each year also climbed, increasing from 35.2 million to 70.3 million. These increases reflect a growing absolute burden of low back pain in this population, driven in part by demographic shifts.

- **Disability associated with low back pain also rose significantly** – In 1990, postmenopausal women lost an estimated 9.8 million years to low back pain-related disability. By 2021, that figure had reached 19.1 million years. This metric does not account for deaths caused directly by low back pain, which are rare, but instead captures the years spent living with pain, reduced function, and limitations in daily life.
- **Global rise in cases reflects aging, not worsening risk** – Even though the total number of women with low back pain has gone up a lot, the actual rate after adjusting for age has only gone down slightly. This means your individual risk hasn't changed much over time, but more people are affected overall because the world's population is older and larger than it used to be.

Still, women after menopause are more affected than men their age. In 2021, women had 1.78 times more new cases and 1.86 times more prevalent cases than their male counterparts.

- **High BMI leads the list of modifiable risks** – The study examined three major modifiable risk factors – high body mass index (BMI), smoking, and occupational or environmental exposures. Among these, high BMI emerged as the leading contributor to low back pain-related disability, accounting for 14.2% of all DALYs.

Occupational factors followed at 12.6%, with smoking contributing 7.3%. These percentages reflect the global average, but the influence of each risk factor varied by region. High BMI had the strongest impact in high-income countries, while occupational risks were more prominent in low- and middle-income regions, where physically demanding labor remains common.

- **Regional differences by socioeconomic status** – To explore these variations further, the researchers stratified results by region using the Sociodemographic Index (SDI), which classifies countries by income, education, and fertility levels.

This approach showed that women in high-SDI regions generally experienced greater disability due to metabolic stressors like excess weight, while women in lower-SDI regions were more likely to be affected by work-related exposures. In both cases, the underlying risk factors are modifiable, meaning they are influenced by behavior, environment, or policy and could be targeted through intervention.

## Why Postmenopausal Changes the Back Pain Equation

The transition into menopause triggers a cascade of physiological shifts throughout your body. While many women expect hot flashes and mood changes, fewer realize that menopause fundamentally alters the biological environment supporting the spine. The biological changes include:<sup>4,5</sup>

- **Bone loss** — One of the most well-documented changes during menopause is a loss of bone density. This process, known as osteopenia or osteoporosis depending on severity, weakens the vertebrae that form the backbone. Thinner, more brittle bones are more vulnerable to tiny compression fractures, which can cause low-grade chronic pain or more sudden flare-ups that may be mistaken for muscle strain or aging joints.
- **Intervertebral disc changes** — These discs act as cushions between each vertebra, absorbing shock and allowing the spine to flex. With age, the discs lose water content and begin to shrink in height, making them less effective at their job. As this happens, the pressure on your spinal joints and nerves increases. The natural curvature of the spine may shift, posture may change, and everyday movements may start to place more strain on the lower back.
- **Decline in muscle mass (sarcopenia)** — Muscle tissue plays a key role in stabilizing the spine. When those muscles weaken, particularly the deep core muscles and the muscles along the back and hips, the spine is left more vulnerable to stress and injury. Loss of muscle also reduces your ability to absorb shock through movement, meaning more of that force gets transferred to bones and joints.

- **Fat redistribution** – After menopause, many women experience an increase in abdominal fat, even without major changes in diet or activity. This shift toward central weight gain increases pressure on the lumbar spine, shifts your center of gravity, and alters the way your muscles and joints bear weight. Over time, this added stress can contribute to disc problems, joint pain, and spinal instability, especially when combined with reduced muscle support.
- **Sleep and mood disruptions** – Pain sensitivity tends to increase after menopause. Sleep disturbances become more common, which interferes with recovery and pain regulation. Even mild sleep disruptions can lower your pain threshold, making everyday aches feel more intense and longer-lasting.

Mood changes and increased rates of anxiety or depression during this stage can also interact with pain perception, making it harder for your nervous system to turn down the volume on persistent pain signals.

- **Immune shifts** – Research shows that immune signaling shifts after menopause, with several studies reporting higher baseline levels of inflammation, a process referred to as **inflammaging**. Chronic low-grade inflammation can affect the joints, tendons, and nerves in the back, contributing to pain that lingers or spreads beyond the original area. Inflammatory cytokines may become more active or less regulated, adding to the load on already stressed tissues.
- **Hormonal imbalance** – Changes in hormone balance during and after menopause influence the tissues that support your spine. Estrogen and progesterone both affect bone, cartilage, and muscle health, and the drop in circulating levels contributes to structural weakening.

Estrogen helps maintain bone density, regulate cartilage turnover, and protect against disc degeneration. Progesterone supports bone formation, muscle repair, and inflammatory control. When both decline, your spine becomes more vulnerable to injury, slower to recover, and more prone to chronic pain.<sup>6</sup>

However, while blood levels of estrogen fall after menopause, research shows that many tissues continue to produce estrogen locally. What often declines more dramatically is progesterone.<sup>7</sup> Without progesterone to complement local estrogen activity, the hormonal balance shifts in ways that may influence how tissues respond to stress and recover from damage. Learn more in "[Out of Touch on Menopause](#)."

All of these changes are often misattributed to general aging. Many women are told their pain is just part of getting older, without any deeper evaluation of the biological factors driving it. As a result, back pain during and after menopause is frequently underdiagnosed or treated superficially, even when the structural changes in the spine are clear.

## **Low Back Pain Can Also Start During Perimenopause**

The risk of low back pain doesn't wait for menopause to begin. Many women start experiencing more persistent pain years earlier, during the hormonal transition known as perimenopause. This period, which typically begins in your mid-to-late 40s, is marked by fluctuating hormone levels and irregular cycles. Even without a full cessation of menstruation, your body begins to shift in ways that affect the spine, joints, and connective tissues.<sup>8</sup>

- **Early hormonal shifts amplify pain vulnerability** — A review<sup>9</sup> of multiple studies shows that the risk of low back pain increases during the perimenopausal years. Some research suggests that women in the early transition phase may experience the highest rates of pain compared to any other stage.

One large U.S. study involving over 2,000 women found that early perimenopausal participants reported the sharpest rise in lumbar pain. More than 65% said they had experienced lower back pain at least once in the prior two weeks, which is significantly higher than either premenopausal or postmenopausal women in the same cohort.

- **Pain prevalence rises as the transition progresses** — Long-term data confirm that back pain tends to increase steadily through the menopausal transition. In one eight-year study that followed women from regular menstruation into postmenopause, 44% reported back pain at the start. By the end, that number had climbed to 59%.
- **Consistent global pattern across diverse populations** — Studies from Japan, Mexico, and India echo these findings. Across different cultural and ethnic groups, middle-aged women report a marked rise in low back pain during perimenopause. In one Indian study, 80% of women in the perimenopausal stage experienced low back pain — slightly more than those in early postmenopause (76%).

While the studies reviewed didn't explore mechanisms in depth, many documented a clear association between higher body mass index (BMI) and greater pain. Weight gain during the perimenopausal years is common and may add stress to the spine. Others have proposed that declining bone mineral density and increased inflammation could also contribute, although more research is needed.

## **How Back Pain Increases Your Risk of Common Diseases**

Living with low back pain does more than limit movement or reduce comfort. A recent study published in the *Brazilian Journal of Physical Therapy* showed that it's also strongly linked to the development of other chronic health conditions, including:<sup>10,11</sup>

- **Cardiovascular disease** — Adults with chronic low back pain show significantly higher rates of high blood pressure, heart disease, and stroke. High blood pressure was the most common coexisting condition in the study population, even after adjusting for age and other variables. Reduced physical activity and persistent inflammation, which are both common in people with chronic pain, may contribute to cardiovascular strain over time.
- **Respiratory disease** — Conditions such as asthma and chronic obstructive pulmonary disease (COPD) were more prevalent in those with back pain. Limited mobility can weaken respiratory muscles, restrict aerobic capacity, and reduce

exposure to fresh air and physical conditioning, all of which may worsen lung function.

- **Metabolic and endocrine disorders** – Diabetes, dyslipidemia (abnormal cholesterol or triglyceride levels), and thyroid disorders occurred more frequently among those with back pain. These conditions may worsen as back pain reduces movement and impairs metabolic flexibility. Many of these disorders are also more common in women after midlife, adding to the burden during this stage.
- **Mental health disorders** – Anxiety and depression were frequently reported in adults with chronic back pain. These conditions interact with pain perception, immune regulation, and sleep quality. The presence of both physical and emotional stressors tends to intensify symptoms and make pain more difficult to manage day to day.
- **Functional decline and disability** – Chronic low back pain was strongly linked to limitations in daily activities such as walking, dressing, and standing. Over time, these limitations may lead to further physical deconditioning, greater dependence on others, and increased risk of injury or falls.

Overall, multimorbidity was identified in nearly 80% of adults with chronic back pain, with over half living with three or more chronic conditions. These overlapping health issues raise the risk of hospitalization, affect independence, and reduce overall quality of life.

## **What You Can Do Today to Lower Your Risk**

While menopause itself isn't something you can control, you do have the power to reduce the strain on your lower back and strengthen the systems that support it. The steps below target the daily habits and physical patterns that often fuel pain and give you a better path forward:

**1. Keep moving – Walking** is one of the most effective and accessible ways to interrupt the pain cycle. If you spend much of the day sitting, short walks help release tight muscles and improve circulation. Each step allows your spine to gently compress and decompress, which promotes fluid exchange in the discs and joints. You don't need special gear – just a comfortable pair of shoes and a few minutes.

Start with 10 to 15 minutes at a comfortable pace, five to six days a week. If your pain flares above a 5 out of 10, ease off but keep moving. By week two, aim for 20 to 25 minutes and, if you're able, include two gentle hills or stair bouts to build strength and mobility.

**2. Rearrange your sitting pattern** – Staying in one position for too long weakens the muscles that stabilize your back. Shifting your posture every 30 minutes – standing up, stretching overhead, or moving around – keeps these muscles active.

If you work at a computer, set a timer as a reminder to move. When it rings, do a few squats, a gentle backbend, or a lap around the room. Using a standing desk or walking pad also helps break up long sitting periods and keeps your spine engaged.

**3. Strengthen core and supporting muscles** – If your midsection feels weak or unstable, targeted core work can restore strength where it matters most. Your core includes the abdominals, lower back, hips, and pelvic floor. Aim for core and pelvic floor basics three to four times a week. Focus on movements like abdominal bracing with breath, bridges, sit-to-stands, and gentle hip hinges.

Two sets of 8 to 12 repetitions is a good place to start. If you experience urine leakage with coughing or jumping, or feel heaviness in the pelvic area, it may be a sign that your pelvic floor needs more attention. Work with a physical therapist or qualified clinician to tailor your plan if these symptoms show up.

**4. Introduce movement breaks that fight stress** – Stress and anxiety have a way of tightening your body, and that tension often settles in your back. To interrupt this pattern, include short relaxation breaks during the day. **Slow, steady breathing** and

gentle neck movements help release the tightness that builds up when you're under pressure.

Every few hours, stop what you're doing, close your eyes, and take a long [breath in through your nose](#). Then exhale slowly through your mouth. This helps your nervous system shift out of a tense state and brings down the stress hormones that can heighten pain. Follow the breath with a simple movement, like lifting your arms, circling your shoulders, or doing a few slow lunges, to keep your muscles loose and your circulation moving.

- 5. Pay attention to nutrition and weight control** – [Excess weight](#) increases pressure on the spine, much like carrying a heavy backpack all day. Easing that load starts with better food choices. Avoid ultraprocessed foods that contain seed oils high in [linoleic acid](#), and consume nutrient-dense foods that support cellular energy and muscle repair. Over time, steady improvements in diet and weight make movement easier and help your back handle everyday activity with less strain.

For more ways to stay strong, balanced, and resilient through every phase of menopause, read "[How to Stay Healthy and Happy Through Menopause](#)."

## **Frequently Asked Questions (FAQs) About Postmenopausal Back Pain**

**Q: Is low back pain more common after menopause?**

**A:** Yes. According to the *Frontiers in Endocrinology* analysis of Global Burden of Disease 2021 data, postmenopausal women are nearly twice as likely to have low back pain as men their age. In 2021, women had 1.78 times more new cases and 1.86 times more total cases than men. This gap has remained consistent over the past three decades, showing that hormonal and physiological differences continue to influence risk.

**Q: How does menopause increase the risk of low back pain?**

**A:** Hormonal changes after menopause affect the structure and function of your spine. You lose bone density, your intervertebral discs shrink, and muscle mass declines, especially in the core and hips. Fat often shifts toward the abdomen, increasing pressure on your lower back. These changes can weaken spinal support, raise inflammation, and make your tissues more sensitive to stress. Together, they increase your risk of developing chronic low back pain.

**Q: Can back pain start before menopause?**

**A:** Yes. You might notice pain starting in your 40s, even before your periods stop. Perimenopause brings fluctuating hormones that affect your joints, muscles, and spine. Many women in early transition report more frequent or intense low back pain than at any other stage.

**Q: How does body weight affect my back pain risk?**

**A:** Carrying extra weight puts more pressure on your spine, especially in the lower back. High BMI is the top modifiable risk factor for back pain-related disability worldwide. Losing even a small amount of weight can help reduce strain and make movement easier.

**Q: What are the best exercises for low back pain?**

**A:** Walking, core strengthening, and gentle mobility drills are among the most effective. Start with 10 to 15 minutes of walking most days, then gradually increase duration and intensity. Basic core moves like bridges, hip hinges, and abdominal

bracing help stabilize your spine. Consistent movement breaks throughout the day also ease tension and improve circulation.

## Sources and References

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- <sup>4</sup> [Climacteric, 27\(5\), 466–472](#)
- <sup>5</sup> [J Obstet Gynaecol India. 2019 Mar 7;69\(2\):99–103](#)
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- <sup>7</sup> [YouTube, Dr. Mercola, April 29, 2024](#)
- <sup>8, 9</sup> [Prz Menopauzalny. 2015 Sep 30;14\(3\):203–207](#)
- <sup>10</sup> [Brazilian Journal of Physical Therapy Volume 29, Issue 5, September–October 2025, 101241](#)
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