



Lumbar Multilevel



Custom Pro Package Deluxe

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Our Custom Pro Package Deluxe is the most detailed and elaborate spine education model package on the market today. Selected models create a spine education library experience.

Package includes 5 models:

- **Multilevel (Sacrum-L5-L4) Model** with our Professional LxH Model stacked up onto an L5-1 2-part disc with the ligamentum flavum at the L4-5 and L5-1 levels. Dual herniation under compressive load. Colour variations from the model shown may exist as each model is individually crafted. Model only without added features.
- **Midsagittal Model**
- **Medial Branch Model** demonstrating three level innervation to an inflamed facet capsule. This is our Professional LxH Model with these added zygapophyseal joint features.
- **Stenosis Lumbar Model**
- **Professional CxH Model**
- **Dual Stand**
- **Triple Stand**

Please expect a 3-6 week lead time on this custom package.

Call for pricing.



Spine Educator

Spine Educator

A Spine Educator Model Package includes 7 popular products:

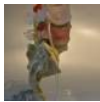
- **Professional LxH Dynamic Disc Model with Ligamentum Flavum** (demonstrating normal and herniation)
- **Lumbar Spinal Stenosis Dynamic Disc Model**
- **Professional CxH Model**
- **Cervical Spinal Stenosis Model**
- **Spondylolysis Spondylolisthesis** (bilateral pars fracture)
- **Business Card Holder**
- **Anatomy of Pain Poster**

~~\$1,375.00~~ **\$1,099.00**



Multilevel Spinal Manipulation Model

Dr. Jerome Fryer uses a multilevel to explain a typical manual spinal assessment in the search for pain generators. Treatment is also explained including the act of spinal manipulation and facet cracking. This multilevel model is not for sale.



Multilevel Custom Spine Model with Medial Branch

This multilevel custom model with medial branch is uniquely designed.

Details include:

- Fully Clear LxH Model (Professional LxH Model with a transparent L5)
- Medial branches to L4-5 left facet with a clear capsule
- Ligamentum Flavum at two levels
- Sacrum
- Postero-lateral L4-L5 Herniation
- Fully dynamic two part intervertebral discs at 2 levels.
- Stand with post

This model has been carefully hand crafted by Dr. Jerome Fryer himself. It is a dynamic model that demonstrates realistic motion qualities. Dynamic Disc Designs models are by far the leading spine models in the marketplace. They represent a new quality and considered by many physicians the standard in effective spine education.

\$1,320.00



Multilevel Lumbar Dynamic Disc Model L4-S1

A multilevel lumbar model L4-S1. This detailed model includes a sacrum, L5-S1 annulus fibrosus and nucleus pulposus, L5-S1 ligamentum flavum, and our most popular L4-5 model (The Professional LxH) with the added feature of the ligamentum flavum. Comes standard with one right posterior-lateral annular tears in each disc (L4-5 and L5-S1) allowing two-level nuclear migration with manual compression. Includes a stand. Interspinous ligaments and medial branch options available. Slight variations may exist between models as they are all custom hand crafted.

Note: if preference for one tear to be central, please specify with order. No extra charge.

Contact for pricing.

\$825.00 – \$1,250.00



Double Spondy Dynamic Disc Model

Double Spondy Model

This multilevel L4-L5-sacrum double spondy model showcases both a lytic L5 and non-lytic L4 spondylolisthesis. Additional features include double dynamic herniation demonstrating nuclear shifting and extrusion under manual compression of model. See video for details. Please expect 3-4 weeks lead time for custom construction.

Contact for pricing.



L2-5 Hypermobility Lumbar Dynamic Disc Model

Hypermobility Lumbar Model

Each model includes identical size and texture of real bone. Each vertebra is opaque light brown colour with elastomeric intervertebral discs. The facets surfaces have been painted with red and blue signifying perichondrial vascularization and hyaline cartilage, respectively. Two model types are available for purchase: a two level (L3-L5) or three level (L2-L5). Each hypermobile (L3-4) motions segment is half the stiffness and demonstrates hypermobility compared to the other levels.

L3-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc

L2-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc with L4-5 and L2-3 of identical lesser elasticity (2x stiffness).

Custom orders available to include a two-part intervertebral disc (both nucleus and annulus) to demonstrate nuclear shifting and herniation. [Inquire](#) for pricing.

[Research](#) has revealed how aberrant motion can affect the dynamics of an adjacent functional spinal unit. This model has been constructed to show a patient what relative instability looks like with dynamic disc micro-movements of sheer instability as the facets approximate. Engage with patients who display hypermobility symptoms to encourage self-management of practices that improve the condition like in the case of core stabilization exercises.

\$325.00 – \$385.00



L1-4 Hypermobile Lumbar Dynamic Disc Model

A dynamic hypermobile lumbar model demonstrating a hypermobile L2-3 disc. Herniation demonstrated under flexion and compressive load.

\$445.00



Pelvic models



Pelvic Model Translucent Sacroiliac - A model of lumbopelvic motion

Pelvic model to demonstrate dynamic motion of the sacroiliac joints and pubic symphysis. Clearly show pelvic tilt and its relationship to the lumbar spine in this movable model. A durable and realistic tool to show lumbopelvic dysfunctions. Helping explain biomechanical faults of joint space in the discussions of pain generators and the development (and prevention/treatment) of osteoarthritis and degenerative disc disease. Handcrafted by Dr. Jerome Fryer.

Details include:

- Identical female bone geometry
- Dynamic sacroiliac joints
- Dynamic pubic symphysis
- Translucent ilium and sacrum
- Simulated vasculature ilium and sacrum
- Reddened sacroiliac joint surface
- Matching sacrum, L5 and L4
- Dynamic two-part intervertebral discs
- Ligamentum flava
- Right posterior lateral tear L4-5 and L5-1
- Herniating L5-S1
- Herniating L4-5
- Detailed cauda equina
- Clear L4 showing : de-laminated annular fibres, innervation, neo-innervation, dynamic nucleus pulposus, dynamic bulging, endplate, endplate fracture, radial fissure, circumferential fissure, vascular L4)
- Painted facets - hyaline (blue); perichondrial vasculature (red)

Includes wood base and polished brass post.

\$2,100.00



LumboPelvis (L3-Pubic Symphysis) Spine Model

A custom crafted lumbopelvis model. This model has been constructed with elastomeric sacroiliac joints (simulated hyaline and fibrocartilage thickness) adhered to a matching ilium and sacral bony specimen including a simulated elastomeric pubic symphysis connecting each ilia anteriorly. This enables six degrees of freedom to be shown as the lumbar spine and pelvis intimately are involved. Intervertebral discs at the L3-L4, L4-L5 and L5-S1 levels with the respective ligamentum flavum allows movements to be created for patient consultation or educational facilities to teach basic lumbopelvis movements.

See video for details.

Expect 4 weeks lead time.

\$2,000.00



Lumbar Models



Professional LxH Dynamic Disc Model

The NEW Professional LxH Dynamic Disc Model for 2019

New features include:

- circumferential (diffuse) disc bulge
• superimposed disc protrusion
• limacon shaped annulus
• peripherally exposed calcified endplate
• elastomeric white articular cartilage
• subchondrial bone exposed with a hyaline fibrillation
• bone coloured L5
• white superior endplate matching the colour of the articular cartilage
• blue coloured intervertebral disc innervation

The features that remain (from the previous model):

- flexible and totally dynamic herniating (or prolapse) nucleus pulposus. This is achieved through a realistic 2-part intervertebral disc with 6 degrees of freedom. Nuclear migration upon manual compression through a torn annulus fibrosus explaining pain generators under load.
• right posterior-lateral radial and circumferential(concentric) fissure
• intervertebral disc innervation to outer third of annulus
• nerve ingrowth (neo-innervation) to inner two thirds of damaged annulus to help demonstrate chronic pain
• left partial posterior-lateral radial tear matching up to the disc protrusion (contained nucleus)
• anterior circumferential tear
• transparent L4



Lumbar Spinal Stenosis Dynamic Disc Model

Lumbar Spinal Stenosis Dynamic Disc Model (2019 LxD model)

A recently updated lumbar spinal stenosis model, our LxD Model. The newest detail includes both lateral recess stenosis and the newest feature of foraminal stenosis from an enlarged projecting osteophyte from the right superior articular process of L5. Details extracted from real cadaveric bone that includes a L4-5 motion segment with a reduced lordotic curve and significant disc height loss. Features include subchondral sclerosis, facet arthropathy and a thickened ligamentum flavum. Optional nerves available.

Keep in mind that the nerves are removable to reveal the lateral recess, however they are a little tricky to re-insert.

NOTE: Each model is individually crafted and small variations may exist between models and may not be exactly as shown...but it will be pretty darn close!

\$195.00 – \$215.00



Academic LxH Dynamic Disc Model

This Academic LxH Dynamic Disc Model is one of our best selling models and the most popular with our distributors.

Details of this model include:

- herniating (or disc prolapsing) nucleus pulposus with a realistic 2-part disc allowing 6 degrees of freedom and nuclear migration upon manual compression through a torn annulus fibrosus
• right posterior-lateral radial and circumferential tear
• transparent L4
• clinic white opaque L5
• embedded nuclear structure to demonstrate nuclear shifting dynamics
• endplate (blue)
• endplate pores (black)
• endplate lesion (red)
• vasculature in L4 vertebral body (red)
• facet hyaline cartilage (blue)
• facet subchondrial vascularization (red)
• facet tropism (L5 inferior)
• Detailed cauda equina includes: sensory and motor divisions, dorsal root ganglion, recurrent meningeal, gray rami communicantes, posterior primary division, dura mater, arachnoid sheath, rootlets, properly placed nerve root to accurately demonstrate the most commonly affected nerve with a post-lateral herniated intervertebral disc model.

Also see model usage videos for more clinical information. [*Clinical pearl is to use this model to show how flexion load will push the nucleus posterior through the tear....awesome patient education for posture teaching*]

Need 2 or more? Discounts apply when ordered in multiples.

NOTE: Each model is individually crafted and very



- randomly scattered and embedded black nuclear structures to easily show nuclear shifting dynamics through the L4 view lens
- L5 superior endplate pores (**black**)
- L5 superior endplate lesion (**red**)
- vasculature in L4 vertebral body (**red**)
- facet subchondrial vascularization (**red**)
- facet tropism (L5 inferior)
- Detailed cauda equina includes: sensory and motor divisions, dorsal root ganglion, recurrent meningeal, gray rami communicantes, posterior primary division, dura mater, arachnoid sheath, rootlets, properly placed nerve root to accurately demonstrate the most commonly affected nerve with a post-lateral herniated disc.
- BONUS [disc disruption graphic](#) is included as a download

small variations may exist between models and may not be exactly as shown...but it will be pretty darn close!

\$235.00

Optional Features: **ligamentum flavum**, **spondylolisthesis** (elongated pars, non-lytic)

See [model usage videos](#).

Need 2 or more? Discounts apply when ordered in multiples.

\$265.00 – \$305.00



Spine model - created by Ara Deukmedjian MD

The Deuk Spine Model

Another first in spine modeling and inspired by Ara Deukmedjian MD neuro-spine surgeon. Dr. Deuk made contact with Dynamic Disc Designs Corp. at the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting in 2010, Orlando. Later, a follow-up at the CNS Meeting in Chicago 2012. Dr. Deuk is an inspiring leader in his field and is active in research and spine education. Dr. Deuk's contribution to this exciting new model includes: interposed stained disc herniation, granulation tissue, and an inflamed nerve root. Very often pain generators of back pain are due to inflammation of the posterior annulus and chemical radiculitis. Overt nerve root compression is not required to cause back pain. Dr. Deuk wanted to showcase this important clinical finding in his drive to better educate the world about spinal pain. Therefore, Jerome Fryer, CIO of ddd decided to name this new model the 'Deuk Spine' Model to thank him for his collaboration and knowledge in the pursuit of improving outcomes. ddd is committed to highlighting those that contribute in their fields.

Call for pricing.



Classic LxH Dynamic Disc Model

Classic LxH Dynamic Disc Model

This lumbar disc model includes a realistic 2-part disc providing 6 degrees of freedom, nuclear migration with manual compression, identical human opaque L4 - L5 bone and a red extruding nucleus. This model may suit those best on a budget and want to keep things simpler for the patient. This model is build from the same quality materials as our other high end models. The nerves are less detailed but effective to get the point across with nuclear herniation and facet approximation with extension and/or disc height loss. One of our most popular models too.

Need 2 or more? Discounts apply when ordered in multiples.

NOTE: Each model is individually crafted and small variations may exist between models and may not be exactly as shown...but it will be pretty darn close!

\$186.00



Degenerative Spondylolisthesis Dynamic Disc Model

Degenerative Spondylolisthesis Dynamic Disc Model (L4-5) ... includes new foraminal osteophyte (2019)

A Degenerative Spondylolisthesis model. This is our LxD Model with a grade 1 anterior spondylolisthesis. With an intact pars demonstrate the degenerative nature of the facets and the most common form of spondylolisthesis. A stiff but dynamic one part disc allows motion at this one level to show how the spinal canals will narrow in extension and open in flexion. This model can be very helpful in the explanation of symptoms associated with spinal stenosis. The model can help explain why sitting (spinal flexion) may be relieving of stenosis symptoms and why walking (spinal extension) may increase symptoms.

Optional feature of a shortened cauda equina.

\$185.00 – \$205.00



Spondylolytic Spondylolisthesis Dynamic Disc Model

Spondylolytic Spondylolisthesis Dynamic Disc Model

This spondylolytic spondylolisthesis model has been designed with the spine clinician in mind who wants to educate their patients about spondylolisthesis due to a pars defect. Details include our trademarked dynamic 2-part disc with 6 degrees of freedom and a L4 endplate lens, to view a radial and circumferential fissures on the top of the annulus fibrosus. The nucleus pulposus is clear with the embedded nuclear structures showing dynamic motion under differing compressive loads. Other features include the ligamentum flavum, herniation upon manual compression, painted facets (red and blue), simulated endplate fracture, and endplate pores. Optional unilateral pars defect available to demonstrate the potentially impending nature of bilateral spondylolysis. This model can be helpful for patient education if rest is clinically warranted or in the discussion of listhesis. Show how the spinal canal is usually spared for spacing with this type of spondylolisthesis.

Cauda Equina available as an optional feature.

Spondylolytic Spondylolisthesis

\$255.00 – \$275.00



Bronzed Honorary Distinction LxH Lumbar Spine Model

This bronzed honorary distinction model makes a wonderful gift for those who are passionate about the spine and are fortunate enough to own a bronzed LxH model by ddd.

Details Bronzed Honorary Distinction LxH model include: bronzed L5 and bronzed see-through L4. Cauda equina details include a white dural sheath and nerve-yellow rootlets. The filum terminale remains white in the centre. This is a fully functional and dynamic model with a migrating nucleus through a torn post-lateral annular tear. Included laser engraved name bar embedded in nucleus. Small variations may be present between models as each is handcrafted.

\$1,450.00



Fully Clear Herniated Dynamic Disc Model

This Fully Clear Dynamic Disc Model herniated disc model is the Professional LxH model but with the added feature of a vascular clear L5.

In other words, both the L4 and L5 are matching with the Fully Clear LxH model. L5 does not have the view lens but is semi-transparent. Optional ligamentum flavum available for even greater realism. Take spine education to a whole new level with Dynamic Disc Designs. Educate the dynamic nature of the intervertebral disc through accurate anatomical modeling to help improve clinical outcomes. Very useful for chiropractors, physiotherapists, osteopathic doctors, physiatrists, spine surgeons, teaching hospitals, medical schools, orthopedic schools and universities.

Contact for pricing.



Fully Clear Enhanced Herniated Disc Model

This Fully Clear Enhanced Herniated Disc Model

Includes all the anatomical details of the Fully Clear LxH plus: Inferior L4 Endplate Innervation and Fracture(s). Each model is handcrafted and small variations may exist. Optional feature ligamentum flavum available for even greater realism.

Call for pricing.



Dissection Demonstrator LxH Spine Model

Dissection Demonstrator LxH Spine Model

A Dissectomy Demonstrator Model inspired from our Professional LxH with the added feature of an unilateral laminotomy along with an extractable and replaceable white fibrous simulated nucleus pulposus. Model includes cauda equina. Extra nucleus pulposus included. Use of forceps can easily place and remove nucleus for demonstration. Cauda equina removable. Quelling fears of spine surgery through effective patient education.

\$305.00



Basivertebral Nerve Lumbar Model

Basivertebral Nerve Lumbar Model

A Basivertebral Nerve Lumbar Model of midsagittal L2 vertebrae model exposing a midline slice of the red cancellous bone showing vertebral intraosseous innervation of the basivertebral nerve (BVN). Identical copy of human bony specimen with coloured cancellous and hand painted innervation. BVN variations may exist between models. Helpful in the explanation of back pain with Schmorl's nodes and endplate disruption pathology of back pain. Modeling from award winning research.

\$105.00



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- **Midsagittal Model**
- **Medial Branch Model** demonstrating three level innervation to an inflamed facet capsule. This is our Professional LxH Model with these added zygapophyseal joint features.
- **Stenosis Lumbar Model**
- **Professional CxH Model**
- **Dual Stand**
- **Triple Stand**

Please expect a 3-6 week lead time on this custom package.

Call for pricing.



Spine Educator

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A Spine Educator Model Package includes 7 popular products:

- **Professional LxH Dynamic Disc Model with Ligamentum Flavum** (demonstrating normal and herniation)
- **Lumbar Spinal Stenosis Dynamic Disc Model**
- **Professional CxH Model**
- **Cervical Spinal Stenosis Model**
- **Spondylolysis Spondylolisthesis** (bilateral pars fracture)
- **Business Card Holder**
- **Anatomy of Pain Poster**

~~\$1,375.00~~ **\$1,099.00**



Professional Lumbar Package

Professional Lumbar Package

A Professional Lumbar Package includes three popular products:

- **Professional LxH with LF** (demonstrating normal and herniation)
- **Lumbar Stenosis** (degenerated)
- **Spondylolisthesis Lumbar** (spondylolytic)

~~\$745.00~~ **\$699.00**



Multilevel Spinal Manipulation Model

Dr. Jerome Fryer uses a multilevel to explain a typical manual spinal assessment in the search for pain generators. Treatment is also explained including the act of spinal manipulation and facet cracking. This multilevel model is not for sale.



Lumbar Epidural Trainer

Lumbar epidural trainer teaching model by Dynamic Disc Designs Corp.

This Lumbar Epidural Trainer model includes the ligamentum flavum (diametre 4mm) and associated interspinous ligament. All vertebrae are anatomically accurate with careful recreation of soft tissues. Lumbar puncture force feel realism with characteristic "loss of resistance" feel when the ligamentum flavum is finally traversed. Repetitive use with self-sealing properties (some customers have reported 500+ punctures). Great for anatomical and placement training. Translucent ligaments available. Cauda Equina and Disc Herniation as options. Replacement ligaments available after multiple uses approximate cost is \$100-150 (models must be returned for install).

Contact for pricing. \$235.00 – \$305.00



Lumbar Epidural Trainer (Epiclear)

Lumbar Epidural Trainer (Epiclear)

Lumbar Trainer epidural placement teaching model by Dynamic Disc Designs Corp. This model includes a translucent ligamentum flavum (diametre 4mm) and associated interspinous ligament. Translucent ligaments allow visualisation of traversing needle into epidural space. All vertebrae are anatomically accurate with careful recreation of soft tissues. Lumbar puncture force feel realism with "loss of resistance" feel experienced when the needle exits the ligamentum flavum and enters epidural space. Repetitive use with self-sealing properties. Great for anatomical and placement training. Cauda Equina and Disc Herniation options available. Replacement ligaments available after multiple uses.

\$265.00 – \$335.00



Degenerative Lumbar Epidural Trainer

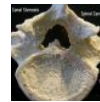
Inspired from our EpiClear and LxD models with the degenerated patient in mind. Our Degenerative Lumbar Epidural Trainer includes a thickened translucent ligamentum flavum and associated interspinous ligament. Translucent ligaments allow visualisation of traversing needle into epidural space. All vertebrae are anatomically accurate and casted from a real degenerated specimen. This model is useful for teaching epidural placement with realistic puncture force feedback and loss of resistance training in a degenerated spine with narrowed interlaminar spacing and facet arthropathy. Optional shortened cauda equina. Replacement ligaments available after multiple uses.

Contact for pricing. \$225.00 – \$245.00



Endplate Fracture Model

An Endplate Fracture Model demonstrating inferior nuclear migration through a fractured superior L5 endplate and see-through L5 bone window. Ordering: Please call or email for details



L5 Spinal Stenosis Vertebrae Model

Identical copy of a natural specimen with a central osteophyte encroaching on spinal canal.

\$35.00



Medial Branch Dynamic Disc Model

Our Medial Branch Dynamic Disc Model uses our Professional LxH Model with added nerve detail extending branch sensory innervation to the posterior primary division of the cauda equina for three levels (two level innervation is also available). Details include an inflamed facet capsule and a ligamentum flavum that buckles in extension. Helpful for pain specialists for education performing block, injection, neurotomy, radiofrequency ablation or rhizotomies. Add the extra feature of a grade 1 spondylolisthesis. Model stand also available for purchase including exotic wood bases and name plate. Expect a 3-5 week lead time for detailed construction and assembly.

Model may not be exactly as shown as small variations exist between each handcrafted model. Guaranteed similarity.

(reference used: Cramer GD, Darby SA, Fryszak RJ. Pain of Spinal Origin. In: Basic and Clinical Anatomy of the Spine, Spinal Cord, and ANS, Second Edition Chapter 11 Elsevier Mosby 2005:480-517)

\$750.00 – \$775.00



Modic Spine Model

A L4-L5 Modic Model midsagittal cut demonstrating Type 1 Modic changes and the basivertebral nerve. Comes with a stand. Developed with feedback from Dr. Michael Modic himself.

"Your model of the type I marrow changes sits on my desk in a prominent position and generates a fair amount of interest. I think you did a great job!" ... Dr. Michael Modic with permission.

Hand-painted variations of the basivertebral nerve may exist between models. Model is helpful in explaining pain from vertebrae or endplate.

\$255.00



Audible Release Dynamic Disc Model

Audible Release Dynamic Disc Model

A spinal manipulation model that elicits a 'crack' when the right L4-5 facets are pressed together and released quickly. A dynamic disc model to demonstrate not only the approximation of the facets with disc height loss as the neural arch bears more load but this model can also show the therapeutic benefits of facet joint gapping as in the act of manipulation. Also nicknamed: The Oracle Model because of its role in the development of a research piece explained in more detail here.

(NEW Painted Facets)

Details include:

- 2-part dynamic intervertebral disc (nucleus pulposus and annulus fibrosus)
- simulated synovial fold that emits an audible sound when distracted
- life-size L4 and L5 vertebrae
- palpable smooth hyaline facet surfaces with one having a roughed surface showing degenerative changes
- red nuclear herniation under load...similar to Classic LxH Model
- optional detailed cauda equina

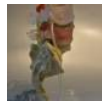
\$250.00 – \$270.00



Endplate Junction Disruption Model

Endplate junction disruption model. Model includes blue tinted nucleus to improve contrast between endplate and nucleus. Read more about ISSLS Winning Study.

Contact for pricing.



Multilevel Custom Spine Model with Medial Branch

This multilevel custom model with medial branch is uniquely designed.

Details include:

- Fully Clear LxH Model (Professional LxH Model with a transparent L5)
- Medial branches to L4-5 left facet with a clear capsule
- Ligamentum Flavum at two levels
- Sacrum
- Postero-lateral L4-L5 Herniation
- Fully dynamic two part intervertebral discs at 2 levels.
- Stand with post

This model has been carefully hand crafted by Dr. Jerome Fryer himself. It is a dynamic model that demonstrates realistic motion qualities. Dynamic Disc Designs models are by far the leading spine models in the marketplace. They represent a new quality and considered by many physicians the standard in effective spine education.

\$1,320.00



Multilevel Lumbar Dynamic Disc Model L4-S1

A multilevel lumbar model L4-S1. This detailed model includes a sacrum, L5-S1 annulus fibrosus and nucleus pulposus, L5-S1 ligamentum flavum, and our most popular L4-5 model (The Professional LxH) with the added feature of the ligamentum flavum. Comes standard with one right posterior-lateral annular tears in each disc (L4-5 and L5-S1) allowing two-level nuclear migration with manual compression. Includes a stand. Interspinous ligaments and medial branch options available. Slight variations may exist between models as they are all custom hand crafted.

Note: if preference for one tear to be central, please specify with order. No extra charge.

Contact for pricing.
\$825.00 – \$1,250.00



Delamination Lumbar Spine Model

Delamination lumbar model. This is a Stuart McGill inspired model. Delamination to the annulus fibrosus is a common clinical finding in the generation of back pain. In this model, a circumferential (concentric) tear was created with a combined radial tear. Granulation tissue surrounds the delaminated tear with innervation demonstrating sensory pain generators from the sinuvertebral nerve. Included in this model is a dynamic nucleus with embedded particles to show the dynamic nature of nuclear movement in discussions of pain generators with movement...in particular with flexion loads. This model is also helpful in the explanation of stiffness (1, 2) and soreness in the morning hours after a period of rest and in the prevention of disc herniation.

Model does not include a full herniation (as seen with our other models) but can be ordered as an option. Dynamic Disc bulging, however, can be demonstrated. Cauda equina sold separately.

Details include:



Hybrid Split Dynamic Disc Model

The Hybrid Split Dynamic Disc Model was designed with the busy doctor in mind, allowing a side by side comparison of normal and degeneration. With a midsagittally cut hybrid split lumbar vertebra and disc, dynamically demonstrate many comparative features to allow patients to understand quickly and efficiently. This is a marrying of the Professional LxH Lumbar Model and the Stenosis/Degenerative Lumbar Model with the added features of degenerative innervation.

Details included on the Stenosis Degenerative Half:

- Reduced disc height (20 degrees annular fibre angle)
- Thicker annular wall
- View lateral window into disc innervation
- Innervation deep into the disc as far reaching as the nucleus



- flexible and totally dynamic disc. This is achieved through a realistic 2-part intervertebral disc with 6 degrees of freedom.
- circumferential tear with granulation tissue
- intervertebral disc innervation to outer third of annulus to demonstrate discogenic pain
- nerve ingrowth (neo-innervation) to granulation tissue in annulus to help demonstrate chronic pain
- transparent L4
- clinic white opaque L5
- embedded nuclear structure to demonstrate nuclear shifting dynamics (embedded structure simulated proteoglycan)
- endplate (blue)
- endplate pores (black)
- endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet hyaline cartilage (blue)
- facet subchondrial vascularization (red)
- Detailed cauda equina (optional) includes: sensory and motor divisions, dorsal root ganglion, recurrent meningeal, gray rami communicantes, posterior primary division, dura mater, arachnoid sheath, rootlets, properly placed nerve root to accurately demonstrate the most commonly affected nerve with a post-lateral herniated disc.

Contact for pricing.

\$265.00 – \$290.00

- Multiple annular inner fissures
- Kidney shaped posterior inner annulus
- Disc bulge encroaching into lateral recess
- Red facet arthropathy without blue hyaline...palpable difference to contralateral smooth facets
- Vertebral body height loss with osteophytes
- Simulated calcified endplate pores
- Endplate fracture
- Narrowed spinal canal
- **FULLY DYNAMIC WITHOUT HERNIATION**

Details included on the Professional LxH Half:

- Good disc height
- View lateral window to show outer innervated annulus
- 30 degree anular fibres from the horizontal and an additional exposed layer showing -30 degrees in the next inner layer
- Annular innervation (minimal penetration into nucleus...significant contralateral comparison)
- One radial annular fissure to match up with the herniating nucleus under load
- Cancellous bone
- Polished facets and blue painted hyaline
- **FULLY DYNAMIC HERNIATING NUCLEUS**

Both halves of model include a nucleus with randomly scattered reflective particles to clearly show nuclear movement under differing vector loads.

NOTE: Each model is individually crafted and small variations may exist between models and may not be exactly as shown...but it will be pretty darn close!

\$450.00



Degenerative Centralizer Lumbar Spine Model

New for 2015 a centralizer lumbar model designed to improve patient education for spine professionals. This model is the first of its kind allowing clear view of an innervated nucleus and showing movement with varying load dynamics.

Features include:

- Degenerated with multiple vertebral osteophytes
- Facet arthropathy leading to a narrowed lateral recess
- Dynamic and innervated nucleus pulposus
- Dynamic disc bulging
- Facet colouring to represent subchondrial vascularization and hyaline cartilage
- Radial fissuring of annulus
- See-through L4
- White L5
- Optional nerves and disc herniation

Contact for pricing.

\$399.00 – \$459.00



Double Spondy Dynamic Disc Model

Double Spondy Model

This multilevel L4-L5-sacrum double spondy model showcases both a lytic L5 and non-lytic L4 spondylolisthesis. Additional features include double dynamic herniation demonstrating nuclear shifting and extrusion under manual compression of model. See video for details. Please expect 3-4 weeks lead time for custom construction.

Contact for pricing.



Modic vertebra with the basivertebral nerve demonstrating bone inflammation.

A Modic Vertebra with the basivertebral nerve. This new model is a midsagittal cut lumbar vertebra exposing the cancellous bone, painted blood red with a clear finish. Every model created will have small variations due to the handcrafted nature. [Modic endplate changes](#) are often important clinical findings.

\$120.00



Naturally Bulging Lumbar Spine Model

If fear-avoidance behaviour is suspected to be part of the clinical presentation of back pain, this naturally bulging disc model may be useful for patients that require anatomical education to minimise fear. This model has been resiliently handcrafted to show natural load on an L4-5 motion segment in all six degrees of freedom without herniation to help show patients how the intervertebral disc is designed to withstand load and how it naturally it bulges. To combat [catastrophic](#) thoughts regarding pain, this model can assist connecting patients with unknowns about normal spinal movements and patterns (For example, like that of natural hydraulic [diurnal](#) height variations). This model can be helpful in linking a patients variation of pain experiences, like that of stiffness in the morning, which is common for degenerative discs. Fear avoidance education can be executed with this one-level lumbar model to help patients realize the beautiful inner workings of their spine and that movement should not be scary.

Details include:

- actual size
- naturally bulging annulus
- nuclear pulposus shifting
- transparent L4 to visualise nuclear shifting dynamics
- clinic white opaque L5
- endplate (blue)
- endplate pores (black) to show the route of nutrition and hydraulics
- endplate lesion (red)
- vasculature in the L4 vertebral body (red)
- facet hyaline cartilage (blue)
- facet subchondral vascularization (red)
- facet tropism (L5 inferior) to show that asymmetry exists naturally!

Optional colour change is available in replacement of the red perichondral vascularisation to yellow.

Contact for pricing.



Degenerated Disc Spine Model

A degenerated disc model crafted from an elderly female specimen. With a two-part intervertebral disc, nerves enter the central aspect of the nucleus from the periphery of the annulus. The embedded innervation allows visible movement of the nucleus under differing vector loads. Very helpful in understanding directional preferences for back pain.

Features include:

- Frosted clear natural textured L4 with a view lens
- Painted facets (blue-hyaline; red-perichondrial vascularization)
- Lateral recess osteophyte
- Opaque white matching L5
- Two-part intervertebral disc
- Posterior-lateral (left and right) reddened annular fissure
- Dynamic disc bulging
- Dynamic disc herniation (nuclear movement (protrusion-extrusion) through an annular tear) ... designed to perform repeatedly. Nucleus will retract naturally when compressive forces are relieved.



Loaded LxH Lumbar Model

This Loaded LxH Lumbar Model includes many anatomical features for those who want it all....well, almost.

Details include:

- Opaque bone coloured L4 and L5
- Dynamic two-part disc (annulus fibrosus and nucleus pulposus)
- **Medial branches**
- Inflamed facet capsule
- **Audible release feature**
- Blue hyaline (polished and roughed with fibrillation as comparison on superior articulating facets of L4)
- Perichondrial vascularization
- Cauda equina
- Intertransversari muscle

Take patient education of mechanical pain generators to the next level. Be prepared to explain a patient's condition. This model can demonstrate disc bulge, disc protrusion, disc extrusion, facet pain, sheer instability, dynamic disc height loss, disc compression, disc decompression and much more.

Contact for pricing.



L2-5 Hypermobility Lumbar Dynamic Disc Model

Hypermobility Lumbar Model

Each model includes identical size and texture of real bone. Each vertebra is opaque light brown colour with elastomeric intervertebral discs. The facets surfaces have been painted with red and blue signifying perichondrial vascularization and hyaline cartilage, respectively. Two model types are available for purchase: a two level (L3-L5) or three level (L2-L5). Each hypermobile (L3-4) motions segment is half the stiffness and demonstrates hypermobility compared to the other levels.

L3-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc

L2-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc with L4-5 and L2-3 of identical lesser elasticity (2x stiffness).

Custom orders available to include a two-part intervertebral disc (both nucleus and annulus) to demonstrate nuclear shifting and herniation. [Inquire](#) for pricing.

Research has revealed how aberrant motion can affect the dynamics of an adjacent functional spinal unit. This model has been constructed to show a patient what relative instability looks like with dynamic disc micro-movements of sheer instability as the facets approximate. Engage with patients who display hypermobility symptoms to encourage self-management of practices that improve the condition like in the case of core stabilization exercises.

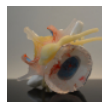
\$325.00 – \$385.00



L1-4 Hypermobile Lumbar Dynamic Disc Model

A dynamic hypermobile lumbar model demonstrating a hypermobile L2-3 disc. Herniation demonstrated under flexion and compressive load.

\$445.00



Non-Herniating Dynamic Disc Model

Another Dynamic Disc Model, this one without a herniation. This non-herniating model has been designed with the practitioner in mind who wants to minimize any nocebo effects to optimize a patient's outlook. Constructed with materials that are durable and can withstand compressive loads without a radial tear, which will contain the nucleus within the annulus showing a natural bulge under load. This L4-5 model crafted from a cadaveric specimen with minimal osteophytosis incorporates a see-through L4 vertebra with visible details of the intervertebral disc; including both an active nucleus pulposus and annulus fibrosis. Further features include deep annular fissures, a partial annular fissure, disc innervation, neo-innervation, L5 endplate fracture, endplate pores, painted blue hyaline cartilage, painted red subchondral bone... all to help the practitioner effectively educate patients about self-anatomy in a non-scary way. Showing even with internal pathological findings that the motion segment is adaptive and quite resilient...empowering patients with an optimistic prognosis. A ligamentum flavum (LF) is included with this model to stabilize the posterior elements.

Contact for pricing.



Cervical Models



Professional CxH Dynamic Disc Model

Professional CxH Dynamic Disc Model

Use our Professional CxH Dynamic Disc Model to take patient education to a higher level for cervical spine pathologies. This cervical herniating disc model is a matching specimen to the [Professional Lumbar LxH model](#) (same human spine) portraying identical cervical size with natural morphology including a two-part intervertebral disc with six degrees of natural motion with a red post-lateral nuclear migration upon manual compression, posterior longitudinal ligament (PLL), anterior longitudinal ligament (ALL) and periosteal fascia (POL) (adjacent to uncovertebral joint). Helpful in doctor-patient discussions of pain related to uncovertebral joint, IVF narrowing and dynamic disc changes related to the facets.

Ligamentum Flavum (LF) optional feature.

Only available with bundle: [Spine Educator](#)



Cervical Degenerated Dynamic Disc Model

Cervical Degenerated Dynamic Disc Model

A one-level dynamic degenerated cervical spinal stenosis model with significantly reduced disc height, central disc bulge, central annular fissure and respective red nuclear herniation to extrude under load. This model also includes a thickened ligamentum flavum. Demonstrate central stenosis with a central herniation under load all in a dynamic and interactive way with patients or students. Actual size and identical anatomical detail. A cervical degenerated herniating spine model can take your spine education to a new level.

Only available with bundles: [The Essentials](#), [Fryer's Picks](#)

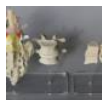


Cervical Spinal Stenosis Model

Cervical Spinal Stenosis Model

A multilevel dynamic cervical spinal stenosis model demonstrating a centrally protruding nucleus pulposus at C6-7 achieved with a 2-part intervertebral disc to show spinal canal narrowing both with herniation under compression load and dynamic extension. Ligamentum Flavum has been thickened to represent natural degenerative changes. Cervical lordotic curve has been reduced to show disturbed facet parallelism. This C5-7 model is our C6-7 CxDH Model with C5 vertebra and an elastic 1-part C5-6 disc.

Only available with bundle: [Spine Educator](#)



Custom Pro Package Deluxe

Custom Pro Package Deluxe

Our Custom Pro Package Deluxe is the most detailed and elaborate spine education model package on the market today. Selected models create a spine education library experience.

Package includes 5 models:

- **Multilevel (Sacrum-L5-L4) Model** with our Professional LxH Model stacked up onto an L5-1 2-part disc with the ligamentum flavum at the L4-5 and L5-1 levels. Dual herniation under compressive load. Colour variations from the model shown may exist as each model is individually crafted. Model only without added features.
- **Midsagittal Model**
- **Medial Branch Model** demonstrating three level innervation to an inflamed facet capsule. This is our Professional LxH Model with these added zygapophyseal joint features.
- **Stenosis Lumbar Model**
- **Professional CxH Model**
- **Dual Stand**
- **Triple Stand**

Please expect a 3-6 week lead time on this custom package.

Call for pricing.



Upper Cervical Spine Model

Upper cervical model designed with dynamic discs. Identical geometry and textures to human bony spine. Includes elastomeric discs, ligamentum flava and cruciform ligament.

\$265.00



Spine Educator

Spine Educator

A Spine Educator Model Package includes 7 popular products:

- **Professional LxH Dynamic Disc Model with Ligamentum Flavum** (demonstrating normal and herniation)
- **Lumbar Spinal Stenosis Dynamic Disc Model**
- **Professional CxH Model**
- **Cervical Spinal Stenosis Model**
- **Spondylolysis Spondylolisthesis** (bilateral pars fracture)
- **Business Card Holder**
- **Anatomy of Pain Poster**

~~\$1,375.00~~ **\$1,099.00**

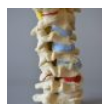


Hypermobility Cervical Spine Model

Hypermobility Cervical Model demonstrating an unstable C3-4. Constructed from a degenerated specimen with a recreation of the intervertebral discs, ligamentum flava and the cruciform ligament at C1-2 this model shows how an adjacent level (C3-4) to the most degenerated segment (C4-5) is unstable and hypermobile in end ranges of motion. Further features include a C6-7 disc central protrusion as well as a herniating red nucleus under compressive and flexion loads. Custom creation. Expect 4-6 week lead time.

Note: any intervertebral disc level (or levels) can be custom crafted to show instability. Please specify with order (additional charges may apply)

\$1,888.00



Multilevel Multicoloured Cervical Dynamic Disc Model

A fully dynamic Multilevel Multicoloured Cervical Model (C1-7). Custom crafted.

Features:

- elastomeric intervertebral discs
- degenerative bony detail
- straightened cervical curve
- ligamentum flava
- cruciform ligament at C1-2
- hyperelastic C5-6 disc demonstrating hypermobility compared to other discs
- 2-part (annulus fibrosus and nucleus pulposus) C6-7 disc with a central annular tear
- nuclear central herniation of C6-7 under load
- reddened facets at facet joints with reduced joint space width

\$1,899.00



Cervical Prox1 Dynamic Disc Model

Cervical Prox1

Details include:

- true geometry
- 1-part elastomeric discs (c2-c3-4-5-6) white c2-3 red c3-6 (hyperelastic c3-4- to demonstrate hypermobility)
- 2-part elastomeric disc (c6-7) red nucleus and red annulus to demonstrate nuclear extrusion and canal encroachment
- red painted subchondral facets
- blue painted hyaline facets
- clear elastic material on surface of facets (superior C1 and inferior C7) for a palpable experience of hyaline surface
- ligamentum flavum throughout
- cruciform ligament

\$1,800.00



Stands



Single Acrylic Stand For Spine Models

Give your model a home and present it on a removable stand. Spins on post to show anterior or posterior structures. Clear acrylic base with rounded corners with dimensions of 4in by 4in (1/4in thick) with an acrylic post and rubber feet to prevent slippage.

Required 1/4in hole drilled into bottom of model to accommodate post. Personalized name plate (black sublimation on shiny silver back) as optional feature. Please specify your text with order.

\$30.00 – \$60.00



Dual Acrylic Stand

Give your models a home and present them on a removable stand. 8in by 4in (1/4in thick) clear acrylic base with two polished steel posts and rubber feet. Required 1/4 in hole drilled into bottom of each model to accommodate posts. Name plate extra. Please specify name with order. This item is stand only.

If a stand is required for more than two models, please inquire. We build stands for multiple model displays.

\$38.00 – \$68.00



Square Wood Stand

Beautiful Wood Bases to Showcase Dynamic Disc Models

A wonderful way to display your models. These hardwood bases are made from indigenous species from the Americas using the traditional American Black Walnut from North America and the Exotic Purple Heart from Central and South America. (Any other species of wood is available) The edges of the base are shaped with the Classical Bead and Cove profile then the wood is coated with a clear UV protective finish. The upright support for the model is made from a solid brass rod with a hand rubbed polish. The under base has a No Mar protective felt.

Select species of wood. Models with Sacrum will only accommodate tall rods. Each model will require a shallow drilled 1/4 inch hole on inferior vertebra to accommodate post. Optional name plate available. [Contact us](#) to inquire about name plates and bases accommodating multiple models.

\$60.00