Enhancing Patient Outcomes Through Shockwave and Class IV Laser Therapy in Podiatric Medicine

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Where Innovation Meets Movement

Regenerative Medicine Isn't Next. It's Now.

Old Limits

Orthotics, cortisone, surgery hit their ceiling

New Expectations

Patients demand recovery, not just relief

New Standard

Early adopters defining tomorrow's care

Bridging the Gap between Conservative and Surgical Care

40%

of chronic heel or tendon pain do not achieve adequate relief with standard care

Steroid Risk

Steroids risk tissue breakdown and rupture

+

Surgery Burden

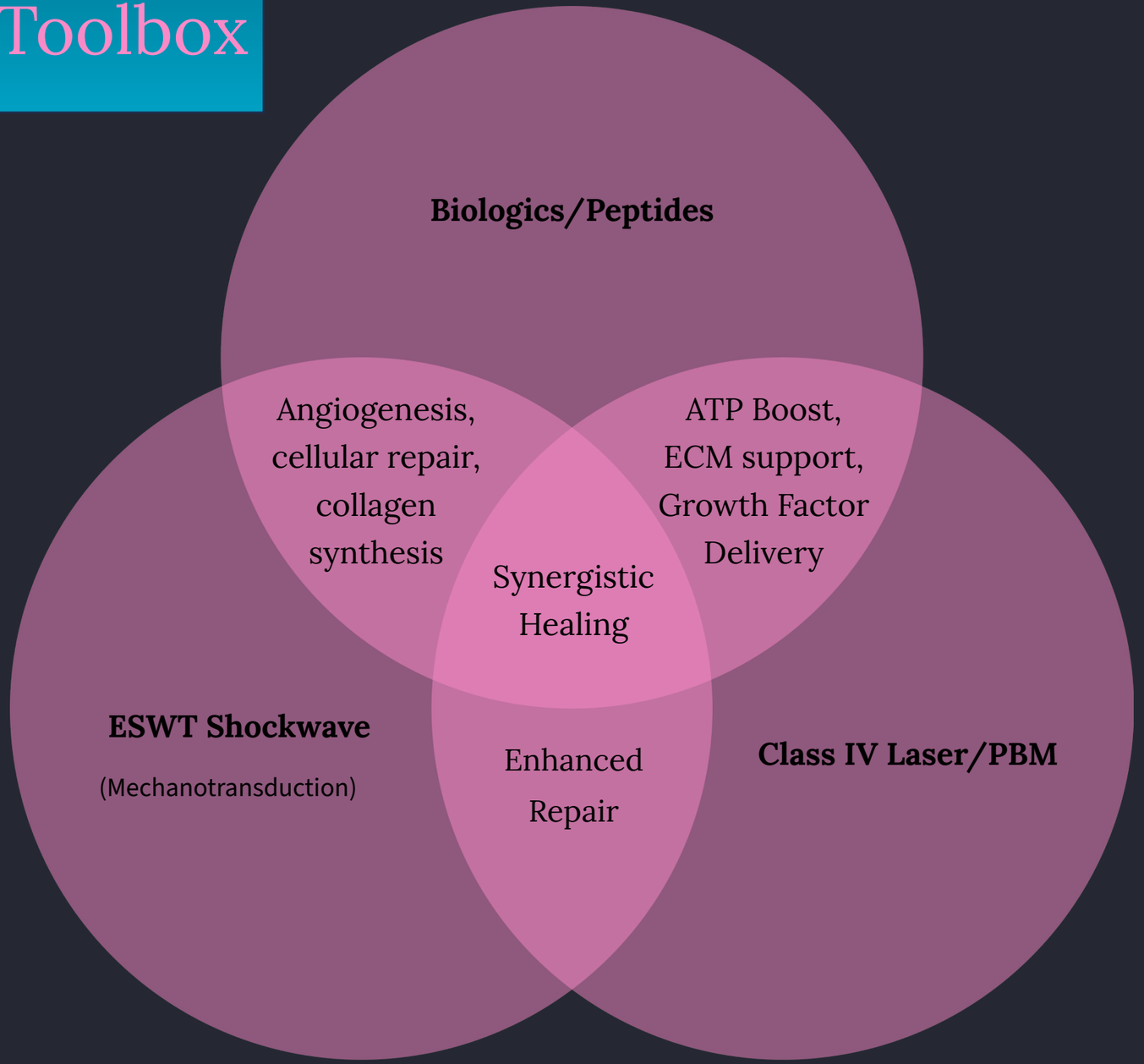
Surgery adds downtime and cost

=

Regenerative Solution

Regenerative care fills the gap between conservative and surgical treatment

The Modern Regenerative Toolbox



Shockwave: The Catalyst

Acoustic Waves

Trigger controlled microtrauma → biological repair cascade

Angiogenesis

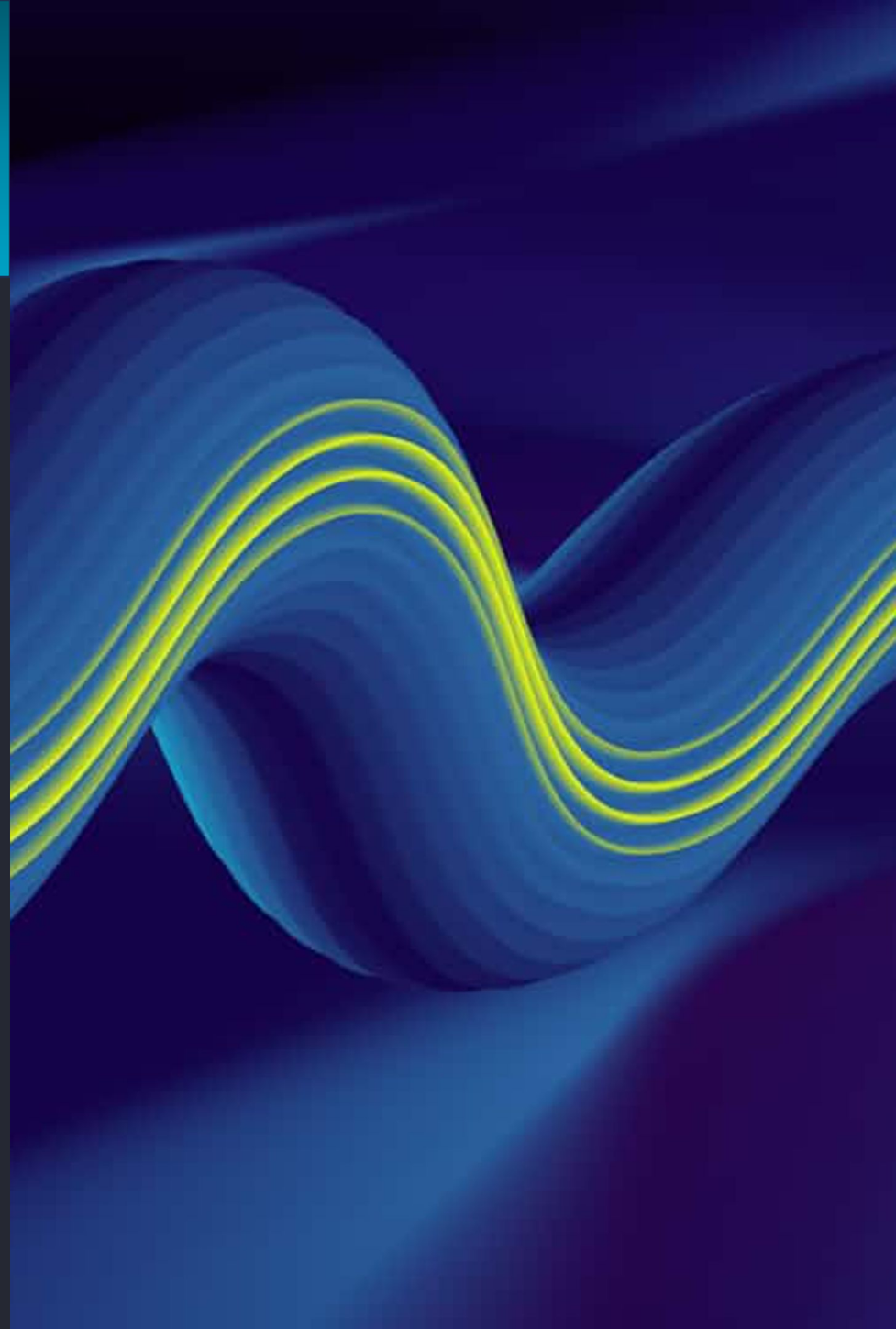
New blood vessel growth via VEGF

Stimulates tenocytes proliferation and collagen remodeling

Proven Results

76% improvement in chronic plantar fasciitis

Gerdesmeyer et al., J Bone Joint Surg, 2008



Laser Therapy: The Amplifier

01

Photon Energy

Energizes mitochondria

02

ATP Boost

Increases cellular energy production

03

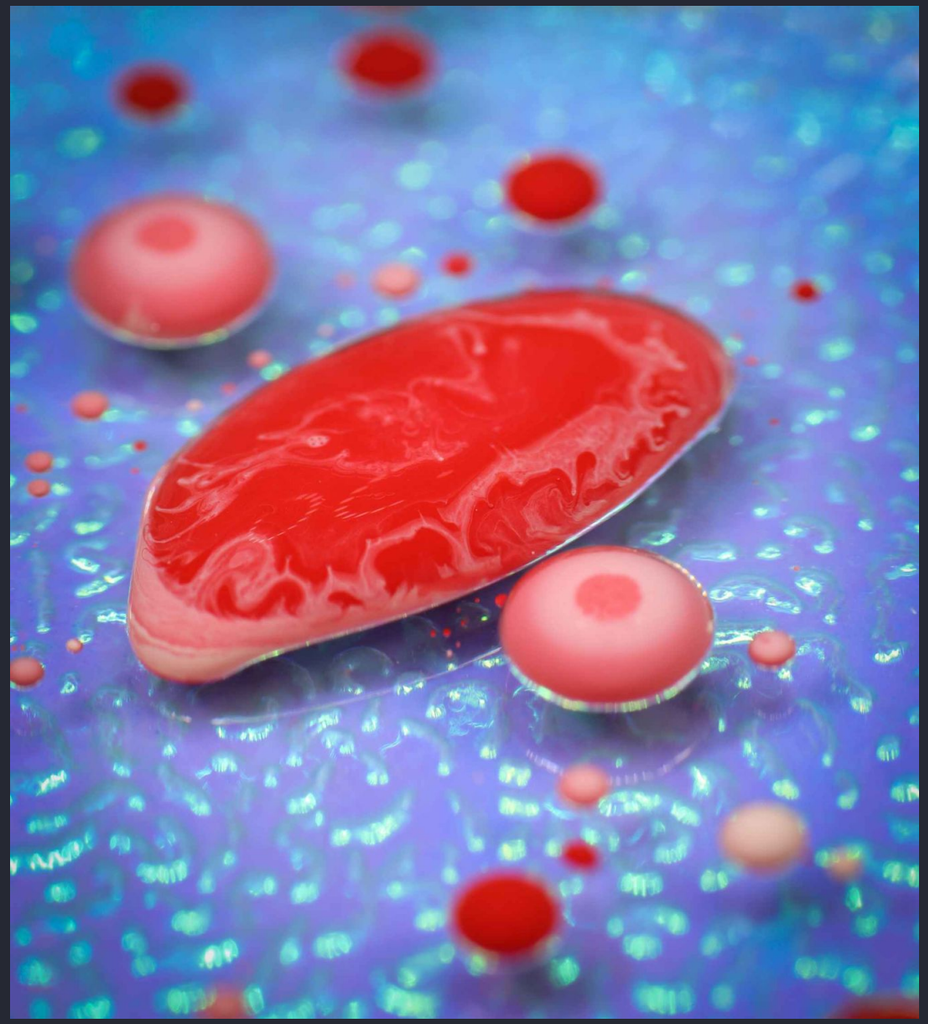
Inflammation Drop

Reduces inflammatory cytokines (TNF-α, IL-1β)

04

Accelerated Healing

30–50% faster tissue repair



Pain relief comparable to NSAIDs—without side effects

Enwemeka et al., Photomed Laser Surg, 2014

The Sum Is Greater Than Its Parts

Shockwave

Triggers **mechanotransduction** and controlled inflammation
Upregulates VEGF → angiogenesis & collagen synthesis
(Schmitz et al., *Br Med Bull* 2015)

Activates stem cells and **creates a regenerative window**

Laser

Applied **immediately after ESWT** while metabolism is active
Boosts **ATP**, improves oxygenation, ↓ oxidative stress
(Hamblin 2022; Chung 2012)

Extends the **anti-inflammatory and reparative cascade**

Result

Shockwave triggers the signal — Laser sustains the response

Combined → faster angiogenesis, reduced pain, accelerated recovery

(Xu et al., *Front Neurosci* 2024; McNary et al., *Int Adv Nat Med* 2023; Toprak et al., *Knee Surg Relat Res* 2024)

Clinical Applications

From Inflammation → Regeneration

- Plantar Fasciitis
  Capsulitis, bursitis
- Inflammatory Conditions
  Arthritis/DJD
- Structural Healing
  Stress fractures, postoperative recovery
- Tendinitis/Overuse injuries
- Nerve Entrapment/ Neuropathy
- Acute/Chronic Sprains

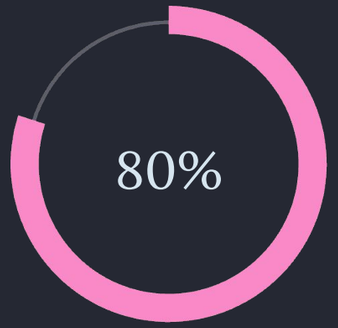
💡 Combine with peptides and biologics for amplified results

Protocols in Practice

Condition	Shockwave	Laser	Duration
Plantar Fasciitis	1×/wk × 5	1–2×/wk × 6	3–4 wks
Tendinosis	1×/wk × 5	2×/wk × 6	3–4 wks
Neuropathy	1×/wk × 6	1×/wk	12 wks + monthly

The key is consistency — when you stack these modalities in sequence,

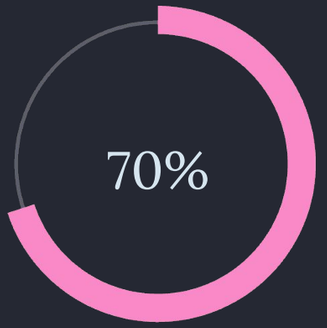
Real-World Outcomes



Sustained Relief

At 12 months follow-up

(Schmitz et al., *Br Med Bull* 2015)



Pain Reduction

Within 4 weeks of treatment

(Rompe et al., *J Bone Joint Surg Am* 2007)

Reduced Interventions

Decreased need for injections and surgery

(Speed et al., *Br J Sports Med* 2014)

(Seung-Hoon et al., *Lasers Med Sci* 2020)

(Xu et al., *Front Neurosci* 2024)

Case Example

History of Present Illness:

Patient is a 54-year-old male with h/o hypertension presenting to the clinic with a chief complaint of left foot plantar fasciitis that has been present for approximately two years. He describes the condition as being "pretty much on" consistently during this period. He reports having previously sought medical attention, where x-rays were performed and plantar fasciitis was diagnosed. He was provided with various conservative treatment recommendations including rolling a tennis ball under the foot, heat/cold therapy, toe curling exercises, and night splint use.

Craig notes that while the initial pain and tightness in his foot would improve with these treatments, he now experiences primarily heel pain. He describes this as a constant, dull soreness at a level of 3-4/10 that is not sharp but persistently present. The pain affects the entire heel region rather than a specific point. He reports some morning tightness but states it is "not crazy" and denies the classic symptom of severe first-step pain in the morning. The night splint continues to provide some relief when worn, reducing morning tightness.

He has consulted with a chiropractor who suggested his symptoms might be related to calf tightness. Despite performing heel and calf stretching exercises, he reports only partial relief without complete resolution of symptoms. He states the pain is "never debilitating" but is a constant presence that he can feel even while sitting.

Craig has found significant relief with specialized footwear (Oofos) that supports the heel rather than placing pressure on it. He reports these shoes have been a "pain changer" allowing him to walk without discomfort. He is seeking treatment to determine why he cannot completely resolve this condition despite multiple interventions.

History of Present Illness:

Patient is a 54-year-old male with h/o hypertension returning to the clinic for follow-up regarding LEFT foot pain, also present for his 6st Softwave and Remy Laser treatment on the left heel.

The individual presents for a follow-up session of soft-wave electric shockwave therapy for foot pain. Reports that the pain over the last week has been minimal, rating it a 1-2 out of 10. States that yesterday he played pickleball for an hour and a half in high heat, which was physically draining, and he feels this may have contributed to increased sensitivity during today's treatment. He confirms he has been compliant with his stretching exercises. He believes his pain may have reached a plateau at a manageable level.

Case Example

History of Present Illness:

Patient is a 47-year-old female with h/o Right Wrist Ganglion Cyst removed (2009), Remove LEFT Foot Nerve Lesion (Morton) removed (2011), C-section (2012), RIGHT Bunionectomy (2018) presenting to the clinic with a chief complaint of LEFT plantar fasciitis pain since April 2024. She reports the pain started while using the treadmill on an incline and has persisted despite conservative treatment including stretching, icing, heating, and resting ("I've tried so many things. That's it. Everything they tell me to try, and I'm like, I'm not sure what to do now."). Patient denies any recent injuries to area.

She had a similar issue in her right foot a few years ago that resolved with bunion surgery and physical therapy. She has not seen any relief with her current symptoms despite trying home remedies. Patient states that pain is worst in the morning, rating it a 4-5 out of 10 in severity. She has not found anti-inflammatory medications helpful.

Patient reports seeing a physical therapist at East Side Movement for 4 sessions but stopped as it seemed to be exacerbating her symptoms. The physical therapist had her doing adductor strengthening exercises and using toe spacers which patient did not find helpful.

- Social history: Patient works as a ceramic artist, on feet for about half the day. Was running about 40 miles per week, also does rowing and swimming. Has ceased all activities due to pain.

History of Present Illness:

Patient is a 47-year-old female with h/o Right Wrist Ganglion Cyst removed (2009), Remove LEFT Foot Nerve Lesion (Morton) removed (2011), C-section (2012), RIGHT Bunionectomy (2018) who is returning to the clinic for plantar fasciitis LEFT foot, and orthotics dispensing, as well as her 6th laser treatment.

Patient reports that she is not experiencing any pain or discomfort while wearing the orthotics anymore. She recently bought a new pair of Altra Paradigm shoes that fit the orthotics well and do not cause any pushing on her heel like the previous Hoka shoes did. Patient states that the heel pain is not completely gone but is better, estimating it to be about half of what it was previously. She describes the pain as being really stubborn and located just in the heel. However, if she has to stand up all day, the pain starts moving out to all parts. Patient is unsure how the healing process works and if this part just needs more time to heal.

Patient has been wearing the Altra Paradigm shoes since Sunday and feels they have improved her posture. She is able to tell a big difference between the two pairs of shoes in terms of comfort and fit with the orthotics. Patient has been icing the heel in the afternoon.

Case Example

History of Present Illness:

Patient is a 29-year-old male with no h/o chronic medical condition returning to the clinic today for follow-up regarding a left fourth metatarsal fracture follow up. He reports new complaints of pain on the outer side of his left leg and a pulling sensation in the posterior aspect of his left knee.

The pain on the outer side of the left leg started approximately two to three weeks ago. Initially, after his last visit, his entire leg was hurting, but the pain is now localized to the lateral aspect. The pain is described as a constant, dull ache that begins after walking for about half a mile. He reports that wearing CEP brand compression socks has provided significant improvement, reducing the pain from his entire leg to just the outer side. The pain is present but not severe enough to cause him to stop walking.

He also reports a non-painful pulling and tightness sensation in the posterior aspect of his left knee, which he describes as feeling his tendon "moving around" or "popping." This occurs when performing squats and deadlifts, which he does twice a week. He is currently squatting 150 lbs. He also notices this sensation when his leg is stretched out.

He has been walking approximately a mile, three to four times per week. He performs stretching once a day on the days he works out. He recently purchased a Theragun for shoulder and back issues related to working out and plans to start using it. He uses the dispensed EB2 orthotics in his walking and work shoes, but not for daily walking or during weightlifting. He has noticed a positive difference when using them. He denies any other new concerns.

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Patient is a 29-year-old male with no h/o chronic medical condition returning to the clinic today for follow-up regarding a left fourth metatarsal fracture follow up. He reports new complaints of pain on the outer side of his left leg and a pulling sensation in the posterior aspect of his left knee.

The Patient presents for the second session of SoftWave Electric Shockwave Therapy for his left foot. He reports significant improvement after just one session, stating he has been able to walk for miles without any pain, which he has not been able to do in a year since he broke his foot. He reports being very pleased with the results.

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Package

RIGHT LOWER LEG

	DATE:	Energy	Frequency	AREA OF TREATMENT	PAIN B/A	MA Initial	Laser
1							
2							
3							
4							
5							
6							
Recommendation							

LEFT LOWER LEG

	DATE:	Energy	Frequency	AREA OF TREATMENT	PAIN B/A	MA Initial	Laser
1	7/29/25	9/14	3.0	9E 14E LT Dorsal/Lateral calf.	7/10 3/10	ED	MLS - Pra X-5/Y-2
2	8/06/25	11/14-15	3.0	11 14 11E. 14-15E. 11 Dorsal/Lateral 11	6/10 3/10	ED	MLS
3	8.13.25	14/15	3.0	R LATMEDIAL 9E 14 LTLAT 15 11	3/10	TH	MLS
4	8/22/25	13/14	3.0	11 11	2/10 1/10	ED	MLS
5	8/28/25		3.0	11 11	2/10	ED	MLS
6							
Recommendation							

Patient Experience and Retention

Non-Invasive

Minimal downtime

High Satisfaction

Strong ratings and word of mouth referrals

Recovery Packages

Shockwave + Laser + Biologic bundles

> “Patients don’t remember the CPT code—they remember how you made them feel and how fast they could move again.”

Practice Growth meets Physician Purpose

Cash-Based Revenue

Immediate income stream

Regenerative Bundles

Add-on value for patients

Competitive Edge

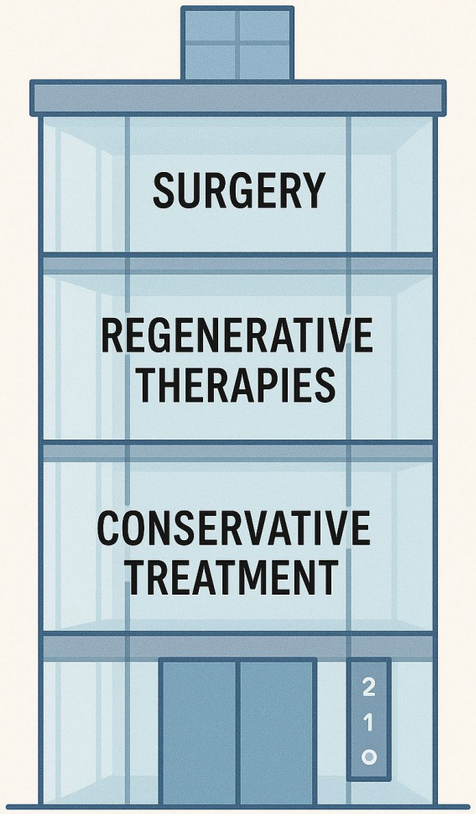
Stand out as advanced podiatry powered by regeneration

Implementation Tips

1. **Train Your Team**
   Focus on healing outcomes, not just sessions
2. **Track Pain Scales**
   Show progress visually to patients
3. **Align Messaging**
   Consistent regenerative language across practice
4. **Integrate Early and Encourage Early Adoption**
   Acute & chronic use = faster recovery

Reframing the Algorithm

From Symptom Management → Regenerative Outcomes



Move regenerative tools earlier

Change timing
Change outcomes

Technology Doesn't Change Outcomes—Doctors Do

Offer Early

Regenerative care from the start

Track Healing

Real outcomes, not symptoms

Educate

Team & patients together

Start Small

Grow with consistency

> "We're not just treating pain—we're restoring biology."