

## The Management of Chronic Low Backache (Kati Shoola) through Herbal Drugs and Life style modifications

**\*Prof. Kuldeep Kumar Pandey**

**Abstract:** Millions of people worldwide suffer from low back pain (LBP) at various stages of their lives. It is a common musculoskeletal disorder that impairs both quality of life and professional productivity. Conventional therapies often include analgesics and invasive procedures; however alternative techniques including herbal interventions and lifestyle adjustments have grown in favor because to their overall health advantages. This review investigates the effectiveness of several integrative therapies in lowering CLBP. Herbal remedies, including anti-inflammatory and analgesic plants like *Nyctanthes arbor-tristis* (Parijata), *Moringa oleifera* (Shigru), *Vitex negundo* (Nirgundi), *Withania somnifera* (Ashwagandha), and *Pluchea lanceolata* (Rasana), have shown promise in reducing pain and inflammation. These botanicals regulate inflammatory pathways, leading to better musculoskeletal function and fewer side effects.

**Keywords:** Chronic low back pain, herbal medicine, integrative medicine, and lifestyle modifications

**\*Professor & Head, Department of Sangyahan, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005, Email-pandeykk@bhu.ac.in, Mobile Number -9415251556**

**Introduction:** People experience low back pain (LBP), a common musculoskeletal illness. While contemporary medicine offers pain relievers and physical therapy, Ayurveda takes a more comprehensive approach to addressing the root causes of pain, restoring spinal health, and preventing recurrences. Chronic low back pain (CLBP) is a condition characterized by pain persisting for more than three months, exceeding the usual recovery period associated with acute back pain. It affects individuals across all age groups and is influenced by various risk factors. Key contributors include *smoking*, which impairs blood flow and hampers healing; *obesity*, which increases mechanical stress on the lumbar spine; *sedentary behaviour*, leading to weakened core muscles and reduced spinal support; and *lower socioeconomic status*, often associated with limited healthcare access, poor nutrition, and occupational hazards. The aging global population further exacerbates the prevalence of CLBP, as degenerative changes in spinal structures become more common with age. Additionally, the expanding world population means a larger number of individuals are at risk, amplifying the public health impact. Epidemiological data suggest that approximately 70 to 80 percent

of people will experience CLBP at some point in their lives. This high prevalence highlights the importance of early intervention, preventive strategies, and comprehensive management approaches. Effective treatment typically involves a multidisciplinary approach, including physical therapy, medication, lifestyle modifications, and sometimes surgical procedures. Public health initiatives focusing on promoting physical activity, smoking cessation, weight management, and socioeconomic support are vital in reducing risk factors and improving quality of life for affected individuals.<sup>1</sup>

CLBP At some point in their life.<sup>2</sup> Women have approximately 50% higher prevalence of chronic low back pain (CLBP) than men. A study indicates that 23% of the global population experiences CLBP, with recurrence rates varying from 24% to 80%, highlighting the significant health impact and gender disparities associated with this condition. CLBP diagnosis and treatment require multidisciplinary care. Microsocial therapy is the most successful for non-specific CLBP.<sup>3</sup> Disability is a significant problem in CLBP because it impairs physical performance and job productivity.<sup>4</sup> Chronic pain makes physical activities difficult. Chronic pain and mental disorders often coexist. Without treatment, these disorders can result in substantial disability and a reduced quality of life.<sup>5</sup> Depression and anxiety are the most common co-occurring conditions with chronic pain. Anxiety, pain, and depression are the causes of clinical depression.<sup>6</sup>

Women experience nearly 50% higher prevalence of CLBP at some point in their lives compared to men, highlighting gender differences in this condition.<sup>7</sup> According to research, 23% of persons globally have persistent low back pain, with a recurrence rate ranging from 24% to 80%. CLBP diagnosis and treatment necessitate multidisciplinary intervention. Non-specific CLBP responds best to microsocial treatment. Disability is a significant concern in CLBP because it impairs physical performance and job productivity.<sup>8</sup> Chronic pain makes physical activities difficult. Without treatment, these disorders can lead to severe disability and a reduced quality of life. Depression and anxiety are the most common co-occurring conditions with chronic pain. Anxiety, pain, and depression all contribute to clinical depression.<sup>9</sup>

**Causes of Low Back Pain:** Low back pain (Katishoola) is a general condition in both Ayurveda and modern medicine. Below is a comparison of the causes according to both perspectives.

**Causes of Low Back Pain in Ayurveda:** Kati Shoola (low back pain) is caused mostly by Vata aggravation in the lumbar region. Vata-provoking food, excessive effort, improper posture, tissue depletion, trauma, aging, and psychological stress are all significant etiological variables. The oldest Indian medical system describes low back pain, known as Kati Soola in Ayurveda, as the most common symptom of musculoskeletal disorders, emphasizing its significance in traditional

diagnostics.<sup>10</sup> When **Vata Dosha** becomes aggravated, it primarily disturbs the musculoskeletal system. The **Shleshmadhara Kala**, located in the intervertebral joints, produces *Shleshaka Kapha*, which functions to lubricate the joints and minimize friction during movements of the vertebral column.

In the condition known as **Kati Shoola** (low back pain), various musculoskeletal symptoms may be observed. These include Vata-dominant pain (*Vataja Shoola*), sacral discomfort (*Trika Vedana*), back pain (*Prushta Shoola*), gaseous stiffness in the lumbar region (*Kati Vayu*), restriction of movement in the sacral area (*Trika Graha*), and radiating pain similar to sciatica (*Gridhrasi*).<sup>11</sup>

**Followings are common reasons:**

**Imbalance of Doshas<sup>12</sup>**

- **Vata Dosha (Air & Ether Element)** – Dryness, degeneration, and nerve irritation.
- **Kapha Dosha (Water & Earth Element)** – Stiffness and heaviness.
- **Pitta Dosha (Fire Element)** - Inflammation and burning sensations.

**A. Nidana (Causes)<sup>13</sup>**

- **Ajeerna (Indigestion & poor digestion)**– This leads to Ama (toxins), causing stiffness and pain.
- **Dhatukshaya (Tissue degeneration)** – Loss of bone mass (Asthi Kshaya) or muscle weakness (Mamsa Kshaya).
- **Sandhigata Vata (Osteoarthritis-like condition)** – Degeneration of joints and vertebrae.
- **Gridhrasi (Sciatica)** – Radiating pain due to nerve compression.
- **Agantuja (External causes)** – Trauma, improper posture, excessive lifting.
- **Vyayama Atichar (Excessive exercise)** – Overuse of muscles and ligaments.
- **Shayyasana Dosha (Wrong sitting & sleeping posture)** – Prolonged sitting, soft mattresses, or poor posture.
- **Mental Stress (Manasika Nidana)** – Anxiety and stress aggravate Vata, leading to tension and stiffness.

**Causes of Low Back Pain in Modern Science**

Modern medicine classifies low back pain into mechanical, inflammatory, infectious, and systemic causes.<sup>14</sup>

#### **Mechanical Causes:**

- **Muscle Strain or Ligament Sprain** – Overstretching or tearing of muscles/ligaments.
- **Herniated Disc (Slipped Disc)** – Nerve compression due to displacement of spinal discs.
- **Degenerative Disc Disease** – intervertebral disc deterioration with age.
- **Spinal Stenosis** – Narrowing of the spinal canal, causing nerve compression.
- **Facet Joint Dysfunction** – Arthritis in spinal joints.
- **Spondylolisthesis** – Vertebral displacement leading to instability.

#### **B. Inflammatory & Autoimmune Causes**

- **Ankylosing Spondylitis** – Chronic inflammation affecting the spine.
- **Rheumatoid Arthritis** – Autoimmune attack on joints causing pain and stiffness.

#### **C. Infectious & Systemic Causes<sup>15</sup>**

- **Osteomyelitis (Spinal Infection)** – Bacterial infection affecting vertebrae.
- **Tuberculosis (Pott's Disease)** – TB infection of the spine leading to vertebral destruction.
- **Kidney Stones & Urinary Tract Infections (Referred Pain)** – Pain radiating to the lower back.

#### **D. Neurological Causes**

- **Sciatica (Gridhrasi in Ayurveda)** – Nerve pain due to disc herniation or compression.
- **Cauda Equina Syndrome** – Compression of the lower spinal nerves, requiring urgent treatment.

#### **E. Lifestyle-Related Causes**

- **Poor Posture & Sedentary Lifestyle** – Prolonged sitting leads to muscle weakness and strain.

- **Obesity** – Excess weight puts pressure on the spine.
- **Smoking & Poor Nutrition** – Reduces blood supply, slowing tissue repair

### **Herbal Drug Compounds for Low Back Pain**

Herbal medicine plays a crucial role in the management of LBP due to its anti-inflammatory, analgesic, and muscle-relaxant properties. Some key herbal compounds include:

- I. *Nyctanthes arbor-tristis* (Parijata)** - Ayurvedic practitioners use Harsingar leaves for inflammatory conditions due to their anti-inflammatory properties. The water-soluble part of the ethanol extract showed notable anti-inflammatory effects against acute edema in rats, induced by carrageenin, formalin, histamine, 5-hydroxytryptamine, and hyaluronidase, demonstrating potential therapeutic properties. Turpentine oil-induced knee joint inflammation in rats was significantly reduced by the extract.<sup>16</sup>
- II. *Moringa oleifera* (Shigru)** - The scientific literature reports antibiotic, antitypanosomal, hypotensive, antispasmodic, antiulcer, anti-inflammatory, hypocholesterolemic, and hypoglycemic effects of moringa extracts, decoctions, creams, oils, powders, and porridges. HIV/AIDS treatment might include moringa powder as an immune stimulant. Folk medicine uses moringa flowers, leaves, roots, and seeds to treat various tumors, including abdominal tumors.<sup>17</sup>
- III. *Ashwagandha* (*Withania somnifera*)** - Chronic non-specific lower back pain has sparked an interest in botanical products that can help relieve pain and enhance function. There is scant proof that herbal medication alleviates back pain. Has adaptogenic and anti-inflammatory qualities that alleviate pain and stress-induced muscular tightness.<sup>18</sup>
- IV. *Nirgundi* (*Vitex negundo*)** - Vitexin and flavonoids regulate neutrophil and macrophage recruitment and activity, reducing inflammation. Vitexin reduces leukocyte migration in RAW 264.7 animals and lowers TNF- $\alpha$ , IL-1 $\beta$ , and NO levels in the peritoneal cavity of lipopolysaccharide-challenged mice. Vitexin inhibits p-p38, p-ERK1/2, and p-JNK in LPS-stimulated cells. Lignin in *V. negundi* decreases inflammation. VN leaf oil suppresses COX-2 without altering COX-1 and is very anti-inflammatory. Casticin from *V. rotundifolia* and *V. agnus-castus* lowers inflammation in the body. C57BL/6 mice were exposed to either mainstream cigarette smoke (CS)

or fresh air for two weeks. Casticin suppresses neutrophils, macrophages, and lymphocytes while lowering BALF proinflammatory cytokines and chemokines.<sup>19</sup>

- 1. *Pluchea lanceolata* (Rasana)** - The review critically assesses *P. lanceolata*'s phytochemicals, biological, and pharmacological effects, including anti-inflammatory, anti-arthritis, anticancer, muscle relaxant, CNS stimulant, anti-implantation, immunosuppressant, contraceptive, toxicological properties, and traditional system applications.<sup>20</sup>

## **Yoga for Lower Back Pain Relief**

Yoga is an ancient technique that increases flexibility, muscle strength, and posture, ultimately relieving low back pain. Some helpful yoga positions are:

**Asanas (Postures):** According to hatha yogis, asanas unlock energy pathways and psychic centers. Controlling the body through these practices allows them to control the mind and energy. Yogasanas established a solid platform for investigating the body, breath, mind, and higher states. It enhances spinal flexibility, lower back tension, back muscle stretching and strengthening, lower back and circulation, spine, and core muscle strength. According to yoga teachings, there were 8,400,000 asanas, which represented the 8,400,000 incarnations that each individual must go through before being free of birth and death. Through these asanas, life progressed from its most basic form to that of a fully developed human. Famous rishis and yogis have adjusted and decreased the number of asanas to few hundred. In Tadasana (Palm Tree Pose), The list includes various yoga poses such as Tiryaka Tadasana, Advasana, Marjhari Asana, Bhujangasana, Ardh Shalabhasana, Shalabhasan, Viprit Naukasana, Dhanurasana, Makarasana, and Setubandhas. These poses target flexibility, strength, and relaxation, forming a comprehensive yoga routine for physical and mental well-being.<sup>21</sup>

**Pranayama (Breathing Techniques):** The body's most vital process is breathing. It affects every cell and, most importantly, brain function. Humans breathe 15 times per minute, 21,600 times daily. Respiration burns oxygen and glucose to power every muscle contraction, glandular secretion, and mental process. The breath is central to all human experience. Most people breathe improperly, using only a small portion of their lung capacity. Breathing becomes shallow, depriving the body of oxygen and prana needed for health. This section begins with five breathing exercises to teach proper breathing. They also draw attention to breathing, which is often overlooked. Practitioners increase vital capacity and prepare for pranayama by becoming sensitive to the respiratory process and retraining pulmonary cavity muscles. Calm, contentment stimulates rhythmic, deep, slow respiration. Irregular breathing disrupts brain

rhythms and causes physical, emotional, and mental blocks. These cause inner conflict, personality imbalance, lifestyle disorders, and disease. Pranayama reverses this negative cycle by establishing regular breathing patterns. It does so by controlling the breath and restoring gentle body and mind rhythms. The described pranayama techniques Anulom-Vilom, Bhramari, and Ujjayi—are vital in managing Katishool (LBP) patients, offering potential relief through controlled breathing practices that improve overall spinal health and reduce pain. It affects people as Calms the nervous system and balances Vata reduces stress, and relaxes spinal tension.

**Meditation & relaxation:** Meditation approaches often seek to control attention and emotional processes. Meditation is often divided into two types: concentrative meditation and mindfulness meditation. Concentrative meditation entails maintaining sustained attention on a single object, such as a visual image, breath, or mantra, while reducing distractions. In contrast, mindfulness meditation focuses on present-moment awareness, which is characterized by an open, nonjudgmental observation of thoughts, sensations, and emotions.

These meditation practices have been shown in clinical trials to improve symptoms of The text enumerates conditions including fibromyalgia, migraine, chronic pelvic pain, irritable bowel syndrome, cancer-related pain, and chronic low back pain, excluding the selected text. These techniques are thought to alter pain perception, alleviate psychological suffering, and strengthen coping systems. Yoga Nidra, a systematic deep relaxation technique that involves guided body awareness (whole body scan), has also demonstrated.<sup>22</sup>

**Lifestyle Modifications for Long-Term Relief:** Lifestyle modifications play a crucial role in achieving long-term relief from various chronic conditions, including metabolic disorders, cardiovascular diseases, and mental health issues. Sustainable lifestyle changes—such as balanced nutrition, regular physical activity, effective stress management, and adequate sleep—are fundamental to promoting overall well-being and preventing disease progression. Conversely, unhealthy habits like poor dietary choices, sedentary behaviour, and chronic stress significantly contribute to long-term health deterioration.<sup>23</sup> Evidence-based strategies, including mindful eating, structured exercise programs, and behavioural interventions, have demonstrated effectiveness in both disease prevention and management. When lifestyle modifications are personalized and consistently maintained, individuals can improve their quality of life, reduce dependence on pharmacological treatments, and achieve meaningful long-term health benefits.<sup>24</sup>

**Implementing Lifestyle Modifications to Reduce Recurrence of Low Back Pain (LBP):**

Making suitable lifestyle changes can dramatically lessen the occurrence and severity of low back pain (LBP). Evidence suggests that preventive interventions focusing on posture, physical exercise, ergonomics, diet, and stress management help to enhance spinal health and functional outcomes.<sup>25</sup> The key recommendations include:

- ★ **Posture Correction:** Making suitable lifestyle changes can dramatically lessen the occurrence and severity of low back pain (LBP). Evidence suggests that preventive interventions focusing on posture, physical exercise, ergonomics, diet, and stress management help to enhance spinal health and functional outcomes. The key recommendations include:
- ★ **Regular Exercise:** Flexibility exercises, core-strengthening routines, and low-impact aerobics activities like walking increase muscular support, spinal stability, and pain recurrence rates.
- ★ **Ergonomic Adjustments:** Using supportive chairs, improving workstation configuration, and avoiding extended static postures can assist minimize postural abnormalities and cumulative lumbar stress.
- ★ **Balanced Diet:** An anti-inflammatory diet high in fresh fruits and vegetables, nuts, whole grains, and herbal supplements may help lower systemic inflammation linked to chronic musculoskeletal pain.
- ★ **Stress Management:** Meditation, deep breathing (pranayama), and relaxation techniques reduce stress-induced muscular tension and alter pain perception, lessening the chance of LBP recurrence.

**Conclusion:** Ayurveda offer a natural, side-effect-free approach to managing low back pain by addressing its root causes. A combination of Ayurvedic therapies, herbal remedies, Yoga postures, and lifestyle modifications can help in long-term pain relief and overall spinal health. Traditional healing approaches, including herbal medicine, yoga, and lifestyle modifications, have been used for centuries to manage and alleviate LBP. These methods not only address the symptoms but also work on the root causes, promoting overall well-being. Despite growing evidence, more rigorous clinical trials are necessary to standardize herbal formulations, Yoga protocols, and lifestyle guidelines. A multidisciplinary approach integrating traditional wisdom with modern medical insights may offer sustainable and cost-effective solutions for CLBP

management. This study underscores the need for further research and awareness to validate and implement these interventions for broader clinical acceptance.

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