

Why Does Chemotherapy Lead to Peripheral Neuropathy?

The Drugless Doctors Approach to Chemotherapy-Related Nerve Damage, Mitochondrial Stress & Recovery Physiology



Chemotherapy-induced peripheral neuropathy (CIPN) occurs because many chemotherapy medications damage not only cancer cells, but also healthy nerve tissue, mitochondria, circulation pathways, and sensory nerve fibers.

One of the major concepts often missed is that nerves are among the most metabolically active and energy-dependent tissues in the body. They require oxygen, circulation, mitochondrial energy production, antioxidant protection, healthy microcirculation, and nutrient delivery.

Chemotherapy may interfere with many of these systems simultaneously.

Why Chemotherapy Damages Nerves

Certain chemotherapy medications are considered neurotoxic, meaning they may directly injure sensory nerves.

Common chemotherapy medications associated with neuropathy include:

- Taxol (paclitaxel)
- Cisplatin
- Oxaliplatin
- Vincristine
- Bortezomib
- Thalidomide

These medications may damage:

- sensory nerve fibers
- mitochondria
- circulation pathways
- Schwann cells
- dorsal root ganglia
- nerve signaling physiology

As this occurs, patients may develop:

- tingling
- burning sensations
- numbness
- balance instability
- weakness
- hypersensitivity
- painful feet or hands

Mitochondrial Stress & Oxidative Damage

One of the major physiologic drivers of chemotherapy-related neuropathy is mitochondrial injury.

Mitochondria are responsible for cellular energy production (ATP). When chemotherapy damages mitochondria:

- cellular energy declines
- oxidative stress rises
- inflammation increases
- tissue recovery slows
- nerve repair becomes impaired

Chemotherapy may also increase free radical damage and oxidative stress involving:

- nerve tissue
- circulation pathways
- cell membranes
- microcirculation
- DNA

This may contribute to inflammation, nerve irritation, slower healing, and progressive sensory dysfunction.

Microcirculation & Oxygen Delivery

Chemotherapy may impair:

- microcirculation
- nitric oxide physiology
- oxygen delivery
- vascular flexibility
- nutrient delivery

Reduced circulation may impair oxygen delivery into sensory tissue and contribute to:

- burning feet
- numbness
- tingling
- slower healing
- cold hands and feet
- balance instability

The longest nerves in the body — especially those involving the feet and hands — are often affected first because they require substantial oxygen, circulation, and mitochondrial energy support.

Common Symptoms & Body Signals

Patients experiencing chemotherapy-related neuropathy may report:

- tingling hands or feet
- burning feet at night
- numb toes
- hypersensitivity
- balance instability
- cold extremities
- dropping objects
- muscle weakness
- slower healing
- fatigue
- poor stamina
- gait instability

Many patients notice symptoms worsen at night when circulation patterns slow and inflammatory stress becomes more noticeable.

How We Evaluate This in the Office

Our evaluation focuses on identifying physiologic stress patterns contributing to impaired circulation, mitochondrial dysfunction, inflammation, and sensory irritation.

The evaluation may include:

- thermographic circulation imaging
- nitric oxide testing
- gait evaluation
- balance testing
- sensory observations
- glucose evaluation
- inflammatory observations
- nutritional history
- fatigue patterns
- Heart Sound Recorder evaluation
- body signal observations

One of the most visually powerful tools we utilize is thermographic imaging. Reduced circulation patterns often appear as cooler blue or purple thermal patterns involving the hands and feet.

When circulation improves, warmer yellow and orange thermal patterns may become visible, suggesting improved microcirculation and tissue oxygenation.

The Drugless Doctors Three-Tier Supportive Approach

Our goal is not simply symptom masking.

The objective is supporting:

- circulation
- nitric oxide physiology
- mitochondrial activity
- oxygen delivery
- tissue recovery
- inflammatory balance
- nerve recovery physiology
- metabolic stability

Chemotherapy-related neuropathy often involves multiple overlapping physiologic stress patterns including mitochondrial dysfunction, oxidative stress, inflammation, impaired circulation, and sensory nerve injury.

Because of this, the Drugless Doctors supportive approach commonly incorporates a three-tier strategy.

Tier 1 — Biochemical Support

The biochemical tier focuses on helping support:

- mitochondrial function
- antioxidant protection
- nitric oxide physiology
- circulation
- inflammatory balance
- nutritional stability
- nerve recovery physiology

This portion of the program may include:

- nutritional stabilization
- antioxidant support
- mitochondrial support
- nitric oxide support
- glucose stabilization
- anti-inflammatory nutritional guidance

The goal is supporting the internal physiologic environment necessary for tissue recovery and nerve support.

Tier 2 — Biovascular Support

The biovascular tier focuses on circulation, microcirculation, tissue oxygenation, and nitric oxide physiology.

One supportive modality utilized in the practice is FDA-cleared photobiomodulation therapy using the 15-watt TheraRay device.

Photobiomodulation is designed to support:

- circulation
- nitric oxide physiology
- tissue oxygenation
- mitochondrial activity
- ATP production
- cellular energy production
- recovery physiology

Improving microcirculation becomes extremely important because sensory nerves are highly dependent upon oxygen delivery and blood flow.

Tier 3 — Biostructural Support

The biostructural tier focuses on improving:

- gait stability
- posture
- balance physiology
- movement patterns
- proprioception
- tissue recovery
- supportive nerve regeneration physiology

This tier may include:

- posture evaluation
- gait evaluation
- balance rehabilitation concepts
- supportive structural stabilization
- nutritional rebuilding support
- nerve recovery support
- home supportive strategies

The overall objective is helping support the body's ability to improve circulation, oxygen delivery, tissue recovery physiology, neurologic stability, and overall quality of life.

Patient Summary

Chemotherapy-induced peripheral neuropathy is often the result of multiple overlapping physiologic stressors including:

- mitochondrial dysfunction
- oxidative stress
- impaired circulation
- inflammation
- reduced oxygen delivery
- sensory nerve injury
- impaired tissue recovery

The earlier these physiologic stressors are identified and supported, the greater the potential for improving circulation, tissue oxygenation, sensory stability, and overall recovery physiology.



Watch Our Neuropathy Playlist on YouTube

<https://www.youtube.com/@DruglessDoctor>

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