Cervical Models

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 dynamically and interactively with patients or students: actual size and exact anatomical detail. A cervical degenerated herniating spine model can take your spine education to a new level.

Available with bundles: The Essentials, Fryer's Picks

$225.00

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 (hypereastic 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

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 flavum 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

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. The ligamentum flavum has been thickened to represent natural degenerative changes. The cervical lordotic curve has been reduced to show disturbed facet parallelism. This C5-7 model is our C6-7 CxD Model with C5 vertebra and an elastic 1-part C5-6 disc.

$325.00
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 flavum
- 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

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 matches 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 biological motion. This model includes a red post-lateral nuclear migration upon manual compression, the posterior longitudinal ligament (PLL), the anterior longitudinal ligament (ALL) as well as the periosteal fascia (POL) (adjacent to the uncovertebral joint). Now includes the ligamentum flavum.

Also available with bundle: Spine Educator

$245.00
Spine Educator

A Spine Educator Model Package includes 7 popular products:

- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis Dynamic Disc Model
- Professional CoH Model
- Cervical Spinal Stenosis Model
- Spondylolisthesis Spondylolysis (bilateral pars fracture)
- Business Card Holder
- Anatomy of Pain Poster

$1,234.00 $1,119.00

Upper Cervical Spine Model

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

$265.00
Cervical Multilevel

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. The ligamentum flavum has been thickened to represent natural degenerative changes. The cervical lordotic curve has been reduced to show disturbed facet parallelism. This C5-7 model is our C6-7 CxD Model with C5 vertebra and an elastic 1-part C5-6 disc.

$325.00

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 flavum 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 flavum
- 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
A Spine Educator Model Package includes 7 popular products:

- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (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

$1,234.00 $1,119.00

Upper Cervical Spine Model
Upper cervical model designed with dynamic discs. Identical geometry and textures to human bony spine. Includes elastomeric discs, ligamentum flavum and cruciform ligament. $265.00
Cervical Single Level

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 dynamically and interactively with patients or students: actual size and exact anatomical detail. A cervical degenerated herniating spine model can take your spine education to a new level.

Available with bundles: The Essentials, Fryer's Picks

$225.00

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 matches 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 biological motion. This model includes a red post-lateral nuclear migration upon manual compression, the posterior longitudinal ligament (PLL), the anterior longitudinal ligament (ALL) as well as the periosteal fascia (POL) (adjacent to the uncovertebral joint). Now includes the ligamentum flavum.

Also available with bundle: Spine Educator

$245.00

Spine Educator

A Spine Educator Model Package includes 7 popular products:
- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis Dynamic Disc Model
- Professional CxH Model
- Cervical Spinal Stenosis Model
- Spondylysis Spondylolisthesis (bilateral pars fracture)
- Business Card Holder
- Anatomy of Pain Poster

$1,234.00 $1,119.00

3 total products.
Custom Creations

Biomechanical Model | Spine
A biomechanical model by Dynamic Disc Designs Corp. with a realistic 2-part disc with 6 degrees of freedom and reinforced higher tensile and tear strength annular properties and fibrous nucleus pulposus. Able to withstand forces known to cause endplate failure.

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 terminate 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

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

Classic LxH Dynamic Disc Model with a Blue Nucleus Pulposus
This is our Classic LxH Model replacing the red nucleus with a blue nucleus. Inspired by Erson Religioso III

Explore the dynamics of a spinal motion segment and demonstrate the concepts of extension and flexion movements as it relates to a disc bulge, disc extrusion and disc protrusion. Powerful education to encourage compliance of a patient’s healing movements.

This model now includes the updated cauda equina.

$205.00

Custom Neurology
Custom neurology to demonstrate medial branches (from three levels) to the facet capsule, recurrent meningeal, gray rami communicantes, sympathetic ganglion. Exterior Innervation to disc also available. The is nerve function model to help show the intricacies of one functional spinal unit. Serious inquiries only please.

$205.00
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.

Degenerative Dynamic Disc Model
A uniquely crafted L4-5 dynamic disc model which includes:

1. Two-part intervertebral disc (nucleus pulposus and annulus fibrosus)
2. L4 vertebral body with osteophytes
3. L5 vertebral body with osteophytes
4. Medial branches
5. Facet capsule
6. Annular fissure to allow the white nucleus pulposus to extrude under load
7. Facet arthropathy
8. Cauda equina with rootlets

$525.00

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
- Optional Feature: Degenerative Lumbar Epidural Trainer Only, Add Cauda Equina

$225.00 – $245.00
Degenerative Lumbar Spine Model

A degenerative lumbar spine 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

Options: No additions, Herniation and Nerves
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) fissure is within the posterior annulus. 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 includes herniation. Dynamic Disc bulging with the update 2020 can be demonstrated. Cauda equina and the rootlets option available.

Details include:

- 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
- bone coloured opaque L5
- embedded nuclear structure to demonstrate nuclear shifting dynamics (embedded structure simulated proteoglycan)
- endplate (white)
- endplate pores (black)
- endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet hyaline cartilage (white)
- facet subchondrial vascularization (red)
- Detailed cauda equina (optional) with rootlets (optional)

$295.00 – $335.00

Options: No Additions, Add Cauda Equina, Add Cauda Equina and Rootlets

Dissection Demonstrator LxH Spine Model

A Discectomy 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

Double Spondy Model

This three-level multilevel L4-L5-sacrum double spondylolisthesis model showcases both a lytic at L5 and a degenerative non-lytic at L3-4. Additional features include a herniating L5-1 disc.

$775.00

Double Spondy Dynamic Disc Model

This three-level multilevel L4-L5-sacrum double spondylolisthesis model showcases both a lytic at L5 and a degenerative non-lytic at L3-4. Additional features include a herniating L5-1 disc.

$775.00

Options: No Additions, Add Cauda Equina, Add Cauda Equina and Rootlets
Dynamic Spine Education
Explore the realistic and dynamic nature of disc herniation. This custom model uses a white nucleus with simulated granulation and ingrowth of vasculature.

Endplate Disruption Dynamic Disc Model
A L4-L5 motion segment with a three-part disc:
1. annulus fibrosus
2. blue stained nucleus pulposus
3. clear flexible endplates

This model has been created from the request of our customers wanting more anatomical detail. Here our Classic LxH Dynamic Disc Model has been used as a foundation with the addition of hollowing out the vertebra to reveal the white flexible endplates. A small fissure has been created in the superior endplate to demonstrate how the blue stained nucleus can migrate upwards under compression load. Notice the posterior venous channels (Hans venous clefts) which play a hydraulic role. These are the channels that the basivertebral nerve follow. Helpful in the education of endplate sensitivity and the remodeling like that seen in Schmorl's Nodes and Modic changes.

$425.00

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

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.

Endplate Disruption Modeling - Schmorl's Node Mechanism
Schmorl's nodes can be pain drivers which can be the result of an earlier insult to the endplate. Here is our attempt to model a one level L4-S disc which includes dynamic endplates, apophyseal ring and a white nucleus that will penetrate through a fissure.

Endplate Modeling
Endplate modeling of human intervertebral disc-vertebrae interface is a manufacturing feat accomplished by Dynamic Disc Designs Corp. Multilevel models can be seen here.

Endplate Modeling of human intervertebral disc-vertebrae interface is a manufacturing feat accomplished by Dynamic Disc Designs Corp. Multilevel models can be seen here.

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.
- Optional Feature: Do Not Add Ligamentum Flavum
- Add Ligamentum Flavum
Fully Clear Herniated Dynamic Disc Model

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

NEW ANNULUS (2019) and other features, see Professional LxH Dynamic Disc Model for details.

In other words, both the L4 and L5 match with this Fully Clear LxH model. L5 does not have the view lens but is semi-transparent. Optional ligamentum flavum is 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 modelling 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.

$325.00

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
- Multiple annular inner fissures
- Kidney shaped posterior inner annulus
- Disc bulge encroaching into lateral recess
- Red facet arthropathy without blue

Herniation/Endplate Fracture

Bony details: sacrum, L5, and L4 inferior epiphyseal ring. Soft tissues: endplates, annulus pulposus, ligamentum flavum and nucleus pulposus. Pathology details: L5-1 right posterior-lateral radial tear to demonstrate nuclear extrusion (with granulation tissue) and L4 inferior endplate fracture to demonstrate superior nuclear translation...both generated under loading conditions. Ligamentum flavum at 4mm thickness and available for realistic puncture force feedback, for epidural training. See full page video here.

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 flavum 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

Intersegmental Muscle

An intersegmental muscle (simulating the intertransversarii muscle). Easily attached to our Professional Model to both the left and right aspect of the model. Now, the interaction between dynamic disc compression and muscle contraction can be easily shown. Inquire.
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
**IVF Contents Spacer Model**
Demonstrate the intervertebral contents with our dynamic yellow fatty IVF simulated spacer. Details include: intervertebral vein, spinal ramus of segmental artery, lymphatic channel, recurrent meningeal nerve. This is an add-on feature for the Professional LxH Model. Can also be added to any multilevel lumbar model.
Contact for pricing.

**L4-Sacrum Dynamic Disc Model**
Explore the dynamics of disc height loss in this L4-Sacrum model. Includes a homogenous L5-1 and a heterogenous (annulus and nucleus) L4-5 elastomeric disc. Stand included. See video for product details. Optional cauda equina (with rootlets) with and without medial branches.

$525.00 – $725.00
- Optional Feature: Base Model, Add cauda equina with rootlets, Add cauda equina with rootlets and medial branches

**Laminectomy Lumbar Model**
Laminectomy model using our Lumbar Spinal Stenosis Dynamic Disc Model as the specimen. This reveals the spinal canal in the case of surgical requirement. This is a patient education model, primarily. Includes cauda equina.

$225.00

**Ligamentous LxH Model**
A Ligamentous LxH model as a custom design to showcase: anterior longitudinal and posterior longitudinal ligament, interspinous ligament, ligamentum flavum with the Classic LxH model. Inquire.

**Lumbar Epidural Trainer**
Lumbar epidural trainer teaching model by Dynamic Disc Designs Corp.

This Lumbar Epidural Trainer model includes the ligamentum flavum (diameter 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. Contact for pricing.

$235.00 – $305.00
- Optional Features: Epidural Clear Model Only, Add Cauda Equina, Add Disc Herniation, Add Cauda Equina and Disc Herniation

**Lumbar Epidural Trainer (Epiclear)**
Lumbar Trainer epidural placement teaching model by Dynamic Disc Designs Corp. This model includes a translucent ligamentum flavum (diameter 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. Contact for pricing.

- Optional Features: Epidural Clear Model Only, Add Cauda Equina, Add Disc Herniation, Add Cauda Equina and Disc Herniation
Lumbopelvic Dynamic Spine Model

Are you ready to press play on this dynamic lumbopelvic model? A custom crafted lumbopelvis model to explore and teach the dynamic of motion. This model has been constructed with elastomeric sacroiliac joints adhered to a matching ilium and sacral bony specimen including a simulated elastomeric public symphysis connecting each ilia anteriorly. This enables six degrees of freedom to be shown as the lumbar spine and pelvis intimately are involved with one another. Intervertebral discs at the L3-L4, L4-L5 and L5-S1 levels with a disc bulge, herniation and protrusion at L4-5. Take your education to another level to optimize outcomes and patient engagement/retention of your bio-mechanical message.

Expect 4-5 week lead time.

NOTE: Model has now (as of 2021) semi translucent annulus fibrosus as seen in images. Colours may vary slightly from images and video.

$2,000.00

Medial Branches to Facet Joint

For surgeons performing rhizotomies this is an add-on feature for precise patient education. Medial branches from same level and adjacent levels. Contact us.

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 as well as colours may exist between models. Model is helpful in explaining pain from vertebrae or endplate.

$255.00

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 and may not be exactly like the product images seen. Modic endplate changes are often important clinical findings.

$120.00

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.

Pediatric L4-5 Model

Use this model to demonstrate realistic motion in a child's spine with great disc height and therefore, great range of motion. Also, use to educate the early age-related changes that occur in the first decade of life. Identical copy of 6 year old specimen. Ligamentum flavum and interspinous available with puncture force realism for pediatric epidural training.
Pediatric Spine Model

Identical size and shape of six year old spine (L4-5). Opaque white L5, white elastomeric annulus, clear nucleus with (*new*) particles to show nuclear movement, posterior reddened tear on the annulus, and clear L4 to see from superior to inferior. Skinned with a grippy see-through finish on the superior endplate of L4. Small tear in the posterior lateral annulus will be included. If you prefer no tear, just send us a note with your order.

Designed with careful attention to the literature demonstrating how degeneration starts as early as the first half of the second decade of life.

Contact for pricing.

Radio-opaque Models

ddd offers radiopaque models if visualization with x-ray is required. This image is an example of our Academic Model with settings of: cm 4 kvp 55 mas 3.5. Even seen is the annulus and nuclear border.

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 and custom laser printing.

$60.00
- Base Wood and Pole Length: walnut base, purple heart

Thoracic Epidural Placement Spine Model

A thoracic epidural placement model with accurate anatomy and realistic puncture force feedback of the ligamentum flavum. Identical copy of bone captures detail for accurate placement training. Includes stand.

If your goal is to teach proper spinal placement, Dynamic Disc Models are unique by exposing realistic anatomy to help educate the path of a successful epidural placement procedure.

Inquire about volume discounts for classroom applications.

Contact for pricing.

Thoracic spine model

A dynamic thoracic model. This model includes a flexible one-part intervertebral disc, ligamentum flavum, T7 and T8 vertebral bodies. Stand is extra.

$183.00

Upper Cervical Spine Model

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

$265.00
Virtual Digital Spinal Library

ddd's 3D Virtual Digital Spinal Library media scanned and textured from carefully selected healthy and degenerated specimens (c1-sacrum/ium). Geometry tolerance:.005in watertight OBJ file. Other file types available. Files emailed and/or hard copy mailed.

43 total products.
Degenerative

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 dynamically and interactively with patients or students: actual size and exact anatomical detail. A cervical degenerated herniating spine model can take your spine education to a new level.

Available with bundles: The Essentials, Fryer's Picks
$225.00

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. The ligamentum flavum has been thickened to represent natural degenerative changes. The cervical lordotic curve has been reduced to show disturbed facet parallelism. This C5-7 model is our C6-7 CxD Model with C5 vertebra and an elastic 1-part C5-6 disc.
$325.00

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.
Degenerative Dynamic Disc Model
A uniquely crafted L4-5 dynamic disc model which includes:

1. Two-part intervertebral disc (nucleus pulposus and annulus fibrosus)
2. L4 vertebral body with osteophytes
3. L5 vertebral body with osteophytes
4. Medial branches
5. Facet capsule
6. Annular fissure to allow the white nucleus pulposus to extrude under load
7. Facet arthropathy
8. Cauda equina with rootlets

$525.00

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 visualization 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
- Optional Feature: Degenerative Lumbar Epidural Trainer Only, Add Cauda Equina

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

This is our LxD Model with a grade 1 anterior degenerative spondylolisthesis. With an intact pars demonstrate the degenerative nature of the facets with 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...showing central, lateral recess and foraminal 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 cauda equina with optional rootlets available.

$195.00 – $235.00
- Optional Anatomical Features: Do Not Add Cauda Equina, Add Cauda Equina, Add Cauda Equina with Rootlets
L2-5 Hypermobility Lumbar Dynamic Disc Model

Hypermobility Lumbar Model (New for 2019)

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 signifying perichondrial vascularization and covered with an elastomeric white hyaline cartilage, respectively. However, at the L3-4 level, the facets are red only, providing a visual for active inflammation at the hypermobile level.

L2-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc

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.

Laminectomy Lumbar Model

Laminectomy model using our Lumbar Spinal Stenosis Dynamic Disc Model as the specimen. This reveals the spinal canal in the case of surgical requirement. This is a patient education model, primarily. Includes cauda equina with rootlets.

$225.00

Lumbar Spinal Stenosis Dynamic Disc Model

Lumbar Spinal Stenosis Dynamic Disc Model (LxD)

The newest anatomical detail of this one-level degenerative model includes lateral recess stenosis and foraminal stenosis from an enlarged projecting osteophyte—anatomical information extracted from the natural cadaveric bone. Additional detail includes an L4-5 motion segment with a reduced lordotic curve and significant disc height loss with facet subchondral sclerosis and arthropathy with a thickened ligamentum flavum. Optional cauda equina and rootlets demonstrate increased friction in dynamic extension and opening spinal canal dynamics in flexion—an excellent educational tool to understand central, lateral and foraminal stenosis elements.

$185.00 – $215.00

Optional Feature: Model Only, Add Cauda Equina, Add Cauda Equina and Rootlets

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 and may not be exactly like the product images seen. Modic endplate changes are often important clinical findings.

$120.00
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 flavum
- 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

Professional Lumbar Package
A Professional Lumbar Package includes three popular products:
- Professional LxH Dynamic Disc Model with LF with the added features of the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis (degenerated)
- Spondylolisthesis Lumbar (spondyloytic)

compare to the Lumbar Collection which comes with a walnut base and optional laser engraving
$765.00 $699.00

Dynamic Disc Designs catalogue: prices subject to change
This catalogue was generated on December 14, 2021
Spine Educator

A Spine Educator Model Package includes 7 popular products:

- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (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

$1,234.00 $1,119.00

13 total products.
Lumbar Models

Academic LxH Dynamic Disc Model

The NEW Academic LxH Dynamic Disc Model for 2020

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 hyaline fibrillation
- bone coloured L5
- white superior endplate matching the colour of the articular cartilage
- New cauda equina

The anatomical features that remain (from the previous model):
- flexible and 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
- transparent L4
- randomly scattered and embedded black nuclear structures to show nuclear shifting dynamics through the L4 view lens easily
- L5 superior endplate pores (black)
- L5 superior endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet subchondrial vascularization (red)
- facet tropism (L5 inferior)

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 nick-named: The Oracle Model because of its role in the development of a research piece explained in more detail here.

(NEW Painted Facets and NEW Disc Dynamics which includes a circumferential disc bulge with a superimposed protrusion)

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 roughened surface showing degenerative changes
- red nuclear extrusion and protrusion under load
- optional detailed cauda equina with and without rootlets. (see Professional LxH Model for details)

Basivertebral Nerve Lumbar Model

A Basivertebral Nerve Lumbar Model of a midsagittal L2 vertebrae model exposing a midline slice of the red cancellous bone with vertebral intraosseous innervation of the basivertebral nerve (BVN). An identical copy of a 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.

$165.00

Dynamic Disc Designs catalogue: prices subject to change
This catalogue was generated on December 14, 2021
See model usage videos.

$225.00

**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

**Classic LxH Dynamic Disc Model**

Our Classic 3d Dynamic Disc Model with new features of a diffuse disc bulge, dynamic extrusion and dynamic protrusion. Use this model to connect a patient's dynamic symptoms with their posture to help self-awareness and empowerment manage back pain causes. New for 2021, translucent annulus material.

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

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

$186.00

**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.
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
  * Optional Feature: Degenerative Lumbar Epidural Trainer Only, Add Cauda Equina

Degenerative Lumbar Spine Model

A degenerative lumbar spine 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
  * Options: No additions, Herniation and Nerves

Degenerative Spondylolisthesis Dynamic Disc Model

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

This is our LxD Model with a grade 1 anterior degenerative spondylolisthesis. With an intact pars demonstrate the degenerative nature of the facets with 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...showing central, lateral recess and foraminal 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 cauda equina with optional rootlets available.

$195.00 – $235.00
  * Optional Anatomical Features: Do Not Add Cauda Equina, Add Cauda Equina, Add Cauda Equina with Rootlets
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) fissure is within the posterior annulus. 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 includes herniation. Dynamic Disc bulging with the update 2020 can be demonstrated. Cauda equina and the rootlets option available.

Details include:

- 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
- bone coloured opaque L5
- embedded nuclear structure to demonstrate nuclear shifting dynamics (embedded structure simulated proteoglycan)
- endplate (white)
- endplate pores (black)
- endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet hyaline cartilage (white)
- facet subchondrial vascularization (red)
- Detailed cauda equina (optional) with rootlets (optional)

$295.00 – $335.00
- Options: No Additions, Add Cauda Equina, Add Cauda Equina and Rootlets

Dissection Demonstrator LxH Spine Model

A Discectomy 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

Double Spondy Dynamic Disc Model

This three-level multilevel L4-L5-sacrum double spondylolisthesis model showcases both a lytic at L5 and a degenerative non-lytic at L3-4. Additional features include a herniating L5-1 disc.

$775.00
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

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.

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.
- Optional Feature Do Not Add Ligamentum Flavum
- Add Ligamentum Flavum

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

NEW ANNULUS (2019) and other features, see Professional LxH Dynamic Disc Model for details.

In other words, both the L4 and L5 match with this Fully Clear LxH model. L5 does not have the view lens but is semi-transparent. Optional ligamentum flavum is 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 modelling to help improve clinical outcomes. Very useful for chiropractors, physiotherapists, osteopathic doctors, physical therapists, spine surgeons, teaching hospitals, medical schools, orthopedic schools and universities.
Contact for pricing.
$325.00

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
- 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

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. Custom order only.
Inquire
- 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 annular 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
L2-5 Hypermobility Lumbar Dynamic Disc Model

Hypermobility Lumbar Model (New for 2019)

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 signifying perichondrial vascularization and covered with an elastomeric white hyaline cartilage, respectively. However, at the L3-4 level, the facets are red only, providing a visual for active inflammation at the hypermobile level.

L2-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc.

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 shear 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.

$450.00 $415.00

L4-Sacrum Dynamic Disc Model

Explore the dynamics of disc height loss in this L4-Sacrum model. Includes a homogenous L5-1 and a heterogenous (annulus and nucleus) L4-5 elastomeric disc. Stand included. See video for product details. Optional cauda equina (with rootlets) with and without medial branches.

$525.00 – $725.00
• Optional Feature: Base Model, Add cauda equina with rootlets, Add cauda equina with rootlets and medial branches

L5 Spinal Stenosis Vertebrae Model

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

$35.00
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 “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).

$235.00 – $305.00
- Optional Features: Lumbar Epidural Trainer Only, Add Cauda Equina, Add Disc Herniation, Add Cauda Equina and Disc Herniation

Lumbopelvic Dynamic Spine Model

Are you ready to press play on this dynamic lumbopelvic model? A custom crafted lumbopelvis model to explore and teach the dynamic of motion. This model has been constructed with elastomeric sacroiliac joints 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 with one another. Intervertebral discs at he L3-L4, L4-L5 and L5-S1 levels with a disc bulge, herniation and protrusion at L4-5. Take your education to another level to optimize outcomes and patient engagement/retention of your bio-mechanical message.

Expect 4-5 week lead time.

NOTE: Model has now (as of 2021) semi translucent annulus fibrosus as see in images. Colours may vary slightly from images and video.

Medial Branch Dynamic Disc Model

The new Medial Branch Model (2020) uses our Professional LxH Model with two-level nerve details extending sensory branches to the L4 and L5 nerve roots. The new cauda equina (2020) has been updated to include the dura mater along with accurate rootlet number and geometry. Lumbar anatomy includes an inflamed facet capsule.

Model bases also available for purchase. Expect a 3-5 week lead time for detailed construction and assembly. Contact us for branding details.

$885.00 $525.00
- Optional Features: Epidural Clear Model Only, Add Cauda Equina, Add Disc Herniation, Add Cauda Equina and Disc Herniation

Lumbar Spinal Stenosis Dynamic Disc Model

Lumbar Spinal Stenosis Dynamic Disc Model (LxD)

The newest anatomical detail of this one-level degenerative model includes lateral recess stenosis and foraminal stenosis from an enlarged projecting osteophyte—anaotomical information extracted from the natural cadaveric bone. Additional detail includes an L4-5 motion segment with a reduced lordotic curve and significant disc height loss with facet subchondral sclerosis and arthropathy with a thickened ligamentum flavum. Optional cauda equina and rooflets demonstrate increased friction in dynamic extension and opening spinal canal dynamics in flexion—an excellent educational tool to understand central, lateral and foraminal stenosis elements.

$185.00 – $215.00
- Optional Feature: Model Only, Add Cauda Equina, Add Cauda Equina and Rootlets

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 as well as colours may exist between models. Model is helpful in explaining pain from vertebrae or endplate.

$255.00
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 and may not be exactly like the product images seen. Modic endplate changes are often important clinical findings.

$120.00

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.

Original LxH Dynamic Disc Model - Pre-2019

If you are in love with the original LxH Dynamic Disc Model by Dynamic Disc Designs, here it is. Some prefer the original disc geometry and structure with the peacock blue hyaline colour. We hear you!

The anatomical features include:

- 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. (previous disc design pre-2019 upgrade)
- right posterior-lateral radial and circumferential(concentric) fissure
- transparent L4 vertebra
- bone coloured L5 vertebra ***
- 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 hyaline (blue)
- facet tropism (L5 inferior)

New Cauda Equina 2020 with rootlets available as optional anatomy.

$245.00 – $285.00

Options: No Additions, add New Cauda Equina, add New Cauda Equina with rootlets
Professional Lumbar Package

A Professional Lumbar Package includes three popular products:

- Professional LxH Dynamic Disc Model with LF with the added features of the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis (degenerated)
- Spondylolisthesis Lumbar (spondylolytic)

compare to the Lumbar Collection which comes with a walnut base and optional laser engraving

$766.00 $699.00

Professional LxH Dynamic Disc Model (ProLxH)

Features include:

- New cauda equina with optional rootlets (blue) (2020 update)
- Circumferential (diffuse) disc bulge
- Superimposed disc protrusion
- Limacon shaped annulus
- Peripherally exposed calcified endplate
- Elastomeric white articular cartilage
- Subchondral bone exposed with a hyaline fibrillation
- Bone coloured L5
- White superior endplate matching the colour of the articular cartilage
- Blue coloured intervertebral disc innervation
- Flexible and 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 the outer third of the annulus
- Nerve ingrowth (neo-innervation) to the inner two-thirds of the 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
- Randomly scattered and embedded black nuclear structures to show nuclear shifting dynamics through the L4 view lens easily
- L5 superior endplate pores (black)
- L5 superior endplate lesion (red)

Spine Educator

A Spine Educator Model Package includes 7 popular products:

- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis Dynamic Disc Model
- Professional CxH Model
- Cervical Spinal Stenosis Model
- Spondylolisthesis Spondylolythesis (bilateral pars fracture)
- Business Card Holder
- Anatomy of Pain Poster

$1,234.00 $1,119.00

Dynamic Disc Designs catalogue: prices subject to change
This catalogue was generated on December 14, 2021
- vasculature in L4 vertebral body (red)
- facet subchondrial vascularization (red)
- facet tropism (L5 inferior)
- BONUS disc disruption graphic is included as a download

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

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

$275.00 – $335.00
- Options: No Additions, add Rootlets, Ligamentum Flavum, Ligamentum Flavum with Rootlets, Spondylolisthesis, Spondylolisthesis with Rootlets, Spondylolisthesis & Ligamentum Flavum & Rootlets
Spondylolytic Spondylolisthesis
Dynamic Disc Model

New for 2019 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 an L4 endplate lens to view radial and circumferential fissures on the top of the annulus fibrosus. The nucleus pulposus is transparent with the embedded nuclear structures showing dynamic motion under differing compressive loads, including protrusion and extrusion with a diffuse disc bulging disc. Other features include the ligamentum flavum, herniation upon manual compression, red subchondrial structure with an elastomeric white simulated hyaline cartilage, cartilage injury, simulated endplate fracture, and endplate pores. Annular radial fissure details are visualized through the transparent L4 vertebra — as in our Academic LxH Dynamic Disc Model. This model can be helpful for patient education if rest is clinically warranted in the young athlete or the discussion of listhesis. Show how the spinal canal is spared for spacing with this type of spondylolisthesis. Spondylolisthesis induced by manual pressure.

Cauda Equina available as an optional feature with the rootlets if desired.

$255.00 – $295.00

- Optional Feature: Do Not Add Cauda Equina,
  Add Cauda Equina, Add Cauda Equina with rootlets, Unilateral Pars Defect, Unilateral Pars Defect with Cauda Equina, Unilateral Pars Defect with Cauda Equina with rootlets

34 total products.
Lumbar Multilevel

Double Spondy Dynamic Disc Model

Double Spondy Model

This three-level multilevel L4-L5-sacrum double spondylolisthesis model showcases both a lytic at L5 and a degenerative non-lytic at L3-4. Additional features include a herniating L5-1 disc.

$775.00

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. Custom order only. Inquire

L2-5 Hypermobility Lumbar Dynamic Disc Model

Hypermobility Lumbar Model (New for 2019)

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 signifying perichondrial vascularization and covered with an elastomeric white hyaline cartilage, respectively. However, at the L3-4 level, the facets are red only, providing a visual for active inflammation at the hypermobile level.

L2-L5 Model includes a hyperelastic L3-4 one-part intervertebral disc

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 shear 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.

$450.00 $415.00

L4-Sacrum Dynamic Disc Model

Explore the dynamics of disc height loss in this L4-Sacrum model. Includes a homogenous L5-1 and a heterogenous (annulus and nucleus) L4-5 elastomeric disc. Stand included. See video for product details. Optional cauda equina (with rootlets) with and without medial branches.

$525.00 – $725.00

- Optional Feature: Base Model, Add cauda equina with rootlets, Add cauda equina with rootlets and medial branches

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.

$525.00 – $725.00

- Optional Feature: Base Model, Add cauda equina with rootlets, Add cauda equina with rootlets and medial branches
Spine Educator

A Spine Educator Model Package includes 7 popular products:

- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (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

$4,334.00 $1,119.00

6 total products.
Lumbar Single Level

Academic LxH Dynamic Disc Model

The NEW Academic LxH Dynamic Disc Model for 2020

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 hyaline fibrillation
- bone coloured L5
- white superior endplate matching the colour of the articular cartilage
- New cauda equina

The anatomical features that remain (from the previous model):

- flexible and 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
- transparent L4
- randomly scattered and embedded black nuclear structures to show nuclear shifting dynamics through the L4 view lens easily
- L5 superior endplate pores (black)
- L5 superior endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet subchondrial vascularization (red)
- facet tropism (L5 inferior)

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 nick-named: The Oracle Model because of its role in the development of a research piece explained in more detail here.

(NEW Painted Facets and NEW Disc Dynamics which includes a circumferential disc bulge with a superimposed protrusion)

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 roughened surface showing degenerative changes
- red nuclear extrusion and protrusion under load
- optional detailed cauda equina with and without rootlets. (see Professional LxH Model for details)

$250.00 – $290.00

Options: No additions, add cauda equina, add cauda equina with rootlets

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
See model usage videos.

$225.00

Classic LxH Dynamic Disc Model

Our Classic 3d Dynamic Disc Model with new features of a diffuse disc bulge, dynamic extrusion and dynamic protrusion. Use this model to connect a patient’s dynamic symptoms with their posture to help self-awareness and empowerment manage back pain causes. New for 2021, translucent annulus material.

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

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

$186.00

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.

$525.00

Degenerative Dynamic Disc Model

A uniquely crafted L4-5 dynamic disc model which includes:

1. Two-part intervertebral disc (nucleus pulposus and annulus fibrosus)
2. L4 vertebral body with osteophytes
3. L5 vertebral body with osteophytes
4. Medial branches
5. Facet capsule
6. Annular fissure to allow the white nucleus pulposus to extrude under load
7. Facet arthropathy
8. Cauda equina with rootlets
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

- Optional Feature: Degenerative Lumbar Epidural Trainer Only, Add Cauda Equina

Degenerative Lumbar Spine Model

A degenerative lumbar spine 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

- Options: No additions, Herniation and Nerves

Degenerative Spondylolisthesis Dynamic Disc Model

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

This is our LxD Model with a grade 1 anterior degenerative spondylolisthesis. With an intact pars demonstrate the degenerative nature of the facets with 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...showing central, lateral recess and foraminal 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 cauda equina with optional rootlets available.

$195.00 – $235.00

- Optional Anatomical Features: Do Not Add Cauda Equina, Add Cauda Equina, Add Cauda Equina with Rootlets
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) fissure is within the posterior annulus. 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 includes herniation. Dynamic Disc bulging with the update 2020 can be demonstrated. Cauda equina and the rootlets option available.

Details include:

- 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
- bone coloured opaque L5
- embedded nuclear structure to demonstrate nuclear shifting dynamics (embedded structure simulated proteoglycan)
- endplate (white)
- endplate pores (black)
- endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet hyaline cartilage (white)
- facet subchondrial vascularization (red)
- Detailed cauda equina (optional) with rootlets (optional)

$295.00 – $335.00
- Options: No Additions, Add Cauda Equina, Add Cauda Equina and Rootlets

Dissection Demonstrator LxH Spine Model

Dissection Demonstrator LxH Spine Model

A Discectomy 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

Endplate Disruption Dynamic Disc Model

Endplate Disruption Dynamic Disc Model

A L4-L5 motion segment with a three-part disc:

1. annulus fibrosus
2. blue stained nucleus pulposus
3. clear flexible endplates

This model has been created from the request of our customers wanting more anatomical detail. Here our Classic LxH Dynamic Disc Model has been used as a foundation with the addition of hollowing out the vertebra to reveal the white flexible endplates. A small fissure has been created in the superior endplate to demonstrate how the blue stained nucleus can migrate upwards under compression load. Notice the posterior venous channels (Hans venous clefts) which play a hydraulic role. These are the channels that the basivertebral nerve follow. Helpful in the education of endplate sensitivity and the remodeling like that seen in Schmorls Nodes and Modic changes.

$425.00
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.

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.
- Optional Feature: Do Not Add Ligamentum Flavum, Add Ligamentum Flavum

Fully Clear Herniated Dynamic Disc Model
This Fully Clear Dynamic Disc Model herniated disc model is the Professional LxH model but has a vascular clear L5 feature.
NEW ANNULUS (2019) and other features, see Professional LxH Dynamic Disc Model for details.
In other words, both the L4 and L5 match with this Fully Clear LxH model. L5 does not have the view lens but is semi-transparent. Optional ligamentum flavum is 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 modelling 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.
$325.00

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
- Multiple annular inner fissures
- Kidney shaped posterior inner annulus
- Disc bulge encroaching into lateral recess
- Red facet arthropathy without blue

Laminectomy Lumbar Model
Laminectomy model using our Lumbar Spinal Stenosis Dynamic Disc Model as the specimen. This reveals the spinal canal in the case of surgical requirement. This is a patient education model, primarily. Includes cauda equina with rootlets.
$225.00

Ligamentous LxH Model
A Ligamentous LxH model as a custom design to showcase: anterior longitudinal and posterior longitudinal ligament, interspinous ligament, ligamentum flavum with the Classic LxH model.
Inquire.
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**

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**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
Lumbar Epidural Trainer

Lumbar epidural trainer teaching model by Dynamic Disc Designs Corp.

This Lumbar Epidural Trainer model includes the ligamentum flavum (diameter 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).

$235.00 – $305.00

- Optional Features: Lumbar Epidural Trainer Only, Add Cauda Equina, Add Disc Herniation, Add Cauda Equina and Disc Herniation

Medial Branch Dynamic Disc Model

The new Medial Branch Model (2020) uses our Professional LxH Model with two-level nerve details extending sensory branches to the L4 and L5 nerve roots. The new cauda equina (2020) has been updated to include the dura mater along with accurate rootlet number and geometry. Lumbar anatomy includes an inflamed facet capsule.

Model bases also available for purchase. Expect a 3-5 week lead time for detailed construction and assembly. Contact us for branding details.

$685.00 $525.00

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 as well as colours may exist between models. Model is helpful in explaining pain from vertebrae or endplate.

$255.00

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 (diameter 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. Contact for pricing.

- Optional Features: Epidural Clear Model Only, Add Cauda Equina, Add Disc Herniation, Add Cauda Equina and Disc Herniation

Lumbar Spinal Stenosis Dynamic Disc Model (LxD)

The newest anatomical detail of this one-level degenerative model includes lateral recess stenosis and foraminal stenosis from an enlarged projecting osteophyte—anatomical information extracted from the natural cadaveric bone. Additional detail includes an L4-5 motion segment with a reduced lordotic curve and significant disc height loss with facet subchondral sclerosis and arthropathy with a thickened ligamentum flavum. Optional cauda equina and rootlets demonstrate increased friction in dynamic extension and opening spinal canal dynamics in flexion—an excellent educational tool to understand central, lateral and foraminal stenosis elements.

$185.00 – $215.00

- Optional Feature: Model Only, Add Cauda Equina, Add Cauda Equina and Rootlets
Original LxH Dynamic Disc Model - Pre-2019

If you are in love with the original LxH Dynamic Disc Model by Dynamic Disc Designs, here it is. Some prefer the original disc geometry and structure with the peacock blue hyaline colour. We hear you!

The anatomical features include:

- 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. (previous disc design pre-2019 upgrade)
- right posterior-lateral radial and circumferential(concentric) fissure
- transparent L4 vertebra
- bone coloured L5 vertebra ***
- 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 hyaline (blue)
- facet tropism (L5 inferior)

New Cauda Equina 2020 with rootlets available as optional anatomy.

$245.00 – $285.00
- Options: No Additions, add New Cauda Equina, add new Cauda Equina with rootlets
Pediatric L4-5 Model
Use this model to demonstrate realistic motion in a child's spine with great disc height and therefore, great range of motion. Also, use to educate the early age-related changes that occur in the first decade of life. Identical copy of 6 year old specimen. Ligamentum flavum and interspinous available with puncture force realism for pediatric epidural training.

Pediatric Spine Model
Pediatric Spine Model. Identical size and shape of six year old spine (L4-5). Opaque white L5, white elastomeric annulus, clear nucleus with (*new*) particles to show nuclear movement, posterior reddened tear on the annulus, and clear L4 to see from superior to inferior. Skimmed with a grippy see-through finish on the superior endplate of L4. Small tear in the posterior lateral annulus will be included. If you prefer no tear, just send us a note with your order.

Designed with careful attention to the literature demonstrating how degeneration starts as early as the first half of the second decade of life.

Contact for pricing.

Professional Lumbar Package
A Professional Lumbar Package includes three popular products:

- Professional LxH Dynamic Disc Model with LF with the added features of the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis (degenerated)
- Spondylolisthesis Lumbar (spondylolytic)

compare to the Lumbar Collection which comes with a walnut base and optional laser engraving

$765.00 $699.00

Professional LxH Dynamic Disc Model
Professional LxH Dynamic Disc Model (ProLxH)

Features include:
- new cauda equina with optional rootlets (blue) (2020 update)
- 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
- Flexible and 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

Spine Educator
Spine Educator Model Package includes 7 popular products:

- Professional LxH Dynamic Disc Model with Ligamentum Flavum and the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis Dynamic Disc Model
- Professional CxH Model
- Cervical Spinal Stenosis Model
- Spondylosis Spondylolisthesis (bilateral pars fracture)
- Business Card Holder
- Anatomy of Pain Poster

$1,234.00 $1,119.00
compression through a torn annulus fibrosus explaining pain generators under load.

- right posterior-lateral radial and circumferential (concentric) fissure

- intervertebral disc innervation to the outer third of the annulus

- nerve ingrowth (neo-innervation) to the inner two-thirds of the 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

- randomly scattered and embedded black nuclear structures to show nuclear shifting dynamics through the L4 view lens easily

- L5 superior endplate pores (black)

- L5 superior endplate lesion (red)

- vasculature in L4 vertebral body (red)

- facet subchondrial vascularization (red)

- facet tropism (L5 inferior)

- BONUS disc disruption graphic is included as a download

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

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

$275.00 – $335.00

- Options: No Additions, add Rootlets, Ligamentum Flavum, Ligamentum Flavum with Rootlets, Spondylolisthesis, Spondylolisthesis with Rootlets, Spondylolisthesis & Ligamentum Flavum & Rootlets

Spondyloytic Spondylolisthesis Dynamic Disc Model

New for 2019 Spondyloytic Spondylolisthesis Dynamic Disc Model

This spondyloytic 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 an L4 endplate lens to view radial and circumferential fissures on the top of the annulus fibrosus. The nucleus pulposus is transparent with the embedded nuclear structures showing dynamic motion under differing compressive loads, including protrusion and extrusion with a diffuse disc bulging disc. Other features include the ligamentum flavum, herniation upon manual compression, red subchondrial structure with an elastomeric white simulated hyaline cartilage, cartilage injury, simulated endplate fracture, and endplate pores. Annular radial fissure details are visualized through the transparent L4 vertebra — as in our Academic LxH Dynamic Disc Model. This model can be helpful for patient education if rest is clinically warranted in the young athlete or the discussion of listhesis. Show how the spinal canal is spared for spacing with this type of spondylolisthesis. Spondylolisthesis induced by manual pressure.

Cauda Equina available as an optional feature with the rootlets if desired.

$255.00 – $295.00

- Optional Feature: Do Not Add Cauda Equina, Add Cauda Equina, Add Cauda Equina with rootlets, Unilateral Pars Defect, Unilateral Pars Defect with Cauda Equina, Unilateral Pars Defect with Cauda Equina with rootlets

Dynamic Disc Designs catalogue: prices subject to change
This catalogue was generated on December 14, 2021
Thoracic Epidural Placement Spine Model
A thoracic epidural placement model with accurate anatomy and realistic puncture force feedback of the ligamentum flavum. Identical copy of bone captures detail for accurate placement training. Includes stand.
If your goal is to teach proper spinal placement, Dynamic Disc Models are unique by exposing realistic anatomy to help educate the path of a successful epidural placement procedure.

Inquire about volume discounts for classroom applications.

Contact for pricing.

Thoracic spine model
A dynamic thoracic model. This model includes a flexible one-part intervertebral disc, ligamentum flavum, T7 and T8 vertebral bodies. Stand is extra.

$183.00
Pelvic models

**Lumbopelvic Dynamic Spine Model**

Are you ready to press play on this dynamic lumbopelvic model? A custom crafted lumbopelvis model to explore and teach the dynamic of motion. This model has been constructed with elastomeric sacroiliac joints 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 with one another. Intervertebral discs at he L3-L4, L4-L5 and L5-S1 levels with a disc bulge, herniation and protrusion at L4-5. Take your education to another level to optimize outcomes and patient engagement/retention of your bio-mechanical message.

Expect 4-5 week lead time.

NOTE: Model has now (as of 2021) semi translucent annulus fibrosus as see in images. Colours may vary slightly from images and video.

$2,000.00

**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 tw0-part intervertebral discs
- Ligamentum flavum
- 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. Custom requests only.
Spondylolisthesis

Degenerative Spondylolisthesis Dynamic Disc Model

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

This is our LxD Model with a grade 1 anterior degenerative spondylolisthesis. With an intact pars demonstrates the degenerative nature of the facets with 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...showing central, lateral recess and foraminal 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 cauda equina with optional rootlets available.

$195.00 – $235.00
- Optional Anatomical Features: Do Not Add Cauda Equina, Add Cauda Equina, Add Cauda Equina with Rootlets

Professional LxH Dynamic Disc Model

Professional LxH Dynamic Disc Model (ProLxH)

Features include:
- new cauda equina with optional rootlets (blue) (2020 update)
- circumferential (diffuse) disc bulge
- superimposed disc protrusion
- limaon shaped annulus
- peripherally exposed calcified endplate
- elastomeric white articular cartilage
- subchondrial bone exposed with a hyaline

Double Spondy Dynamic Disc Model

Double Spondy Model

This three-level multilevel L4-L5-sacrum double spondylolisthesis model showcases both a lytic at L5 and a degenerative non-lytic at L3-4. Additional features include a herniating L5-1 disc.

$775.00

Professional Lumbar Package

A Professional Lumbar Package includes three popular products:
- Professional LxH Dynamic Disc Model with LF with the added features of the new cauda equina with rootlets (demonstrating normal and herniation)
- Lumbar Spinal Stenosis (degenerated)
- Spondylolisthesis Lumbar (spondylolytic)

compare to the Lumbar Collection which comes with a walnut base and optional laser engraving

$765.00 – $699.00
**fibrillation**

- bone coloured L5
- white superior endplate matching the colour of the articular cartilage
- blue coloured intervertebral disc innervation
- Flexible and 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 the outer third of the annulus
- nerve ingrowth (neo-innervation) to the inner two-thirds of the 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
- randomly scattered and embedded black nuclear structures to show nuclear shifting dynamics through the L4 view lens easily
- L5 superior endplate pores (black)
- L5 superior endplate lesion (red)
- vasculature in L4 vertebral body (red)
- facet subchondrial vascularization (red)
- facet tropism (L5 inferior)
- BONUS disc disruption graphic is included as a download

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**Spondylyotic Spondylolisthesis Dynamic Disc Model**

New for 2019 Spondylyotic Spondylolisthesis Dynamic Disc Model

This spondylyotic 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 an L4 endplate lens to view radial and circumferential fissures on the top of the annulus fibrosus. The nucleus pulposus is transparent with the embedded nuclear structures showing dynamic motion under differing compressive loads, including protrusion and extrusion with a diffuse disc bulging disc. Other features include the ligamentum flavum, herniation upon manual compression, red subchondrial structure with an elastomeric white simulated hyaline cartilage, cartilage injury, simulated endplate fracture, and endplate pores. Annular radial fissure details are visualized through the transparent L4 vertebra — as in our Academic LxH Dynamic Disc Model. This model can be helpful for patient education if rest is clinically warranted in the young athlete or the discussion of listhesis. Show how the spinal canal is spared for spacing with this type of spondylolisthesis. Spondylolisthesis induced by manual pressure.

**Cauda Equina** available as an optional feature with the rootlets if desired.

$255.00 – $295.00
- Optional Feature: Do Not Add Cauda Equina, Add Cauda Equina, Add Cauda Equina with rootlets, Unilateral Pars Defect, Unilateral Pars Defect with Cauda Equina, Unilateral Pars Defect with Cauda Equina with rootlets

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

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

$275.00 – $335.00
- Options: No Additions, add Rootlets, Ligamentum Flavum, Ligamentum Flavum with Rootlets, Spondylolisthesis, Spondylolisthesis with Rootlets, Spondylolisthesis & Ligamentum Flavum & Rootlets
5 total products.
Stands

**Dual Acrylic Stand**
Give your models a home and present them on a removable stand. 8 in by 4 in (1/4 in 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
- Optional Feature: Dual Stand Only, Add Name Plate

**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 5 in by 5 in (1/4 in thick) with an acrylic post and rubber feet to prevent slippage. Required 1/4 in 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
- Optional Feature: Single Stand Only, Add Name Plate

**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 and 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 and custom laser printing.

$60.00
- Base Wood and Pole Length: walnut base, purple heart

**Walnut Base for Single Model**
Display your model in style with this 4 15/16 in by 4 15/16 in (12.5 mm by 12.5 mm) walnut base with 3/16th (4.5 mm) stainless post. Each model (inferior vertebra) will be drilled to accommodate the post to rest on. Laser engraving extra. Please contact for pricing.

$20.00

**Walnut Base for Two Models**
Display two of your models in style with this 10 3/4 in by 6 in (27 mm by 15 mm) walnut base with two 3/16th (4.5 mm) stainless posts. Each model (inferior vertebra) will be drilled to accommodate the post to rest on. Laser engraving extra. Please contact us for pricing.

$35.00