



NORTH AMERICAN
INSTITUTE OF
MEDICAL AESTHETICS

OMNISPEC PLATFORM TRAINING · EDUCATOR SERIES

DOCUMENT THREE OF THREE

Medispec OmniSpec — Training Outline

Theory first, followed by hands-on training

The classroom sequence with timings: opening, tissue response, ED1000, LilyCare, OrthoSpec and the safety review, plus the herniated-disc and trigger-point reference appendices.

AUDIENCE

Licensed clinicians new to shockwave, and clinicians experienced with other shockwave devices

FORMAT

Classroom sequence, approx. 25 minutes

PREPARED BY

NAIMA Education with 3D Medical Technologies, Canadian distributor for Medispec

SECTION 1

Opening: Medispec & OmniSpec

3-4 MINUTES

Classroom

Medispec

- Established in 1992
- More than 30 years of medical shockwave technology
- Origins in urology and lithotripsy
- Expanded into sexual health, orthopedics and regenerative applications
- 3D Medical Technologies — Canadian distribution
- NAIMA Education — clinical education and training

What is a shockwave?

MEDISPEC TERMINOLOGY

Shockwave / acoustic wave — an acoustic wave that carries energy and propagates through a liquid medium. In biological tissue, the wave transmits mechanical energy through blood, tissue and organs.

Extracorporeal = outside the body

ESWT = Extracorporeal Shock Wave Therapy

THEREFORE

“We are generating acoustic shockwave energy outside the body and transmitting that energy through the applicator into a targeted treatment area.”

What type of shockwave does OmniSpec use?

Electrohydraulic shockwave technology

- Electrical energy generates the acoustic shockwave within a fluid medium.
- The shockwave is directed by the applicator / reflector.
- Medispec's Multi-Wave® Technology uses multiple points of reflection to distribute shockwaves through a comparatively deep and large therapeutic zone.

Multi-Wave® — what students need to remember

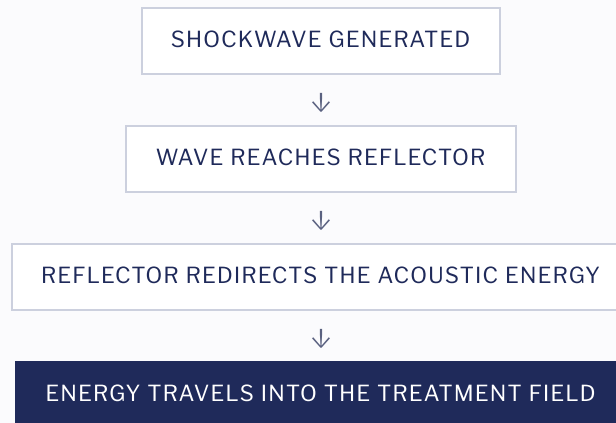
“Electrohydraulic tells us how the shockwave is generated. Multi-Wave describes Medispec's proprietary method of directing and distributing those waves across the therapeutic zone.”

Medispec Multi-Wave® technology produces a stream of shockwaves using multiple reflection points, distributing acoustic energy across an extended treatment area.

Start with a single reflection

Think of the reflector inside the applicator as shaping and directing the shockwave.

FIGURE 1 — A SINGLE REFLECTION



Now add the “Multi” in Multi-Wave®

Instead of directing the energy toward one single focal point, Medispec describes Multi-Wave® as using multiple points of reflection.

SECTION 2

What Happens When the Shockwave Reaches Tissue?

2-3 MINUTES

Introduce the biological terminology here

The teaching sequence



Medispec specifically identifies mechanical stress and cavitation as physical effects associated with shockwaves, and describes vasodilation as a short-term response and neovascularization (angiogenesis) as a longer-term response to Multi-Wave.

Define the key terms

TERM	DEFINITION
Mechanical stress	The physical forces placed on tissue and cells by the acoustic wave.
Cavitation	Microscopic gas bubbles can form, oscillate and collapse within fluid in response to pressure changes produced by the shockwave.
Mechanotransduction	A useful scientific teaching term: cells convert the mechanical stimulus into biochemical / cellular signalling. MECHANICAL STIMULUS → BIOLOGICAL SIGNAL
Vasodilation	Existing blood vessels widen, producing a more immediate increase in blood flow.
Angiogenesis	New blood vessels develop from existing blood vessels. This is Medispec's definition.
Neovascularization	The broader development of new vascularization within tissue. Medispec's OmniSpec brochure pairs the term with angiogenesis.

VEGF and eNOS

You don't need a long molecular biology lecture. Give them two important names.

VEGF

Vascular Endothelial Growth Factor

- Important signalling protein involved in angiogenesis
- Promotes endothelial-cell responses involved in developing new vasculature

eNOS

endothelial Nitric Oxide Synthase

- Enzyme associated with production of nitric oxide (NO) by vascular endothelial cells
- NO contributes to vascular smooth-muscle relaxation and vasodilation

Medispec specifically discusses Li-ESWT in relation to shear stress, eNOS stimulation and VEGF release.

THE TAKEAWAY

“We're applying a mechanical acoustic stimulus with the objective of initiating cellular signalling and subsequent vascular and tissue responses.”

SECTION 3

OmniSpec ED1000 — Men's Sexual Health

5 MINUTES

Understanding the mechanism of action

Before understanding how ED1000 works, clinicians first need to understand how a normal erection occurs and what can go wrong in erectile dysfunction.

An erection is a neurovascular event involving neurological signalling, vascular function and smooth-muscle relaxation.

A. Normal erectile physiology

STEP 1

Sexual stimulation

Sexual stimulation activates neural pathways involved in the erectile response. This initiates the release of nitric oxide (NO) within penile erectile tissue.

STEP 2

Nitric oxide and cGMP

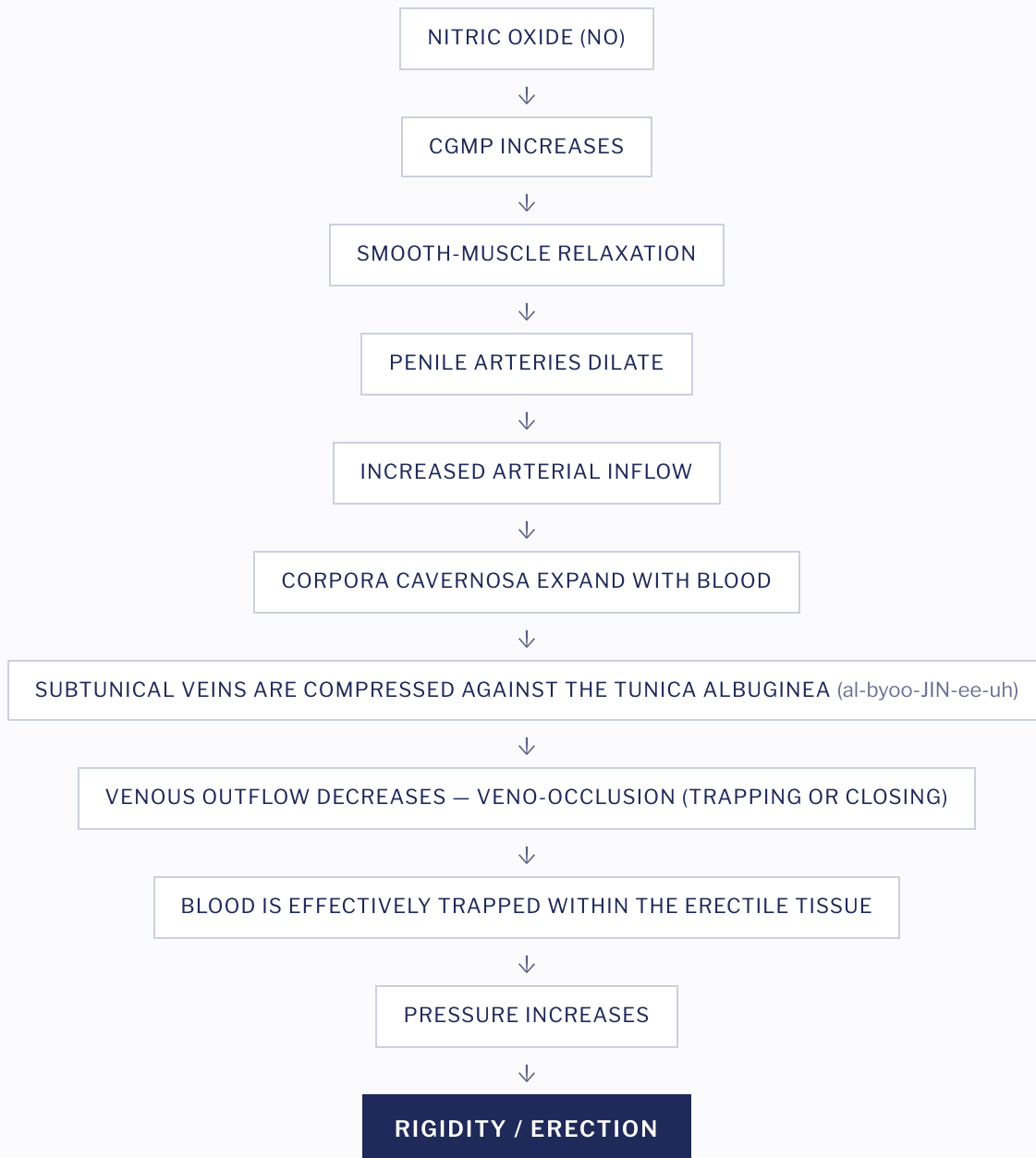
Nitric oxide (NO) stimulates production of cGMP — cyclic guanosine monophosphate. cGMP causes smooth muscle within the penile arteries and erectile tissue to relax.

STEP 3

Increased blood flow

As the smooth muscle relaxes, the following sequence occurs.

FIGURE 2 — THE ERECTILE CASCADE

**KEY TEACHING CONCEPT**

“An erection requires both adequate arterial inflow and the ability to restrict venous outflow.”

B. Key penile anatomy

Before using the ED1000 applicator, students should be able to identify and understand:

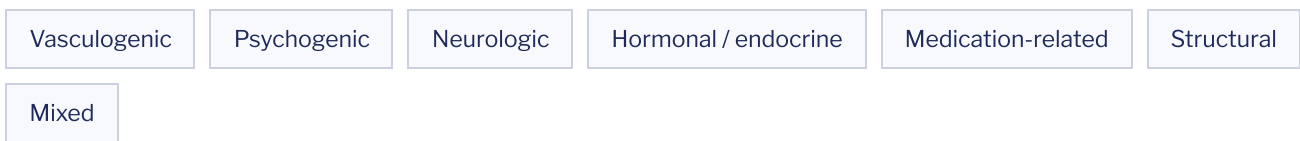
- Penile shaft
- Corpora cavernosa
- Corpus spongiosum
- Tunica albuginea
- Penile arteries
- Penile root
- Right and left crura
- Ischiopubic rami

Emphasize that the corpora cavernosa are the principal erectile bodies responsible for rigidity. As they fill and expand, they press outward against the relatively noncompliant tunica albuginea, contributing to compression of the subtunical venous channels and the veno-occlusive mechanism.

C. What is erectile dysfunction?

Erectile dysfunction (ED) is the persistent inability to achieve or maintain an erection sufficient for satisfactory sexual activity.

ED can have multiple contributing causes:



PRIMARY ED1000 CONCEPT

VASculogenic ED

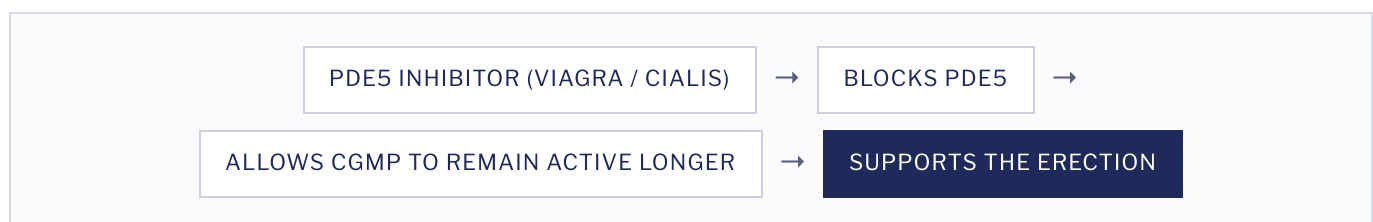
This refers to erectile dysfunction in which vascular impairment contributes to inadequate erectile blood flow and/or vascular function.

Importantly: arousal and erection are not the same thing.

A man may experience normal sexual desire and arousal but still be unable to develop or maintain adequate rigidity if the downstream erectile response is impaired.

D. Where do Viagra and Cialis fit?

Two commonly prescribed medications are Viagra (sildenafil) and Cialis (tadalafil). Both are PDE5 inhibitors. PDE5 = phosphodiesterase type 5.

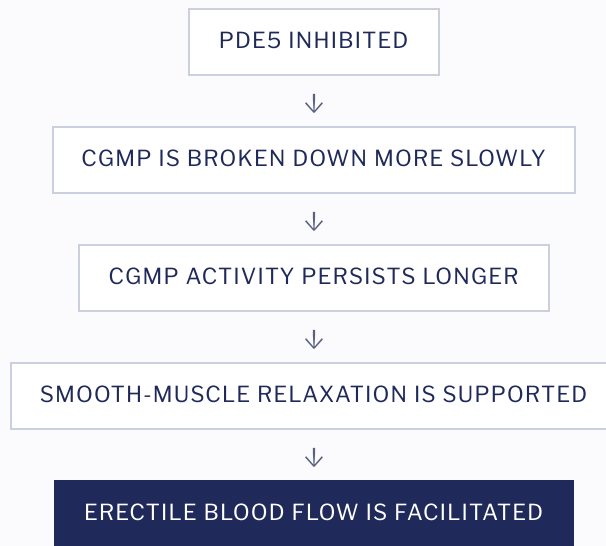


To understand them, go back to cGMP. During the erectile response:

NO → CGMP ↑ → SMOOTH-MUSCLE RELAXATION → INCREASED BLOOD FLOW

The body contains the enzyme PDE5, which breaks down cGMP. A PDE5 inhibitor inhibits that enzyme.

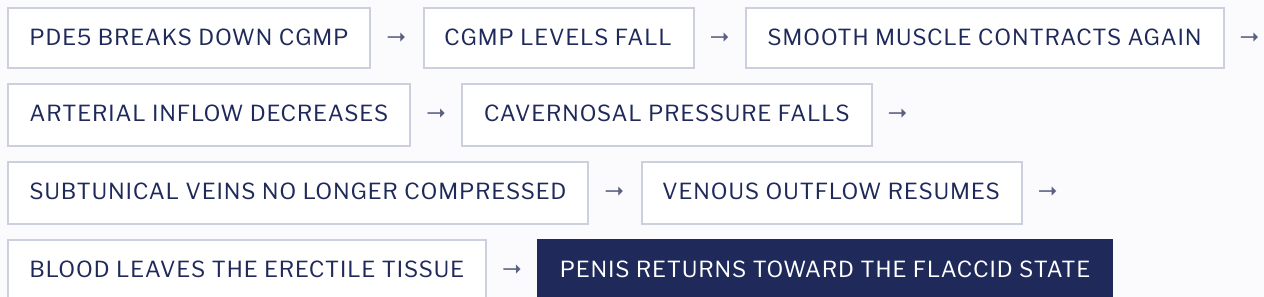
FIGURE 3 – PDE5 INHIBITION



THE “PIPE” ANALOGY

“Think of cGMP as helping open the pipe. PDE5 breaks down cGMP, allowing that effect to diminish. A PDE5 inhibitor slows that breakdown, helping the smooth muscle remain relaxed so blood can enter the erectile tissue more effectively.”

When stimulation decreases and the erection needs to resolve:



“PDE5 is part of the body's normal off-switch for the erectile response. It breaks down cGMP, allowing smooth-muscle tone to return, arterial inflow to decrease and venous drainage to resume.”

“A PDE5 inhibitor doesn't create the erection. It slows that off-switch by preventing PDE5 from breaking down cGMP as quickly.”

IMPORTANT DISTINCTION — PDE5 INHIBITORS

- Do not directly create sexual arousal.
- Do not simply manufacture nitric oxide.
- Specifically inhibit PDE5-mediated degradation of cGMP.
- Generally depend upon sexual stimulation and activation of the NO–cGMP pathway to produce their erectile effect.

E. Where ED1000 / MAMBA is different

MEDISPEC TERMINOLOGY	MEANING
EDSWT	Erectile Dysfunction Shock Wave Therapy
Li-ESWT	Low-Intensity Extracorporeal Shock Wave Therapy
Electrohydraulic	The method used to generate the acoustic shockwave
Multi-Wave®	Medispec's approach to distributing the shockwaves across an extended therapeutic treatment zone

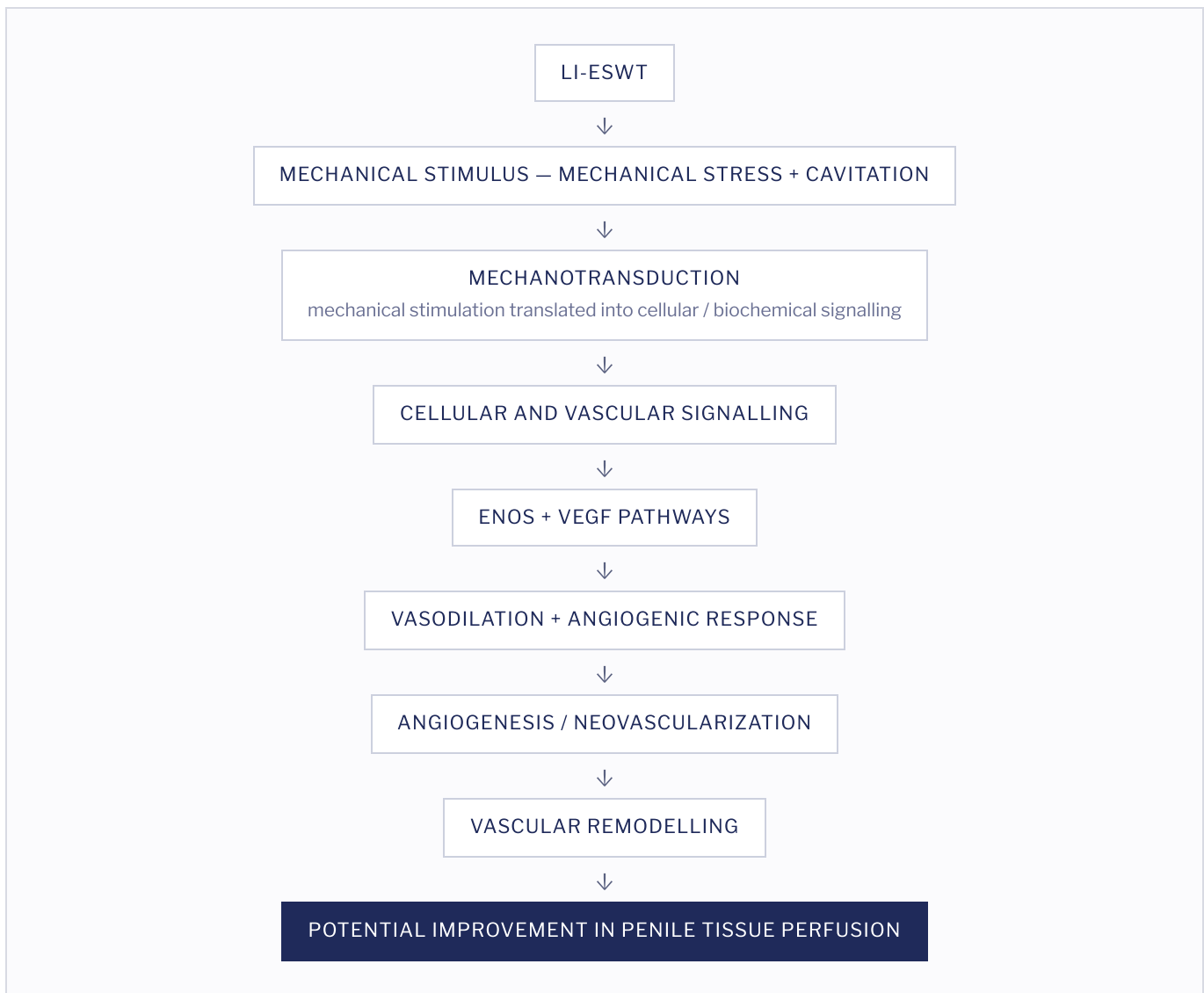
Medispec describes ED1000 as using acoustic technology based on electrohydraulic power and low-intensity extracorporeal shockwaves directed toward penile vascular tissue.

THE IMPORTANT DISTINCTION

“PDE5 inhibitors pharmacologically support the erectile pathway. ED1000 uses low-intensity extracorporeal shockwave therapy to produce a controlled mechanical stimulus within targeted penile tissue.”

F. ED1000 — connect the science

When the acoustic shockwaves interact with the targeted tissue:

**eNOS**

endothelial nitric oxide synthase

Supports nitric-oxide-related
vascular signalling.

VEGF

vascular endothelial growth factor

Important signalling factor involved
in angiogenesis.

G. Angiogenesis & neovascularization

Angiogenesis Formation of new blood vessels from existing blood vessels.

Neovascularization The broader process / result of new vascular development within tissue.

Medispec describes EDSWT in terms of encouraging neovascularization within the penile shaft and crus.

KEY TEACHING STATEMENT

“We're not simply trying to temporarily dilate a blood vessel. The proposed therapeutic mechanism involves stimulating biological signalling associated with angiogenesis, neovascularization and vascular remodelling, with the objective of improving penile tissue perfusion.”

SHORTER-TERM**Vasodilation**

More immediate vascular response.

LONGER-TERM**Angiogenesis / neovascularization**

Longer-term vascular remodelling response.

H. PDE5 inhibitor vs. ED1000

PDE5 INHIBITOR	ED1000 / LI-ESWT
Pharmacologic	Acoustic / mechanical
Inhibits PDE5	Provides controlled mechanical stimulus
Slows cGMP breakdown	Initiates mechanotransduction
Supports smooth-muscle relaxation	Stimulates cellular / vascular signalling
Facilitates erectile response	Proposed angiogenic / neovascular response
Effect depends on drug activity	Objective is vascular / tissue remodelling

TEACH THIS CAREFULLY

The distinction should not be presented as “medication only masks the problem while shockwave cures it.” ED has many causes, PDE5 inhibitors are evidence-based treatments, and response to Li-ESWT varies with patient selection and disease severity.

I. ED1000 treatment anatomy

Students need to understand why each anatomical region is treated, rather than simply memorizing where to place the applicator.

Penile shaft

Understand the relationship between:

CORPORA CAVERNOSA → PENILE VASCULAR TISSUE → ERECTILE FUNCTION

Penile root and crura

The proximal corpora cavernosa continues as the right and left crura, which attach along the ischiopubic rami.

For locating the crura:

PENILE ROOT → ISCHIO PUBIC RAMUS → CRUS

ONE PHRASE TO REMEMBER

“Find the root. Find the ramus. Identify the course of the crus.”

Then follow the specific Medispec ED1000 treatment protocol for applicator positioning and treatment regions.

J. Other male applications

Peyronie's disease

Key anatomy and concepts:

- Tunica albuginea
- Fibrotic plaque
- Plaque location and mapping
- Active / acute versus stable / chronic disease
- Follow the specific Medispec protocol

Do not teach shockwave as reliably straightening penile curvature. Treatment objectives and evidence should be distinguished from claims of curvature correction.

Chronic pelvic pain syndrome

Understand:

- Crura treatment regions
- Perineal treatment region
- Relevant pelvic / perineal anatomy
- Treatment objective differs from vasculogenic ED
- Protocol differs from standard ED treatment

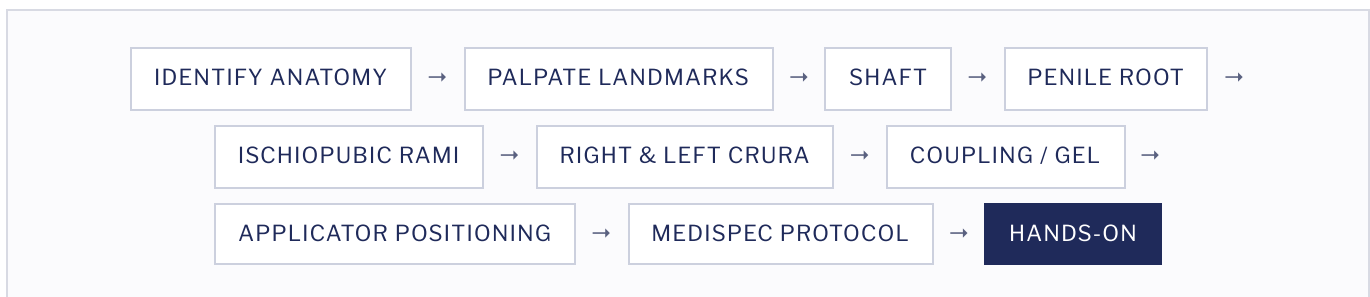
K. Transition directly into hands-on

SAY THIS

“Now that you understand how an erection occurs, what can interfere with that process, how PDE5 inhibitors support the NO–cGMP pathway, and the proposed vascular mechanism of ED1000, we're going to translate that knowledge into anatomy.”

“Don't simply memorize where I put the applicator. I want you to know what is underneath it and why we're treating that location.”

Then move immediately into:



This sequence fits naturally into the short classroom portion because students learn erection → ED → PDE5 → ED1000 mechanism → anatomy → applicator, rather than learning each concept in isolation.

SECTION 4

LilyCare — Women's Health

4-5 MINUTES

Same technology — different anatomy and clinical objective

This is the connection I want students to understand:

“The underlying shockwave technology hasn't changed. What changes are the anatomy, treatment field, therapeutic objective and protocol.”

Key anatomy

- Clitoris
- Clitoral crura
- Labia
- Perineal body
- Pelvic floor region
- External genital vascular anatomy

Biological concept



Medispec's LilyCare materials also use terminology around improved blood flow, collateral blood-vessel formation and regenerative effects.

Before touching the applicator

Review:

- Patient selection
- Indications
- Contraindications
- Informed consent
- Privacy and draping
- Positioning
- Anatomical landmarks
- Ultrasound gel / coupling
- Applicator contact
- Patient comfort
- Communication throughout treatment

Then move directly into the LilyCare hands-on demonstration.

SECTION 5

OrthoSpec — Musculoskeletal

5-6 MINUTES

START WITH ONE RULE

“There is no universal OrthoSpec movement pattern.”

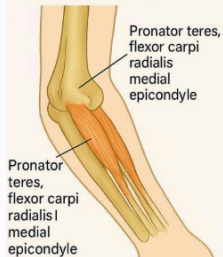
Different indications require different anatomical targets and treatment patterns.

Examples

INDICATION	TREATMENT PATTERN
Arthritis	Painful area → slowly travel over adjacent area.
Epicondylitis (ep-ih-kon-dih-LY-tis)	Painful area → adjacent area → tendon.
Trochanteric bursitis	Pain point → approximately 2-cm surrounding region → concentric circles moving outward and then back toward the pain point.
Trigger points	Locate trigger point → treat the defined point according to protocol → subsequently cover the surrounding / peripheral muscle with slow movement.
Herniated disc	Locate and mark level → delimit adjacent area → low-intensity shockwave → slow travel through the defined region.

MEDIAL VS. LATERAL EPICONDYLITIS

MEDIAL EPICONDYLITIS (Golfer's Elbow)

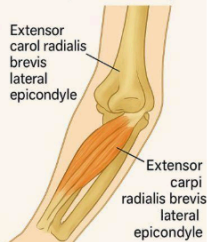


SPECIAL TESTS
Golfer's Elbow Test
Pain with tenderness near epicondyle

SIGN & SYMPTOMS

- Pain and tenderness near epicondyle
- Aching, burning pain around the elbow
- Pain with lifting and gripping
- Weakness in affected forearm

LATERAL EPICONDYLITIS (Tennis Elbow)



SPECIAL TESTS
Cozen's Test
Pain with resisted wrist extension

FIGURE 4 — MEDIAL VS. LATERAL EPICONDYLITIS

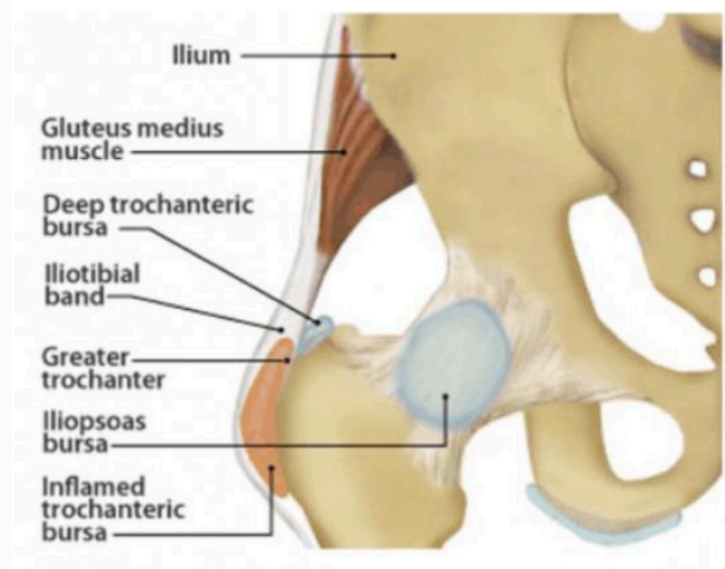
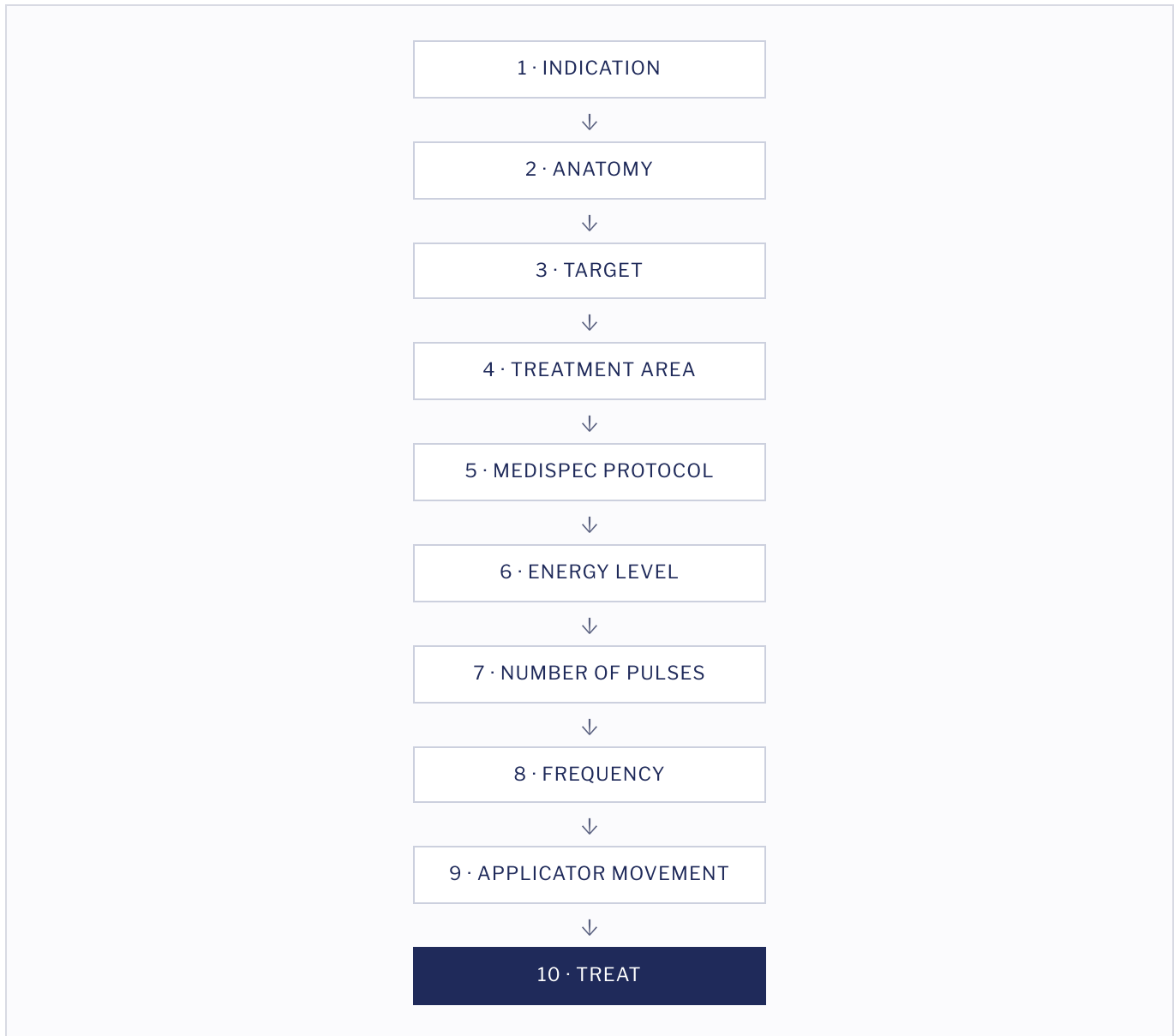


FIGURE 5 — TROCHANTERIC BURSAE AND SURROUNDING ANATOMY

The Medispec material explicitly describes its herniated-disc treatment as palliative rather than curative.

Teach the same clinical thought process every time**REINFORCE**

“Don't bring a treatment pattern you learned on another shockwave device and automatically apply it to OmniSpec. Follow the Medispec protocol for the applicator and indication you're treating.”

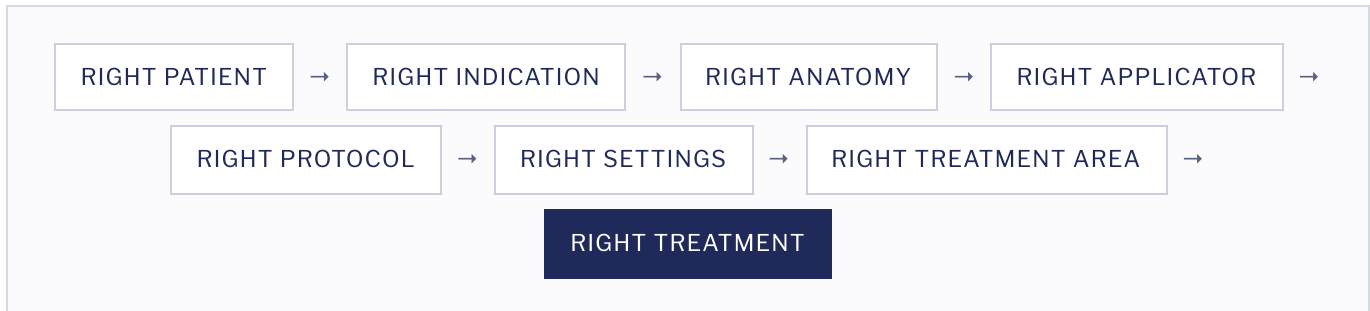
Medispec itself notes that protocols can vary substantially among shockwave systems because power sources, intensity and wave characteristics differ.

SECTIONS 6 & 7

Safety & Transition to Hands-On

2 MINUTES

Before every treatment



Then review the application-specific contraindications and precautions.

CRITICAL

Don't automatically transfer the OrthoSpec contraindication list to ED1000 or LilyCare. Use the current Medispec documentation applicable to that specific treatment.

Transition to hands-on

CLOSE THE CLASSROOM PORTION WITH THIS

“You now understand the foundation. We have the same OmniSpec platform and the same fundamental shockwave principles, but different anatomy, different therapeutic objectives, different applicators and different protocols.”

“From this point forward, we're going to learn by treating. Before every application, I want you to answer four questions:”

1. What are you treating?
2. What anatomy is underneath your applicator?
3. Why are you treating that location?
4. What does the Medispec protocol tell you to do?

“If you can answer those four questions, you're not simply following a recipe. You understand what you're doing.”

ED1000



LILYCARE



ORTHOSPEC



HANDS-ON

KEEP THESE ACCESSIBLE TO TRAINEES

For the slides and handout, keep the three official Medispec resources immediately accessible: **Medispec – What is a Shockwave?**, **Medispec – Angiogenesis**, and **Medispec – ED1000**.

SCIENTIFIC WORDING NOTE

One scientific wording adjustment was made intentionally: mechanotransduction is kept as the explanatory bridge, but it is not presented as a proprietary Medispec term. “Potential improvement in perfusion” is used rather than promising vascular regeneration or cure. That keeps the education scientifically stronger while still preserving Medispec's core terminology.

APPENDIX A

Herniated Disc Anatomy

Teaching module for the OrthoSpec herniated-disc indication

1. Vertebral level — where are we?

The vertebral level identifies which part of the spine you're referring to. For the lumbar spine:

L1 → L2 → L3 → L4 → L5 → S1

The discs are named for the two vertebrae they sit between. For example:

L3-L4 disc between L3 and L4

L4-L5 disc between L4 and L5

L5-S1 disc between L5 and the sacrum

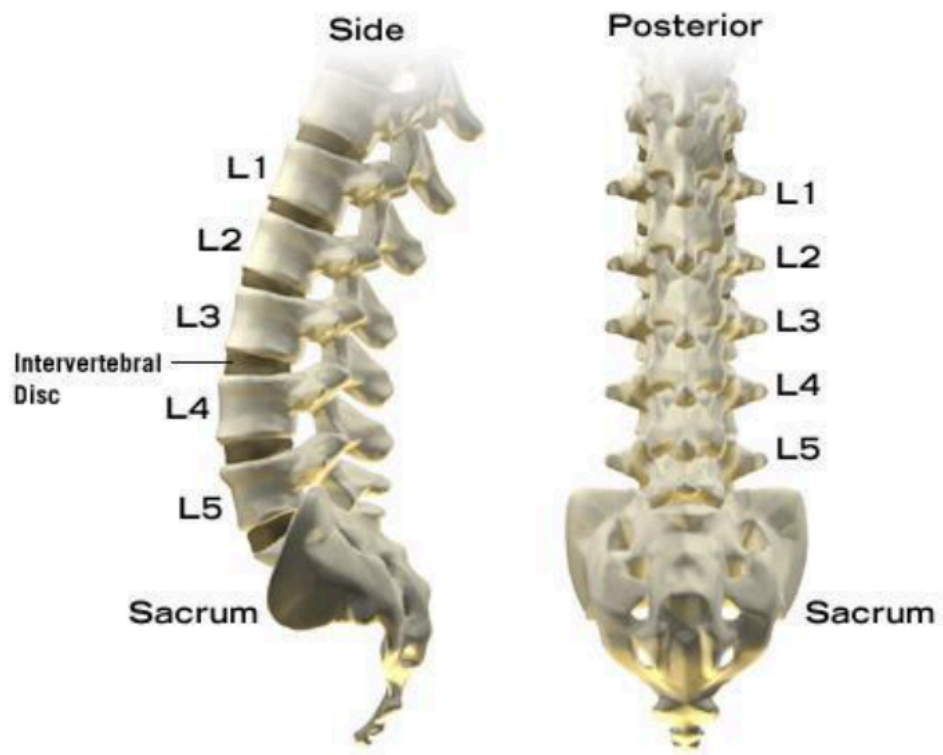


FIGURE 6 — LUMBAR LEVELS L1-S1, SIDE AND POSTERIOR VIEWS

“The vertebral level tells us where the problem is. Before treating, we need to know and correctly identify the affected spinal level.”

2. Intervertebral disc — the cushion

Between adjacent vertebral bodies sits an intervertebral disc. Think of it as a fibrocartilaginous cushion and load-distributing structure. It helps:

- absorb and distribute forces
- permit movement between vertebrae
- maintain spacing between vertebral bodies

And critically, the disc has two major components:

OUTSIDE

Annulus fibrosus

INSIDE

Nucleus pulposus

An easy analogy is a jelly doughnut, although anatomically it isn't literally a liquid-filled doughnut.

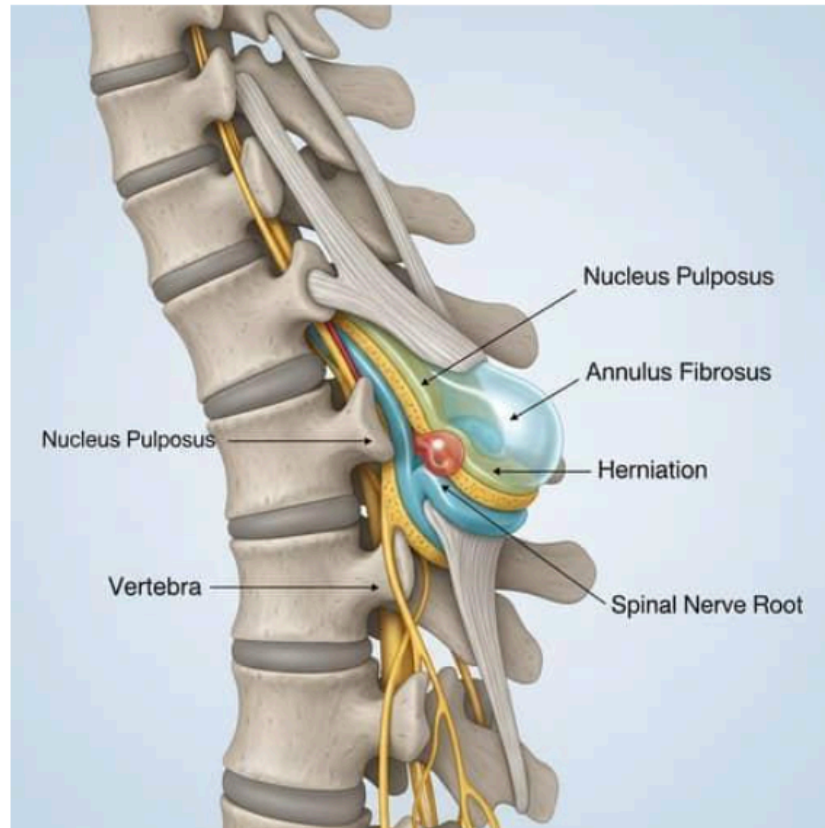


FIGURE 7 — INTERVERTEBRAL DISC — NUCLEUS PULPOSUS, ANNULUS FIBROSUS AND HERNIATION AGAINST THE NERVE ROOT

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3. Annulus fibrosus — the strong outer ring

Annulus = ring · Fibrosus = fibrous

The annulus fibrosus is the tough, layered outer portion of the intervertebral disc. Its collagen-rich layers surround and contain the nucleus pulposus.

Think: Annulus fibrosus = strong outer wall of the disc.

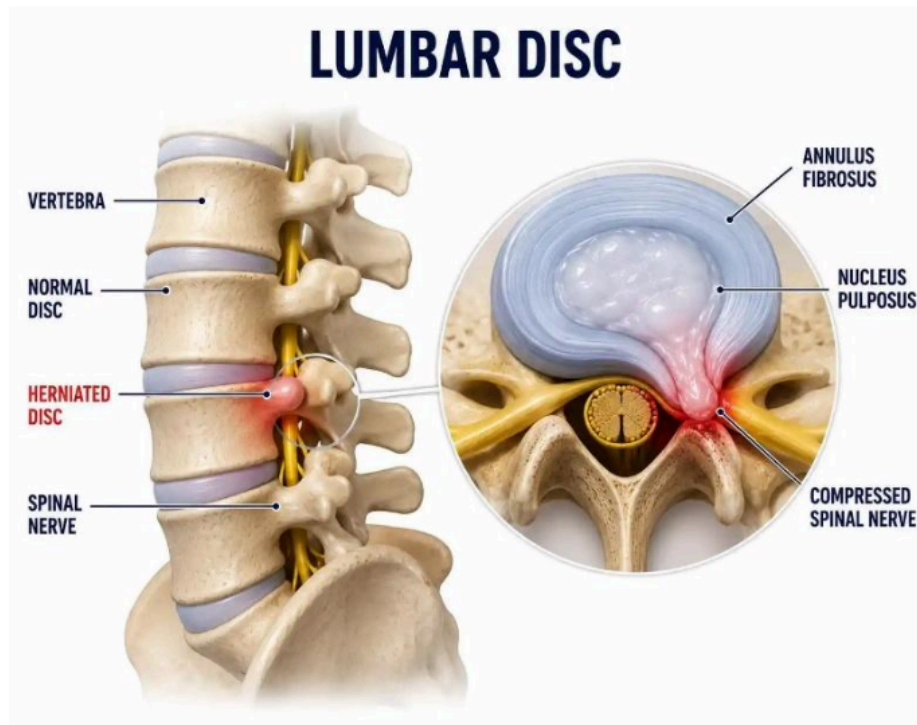


FIGURE 8 — LUMBAR DISC — ANNULUS FIBROSUS, NUCLEUS PULPOSUS AND A HERNIATION COMPRESSING THE SPINAL NERVE

With disc degeneration or injury, the annulus can develop fissures or tears, allowing material from the nucleus to move outward.

4. Nucleus pulposus — the softer inner core

The nucleus pulposus is the softer, hydrated, gel-like central portion of the disc. Its high water / proteoglycan content allows it to help distribute compressive loads.

Think: Nucleus pulposus = softer inner core.

5. Then what is a herniated disc?

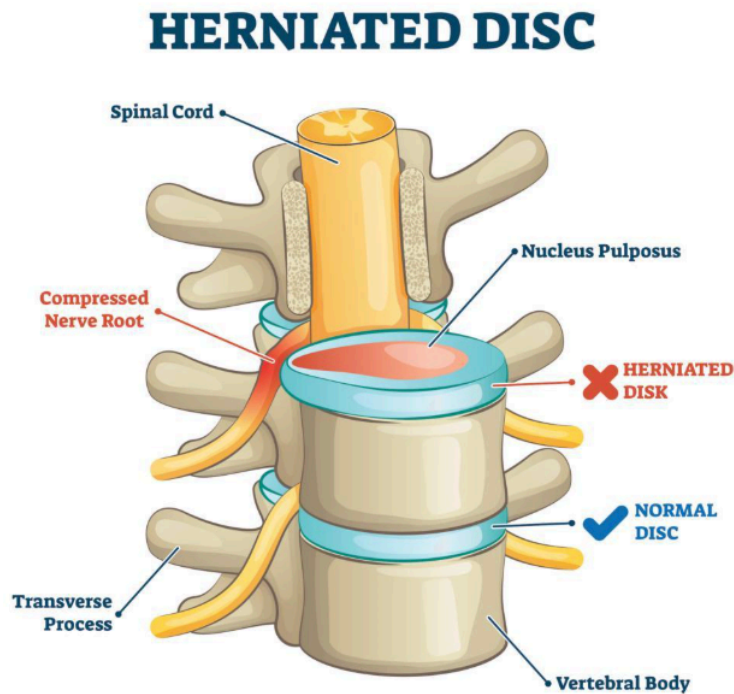


FIGURE 9 — HERNIATED DISC — NUCLEUS PULPOSUS DISPLACED AGAINST A COMPRESSED NERVE ROOT

Now all those terms come together. With a disc herniation, nucleus pulposus material is displaced through a defect in the annulus beyond its normal boundary. If that displaced material irritates or compresses a nearby spinal nerve root, the patient may develop symptoms such as radiating pain, numbness, tingling or weakness.

FIGURE 10 — THE ENTIRE SEQUENCE, ONE SLIDE

**ASK THE ROOM**

What level? What disc? Where is the annulus? Where is the nucleus?

Then connect that anatomy to the specific Medispec OrthoSpec protocol, without implying that shockwave is physically pushing the herniated nucleus back into the disc.

APPENDIX B

Myofascial Trigger-Point Reference

Major trigger-point chart for OrthoSpec hands-on teaching

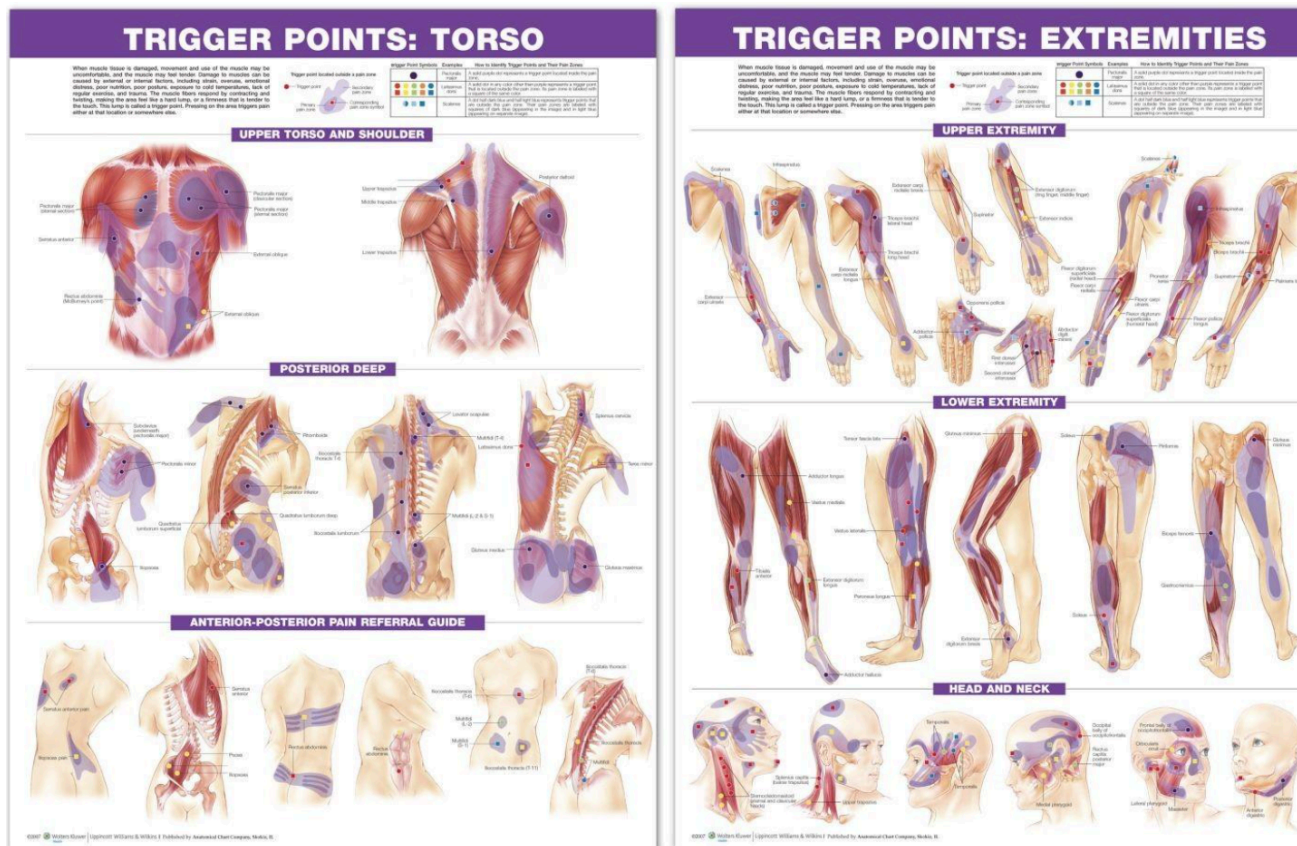


FIGURE 11 — TRIGGER POINTS — TORSO AND EXTREMITIES REFERENCE CHARTS

REGION / MUSCLE	WHERE TO PALPATE	COMMON REFERRED-PAIN PATTERN
Upper trapezius	Upper shoulder between neck and acromion	Side of neck, temple, behind ear / head
Levator scapulae	Upper medial border of scapula toward neck	Neck and upper medial scapular region
Sternocleidomastoid (SCM)	Along SCM from mastoid toward sternum / clavicle	Head, temple, forehead, around eye / ear
Suboccipitals	Base of skull	Occiput, sometimes toward forehead / eye
Scalenes	Lateral neck	Shoulder, arm, forearm and hand
Infraspinatus	Posterior scapula below scapular spine	Anterior shoulder and down arm

REGION / MUSCLE	WHERE TO PALPATE	COMMON REFERRED-PAIN PATTERN
Supraspinatus	Above scapular spine	Lateral shoulder / upper arm
Rhomboids	Between medial scapular border and spine	Local / interscapular aching
Pectoralis major	Anterior chest muscle	Anterior chest, shoulder and arm
Pectoralis minor	Deep to pectoralis major near coracoid region	Anterior shoulder / chest and arm
Deltoid	Anterior, middle or posterior deltoid	Primarily local shoulder / upper-arm pain
Biceps brachii	Anterior upper arm	Anterior shoulder / arm
Triceps	Posterior upper arm	Posterior arm / elbow
Forearm extensors	Lateral elbow → posterior forearm	Lateral elbow, forearm, sometimes hand
Forearm flexors	Medial elbow → anterior forearm	Medial elbow / forearm
Quadratus lumborum	Posterior abdominal wall between iliac crest and 12th rib	Low back, SI / buttock / hip region
Erector spinae	Paraspinal muscle columns	Local or regional spinal pain
Multifidus	Deep paraspinal region	Local / deep spinal pain
Gluteus maximus	Posterior buttock	Buttock / sacral region
Gluteus medius	Lateral / posterolateral ilium	Lateral hip, buttock and sometimes thigh
Gluteus minimus	Deep lateral hip	Buttock and lateral / posterior leg; can mimic sciatica
Piriformis	Deep buttock between sacrum and greater-trochanter region	Buttock and posterior thigh
Tensor fasciae latae (TFL)	Anterolateral hip	Lateral hip / thigh
Adductors	Medial thigh	Groin and medial thigh
Quadriceps	Anterior thigh	Anterior thigh and knee region
Hamstrings	Posterior thigh	Posterior thigh, buttock or knee
Gastrocnemius	Superficial calf	Calf; some points may refer toward ankle / foot
Soleus	Deep calf	Calf / heel region
Tibialis anterior	Anterolateral shin	Anterior ankle / dorsum of foot
Peroneal / fibularis muscles	Lateral lower leg	Lateral ankle / foot

For hands-on OrthoSpec teaching

Have the clinicians use the same sequence each time.

1. Identify the patient's pain complaint
2. Identify the relevant muscle / anatomy
3. Palpate for a taut band
4. Identify the hypersensitive point within that band
5. Determine whether palpation reproduces the patient's familiar pain
6. Mark the trigger point
7. Define the surrounding treatment region
8. Check the Medispec trigger-point protocol
9. Treat the identified point according to the prescribed impulses / settings
10. Treat the surrounding / peripheral muscle according to the protocol

THE KEY CLINICAL TEACHING DISTINCTION

A trigger point isn't simply “where it hurts.” You're looking for a hypersensitive point within a taut band of skeletal muscle that reproduces local and/or characteristic referred pain.