

RU RMT 20 · PATHOLOGICAL TREATMENTS · LECTURE 18

Hyperlordosis

Lecture 18 — The Exaggerated Lumbar Lordosis & Lower Crossed Syndrome

How this lecture fits together



01 · Understanding

The lumbar curve, its muscles, and its symptoms.



02 · Biomechanics

How load shifts to the posterior spine, and what results.



03 · Lower Crossed Syndrome

Janda's muscle imbalance and the pelvic link.



04 · Treatment Principles

Release first, then strengthen and retrain.



05 · Massage Techniques

Assessment and the core soft-tissue methods.



06 · Aftercare & Safety

Re-training, cautions, and contraindications.

What you will be able to do



Define hyperlordosis

The exaggerated lumbar curve and what drives it.



Explain the biomechanics

Load transfer and the pathologies that follow.



Map the imbalance

Postural vs phasic muscles and the lower crossed syndrome.



Assess the pattern

Hypertonic drivers and the anterior pelvic tilt.



Apply core techniques

From effleurage to iliopsoas MET.



Work safely

Key cautions, especially around the iliopsoas.

The exaggerated lumbar curve

The lumbar spine has a natural lordotic curve that absorbs shock. It deepens with extension and flattens with flexion. Hyperlordosis is an exaggeration of this normal curve.

Hypertonicity in the lumbar extensor muscles can drive low-back pain and myofascial trigger points — and further exaggerate the lordosis.



A natural curve

Needed for shock absorption.



Extension deepens it

Flexion reduces it.



Extensor hypertonicity

A key driver of the curve.



Wider effects

Pelvis, discs and nerves.

Source: Rattray & Ludwig (2000); Ruhani College Lecture 18



01

SECTION ONE

Understanding Hyperlordosis

A normal lumbar curve becomes a problem when the extensor muscles pull it too deep — driving pain, trigger points, and postural change.

Muscles that produce lumbar extension



Erector spinae

The main spinal extensor group.



Quadratus lumborum

A powerful lumbar stabiliser and extensor.



Multifidi & rotatores

Small deep intrinsic spinal muscles.



Interspinales & intertransversarii

The smallest deep segmental extensors.

When these muscles become hypertonic, they exaggerate the lordosis — and can seed low-back pain and trigger points.

Source: Ruhani College Lecture 18; Lowe (2009)

How hypertonicity deepens the curve



Extensor hypertonicity

The lumbar extensors tighten and shorten.



Pain & trigger points

Low-back pain and myofascial trigger points develop.



Deeper lordosis

The curve is pulled further into extension.

Each element feeds the next — so effective treatment aims to break the loop, not just chase the pain.

Source: Ruhani College Lecture 18; Lowe (2009)

What the pattern looks like



Low-back pain

Often the presenting complaint.



Trigger points

In the lumbar extensor muscles.



Deep lumbar curve

A prominent, exaggerated lordosis.



Anterior pelvic tilt

The pelvis rotates forward.



Tight hip flexors

Shortened iliopsoas and rectus femoris.



Weak abs & glutes

Inhibited phasic muscles.

Source: Ruhani College Lecture 18; Rattray & Ludwig (2000)

What perpetuates the curve



Poor posture

Habitual, sustained lumbar extension.



Sedentary lifestyle

Overuses postural muscles at the desk.



Muscle imbalance

Hypertonic drivers vs inhibited stabilisers.



Faulty activation

Dysfunctional patterns of muscle recruitment.

Source: Ruhani College Lecture 18; Lowe (2009)

One curve, many consequences

An excessive lumbar lordosis is never an isolated problem. It tilts the pelvis forward, loads the posterior spine, and alters muscles as far away as the hamstrings.

That is why hyperlordosis is best treated as a whole pattern — not as an isolated low-back complaint.



Anterior pelvic tilt

The pelvis rotates forward.



Posterior-arch load

Weight shifts off the vertebral body.



Nerve compression

Foramina narrow in extension.



Hamstring strain risk

Lengthened, vulnerable hamstrings.

Source: Lowe (2009); Ruhani College Lecture 18



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SECTION TWO

Biomechanics & Spinal Pathology

When the curve deepens, load shifts off the vertebral bodies and onto structures never built to bear it — with real consequences.

How a healthy lumbar spine bears load

In a normal lumbar lordosis, the vertebral body is the primary weight-bearing structure — built to carry the body's load through its dense, broad mass.

A balanced curve shares that load safely between the bodies, the discs, and the guiding facet joints.



Vertebral body

The primary load-bearer.



Balanced curve

Distributes force safely.



Discs cushion

Shock absorption between bodies.



Facets guide

Direct motion, not bear weight.

Source: Ruhani College Lecture 18; Magee (2014)

Load shifts to the posterior arch

With an excessive lordosis, more of the body's weight transfers to the posterior vertebral arch — structures that were never designed to bear it.



Lamina & pedicle

The bony bridge of the arch.



Pars interarticularis

A common stress-fracture site.



Posterior disc

The rear of the intervertebral disc.



Facet joints

Now loaded well beyond their design.

Source: Ruhani College Lecture 18; Magee (2014)

Pathologies that can result



Facet joint dysfunction

From chronic posterior overload.



Spondylolysis

A stress fracture of the pars interarticularis.



Disc herniation

Strain on the posterior disc.



Spondylolisthesis

Forward slippage of a vertebra.

Source: Ruhani College Lecture 18; Magee (2014)

Foraminal narrowing & nerve compression



Increased lumbar extension narrows the intervertebral foramen — the bony openings through which the spinal nerve roots exit the spine.



Narrowed foramen. Sustained extension closes down the exit space.



Root compression. Radiating pain or neurologic signs may follow.

Source: Ruhani College Lecture 18; Magee (2014)



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SECTION THREE

The Lower Crossed Syndrome

Janda's model explains why the low back tightens while the abdominals go quiet — and why the pelvis tips forward with the curve.

Postural vs. phasic muscles



Postural

Maintain erect posture

- Slow-twitch dominant
- Tend toward hypertonicity when fatigued
- e.g. iliopsoas, erector spinae
- e.g. quadratus lumborum, rectus femoris



Phasic

Create movement

- Fast-twitch dominant
- Tend to fatigue and weaken
- e.g. rectus abdominis
- e.g. gluteus maximus & medius

Source: Page, Frank & Lardner (2010); Ruhani College Lecture 18

Why the abdominals go quiet



Postural muscle fires

Hypertonic extensors and iliopsoas contract.



Antagonist inhibited

The nervous system quiets the opposite muscle.



Phasic weakness

Abdominals and glutes become functionally weak.

The abdominals are often weak not from lack of training, but from neurological inhibition by tight postural muscles.

Source: Page, Frank & Lardner (2010); Ruhani College Lecture 18

The muscles of the lower crossed syndrome



Tight & hypertonic

The postural group

- Iliopsoas
- Erector spinae
- Rectus femoris
- Quadratus lumborum



Weak & inhibited

The phasic group

- Rectus abdominis
- Gluteus maximus
- Gluteus medius

Lines drawn between these two groups cross diagonally — which is where the syndrome gets its name.

Source: Page, Frank & Lardner (2010); Ruhani College Lecture 18

Anterior pelvic tilt

An excessive lordosis and an anterior pelvic tilt travel together. Both innominates — the two halves of the pelvis — rotate forward, deepening the lumbar curve.

It is worth measuring each innominate separately, because one side often rotates more than the other.



Both innominates rotate

The pelvis tips forward.



Measure each side

One may rotate more.



Muscle imbalance drives it

Pulling on pelvis & spine.

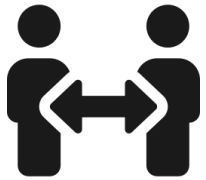


Deepens the lordosis

A reinforcing pair.

Source: Ruhani College Lecture 18; Lowe (2009)

The hamstring connection



A common error is treating a region in isolation. An excessive lordosis tilts the pelvis anteriorly, which lengthens the hamstrings — and longer hamstrings in an anterior pelvic tilt carry a higher risk of strain.



Look upstream. Preventing hamstring strains may mean treating the low back.



One pattern, many sites. A postural distortion radiates through the whole body.

Source: Lowe (2009)



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SECTION FOUR

Treatment Principles

The most effective route is counter-intuitive: release the tight postural muscles first, then strengthen the weak ones and retrain posture.

Release before you strengthen

Because the phasic muscles are weak largely through inhibition, the effective approach is to reduce hypertonicity in the postural muscles first — not simply to strengthen the weak ones.

Strengthening still has a place; it simply comes later, once normal tone allows the phasic muscles to fire freely.



Target the tight

Postural muscles driving the tilt.



Release inhibition

Free the phasic muscles.



Then strengthen

Once tone is normalised.



Retrain posture

Make the change last.

Source: Lowe (2009); Ruhani College Lecture 18

Why strengthening first backfires



Sit-ups recruit iliopsoas

With feet anchored, the hip flexors do the work.



Weakness is inhibition

The abdominals are quiet, not simply untrained.



That worsens the driver

Reinforcing the very iliopsoas hypertonicity you want to reduce.

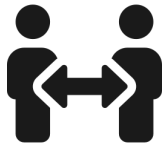


Compensation develops

Strengthening tight patterns builds dysfunctional recruitment.

Source: Lowe (2009); Ruhani College Lecture 18

Soft tissue before strength



Soft-tissue release

Reduce hypertonicity in the postural muscles.



Neuromuscular reset

Let proprioception and control readjust.



Strength training

Build the phasic muscles last.

Strengthening before release invites the dysfunctional compensation and recruitment patterns we are trying to undo.

Source: Lowe (2009); Ruhani College Lecture 18

Postural re-education

Many anterior pelvic tilts persist because neuromuscular patterns of tension are continually reinforced through the day.

Without postural re-training that reinforces corrected biomechanical patterns, even good soft-tissue work or strengthening will not hold.



Reinforced daily

The body relearns the distortion.



Retrain movement

Replace the faulty patterns.



Daily practice

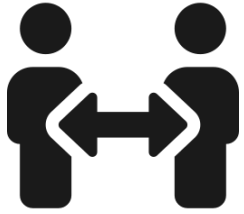
Carries the change forward.



A shared effort

Therapist plus client commitment.

Source: Lowe (2009); Ruhani College Lecture 18



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SECTION FIVE

Massage Therapy Techniques

Assess the pattern, warm the tissue, strip the deep extensors and QL, and release the iliopsoas safely — by MET, not deep abdominal pressure.

Reading the pattern before you treat



Observe the curve

Gauge the depth of the lumbar lordosis.



Check the pelvis

Anterior tilt; measure each innominate.



Palpate for tightness

Extensors, QL, iliopsoas, rectus femoris.



Identify weakness

The abdominals and gluteals.



Hypertonic or weak?

Decide the tissue state before deep work.



Screen for red flags

Especially vascular cautions for the iliopsoas.

Source: Lowe (2009); Ruhani College Lecture 18

Targets & techniques

Soft-tissue work focuses on the hypertonic muscles creating the distortion — the spinal extensors, quadratus lumborum, iliopsoas, and rectus femoris.

A small menu of techniques, applied in sequence, addresses these muscles from superficial to deep.



Sweeping cross-fibre

Broad, superficial release.



Deep longitudinal stripping

Along the muscle fibres.



Pin & stretch

Fix, then lengthen.

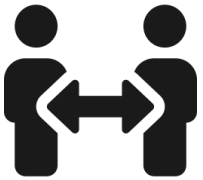


Active-assisted stretch

Client-assisted lengthening.

Source: Lowe (2009); Ruhani College Lecture 18

Effleurage & sweeping cross-fibre



Reduce superficial tension in the lumbar muscles with long gliding effleurage and sweeping cross-fibre strokes — always applied before any deep stripping.



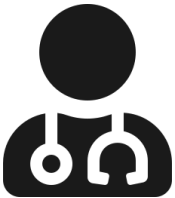
Broad contact. Use the thumb, backs of the fingers, or base of the hand.



Warm first. Prepare the tissue for the deeper work to follow.

Source: Lowe (2009); Ruhani College Lecture 18

Deep longitudinal stripping — spinal extensors



Apply deep stripping to the erector spinae and other lumbar extensors close to the spine, encouraging elongation along the specific myofascial fibres.



Small contact. Fingertips, thumb, or a pressure tool for precision.



Follow the fibres. Strip in the direction of the muscle.

Source: Lowe (2009); Ruhani College Lecture 18

Deep stripping — quadratus lumborum



With the client prone, strip the quadratus lumborum along its several fibre directions — iliac crest to transverse processes, iliac crest to twelfth rib, and transverse processes to twelfth rib.



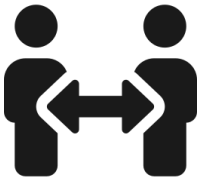
Reach under the erectors. Work lateral-to-medial, deep to the erector edge.



Mind the transverse processes. Don't press hard against their bony tips.

Source: Lowe (2009); Ruhani College Lecture 18

MET for the iliopsoas



With the client supine and one thigh hanging off the table, resist an active hip-flexion effort for 5–8 seconds. On release, guide the thigh into extension to stretch the iliopsoas.



Safer than abdominal pressure. It reaches the muscle without pressing over the vessels.



Ease discomfort. If the back complains, flex the opposite hip to rotate the pelvis.

Source: Lowe (2009); Ruhani College Lecture 18

A safe session sequence



Warm superficially

Effleurage and sweeping cross-fibre first.



Release the iliopsoas

By MET — not deep abdominal pressure.



Then strip deeply

Erector spinae and quadratus lumborum.



Reassess & retrain

Recheck posture and assign self-care.

Repeat soft-tissue work over several sessions before adding strength training — the body needs time to readjust.

Source: Lowe (2009); Ruhani College Lecture 18



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SECTION SIX

Aftercare & Safety

Lasting correction depends on the client's daily re-training — and on respecting a few firm cautions, above all around the iliopsoas.

Homework that holds the change



Posture awareness

Through the day, not just on the table.



Corrective movement

The patterns prescribed by the therapist.



Ergonomic set-up

Desk, chair, and standing habits.



Gradual strengthening

Abdominals and glutes, once tone allows.



Consistency

Daily practice reinforces new patterns.



Move often

Counter the sedentary driver.

Source: Lowe (2009); Ruhani College Lecture 18

Stretch, mobilise, activate



Hip-flexor stretch

Lengthen the iliopsoas and rectus femoris.



Pelvic-tilt drills

Relearn a neutral pelvic position.



Glute activation

Wake the inhibited phasic muscles.



Gentle core work

Once postural tone has normalised.



Break up sitting

Stand and move regularly.



Progress slowly

Let the new patterns re-establish.

Source: Lowe (2009); Ruhani College Lecture 18

Working safely with hyperlordosis



Iliopsoas via the abdomen

Use great caution — direct pressure risks the vessels.



Aortic aneurysm risk

Pressure on the external iliac artery can be dangerous.



Prefer MET for iliopsoas

It avoids direct pressure over the vasculature.



MET back discomfort

From compression of the lumbar facet joints.



Ease the facets

Have the client flex the opposite hip to rotate the pelvis.



Transverse-process tips

Don't over-press the bony tips when stripping the QL.

Source: Lowe (2009); Ruhani College Lecture 18

Sources & further reading

- Rattray, F., & Ludwig, L. (2000). Clinical Massage Therapy: Understanding, Assessing and Treating Over 70 Conditions. Toronto: Talus Inc.
- Lowe, W. (2009). Orthopedic Assessment in Massage Therapy. Sisters, OR: Daviau-Scott.
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- Magee, D. J. (2014). Orthopedic Physical Assessment (6th ed.). St. Louis: Saunders / Elsevier.
- Werner, R. (2019). A Massage Therapist's Guide to Pathology (7th ed.). Books of Discovery.
- Ruhani College. Lecture 18 — Hyperlordosis (course notes).



KEY TAKEAWAYS

Release the drivers, then retrain

Hyperlordosis is a whole-pattern problem — an exaggerated lumbar curve, an anterior pelvic tilt, and Janda's lower crossed syndrome. Reduce hypertonicity in the postural muscles first, treat the iliopsoas safely, then strengthen and retrain posture to make the change last.

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