

### **Chronic Pain**

Chronic pain is pain that persists or recurs for over three months, often continuing beyond the expected period of tissue healing. It results from complex interactions involving central sensitization, neuropathic mechanisms, and altered nociceptive processing. Unlike acute pain, which serves a protective function, chronic pain is considered a distinct condition that can significantly impact physical and emotional wellbeing. Examples include fibromyalgia, chronic back pain, and neuropathic disorders.



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### **How Hyperbarics Helps**



Alleviates chronic pain by modulating central nervous system mechanisms,



Increases tolerance to pain through effects on conditioned pain modulation, surpassing decreasing hypersensitivity in conditions such as fibromyalgia.



Improves brain activity in key areas (prefrontal and temporal regions), contributing to functional restoration and symptom relief.

standard pharmacological treatments.



Releases nitric oxide and endogenous opioids (e.g., dynorphin), which inhibit pain signals in the spinal cord and brain.



Provides effective pain relief without the risks of long-term opioid use, making it a viable

# HBOT reduces central sensitization and promotes neuroplasticity for chronic pain management

Hyperbaric oxygen therapy (HBOT) has demonstrated potential in managing chronic pain, particularly fibromyalgia, by reducing central sensitization and improving symptoms. Studies show HBOT can outperform pharmacological treatments such as pregabalin and duloxetine, especially in fibromyalgia patients with histories of childhood trauma, improving physical,

emotional, and functional outcomes.

Additionally, HBOT enhances neuroplasticity by increasing pre-frontal and temporal brain activity, correlating with symptom relief. Its mechanism includes activating nitric oxide and endogenous opioids, providing significant pain relief while avoiding the side effects of opioids, making it a promising adjunct in comprehensive pain management strategies.

### **Research Studies**

Journal of Clinical Medicine

Hyperbaric Oxygen Therapy (HBOT) shows promise in managing chronic pain by targeting central sensitization in fibromyalgia.

Hyperbaric oxygen therapy (HBOT) has shown potential in managing chronic pain, particularly in conditions like fibromyalgia, by reducing central sensitization and improving symptoms. HBOT should be part of a comprehensive biopsychosocial approach to pain management, emphasizing the central nervous system's role in chronic pain mechanisms.

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Scientific Reports. 2024

HBOT outperforms traditional pharmacological treatments in fibromyalgia, particularly for patients with a history of childhood trauma.

Hyperbaric oxygen therapy (HBOT) offers significant advantages for managing fibromyalgia syndrome (FMS), particularly in patients with a history of childhood sexual abuse (CSA). Compared to standard pharmacological treatments (Pregabalin and Duloxetine), HBOT demonstrated superior improvements in physical, emotional, and functional outcomes, as measured by Fibromyalgia Impact Questionnaire (FIQ) scores, pain thresholds, and conditioned pain modulation. HBOT also increased brain activity in prefrontal and temporal regions, correlating with symptom relief and suggesting a neuroplasticity effect. These findings underscore HBOT's potential as an effective therapeutic approach for chronic pain in FMS, with benefits extending beyond symptom reduction to neural functional restoration.

Department of Anesthesia and Pain Management, Toronto General Hospital, University Health Network, Toronto

HBOT provides effective pain relief by stimulating natural painkillers and enhancing brain activity, offering a safe alternative to opioids.

HBOT has been shown to effectively reduce pain in animal models. It works by stimulating the release of natural pain-relieving chemicals in the body, including nitric oxide (NO) and endogenous opioids like dynorphin. These chemicals interact with specific receptors in the spinal cord and brain to block pain signals.

HBOT offers several advantages for chronic pain management. It taps into the body's natural pain control systems, providing both short-term and longer-lasting pain relief without the side effects of opioid drugs. HBOT may be a useful option, particularly for patients who do not respond well to or want to avoid long-term opioid medication.

## Patient Experiences

Listen to what real patients have to say about their experiences.

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Jennifer had osteomyelitis of the lower jaw (mandible), which proved difficult to heal. Her teeth were becoming loose, and her doctor thought she would need surgery. However, he prescribed hyperbaric oxygen therapy before the surgery, and after 60 treatments, her chronic refractory osteomyelitis healed completely, regrowing bone in her mandible. Jennifer was able to keep her teeth, and was able to return to her active lifestyle, hiking regularly with her husband.

### Jennifer, 68

Hyperbaric oxygen therapy eliminated the need for

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### We Get Authorizations

We ensure the patient understands the treatment and follows the prescribed protocol to

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### **Patient Starts HBOT**

Our medical staff meets with the patient to ensure that HBOT treatment is appropriate and contacts Medicare or private insurance to receive authorization.



Patient Referral Form

Call Us: (408) 359 1731

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### Research on Hyperbaric Oxygen Therapy

To learn more about HBOT, take a look at our FAQs.

What is Hyperbaric Oxygen Therapy?

**Does HBOT kill cancer cells?** 

**IWhat is the CPT code for HBOT?** 

### **Does Medicare cover HBOT?**

### Can HBOT help Neuropathy?

### Why would a physician consider HBOT?

### What is Hypebaric Oxygen Therapy?

# Have more Questions?

See all FAQs



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San Jose/Los Gatos Clinic 14589 South Bascom Avenue, Los Gatos, CA 95032

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