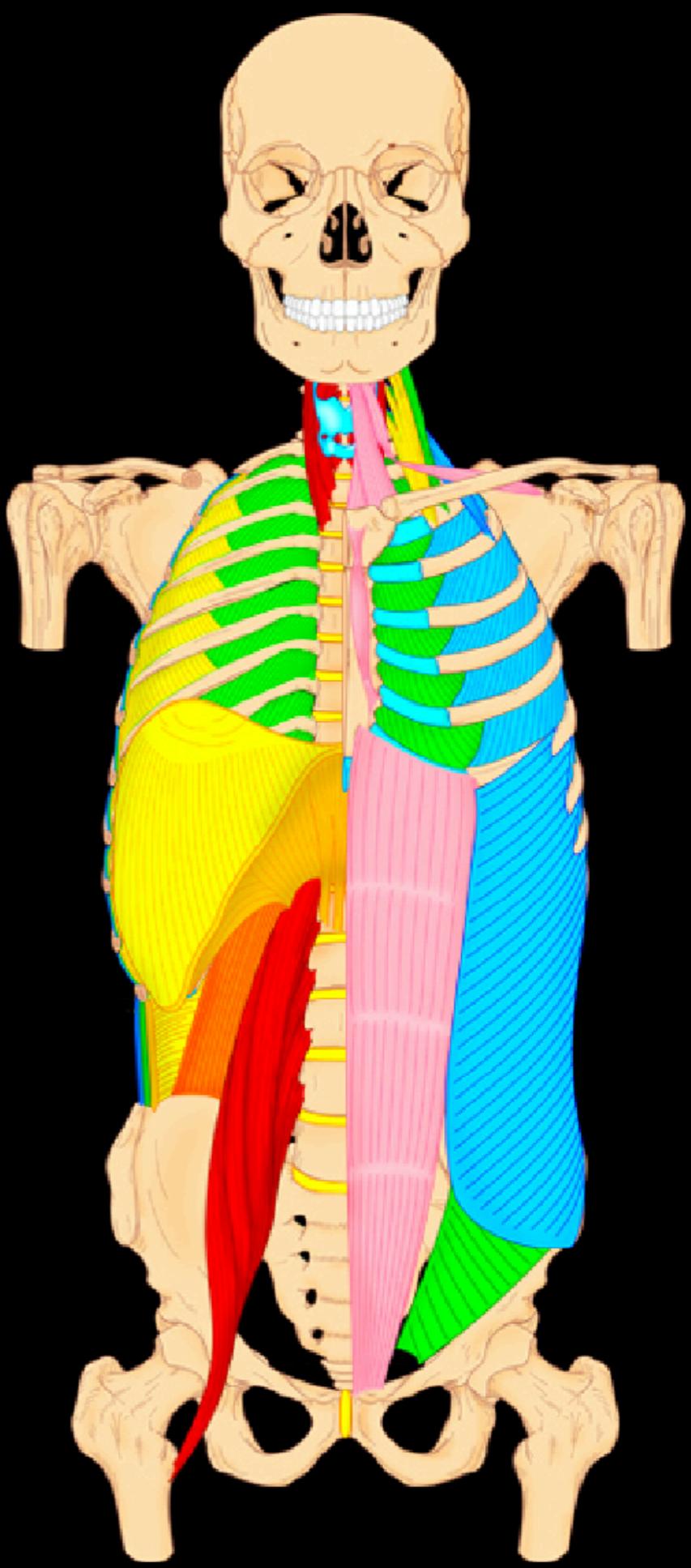


Trunk Design



Trunk Design

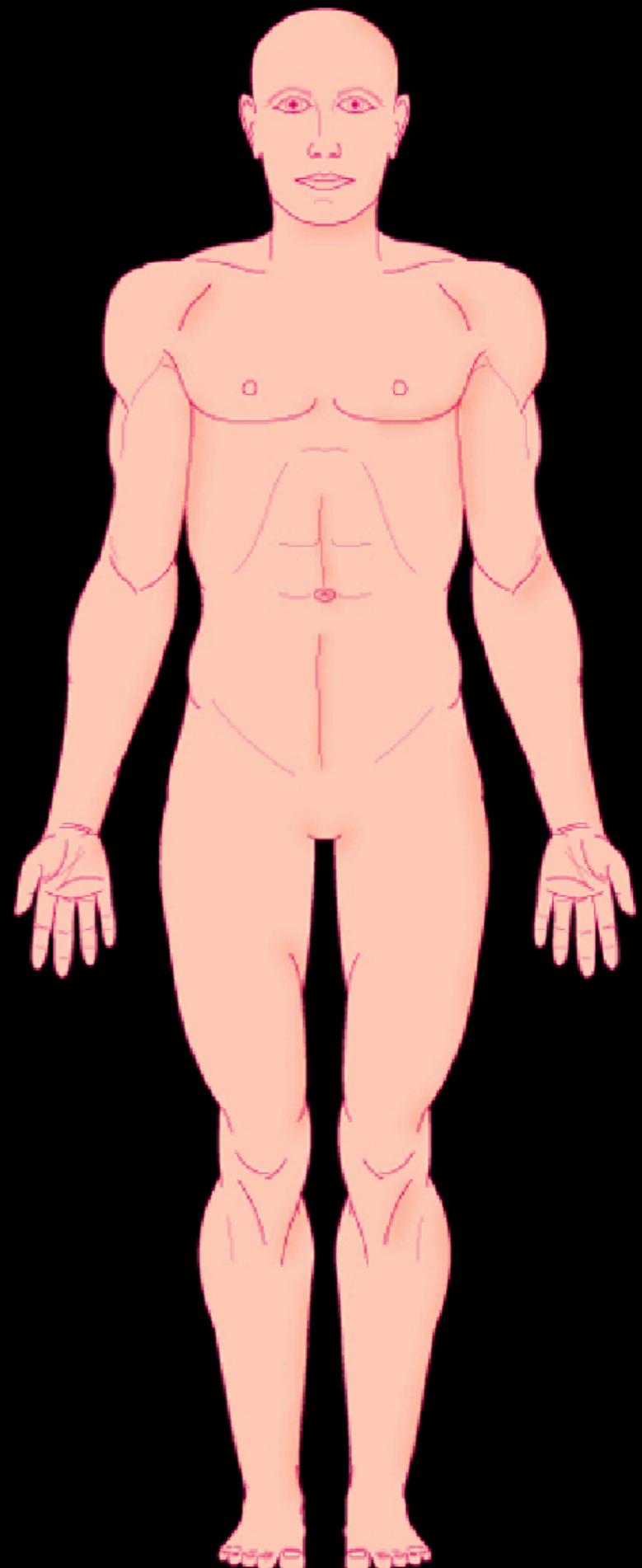
Vertebrate Body Design

Three Basic Parts

Trunk

Appendages

Head



Patterns

Trunk Design

Concept of Patterns

What is a pattern?



Trunk Design

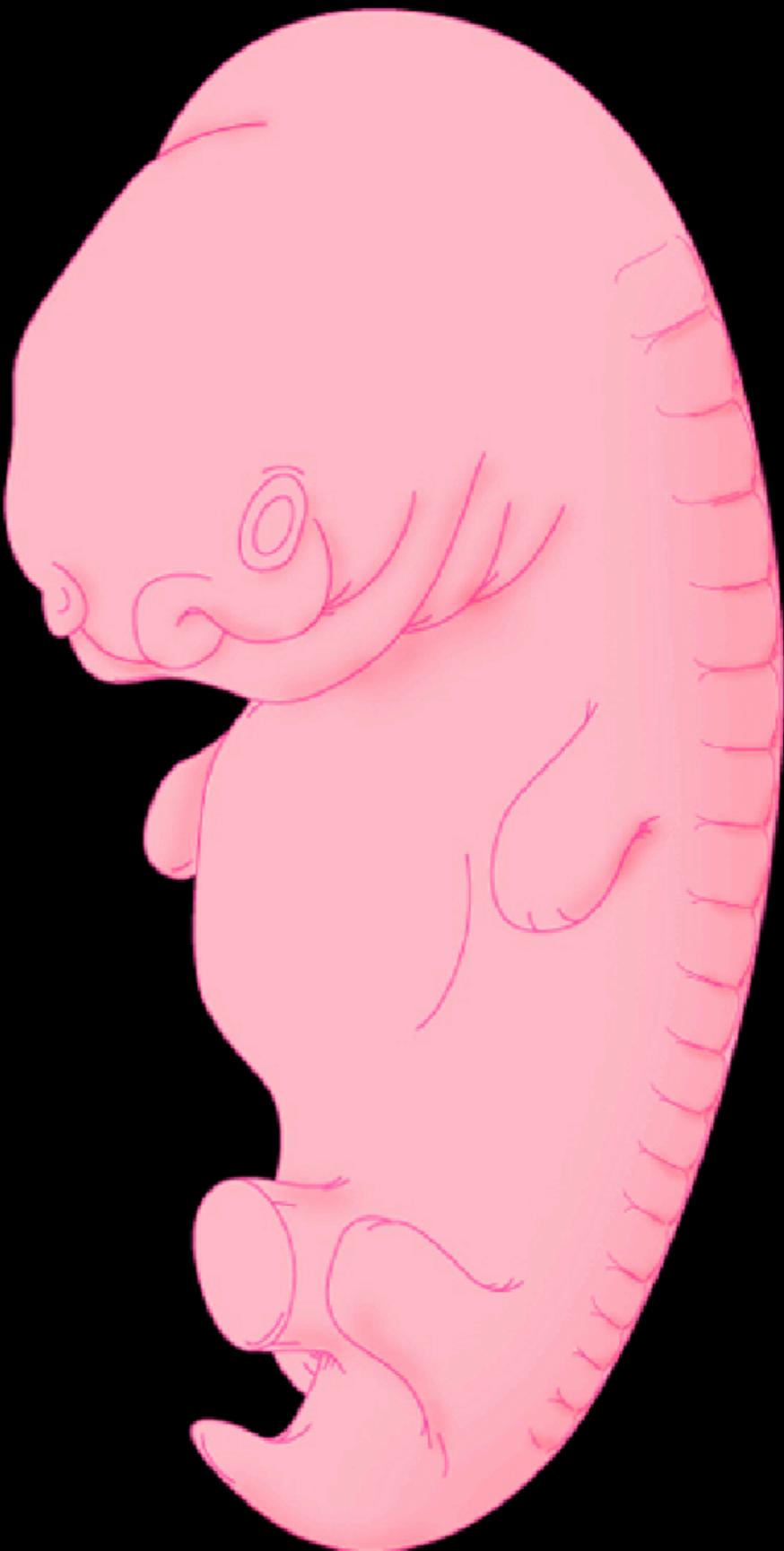
Vertebrate Embryo Design

Three Basic Parts

Trunk

Appendages

Head



Trunk Design

Embryonic Trunk Design

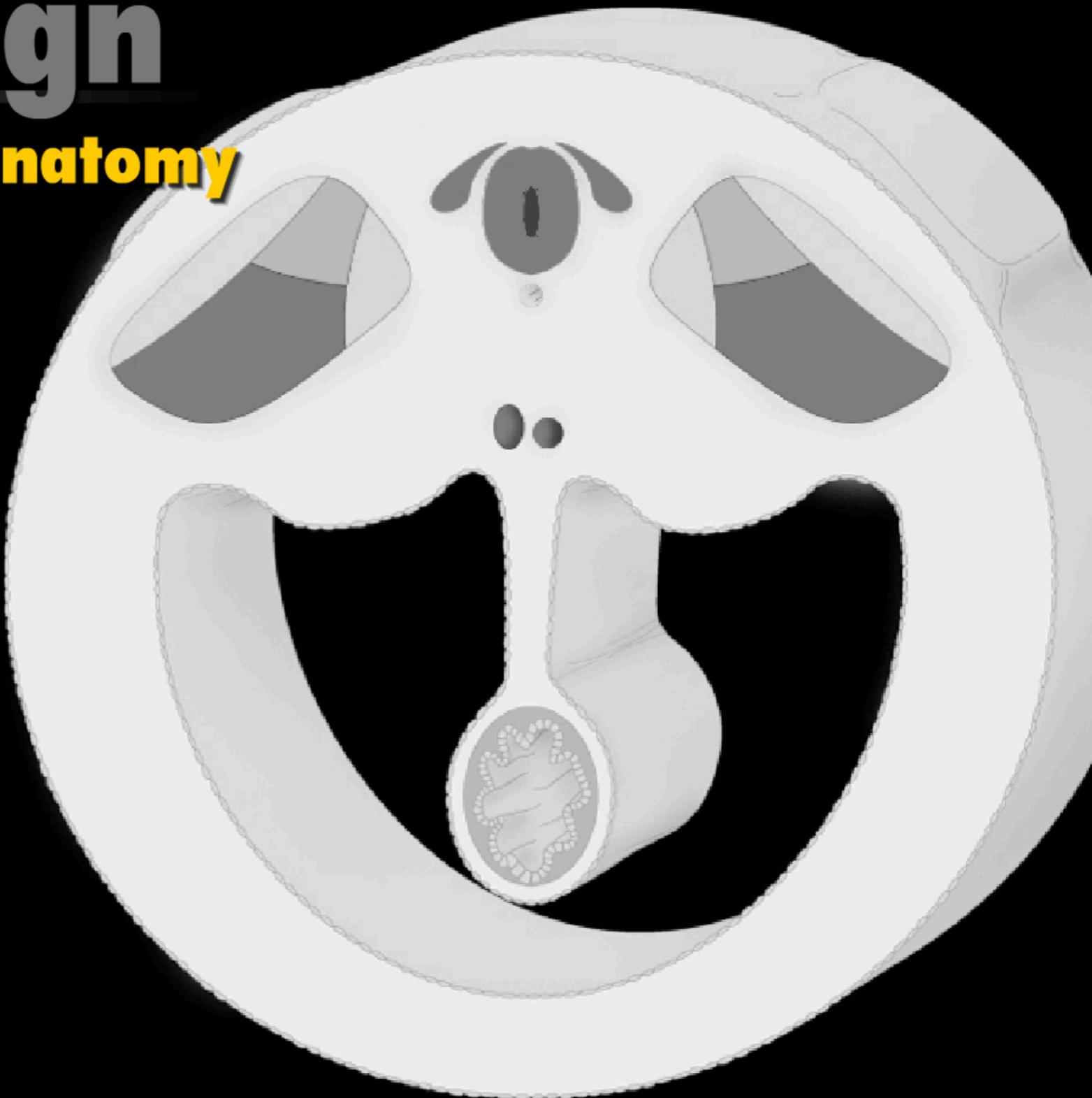
Body Wall Versus Body Cavity



Trunk Design

Embryonic Trunk Design

Body Wall (Somatic) Anatomy

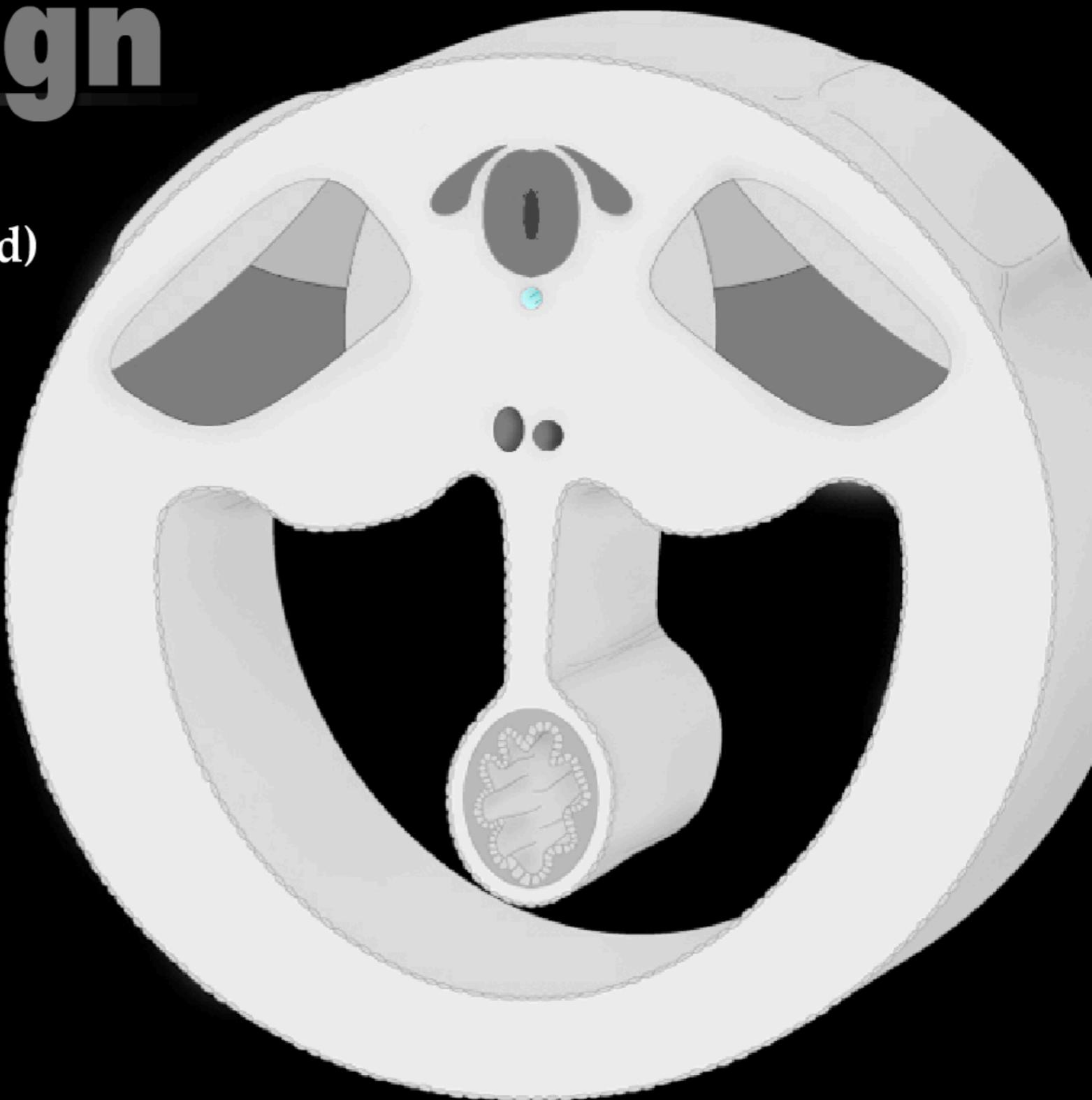


Trunk Design

Embryonic Trunk Design

Body Wall Anatomy

Chordamesoderm (Notochord)



Trunk Design

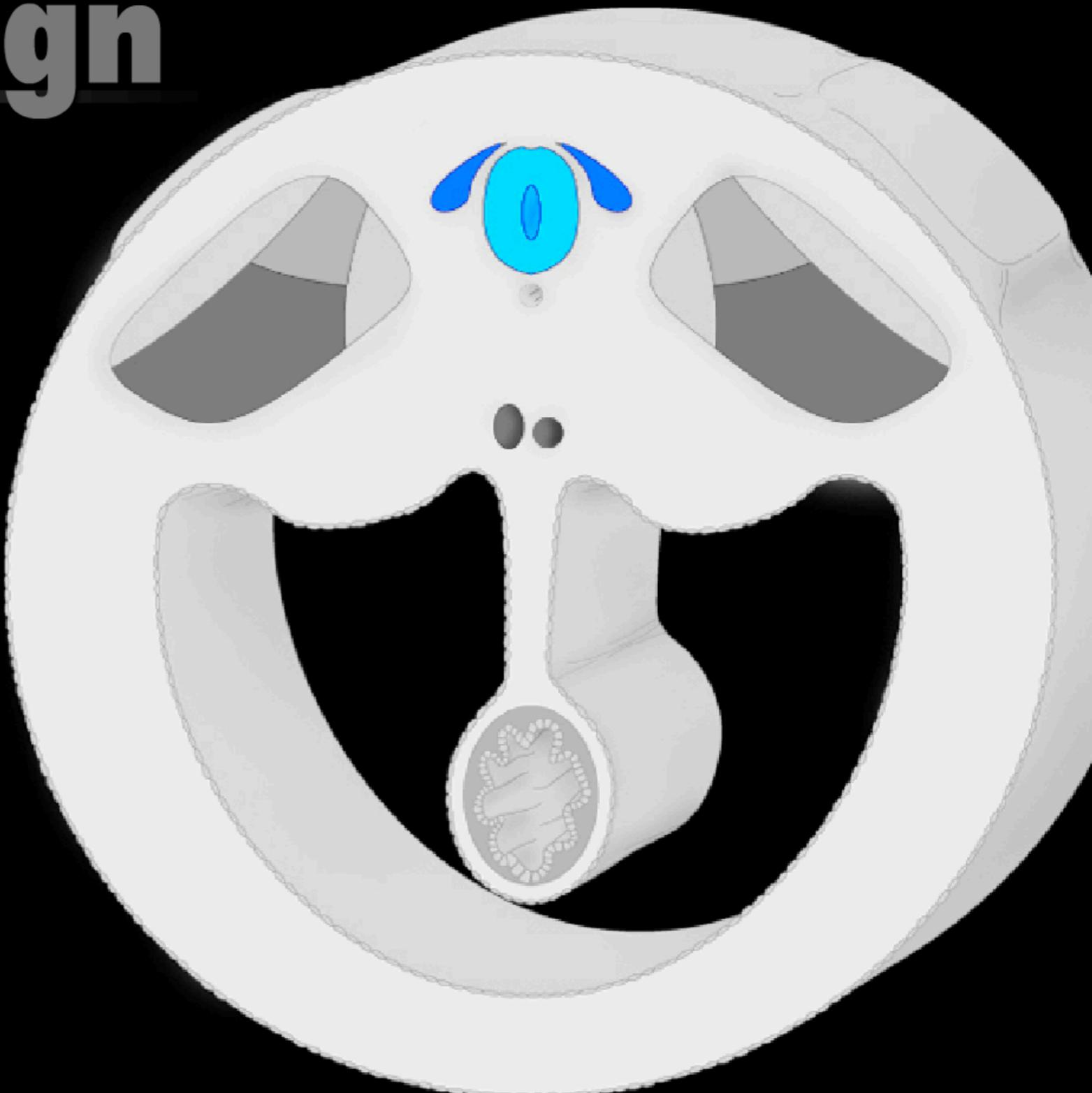
Embryonic Trunk Design

Body Wall Anatomy

Nervous structures

Neural tube

Neural crest

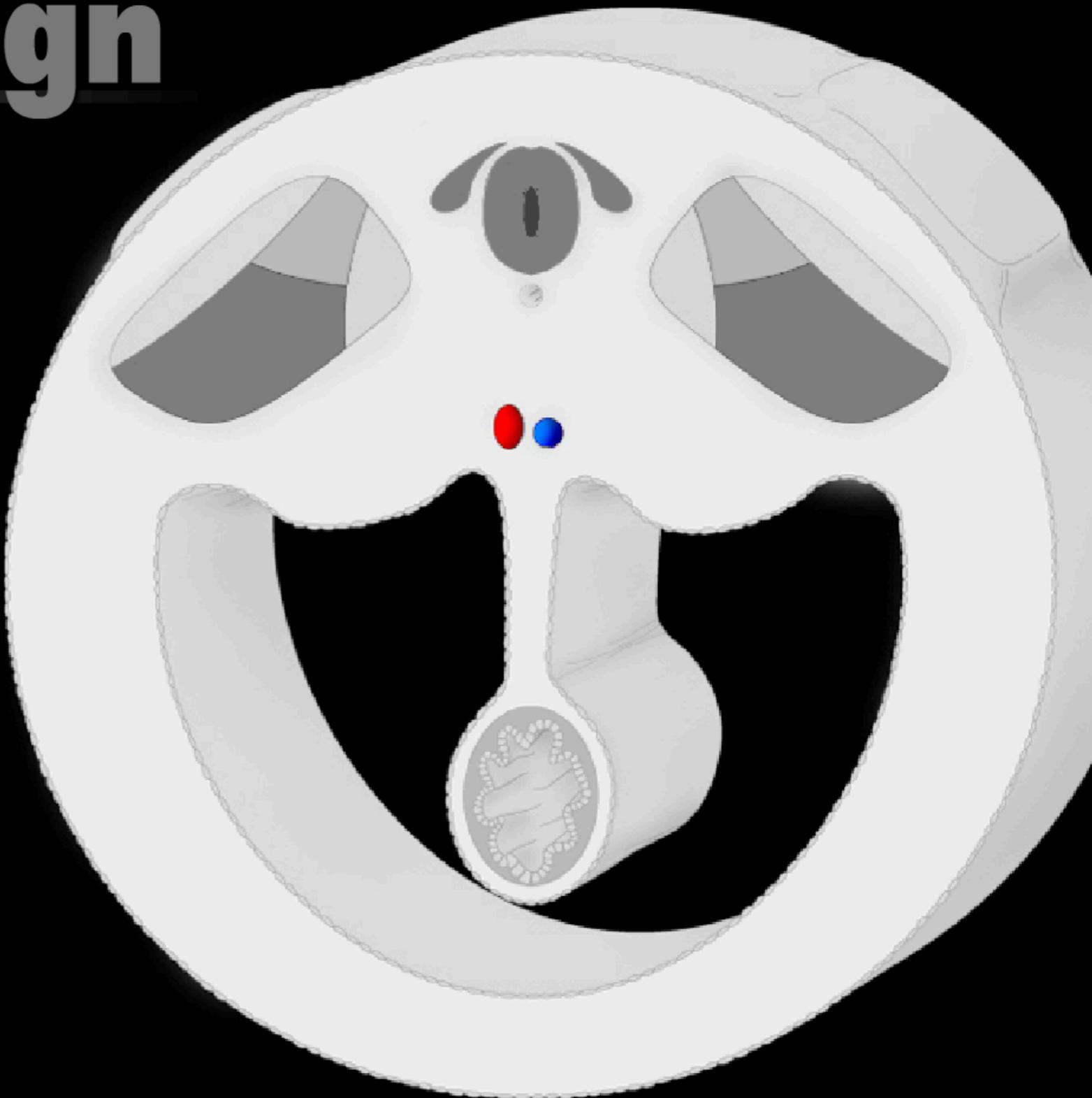


Trunk Design

Embryonic Trunk Design

Body Wall Anatomy

Vessels

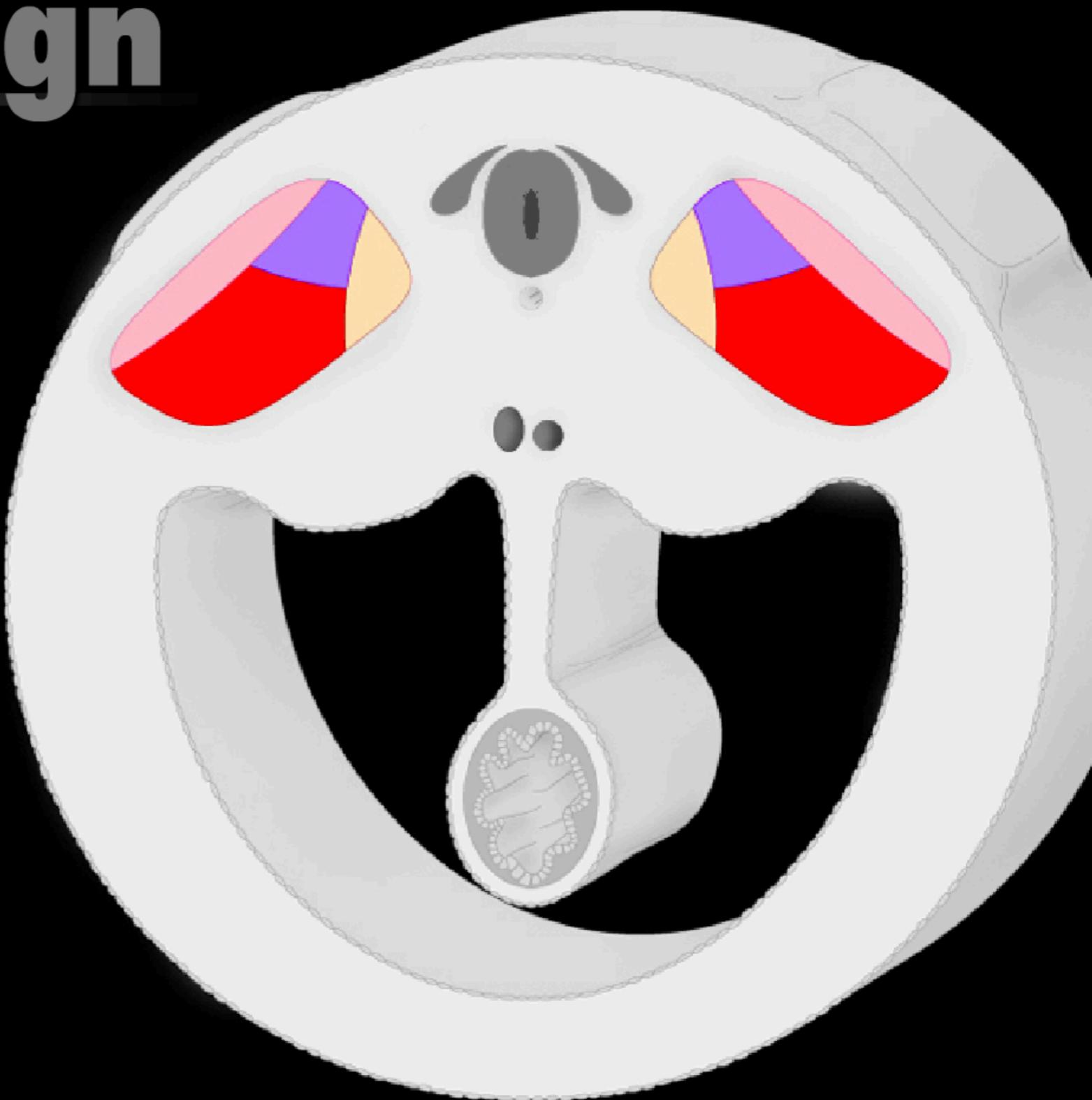


Trunk Design

Embryonic Trunk Design

Body Wall Anatomy

Somites



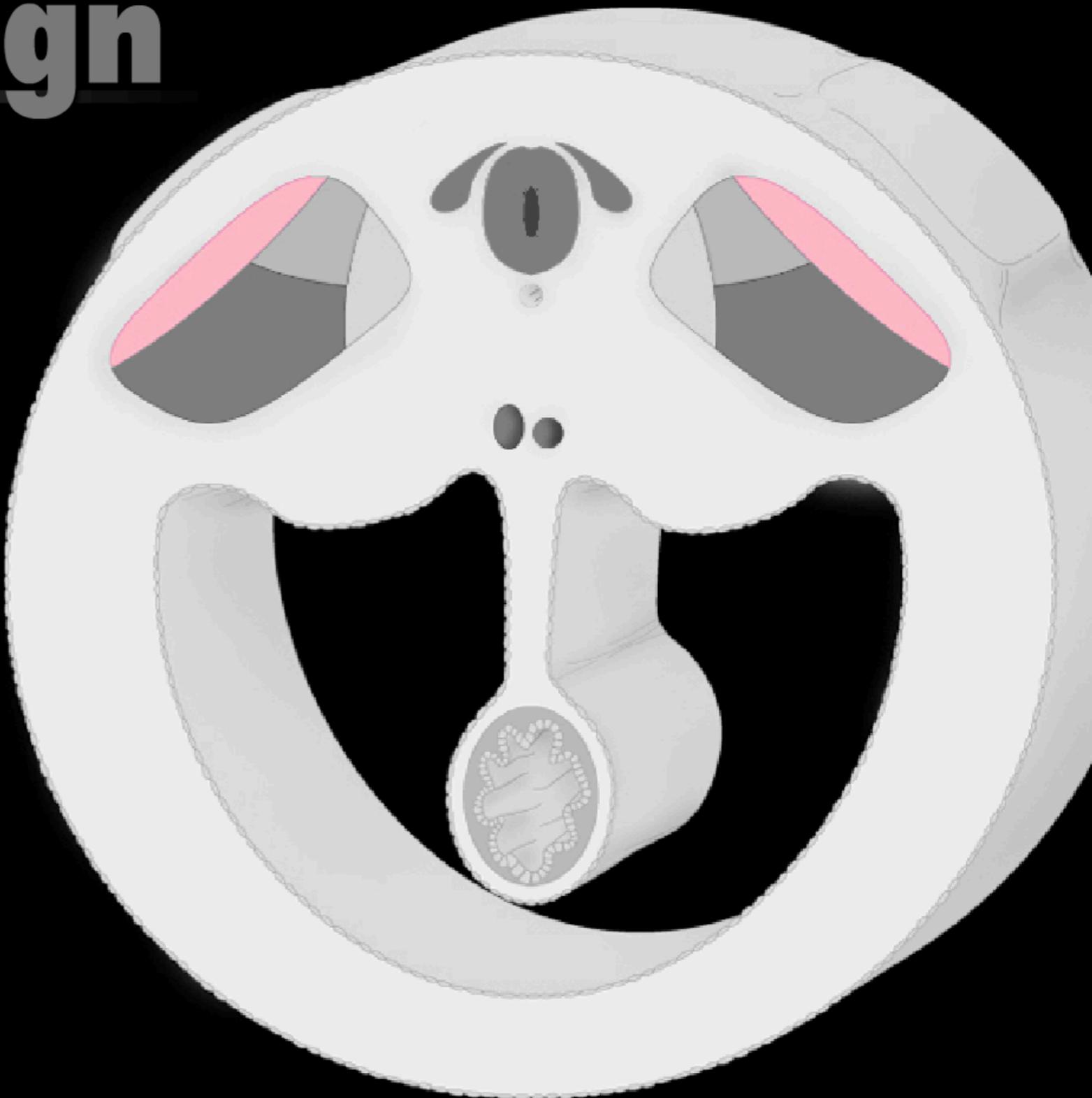
Trunk Design

Embryonic Trunk Design

Body Wall Anatomy

Somite

Dermatome



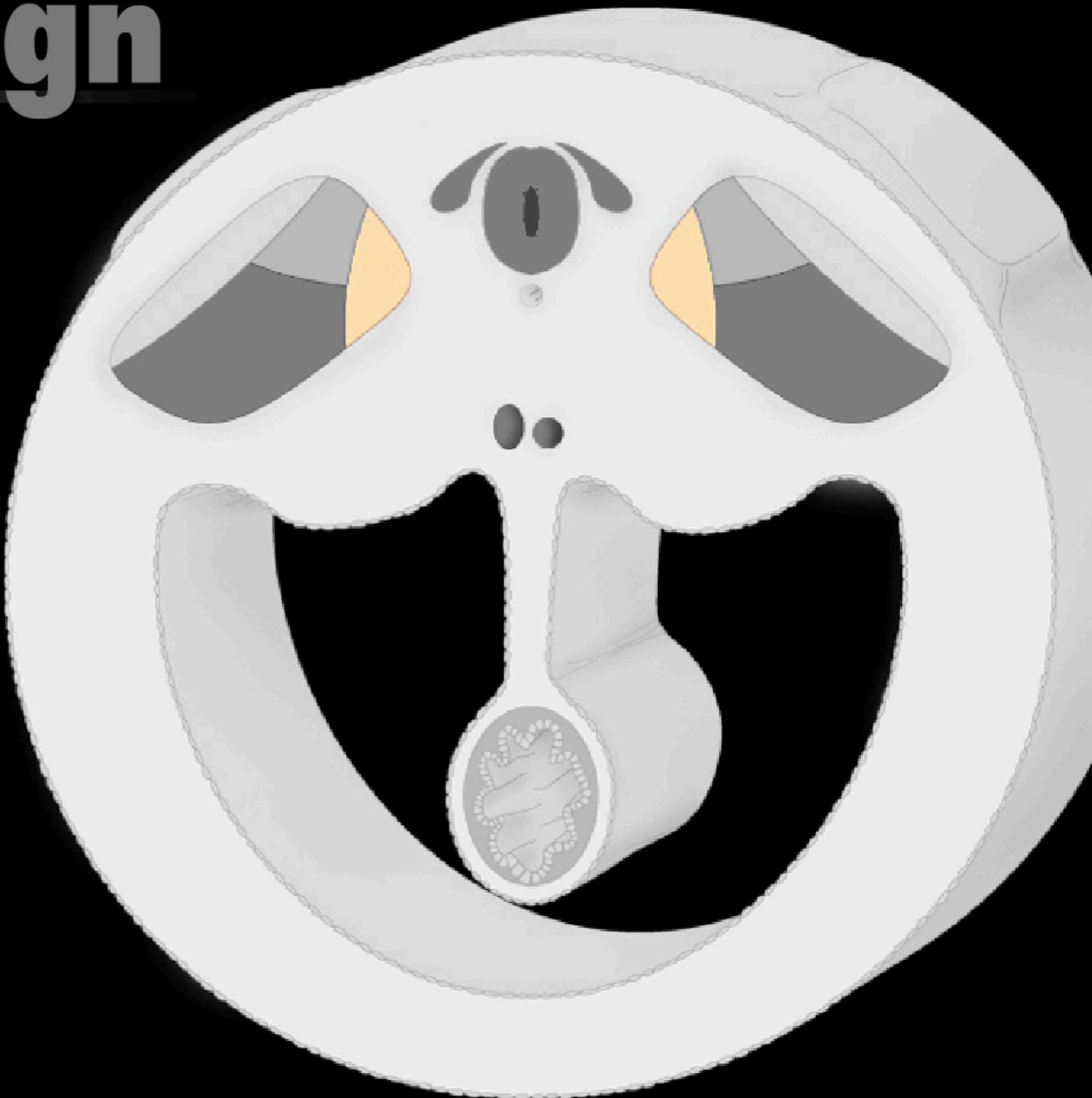
Trunk Design

Embryonic Trunk Design

Body Wall Anatomy

Somite

Sclerotome



Trunk Design

Embryonic Trunk Design

Body Wall Anatomy

Somite

Myotome

Epimere



Trunk Design

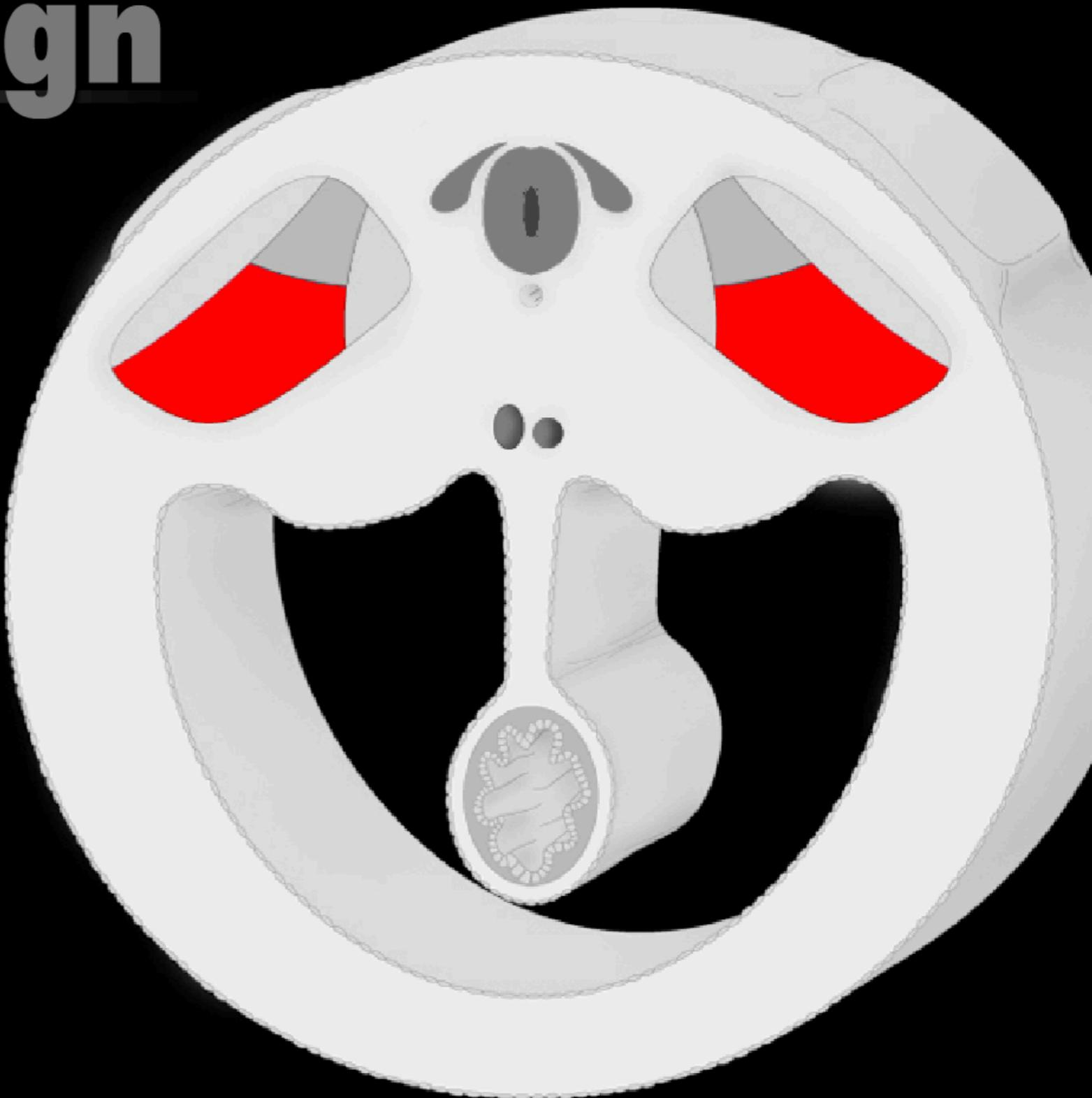
Embryonic Trunk Design

Body Wall Anatomy

Somite

Myotome

Hypomere

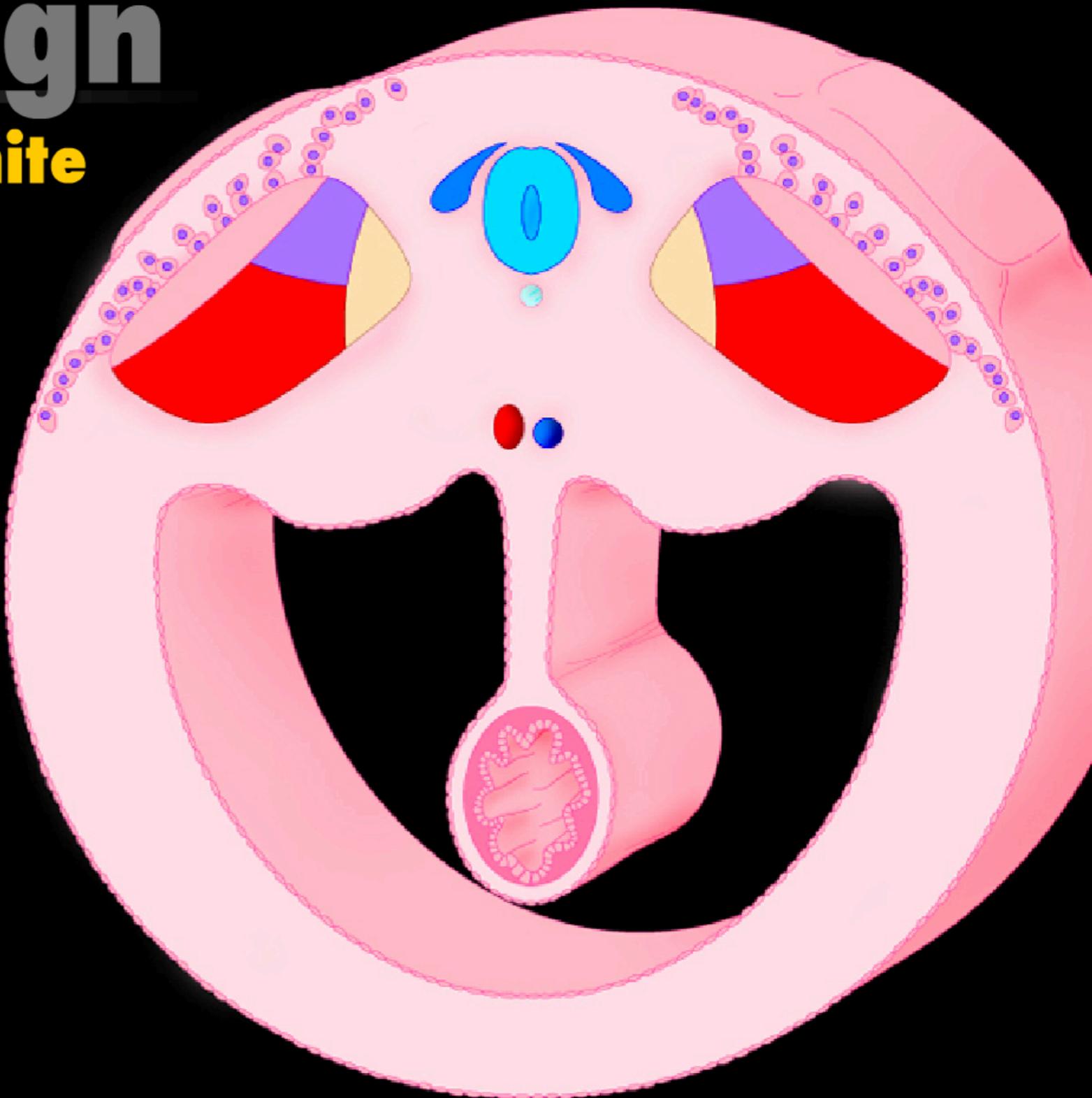


Trunk Design

Embryonic Trunk Design

Migrations of the Somite

Skin

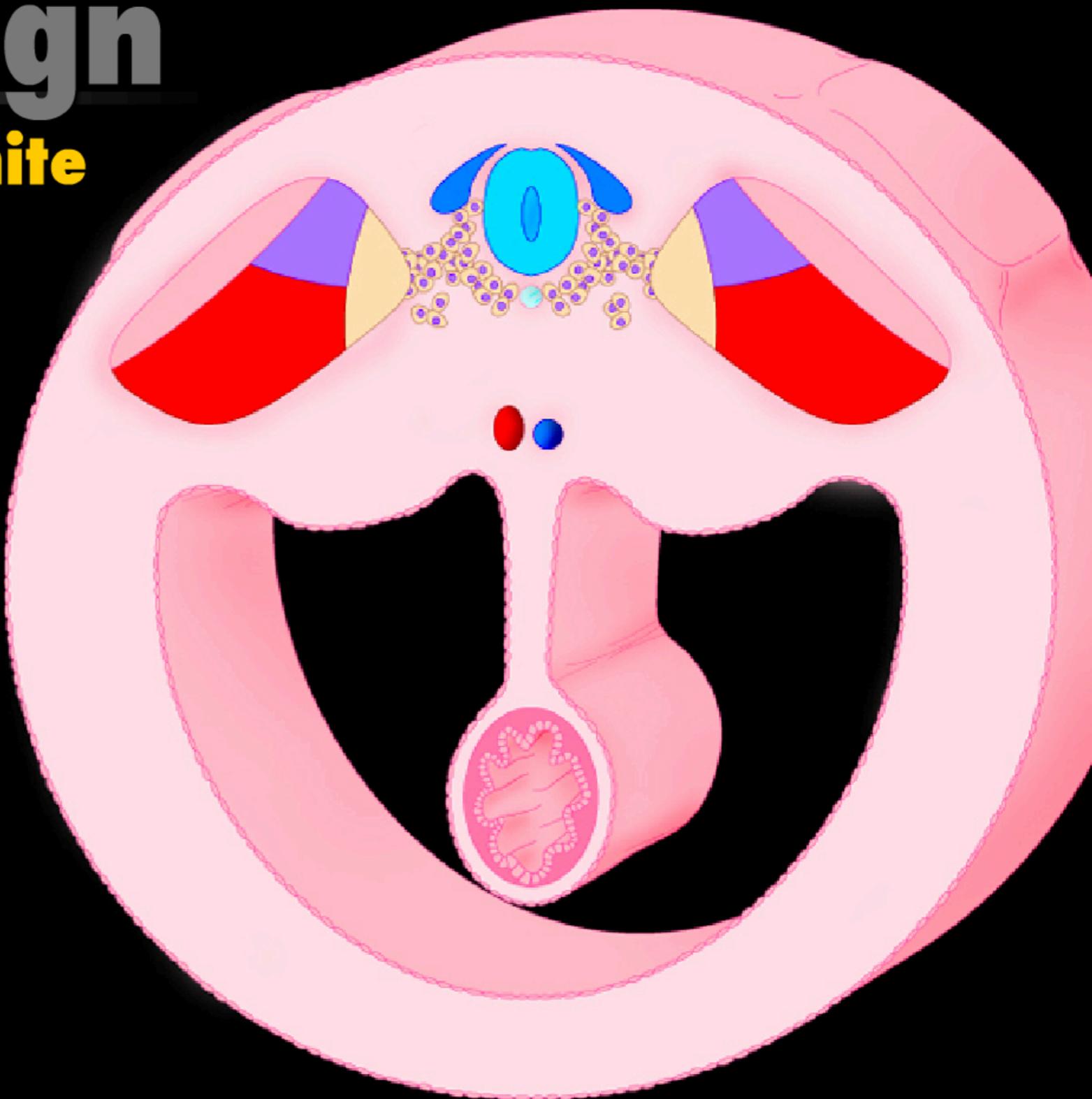


Trunk Design

Embryonic Trunk Design

Migrations of the Somite

Bones

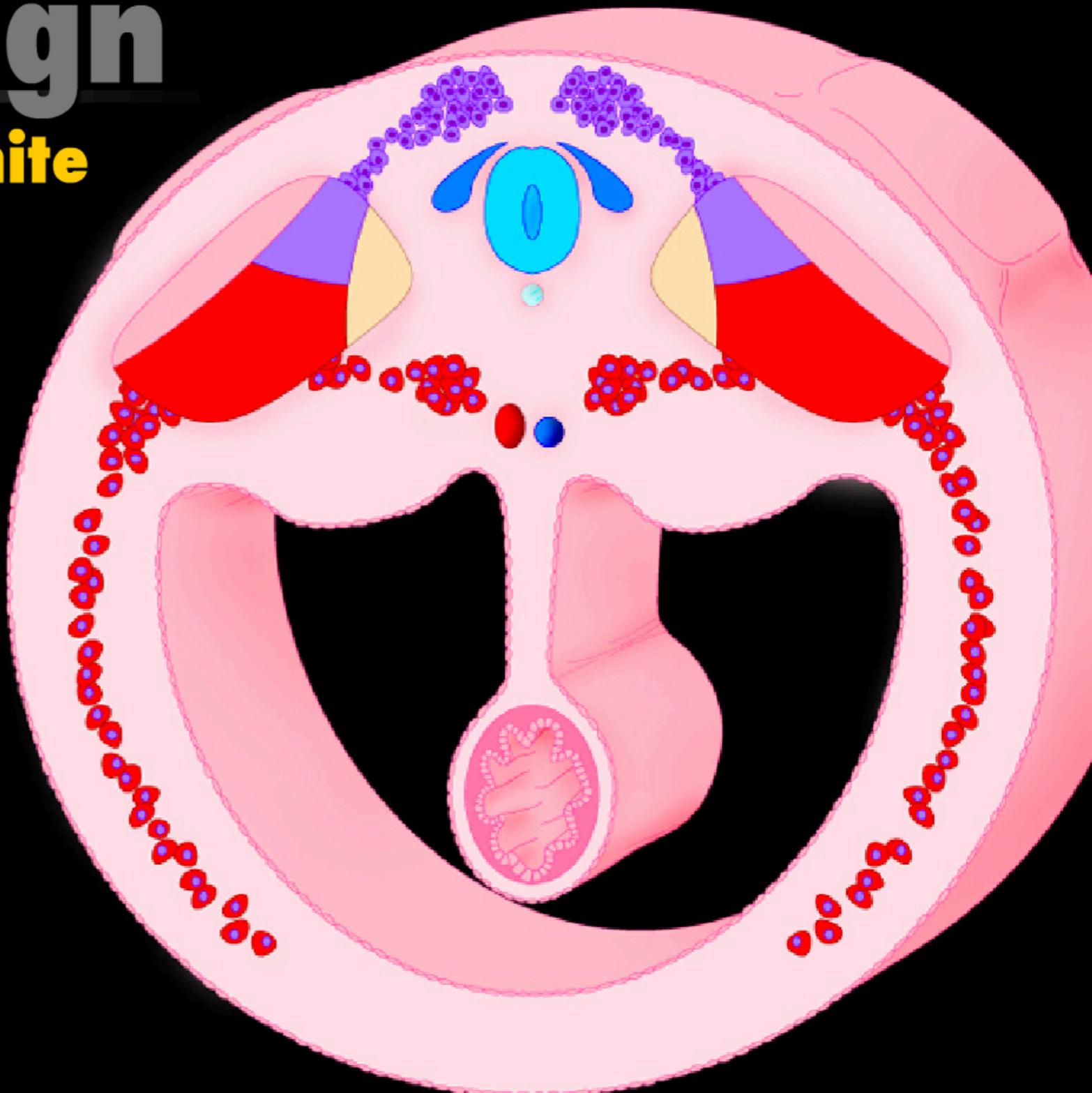


Trunk Design

Embryonic Trunk Design

Migrations of the Somite

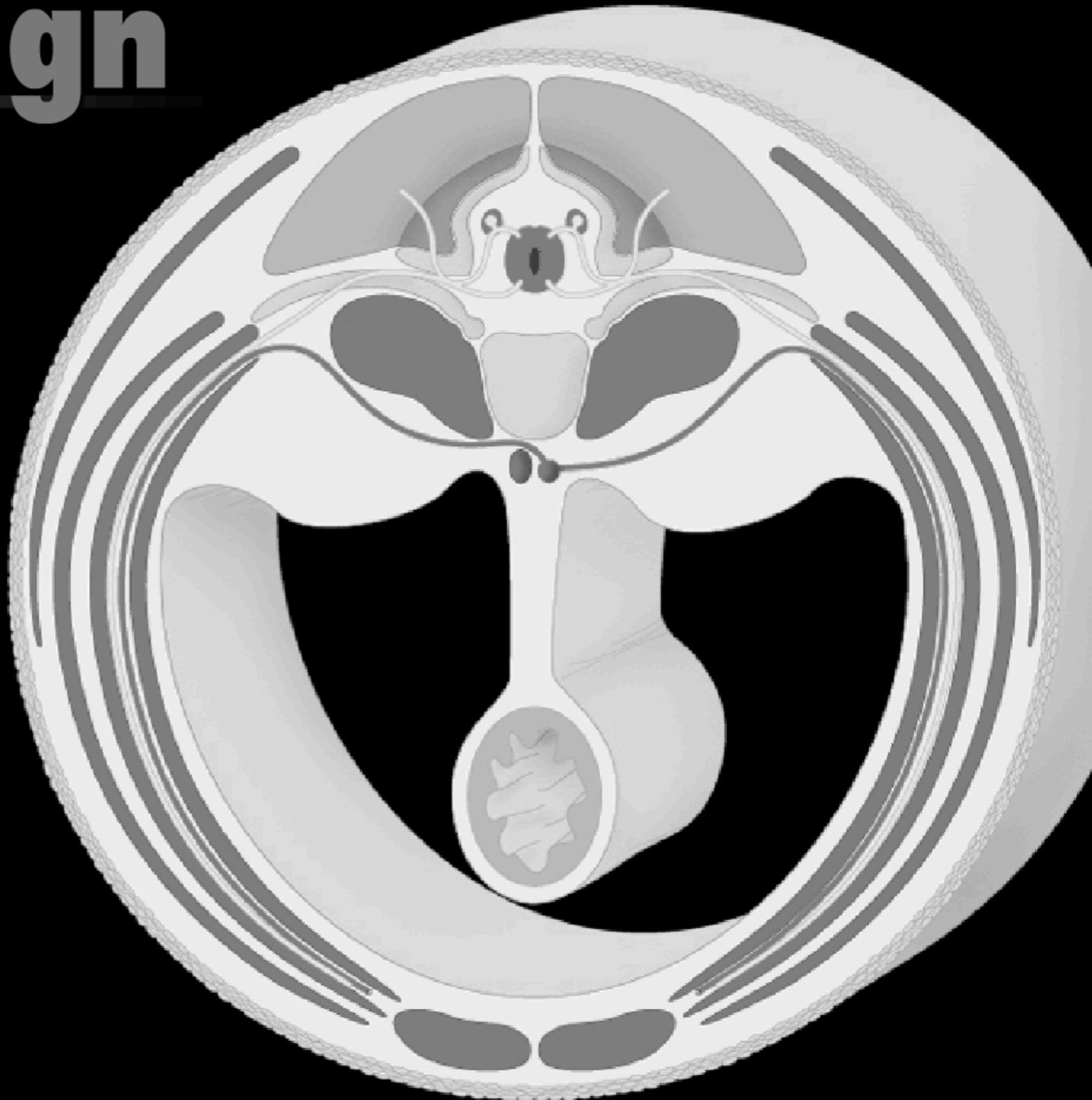
Muscles



Trunk Design

Embryonic Trunk Design

Results of Migrations

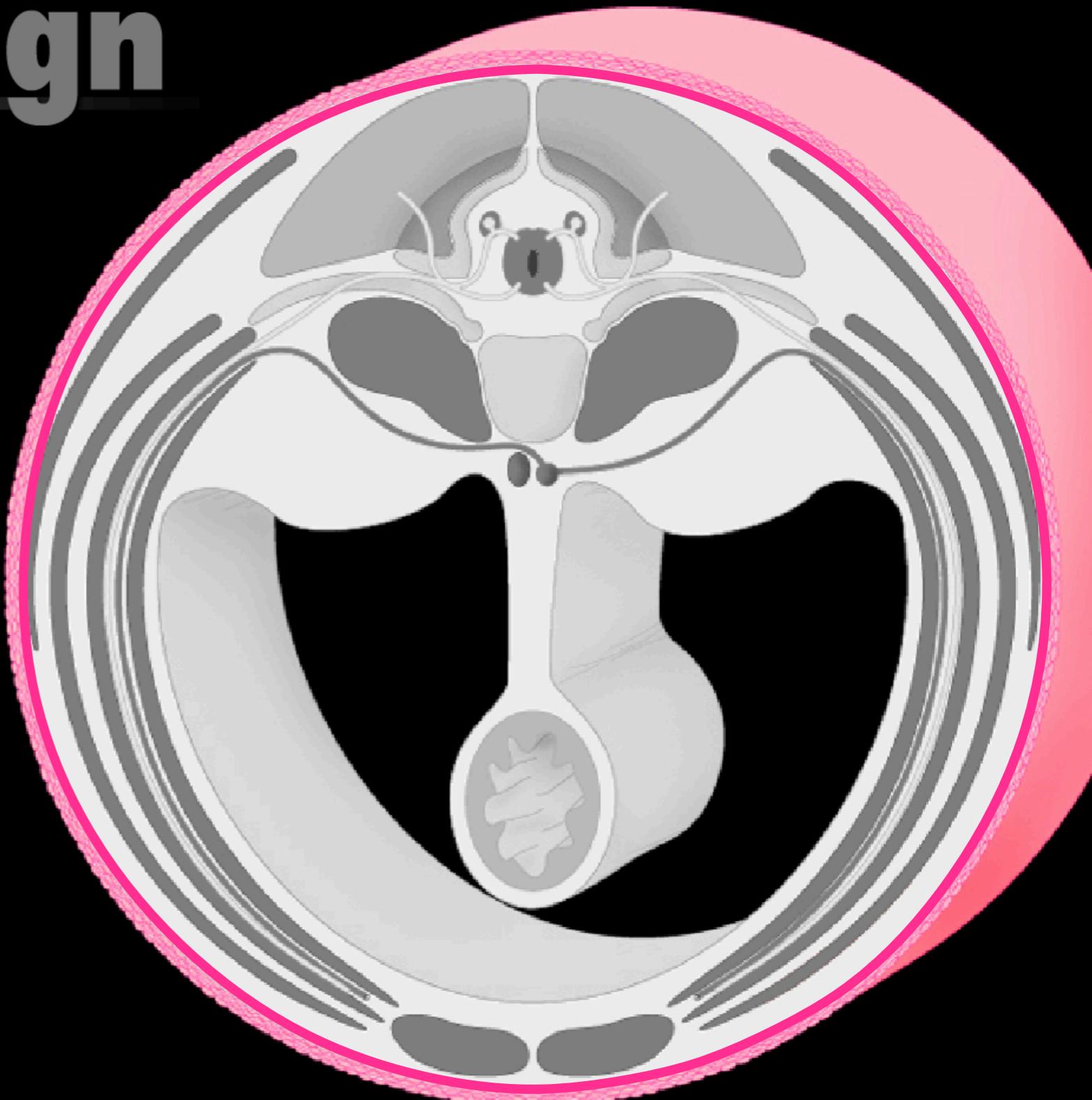


Trunk Design

Embryonic Trunk Design

Results of Migrations

Skin

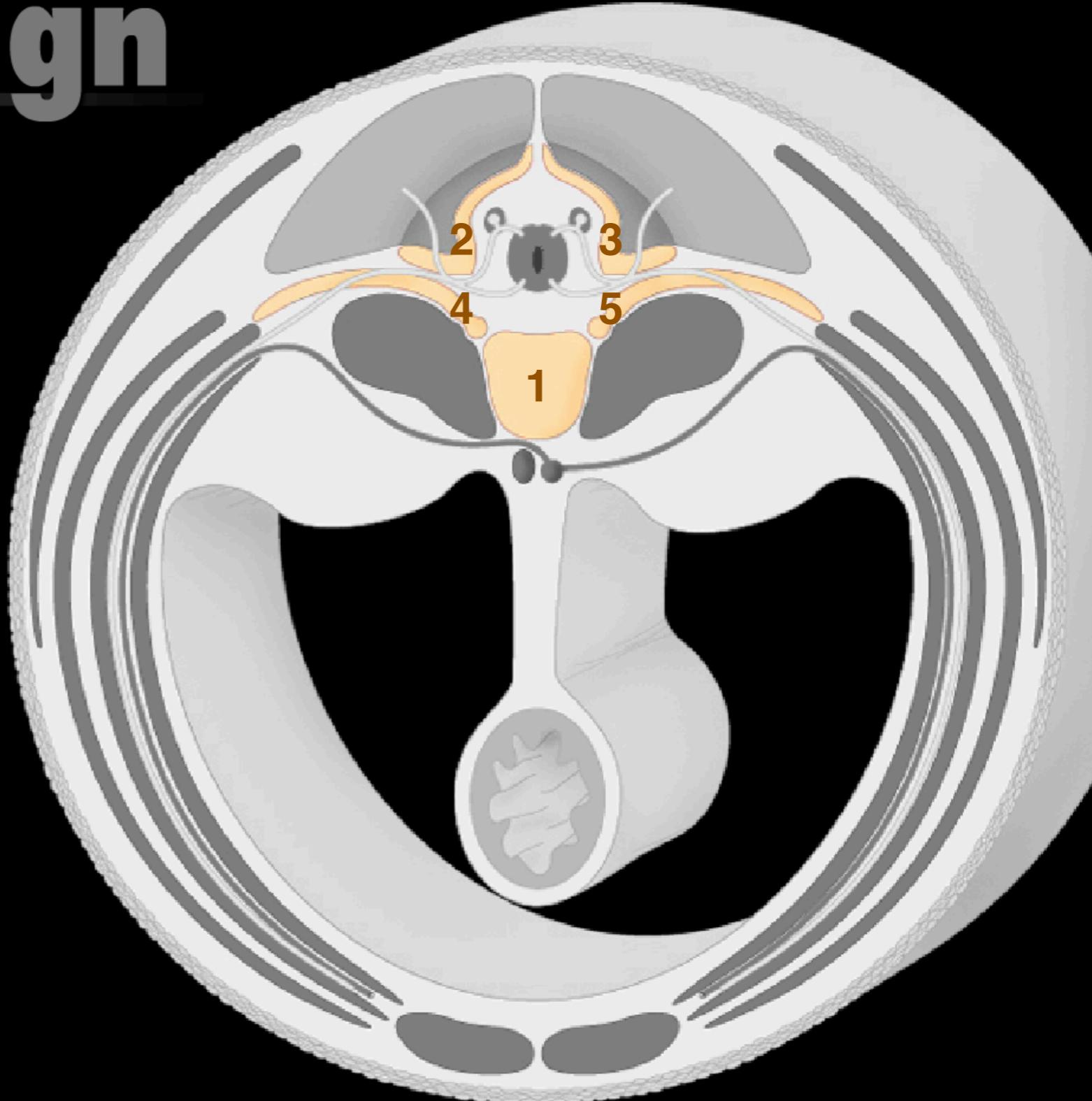


Trunk Design

Embryonic Trunk Design

Results of Migrations

Bones



Trunk Design

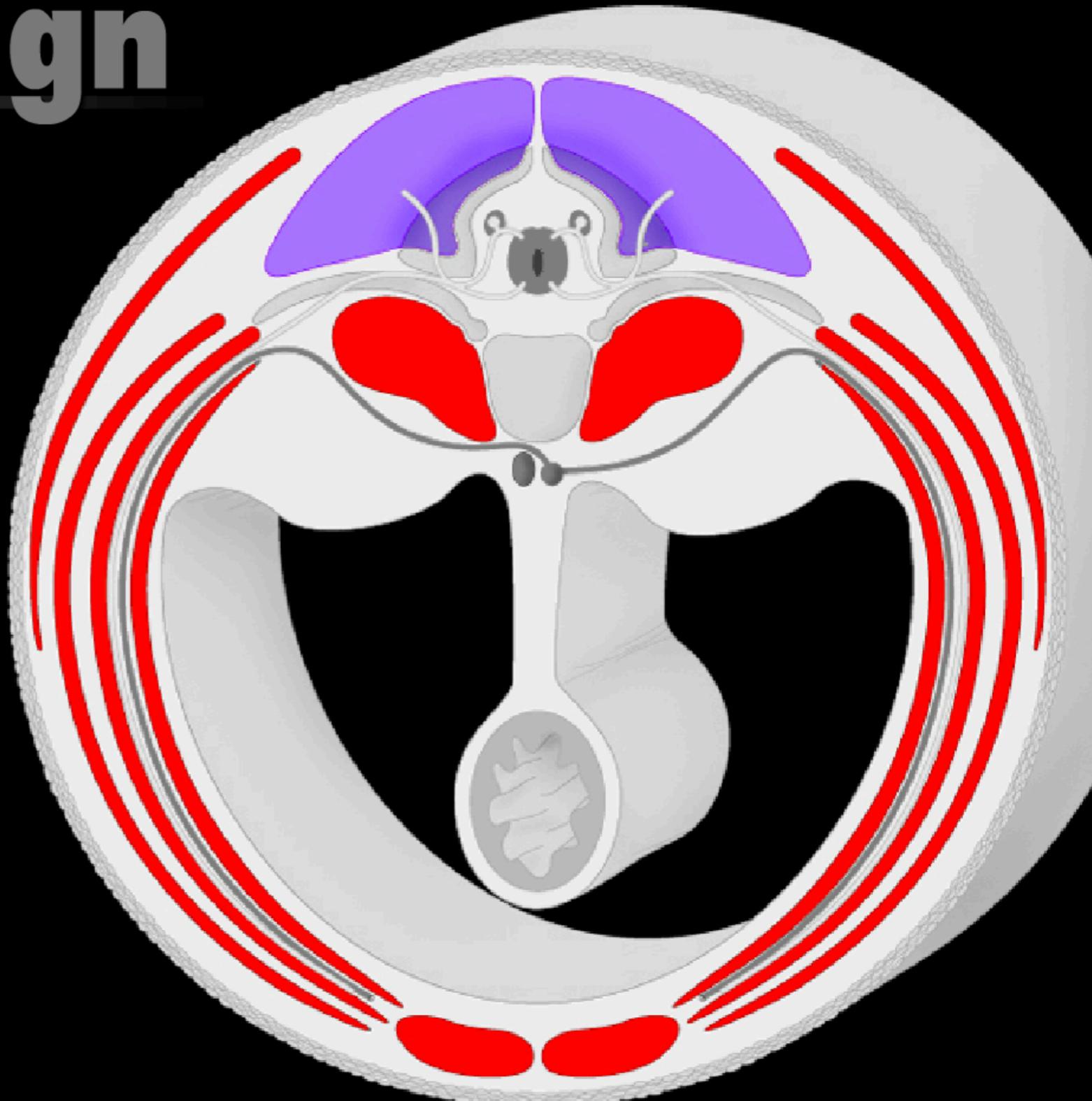
Embryonic Trunk Design

Results of Migrations

Muscles

Epaxial

Hypaxial



Trunk Design

Body Wall Muscle Patterns

Skeletal Muscles of the Trunk

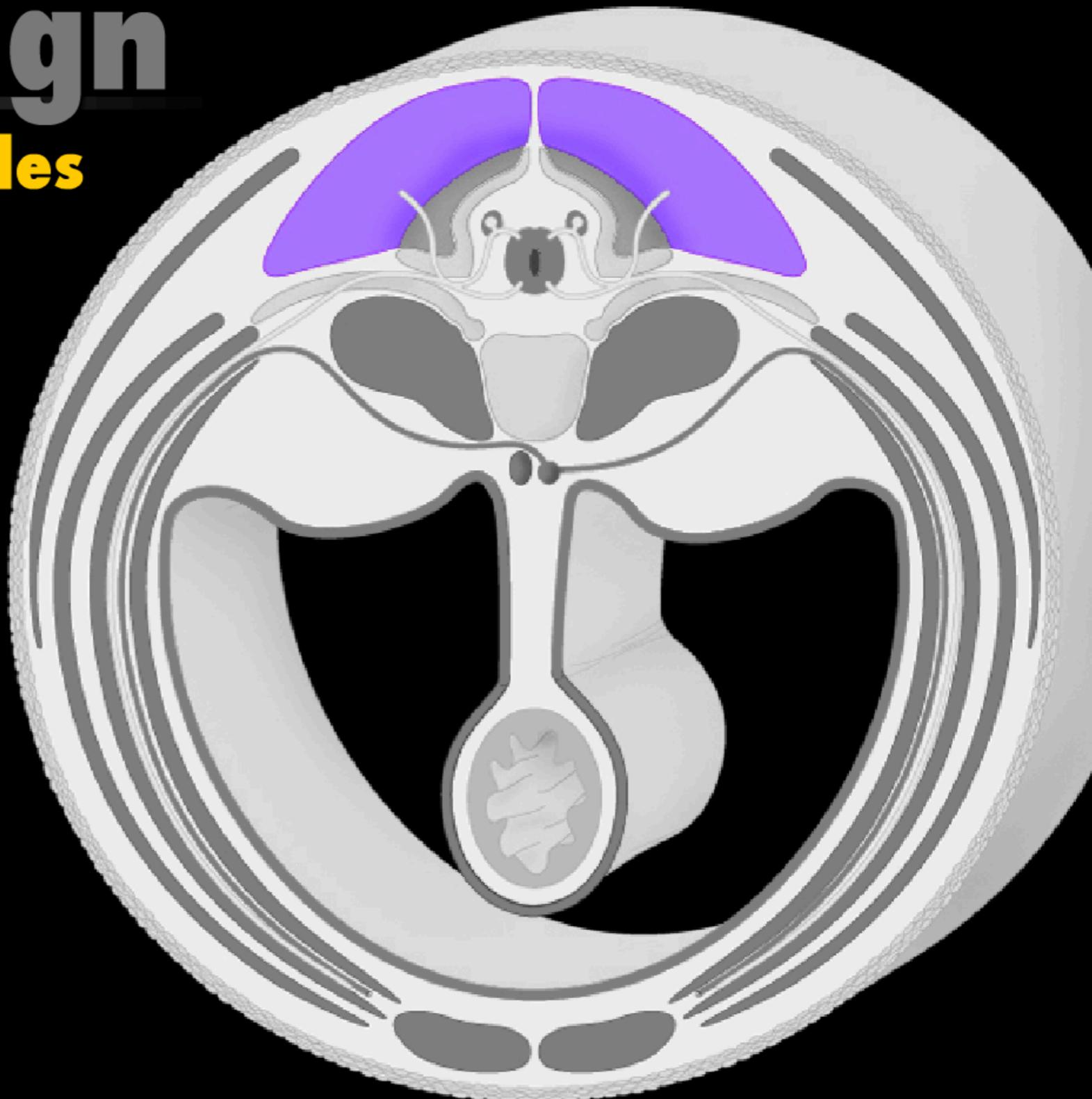


Trunk Design

Body Wall Muscle Patterns

Epaxial (Dorsal) Muscles

Superficial musculature

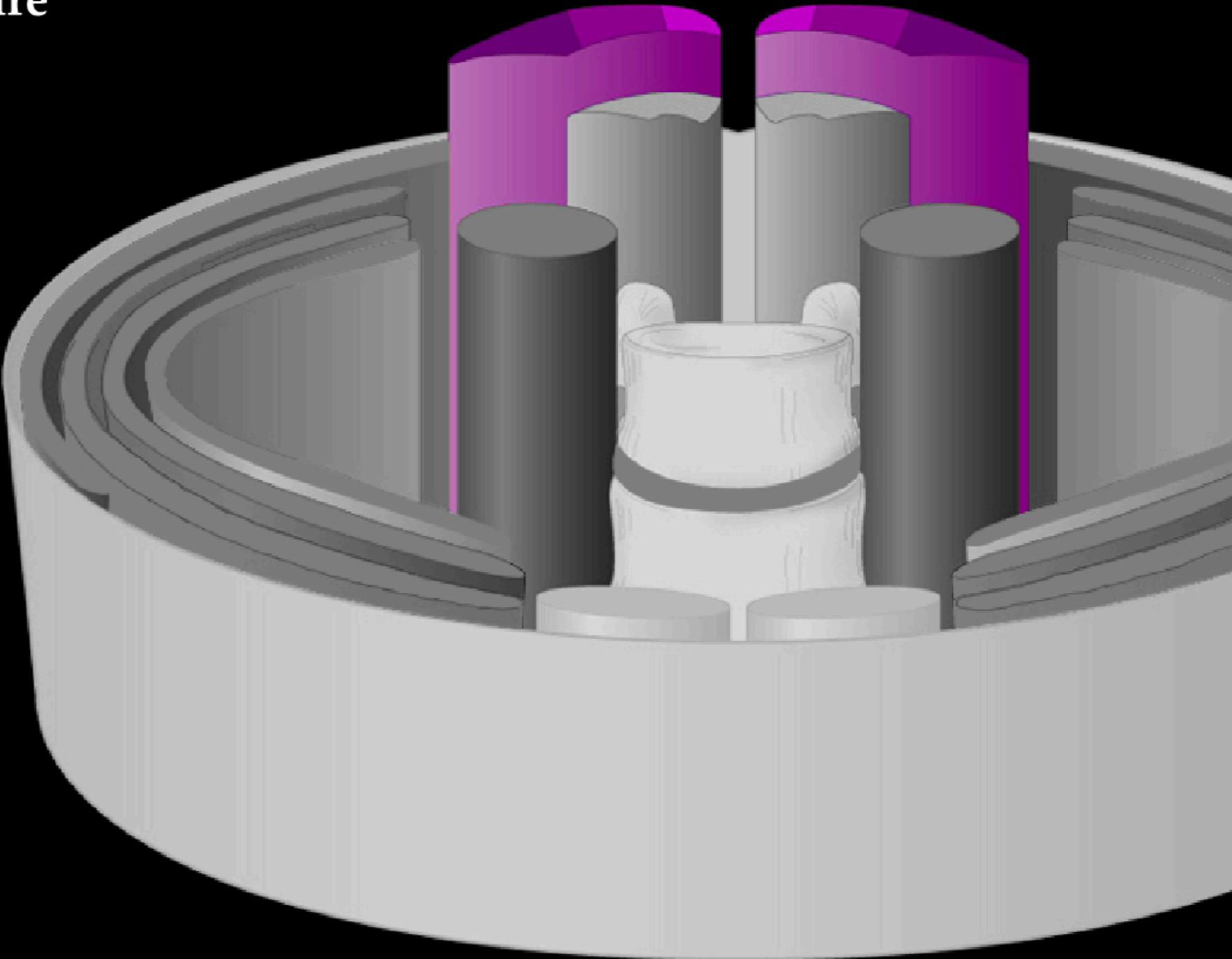


Trunk Design

Body Wall Muscle Patterns

Epaxial (Dorsal) Muscles

Superficial musculature

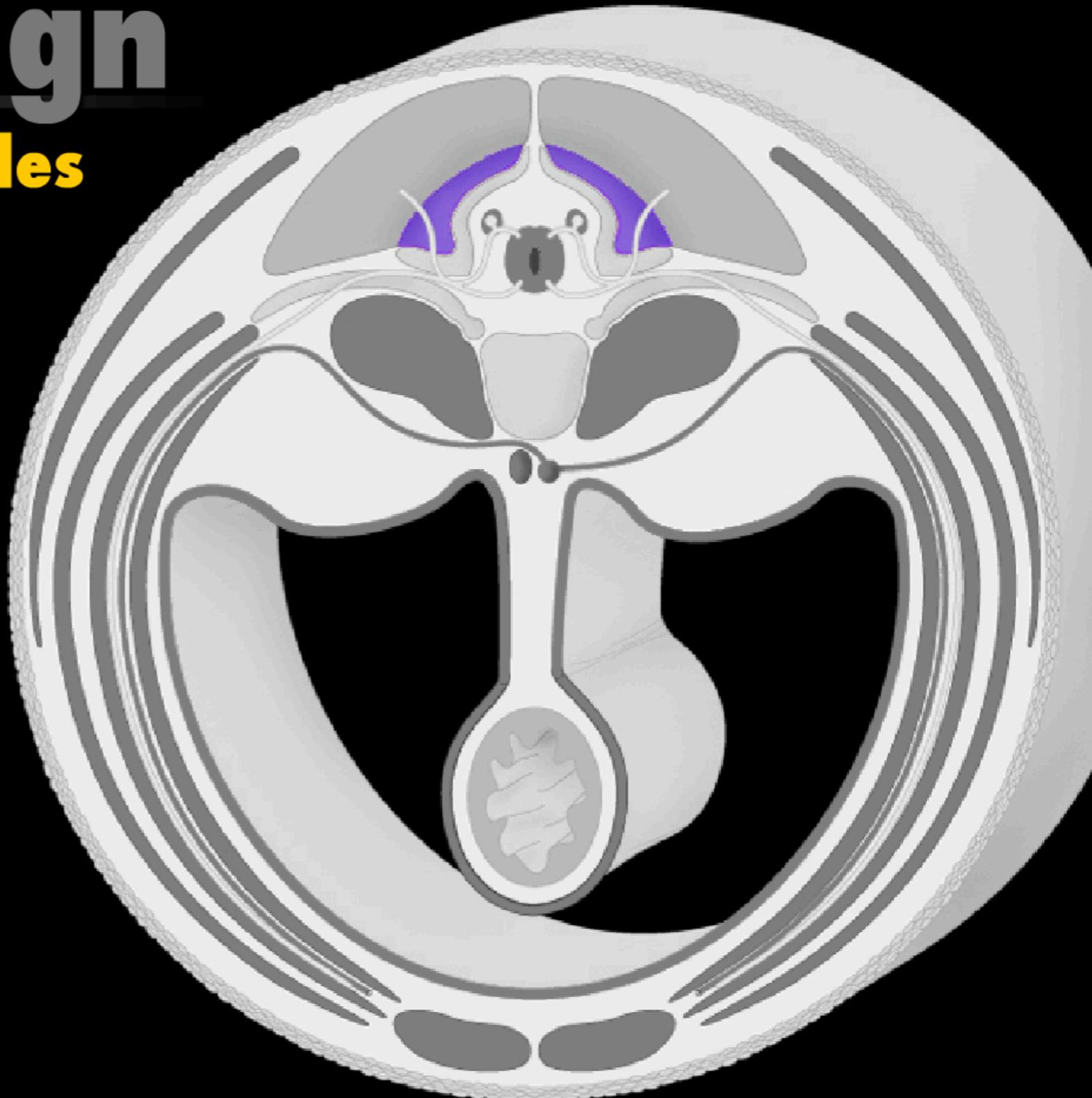


Trunk Design

Body Wall Muscle Patterns

Epaxial (Dorsal) Muscles

Deep musculature

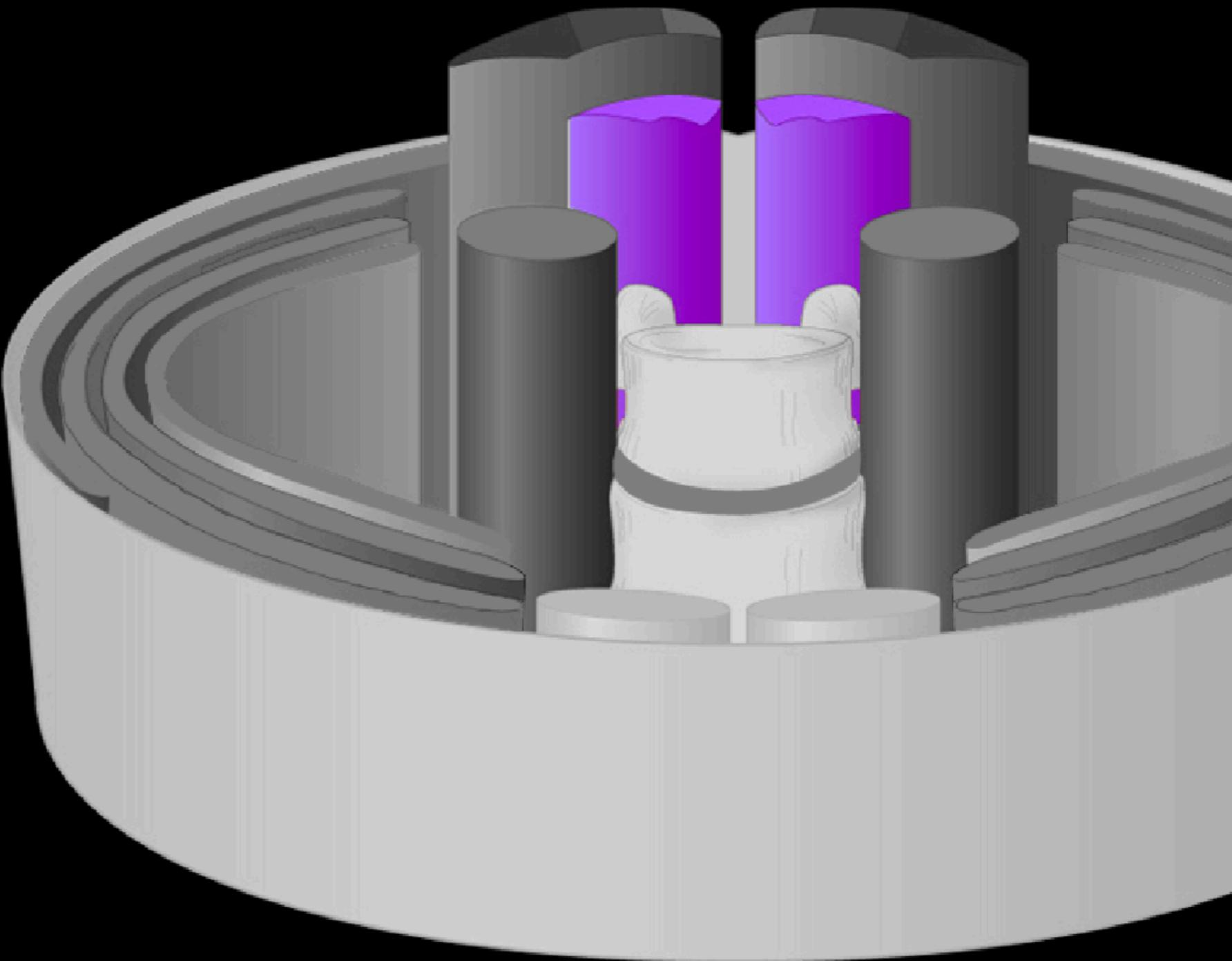


Trunk Design

Body Wall Muscle Patterns

Epaxial (Dorsal) Muscles

Deep musculature

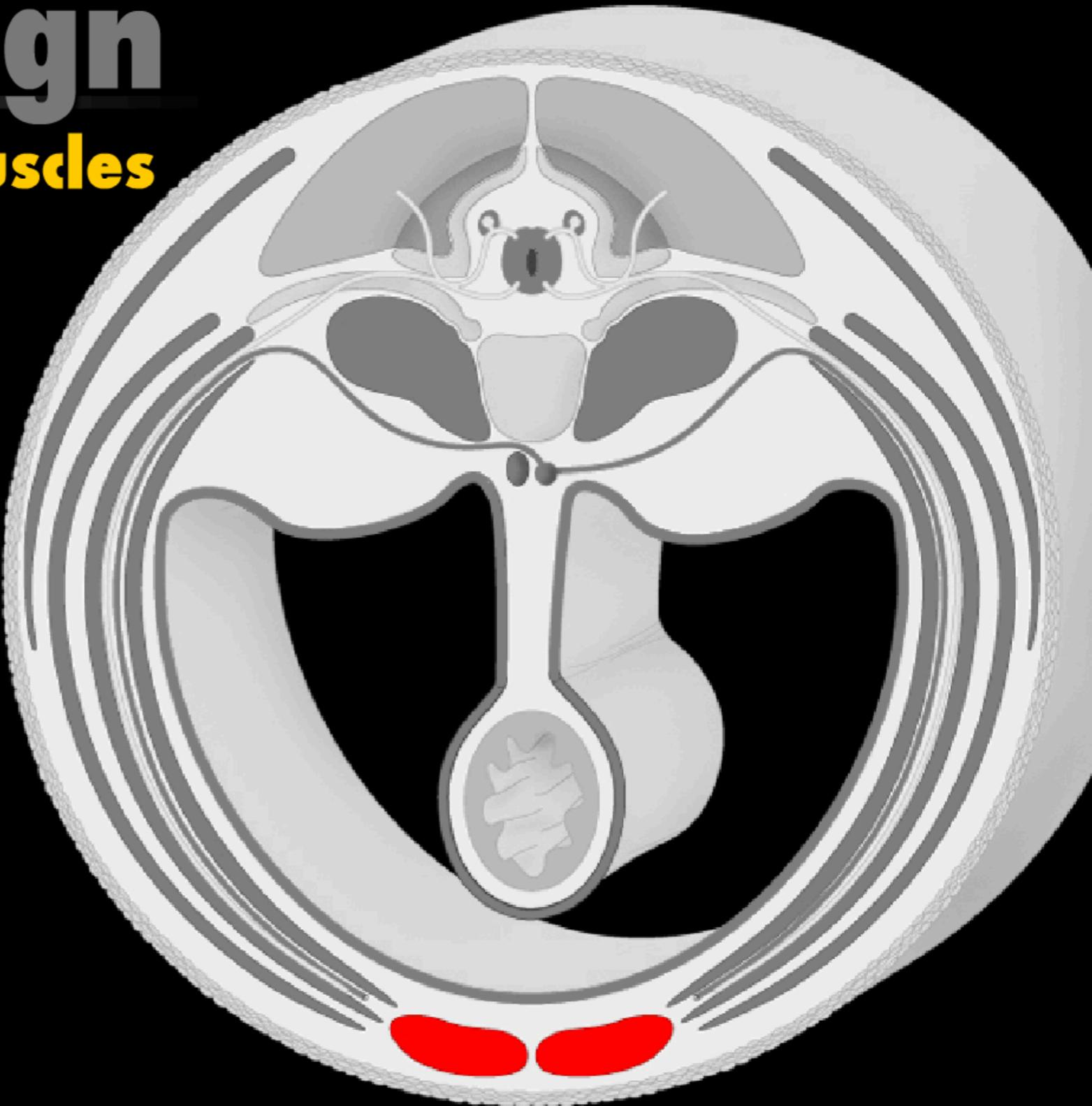


Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Ventral musculature

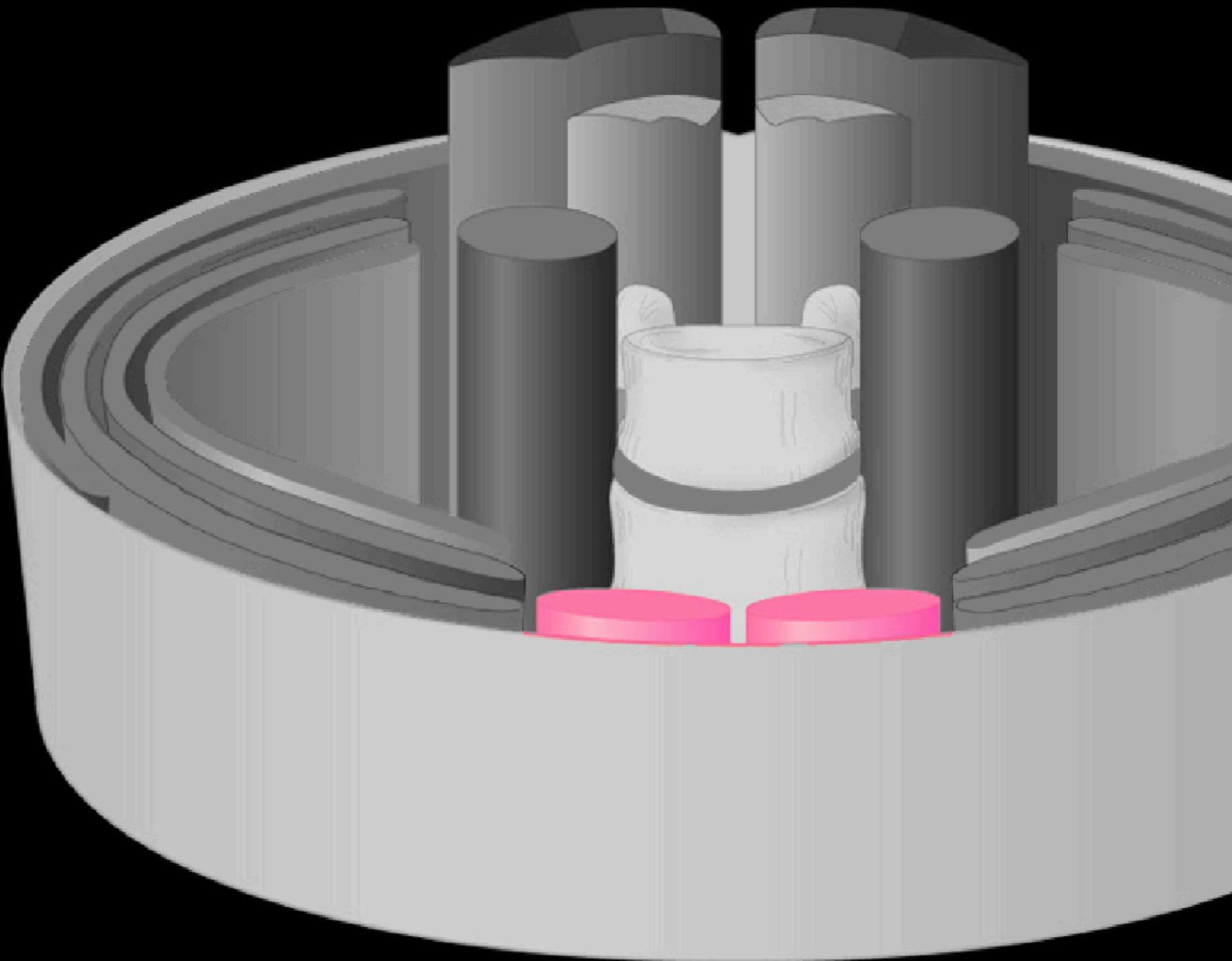


Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Ventral musculature



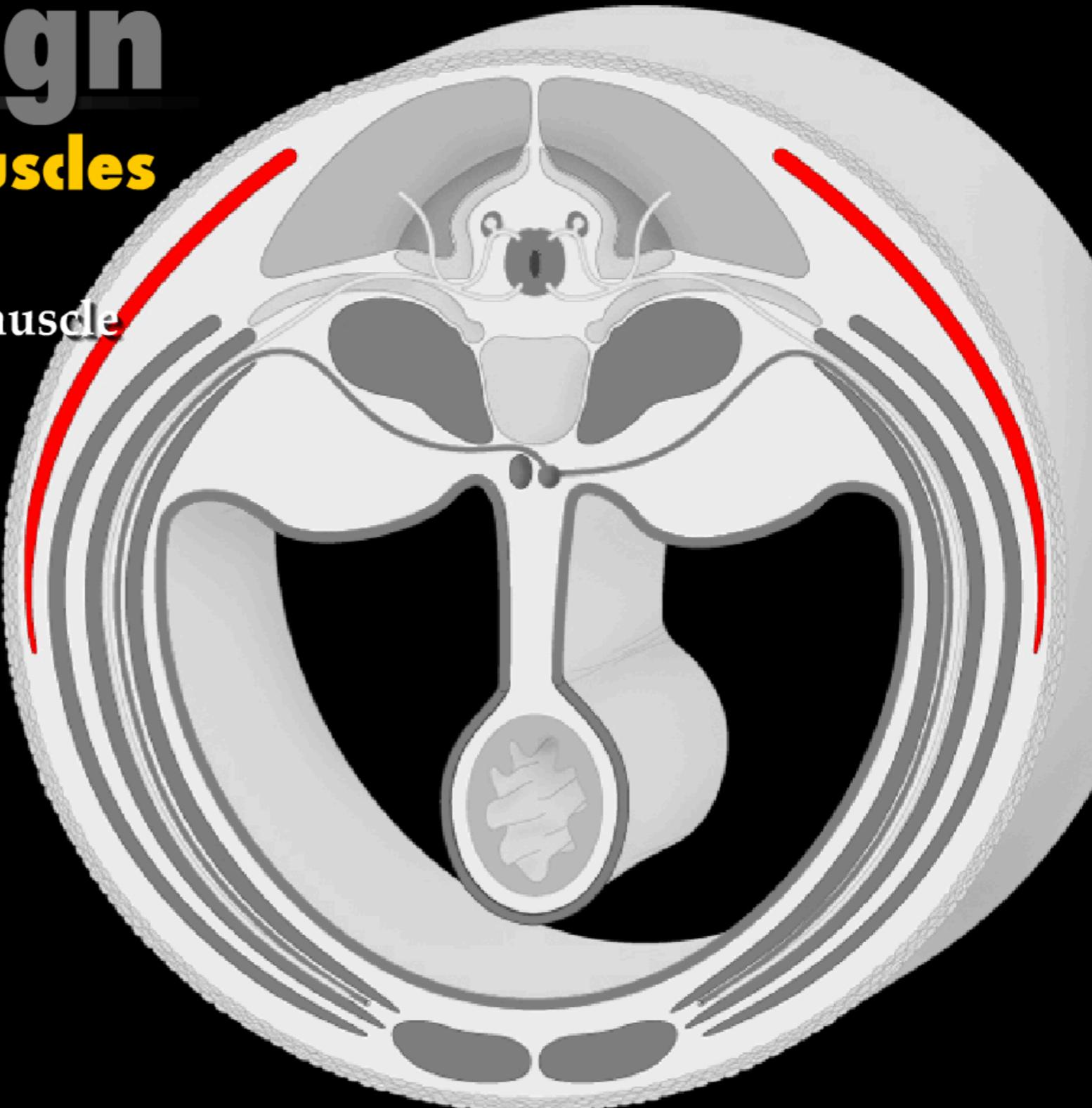
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

Supracostal or outermost muscle



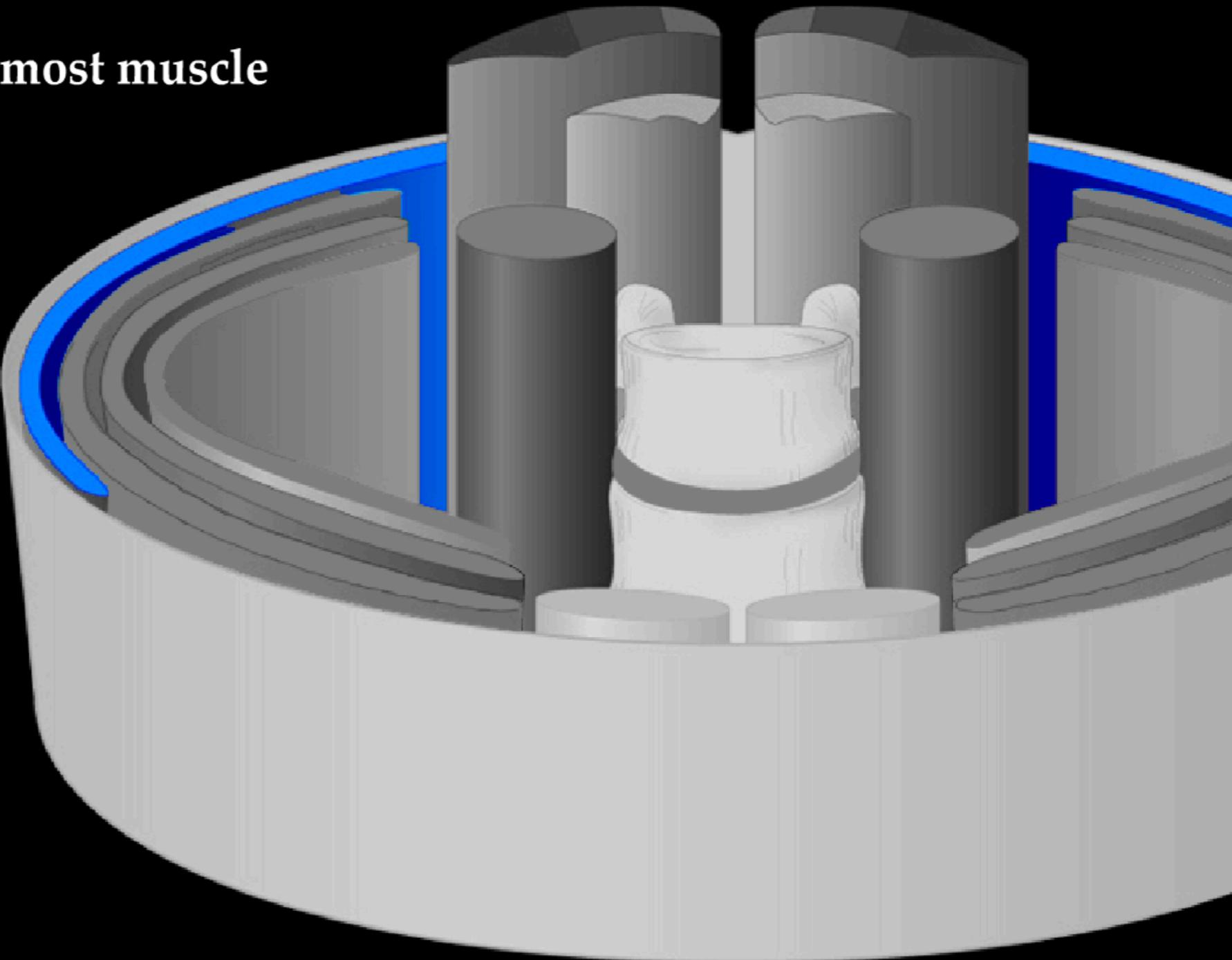
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

Supracostal or outermost muscle



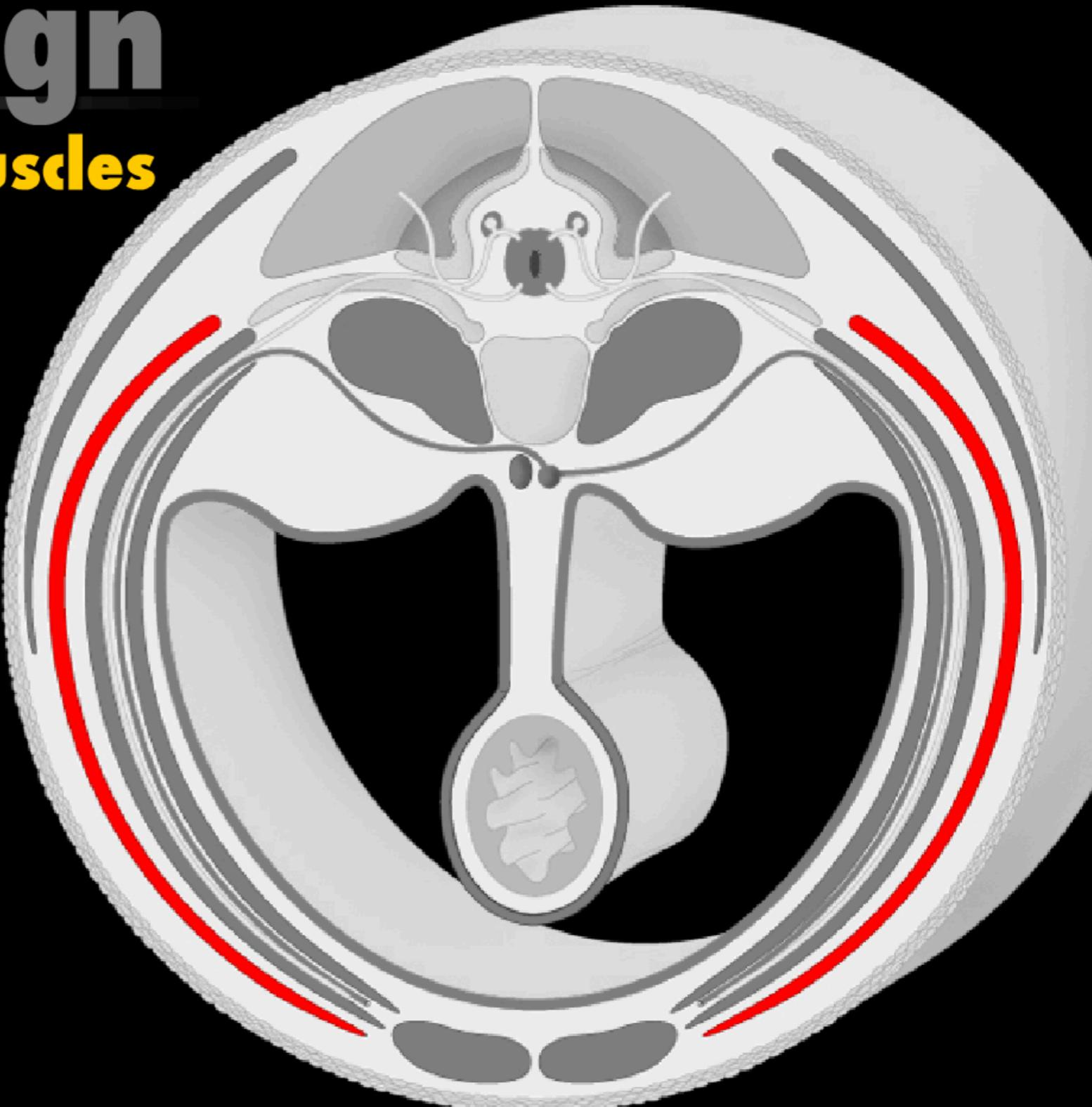
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

External muscle



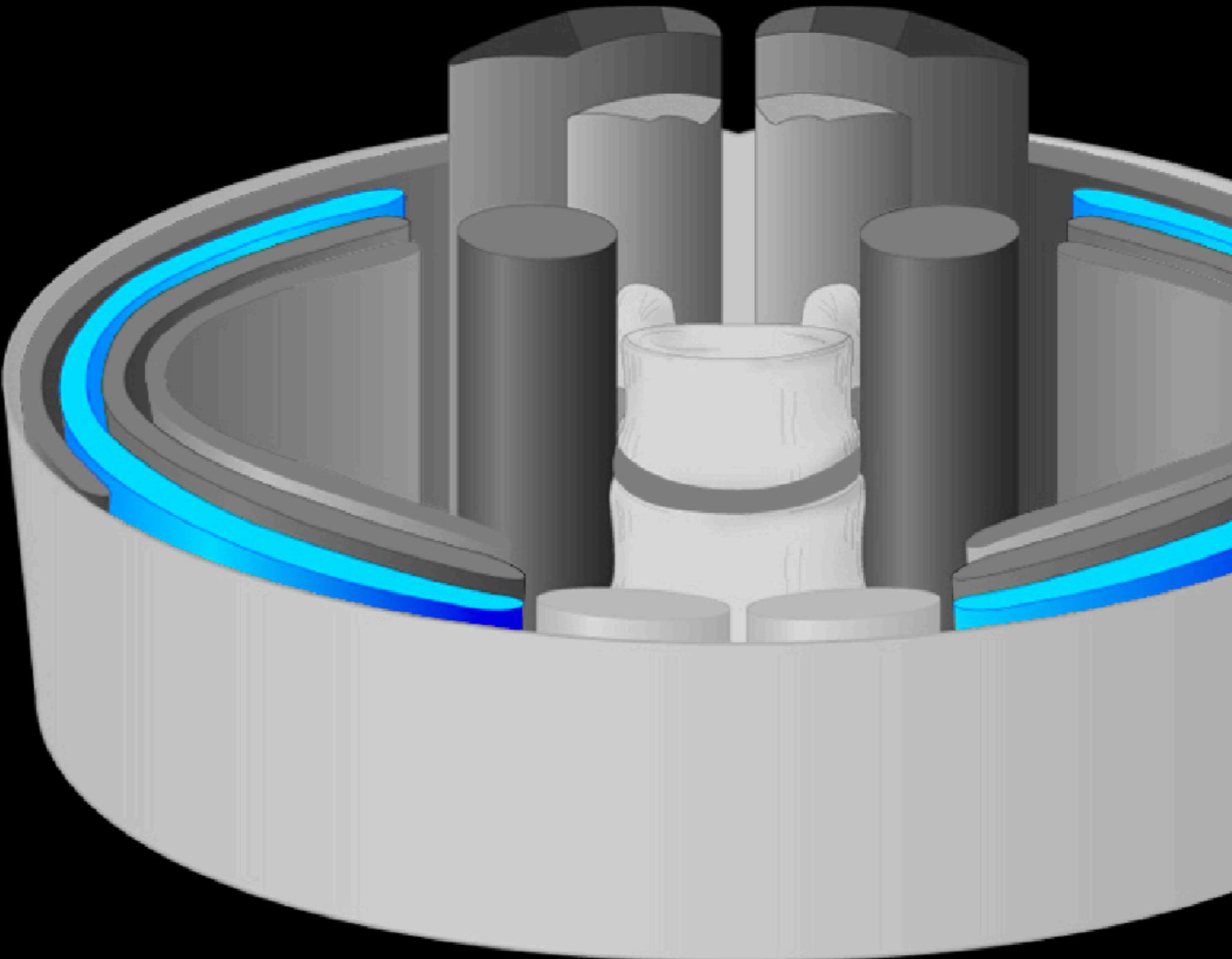
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

External muscle



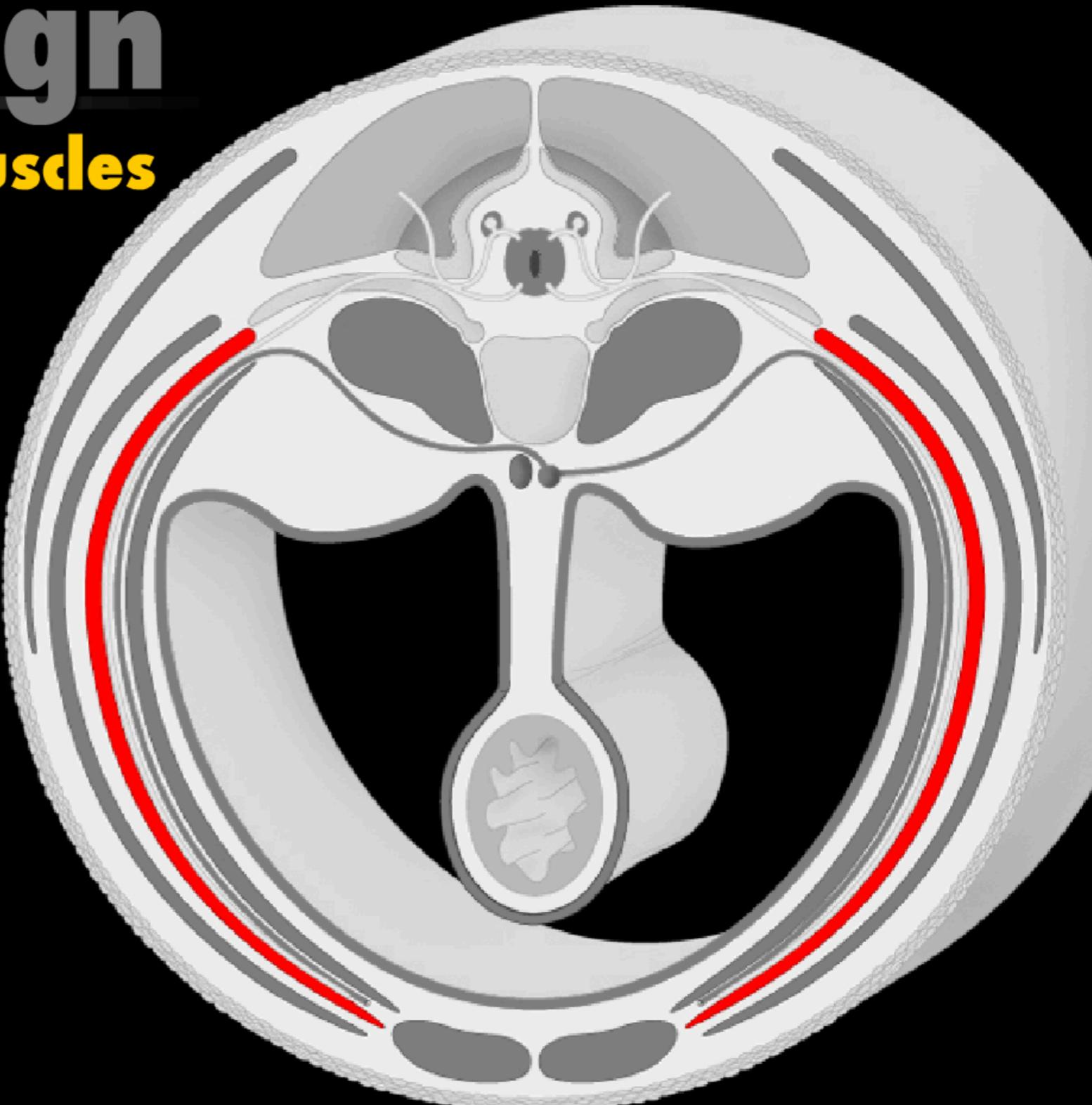
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

Middle muscle



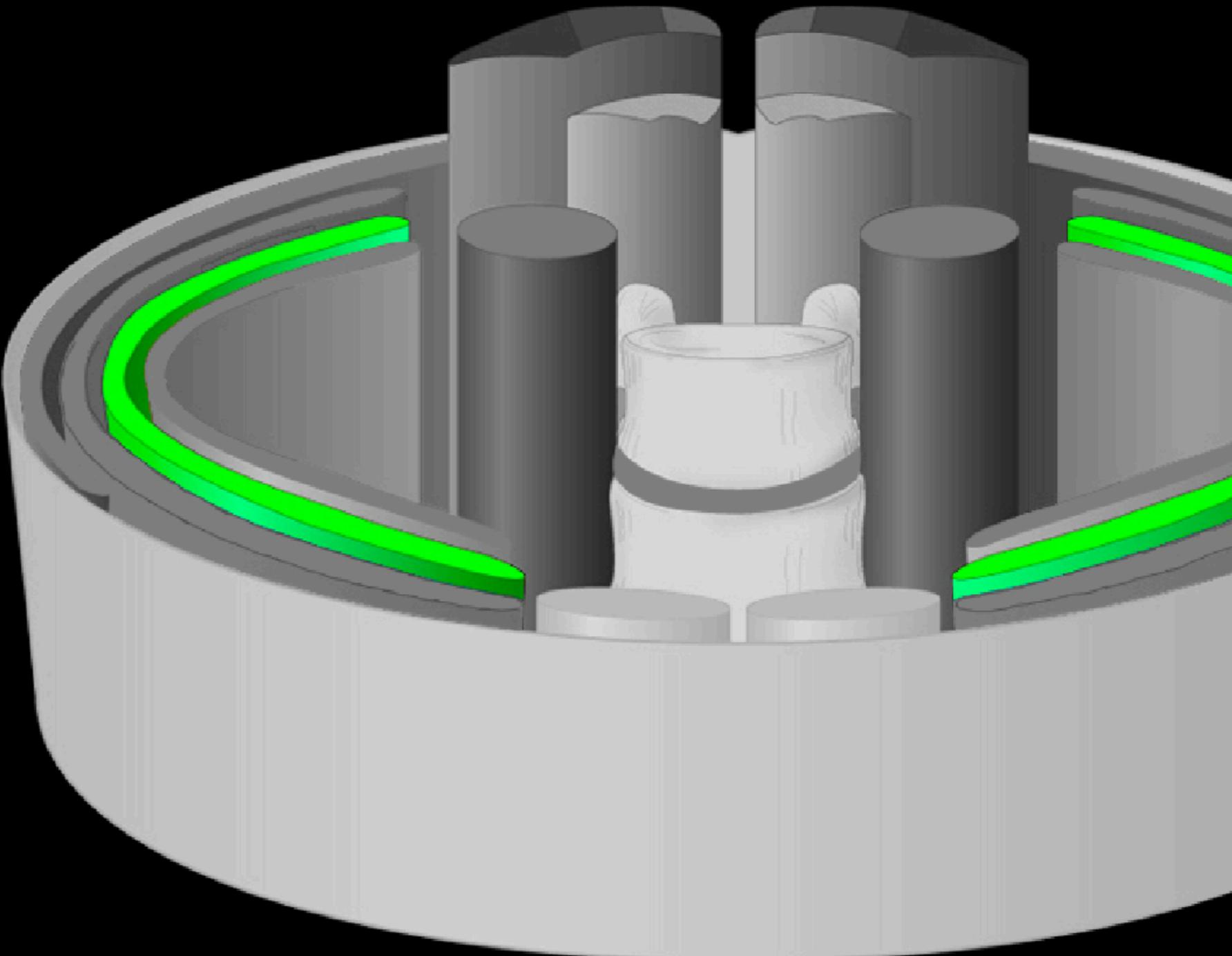
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

Middle muscle



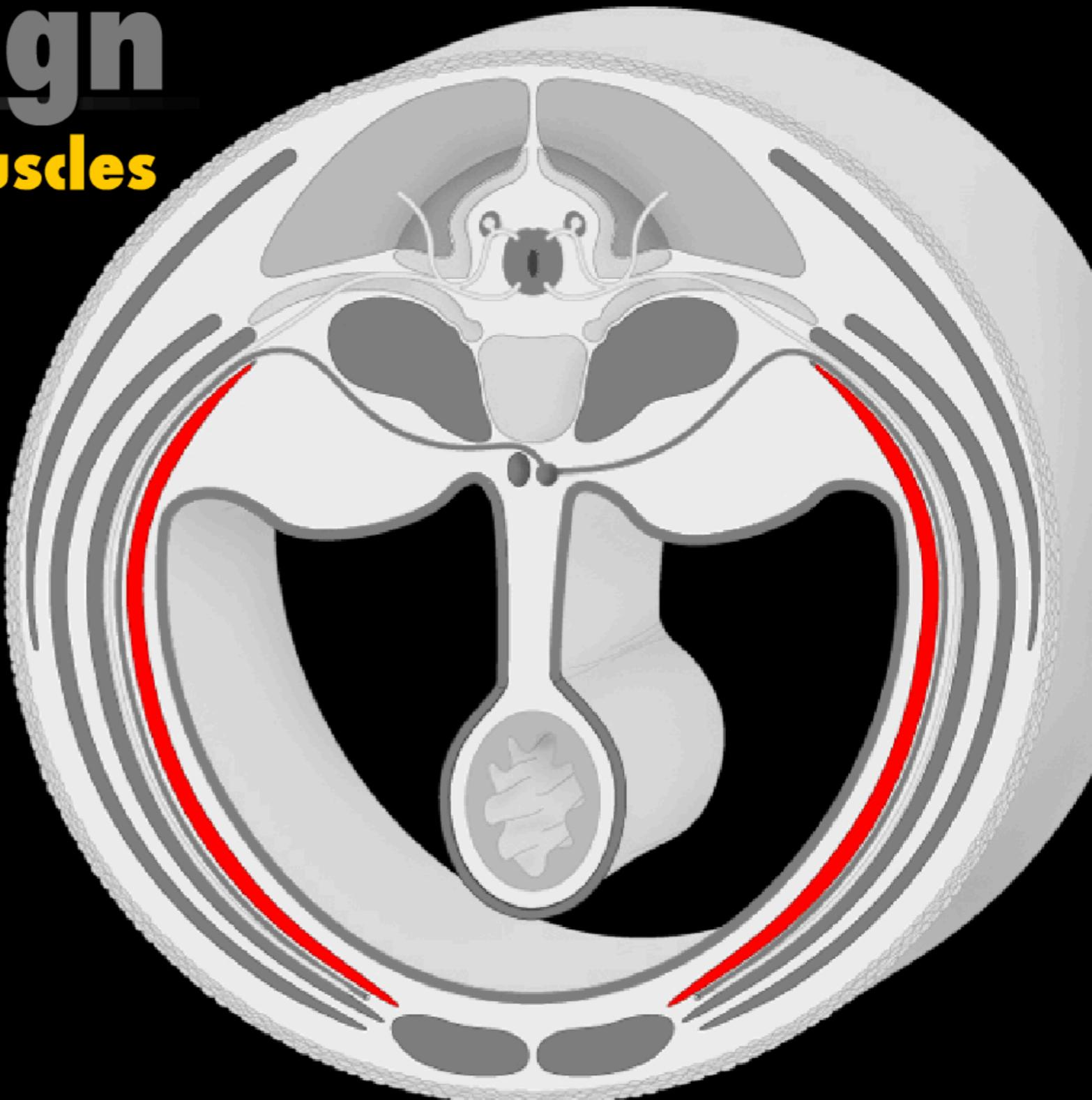
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

Internal muscle



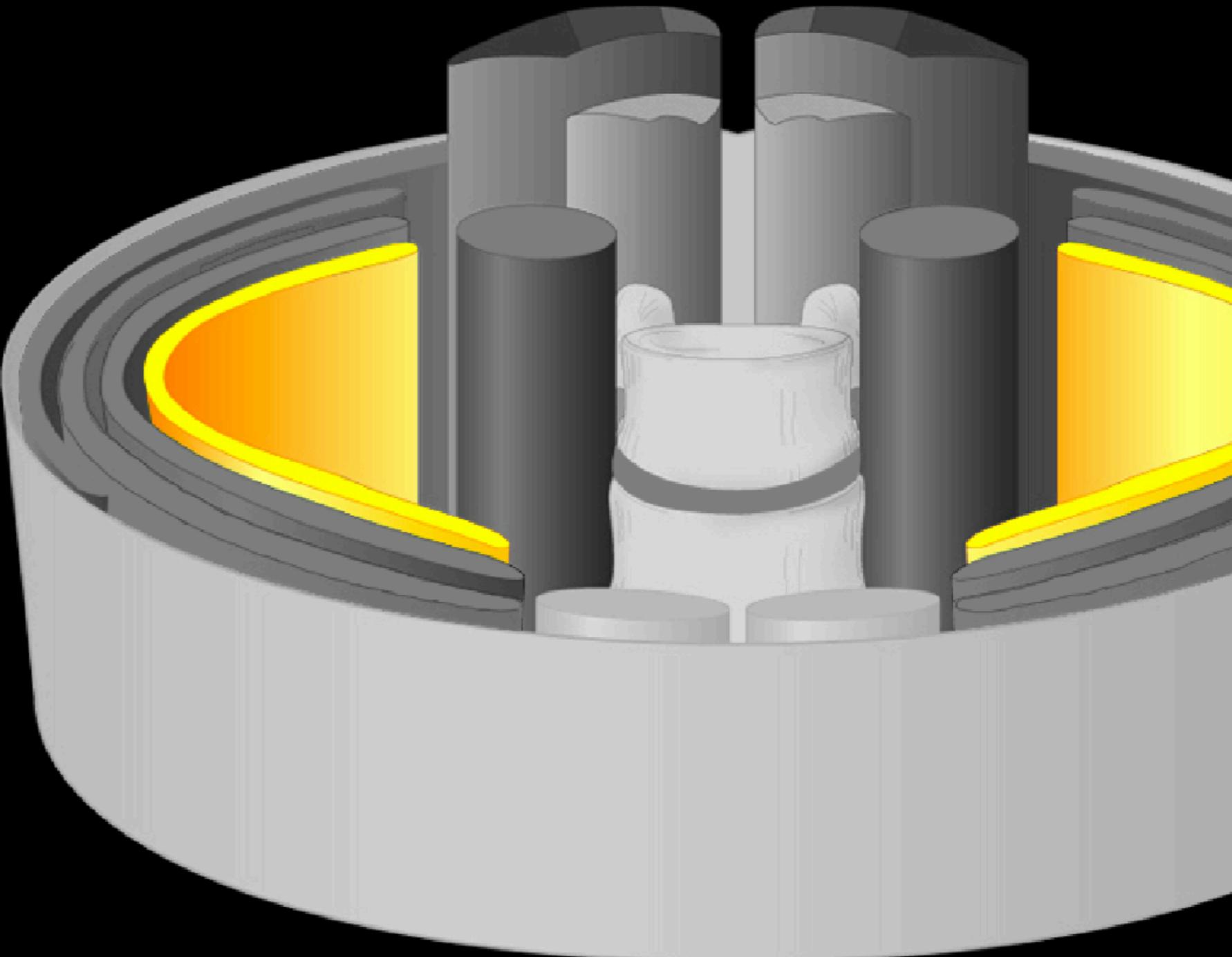
Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Lateral musculature

Internal muscle

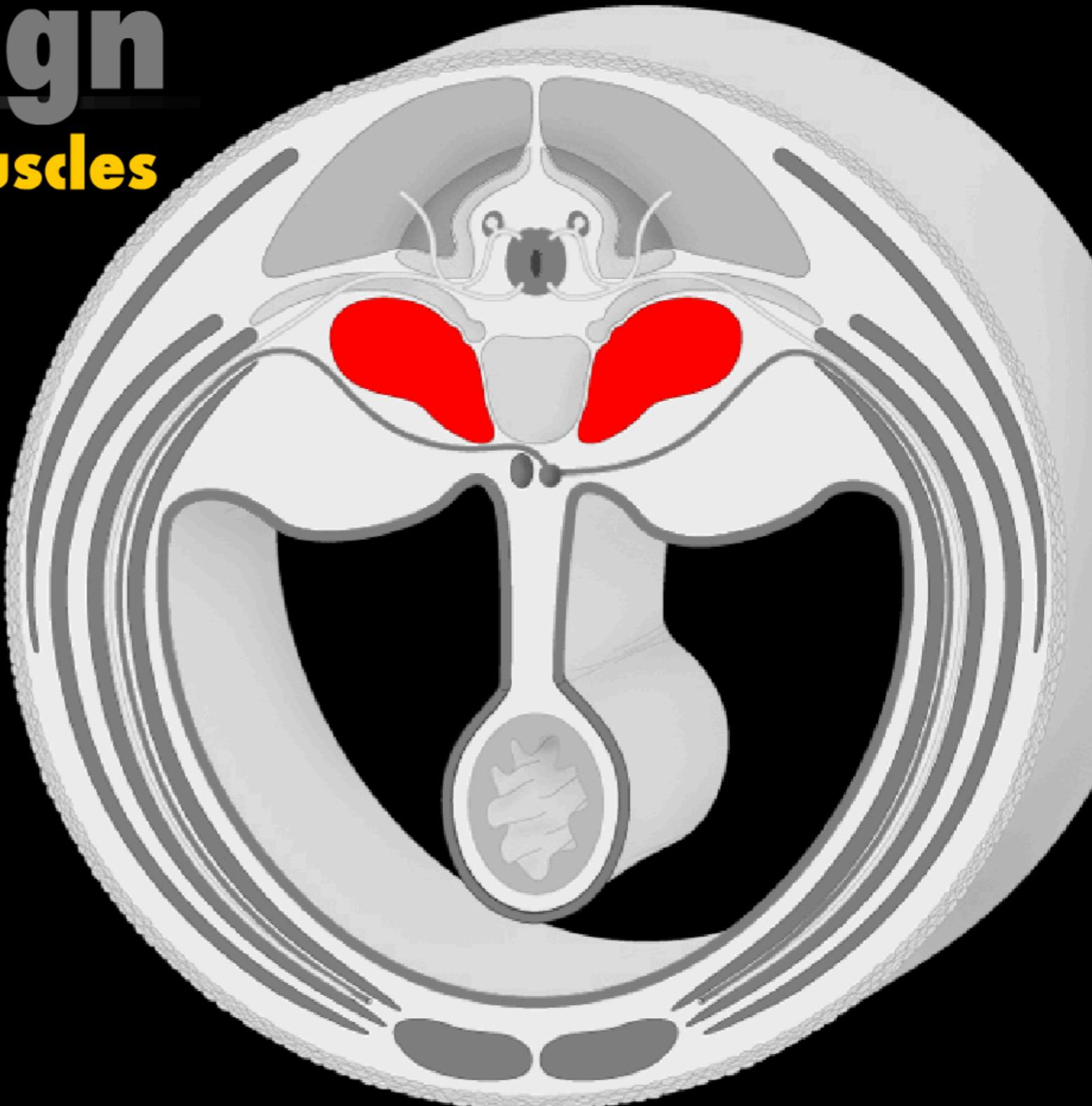


Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Subvertebral muscle

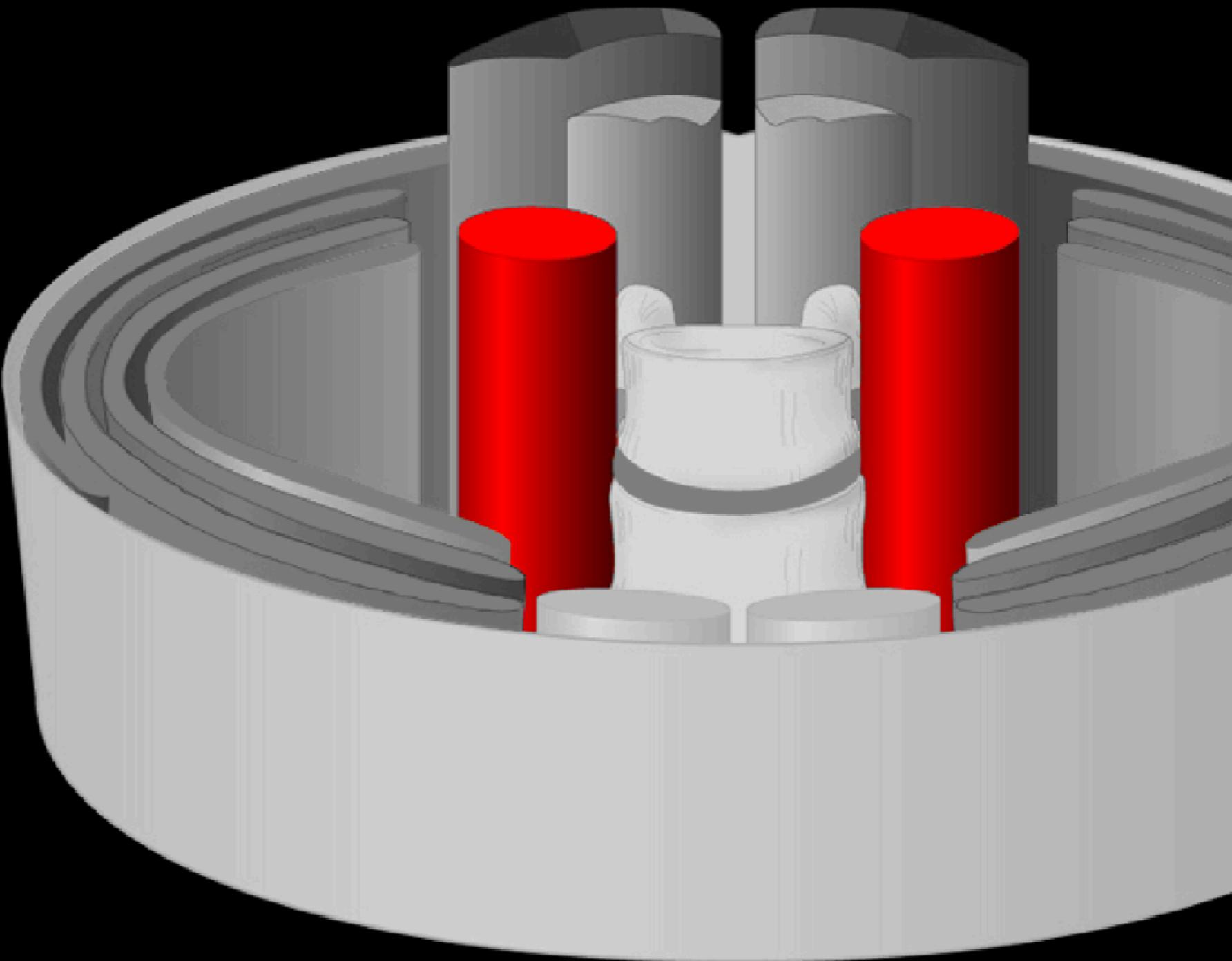


Trunk Design

Body Wall Muscle Patterns

Hypaxial (Ventral) Muscles

Subvertebral muscle



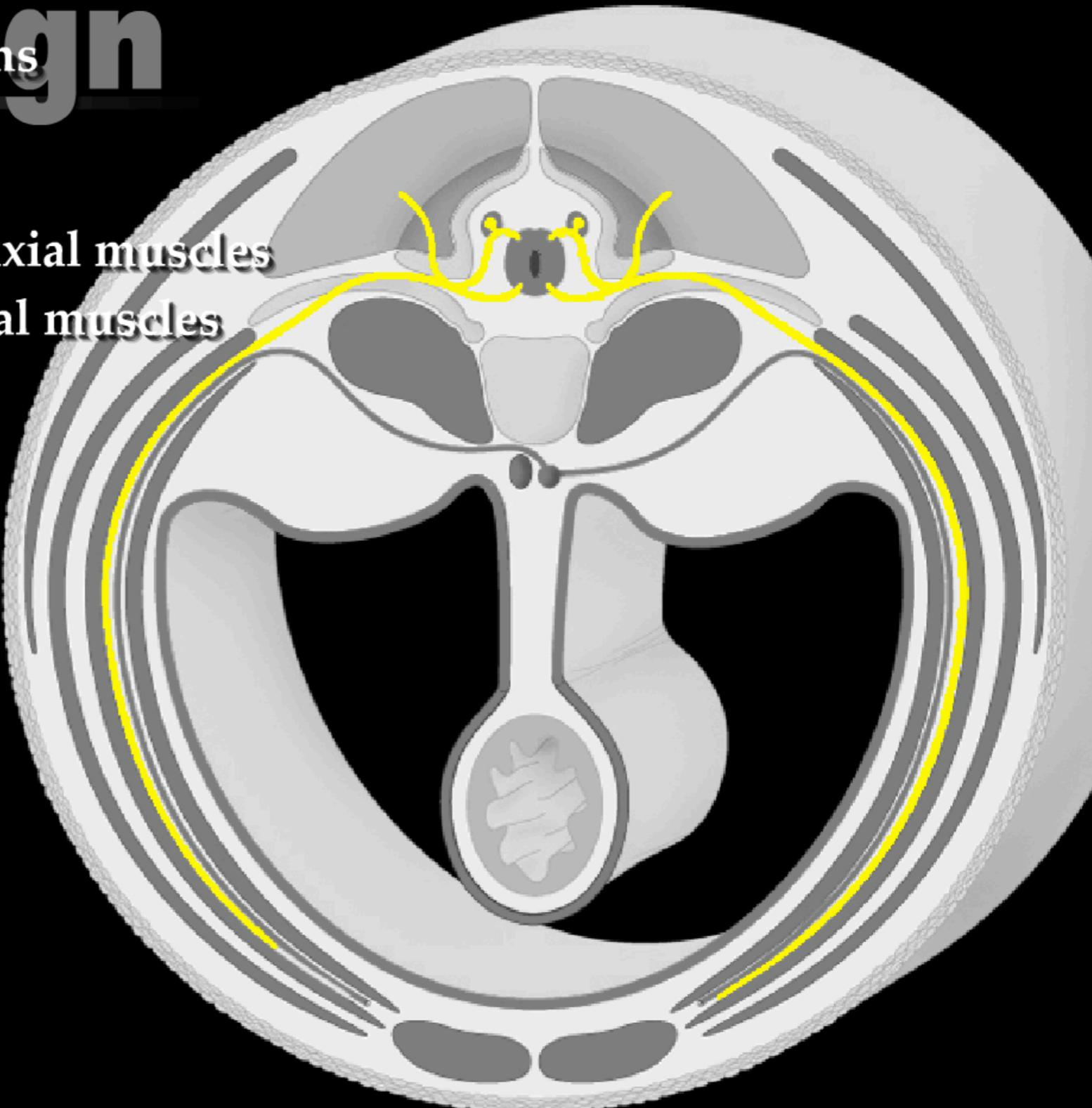
Trunk Design

Body Wall Neurovascular Patterns

Spinal Nerve Design

Ventral ramus supplies hypaxial muscles

Dorsal ramus supplies epaxial muscles

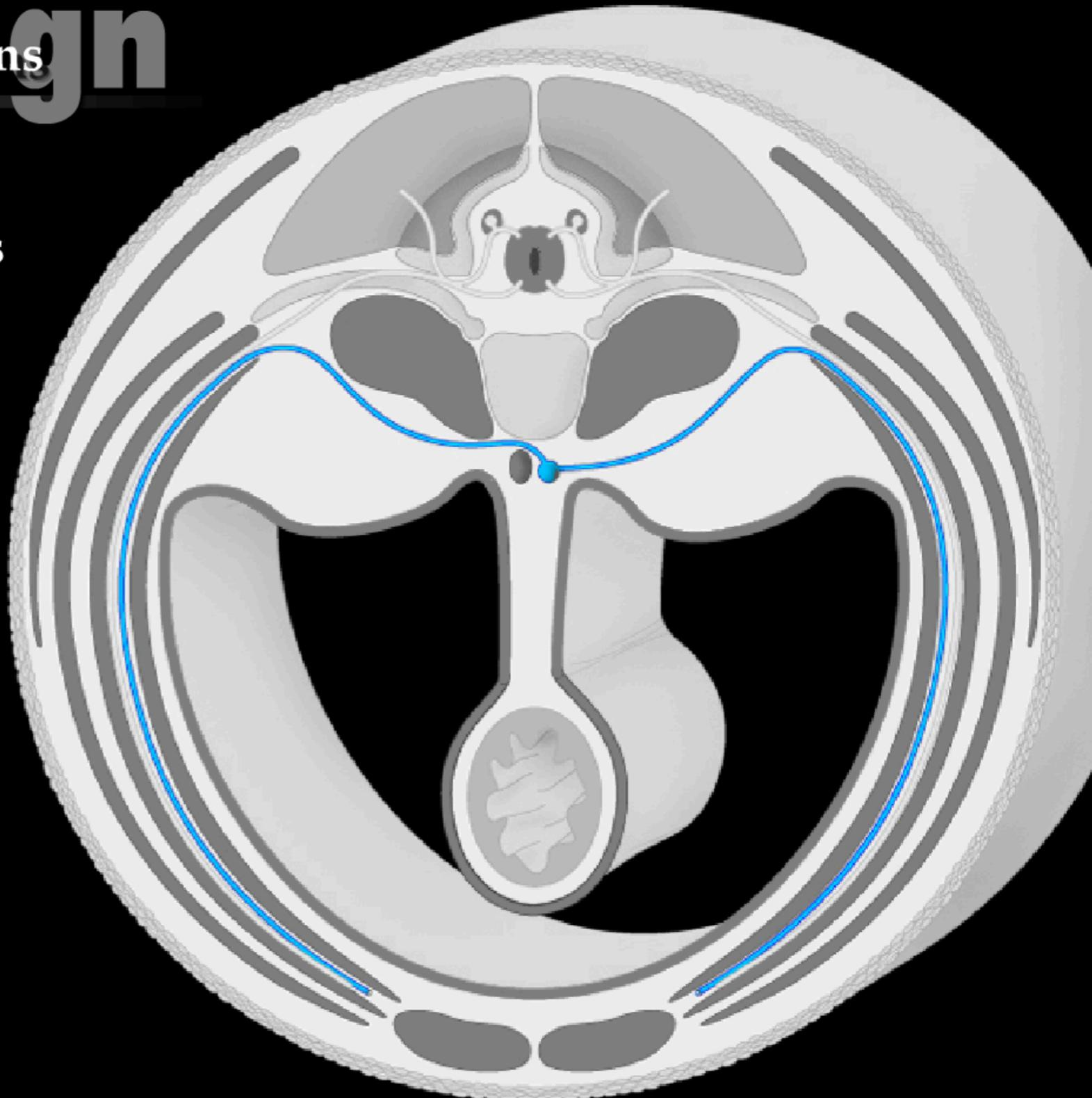


Trunk Design

Body Wall Neurovascular Patterns

Vessel Design

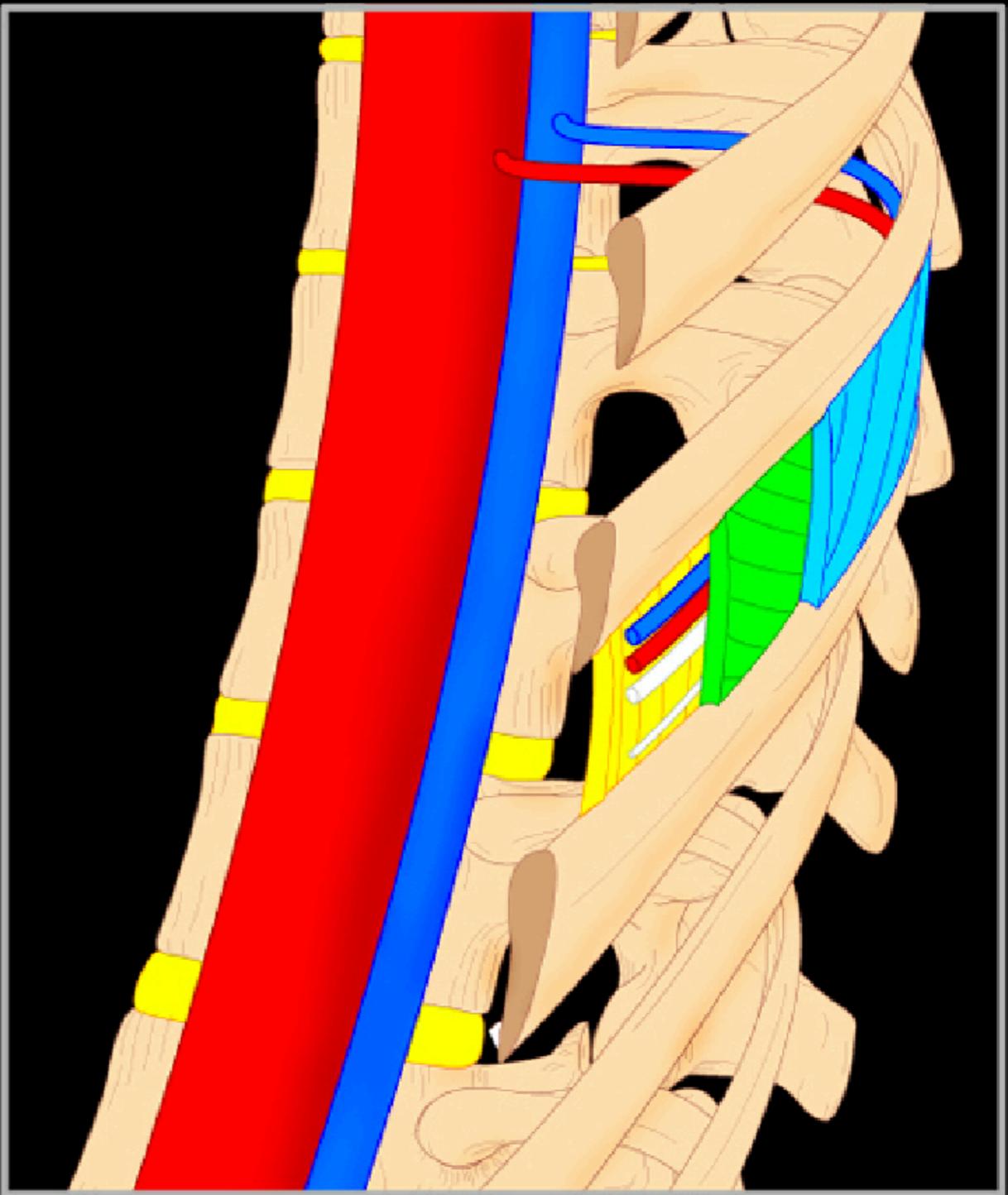
Segmental arteries and veins



Trunk Design

Body Wall Neurovascular Patterns

Relation to Muscle Wall

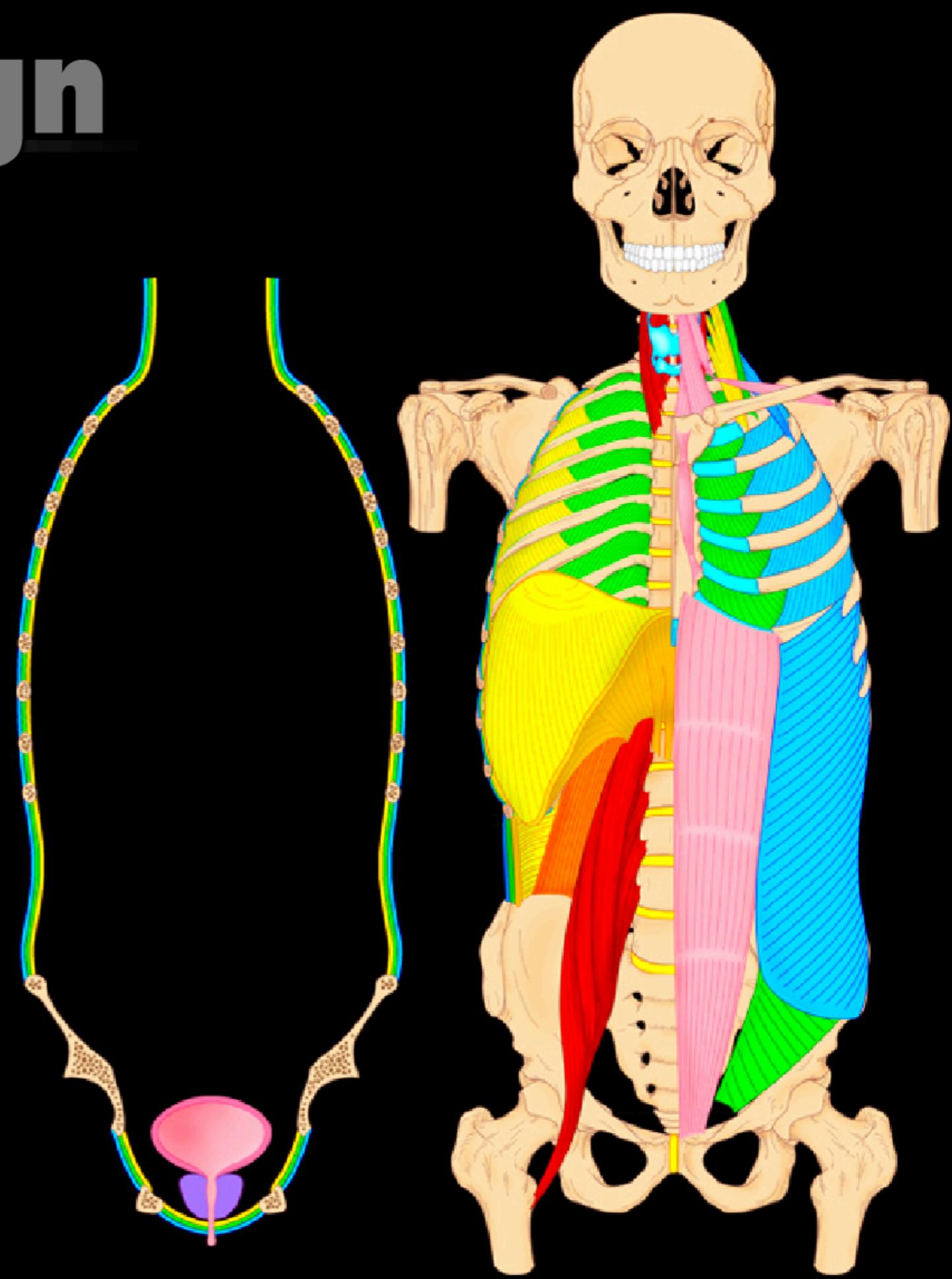


Trunk Design

Applying the Patterns of Design

What is the Trunk?

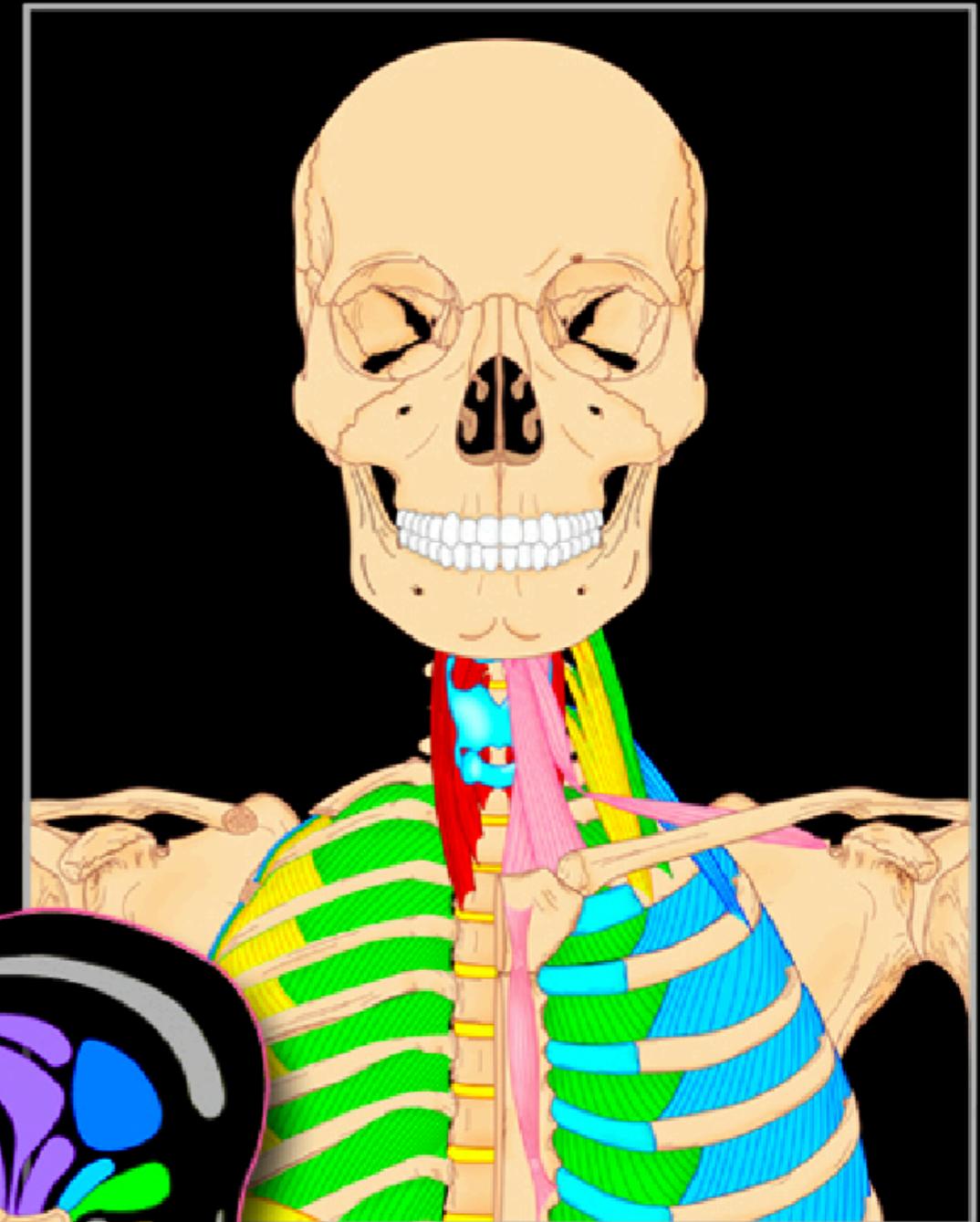
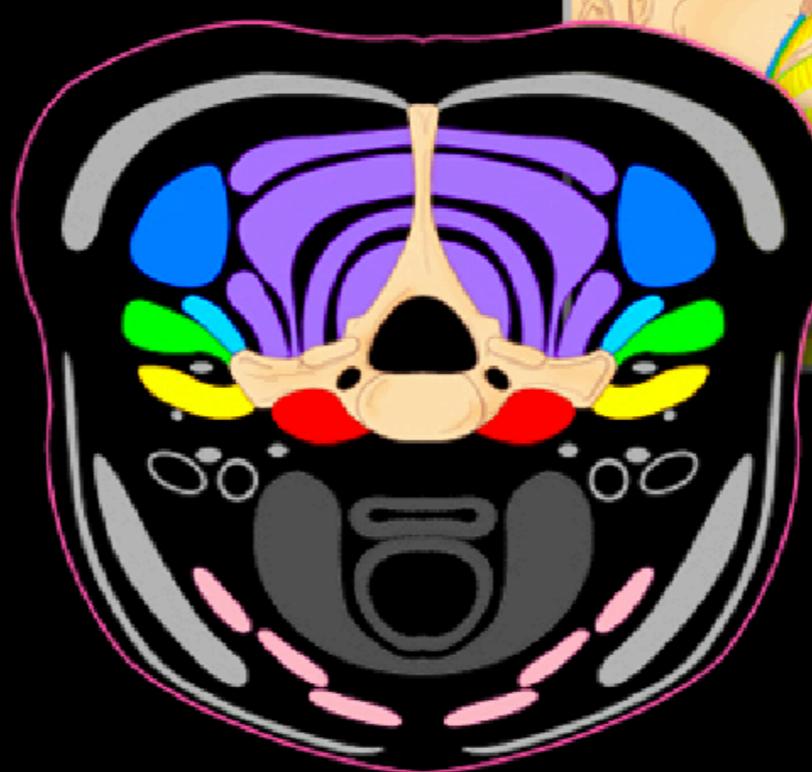
Notice the pattern!!



Trunk Design

Applying the Patterns of Design

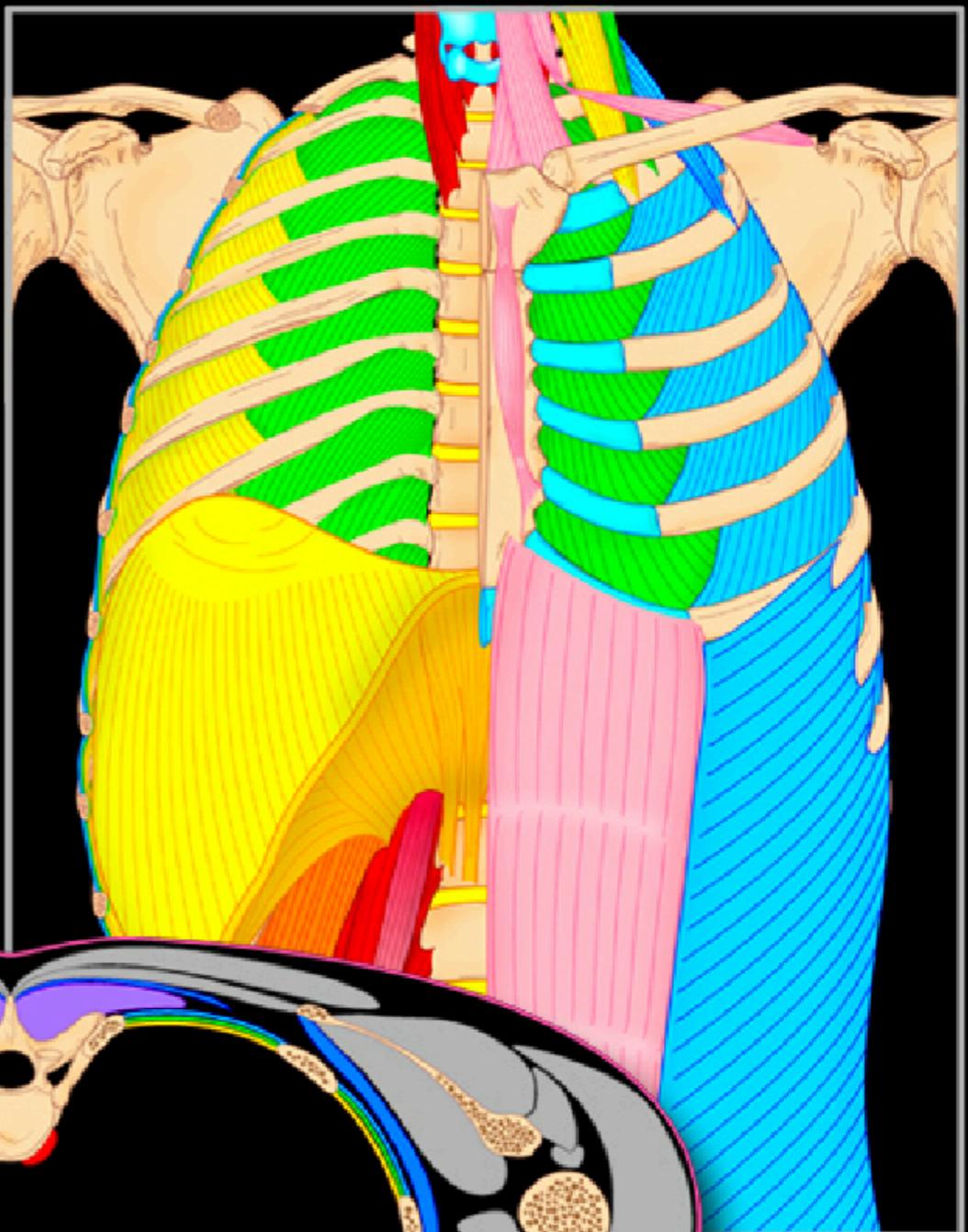
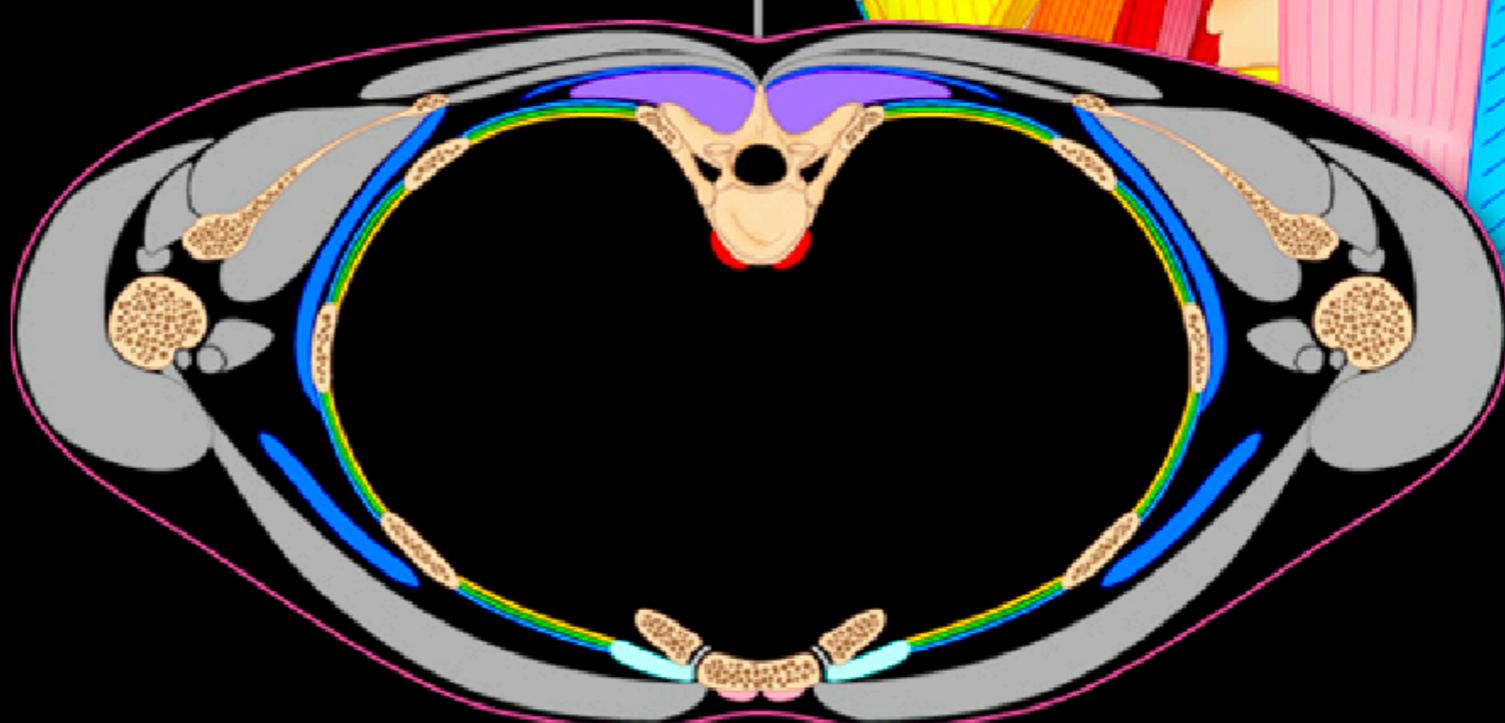
Cervical Wall?



Trunk Design

Applying the Patterns of Design

Thoracic Wall?



Trunk Design

Applying the Patterns of Design

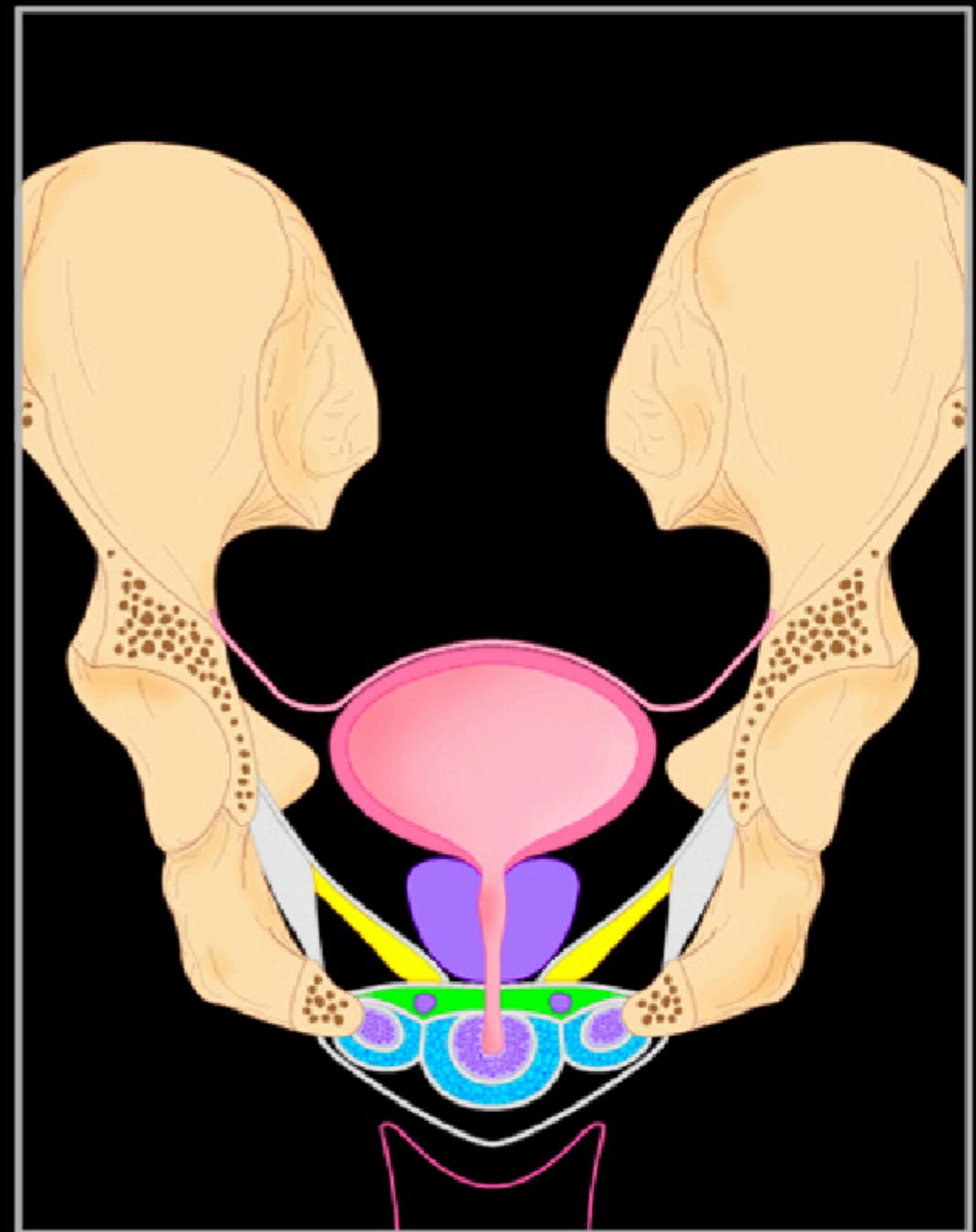
Abdominal Wall?



Trunk Design

Applying the Patterns of Design

Pelvic/Perineal Wall?



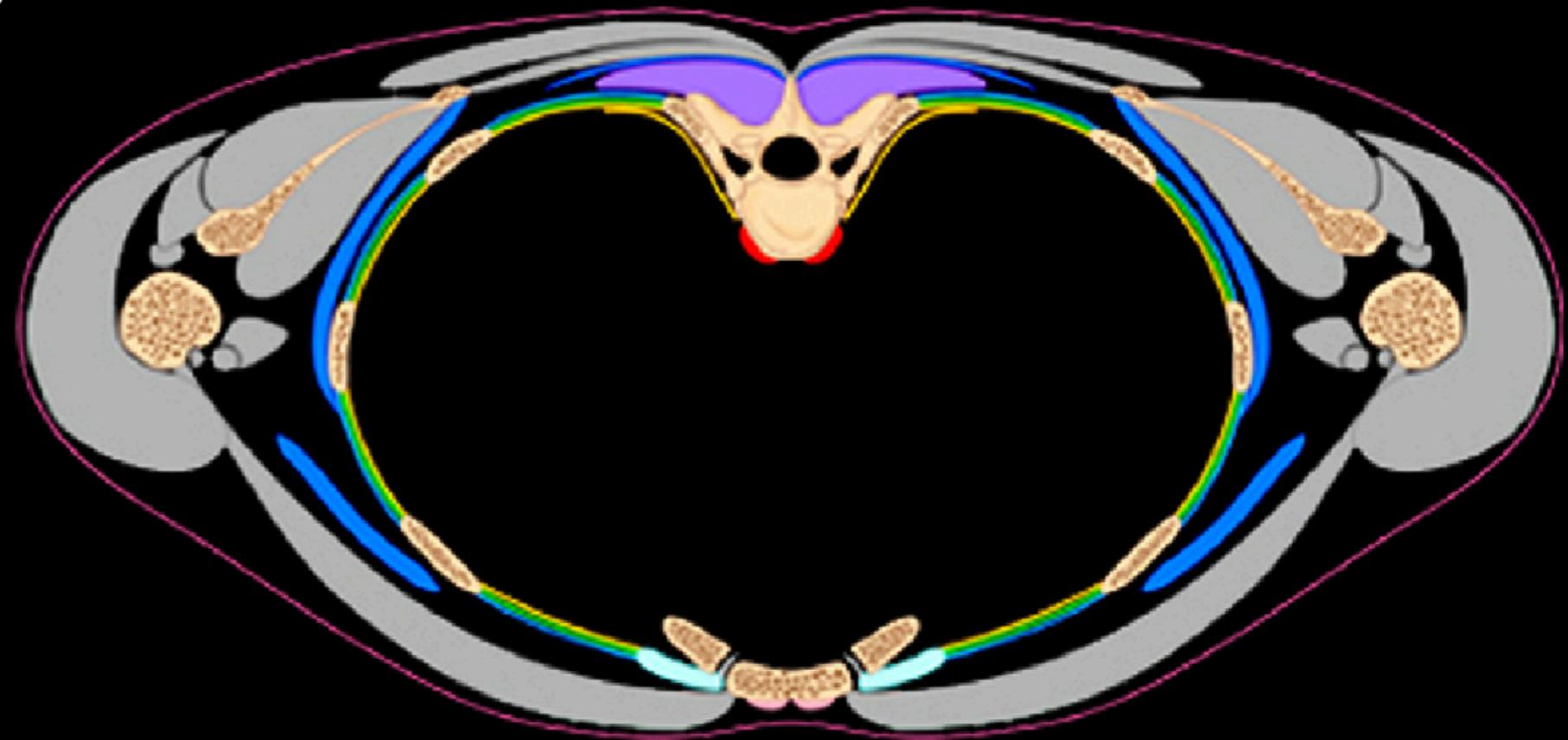
Trunk Design

Embryonic Trunk Design

Body Cavity Anatomy

What is a body cavity?

What is a coelom?



Recognize that cavities and coeloms are different

Trunk Design

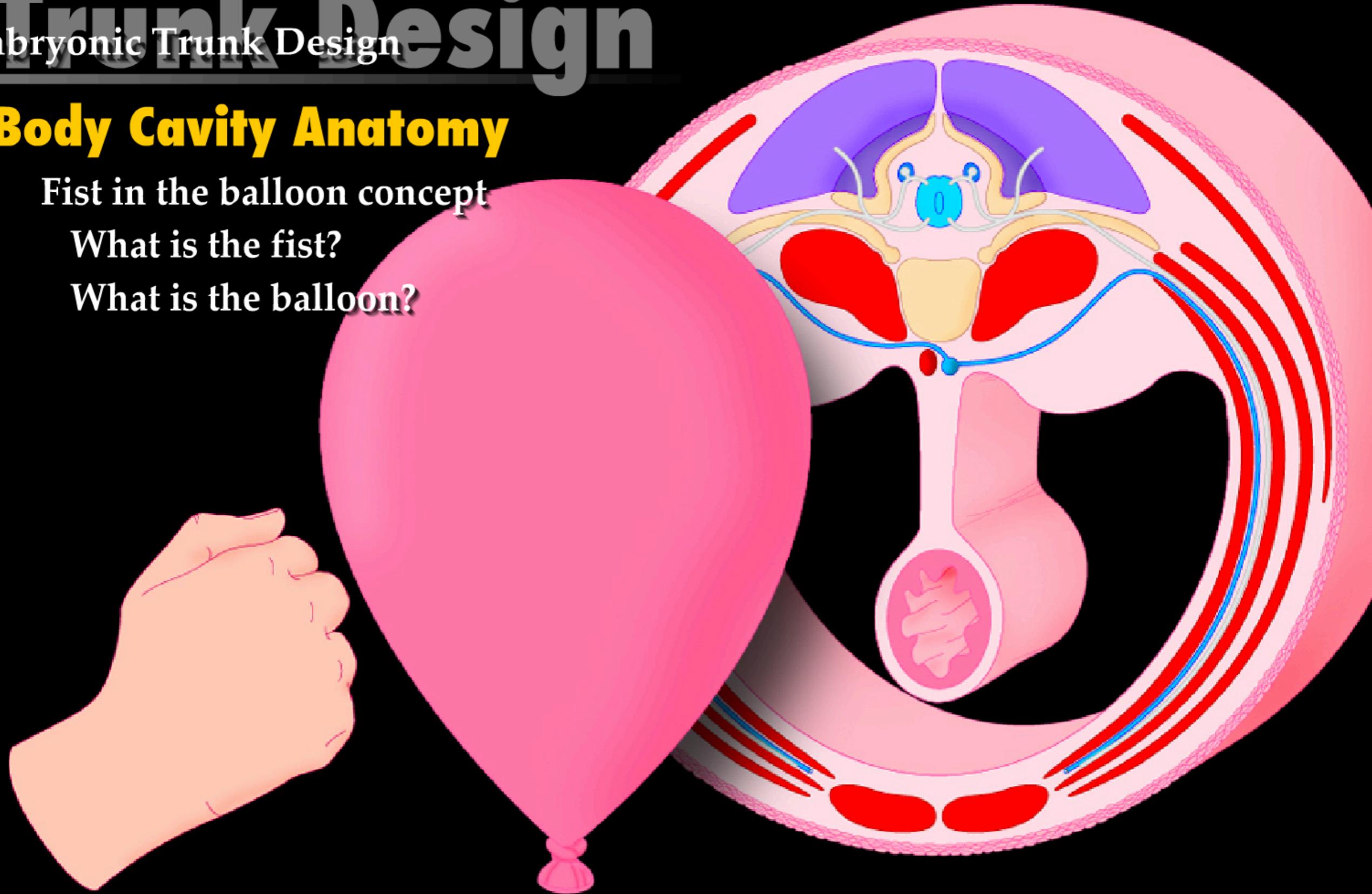
Embryonic Trunk Design

Body Cavity Anatomy

Fist in the balloon concept

What is the fist?

What is the balloon?



Trunk Design

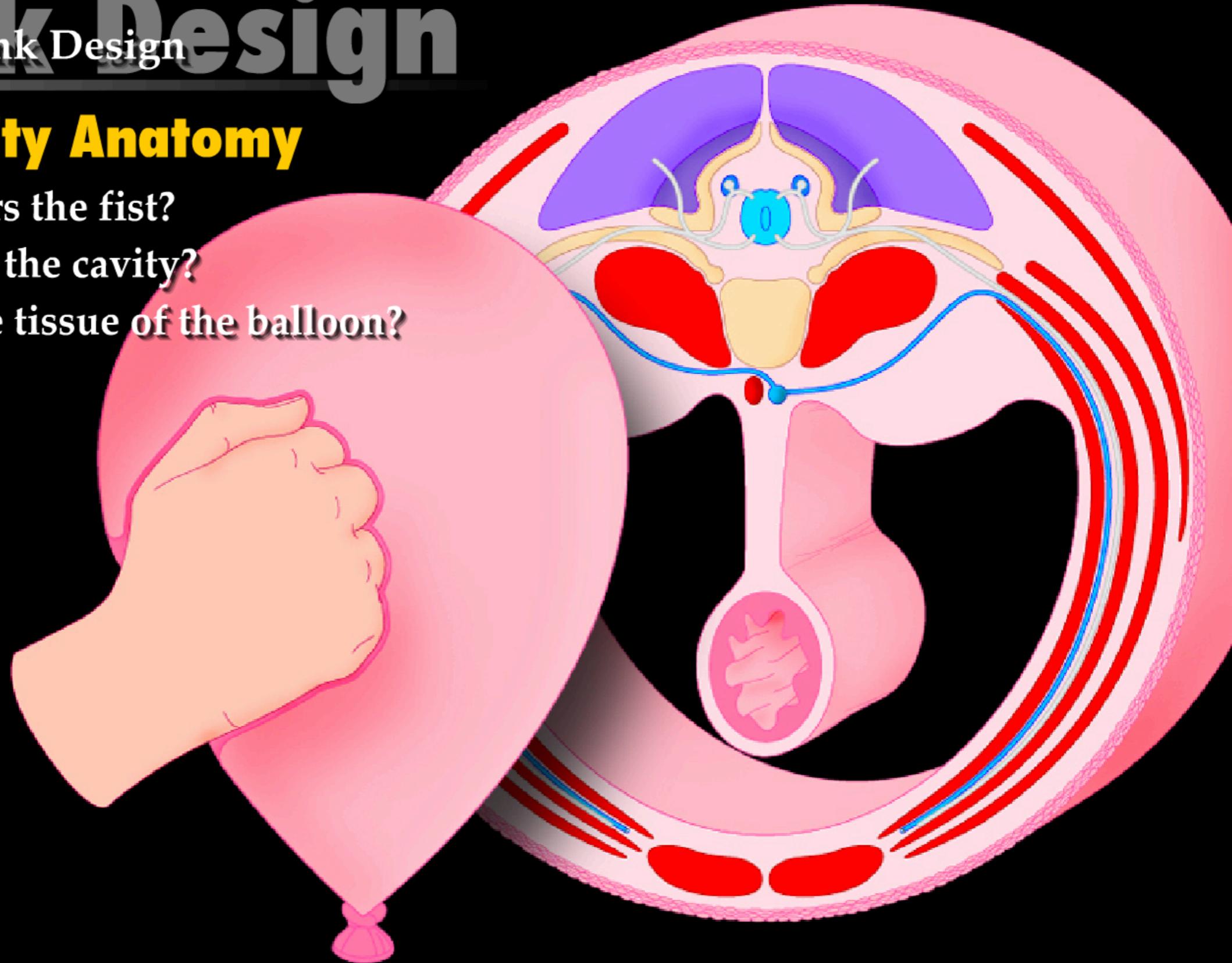
Embryonic Trunk Design

Body Cavity Anatomy

What covers the fist?

What lines the cavity?

What is the tissue of the balloon?



Trunk Design

Embryonic Trunk Design

Resulting Coelomic Structure

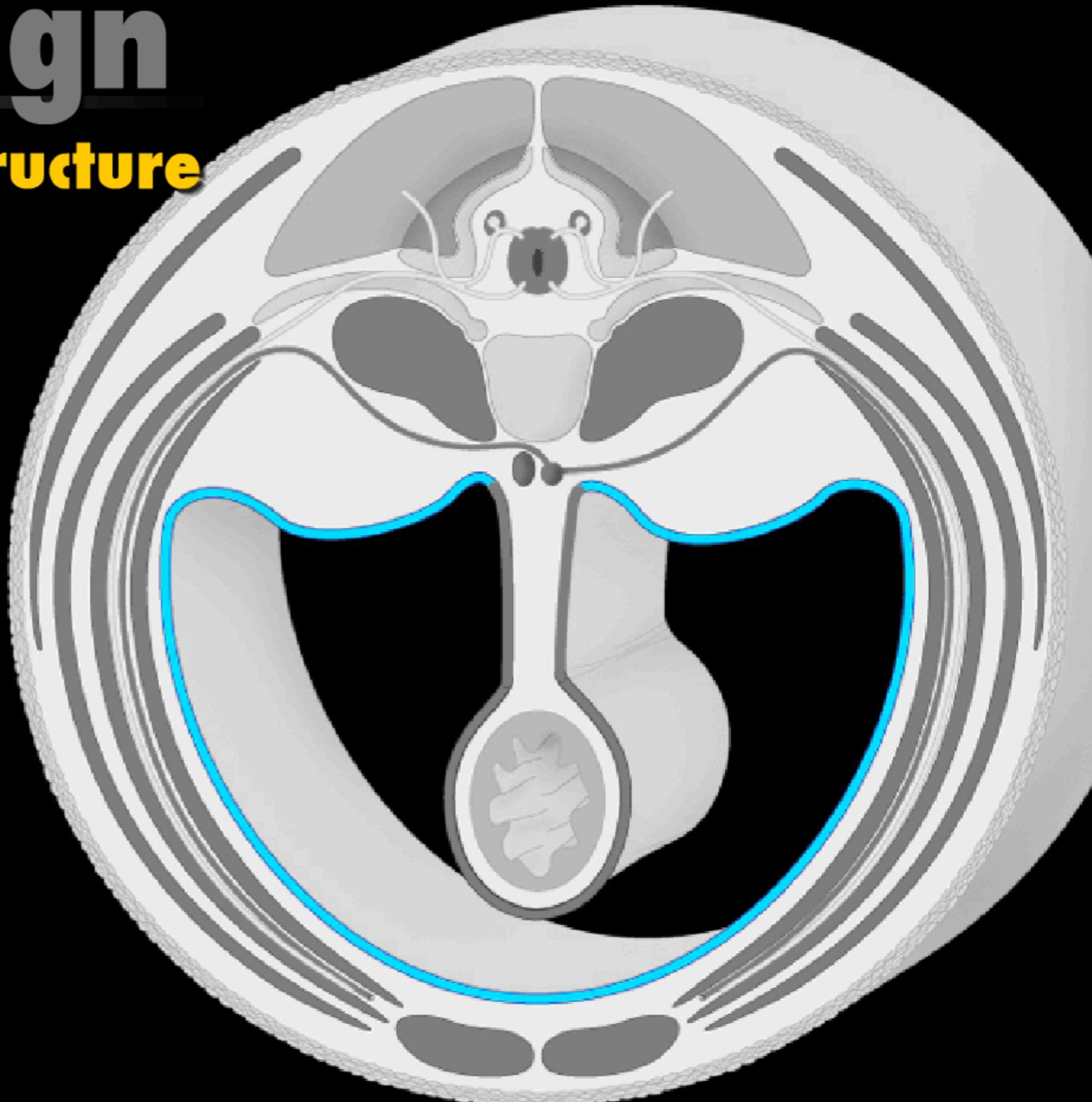


Trunk Design

Embryonic Trunk Design

Resulting Coelomic Structure

Parietal membrane

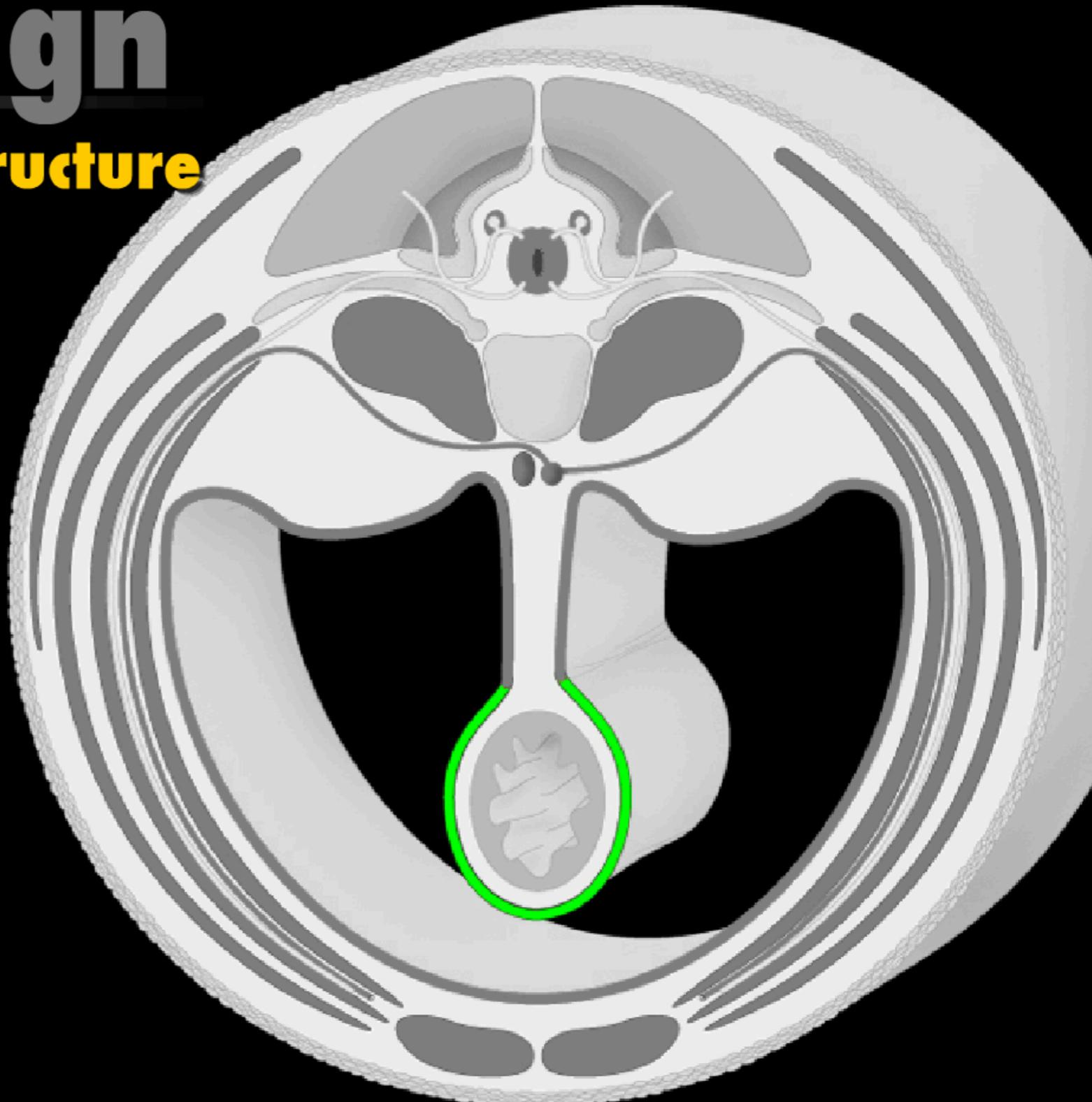


Trunk Design

Embryonic Trunk Design

Resulting Coelomic Structure

Visceral membrane

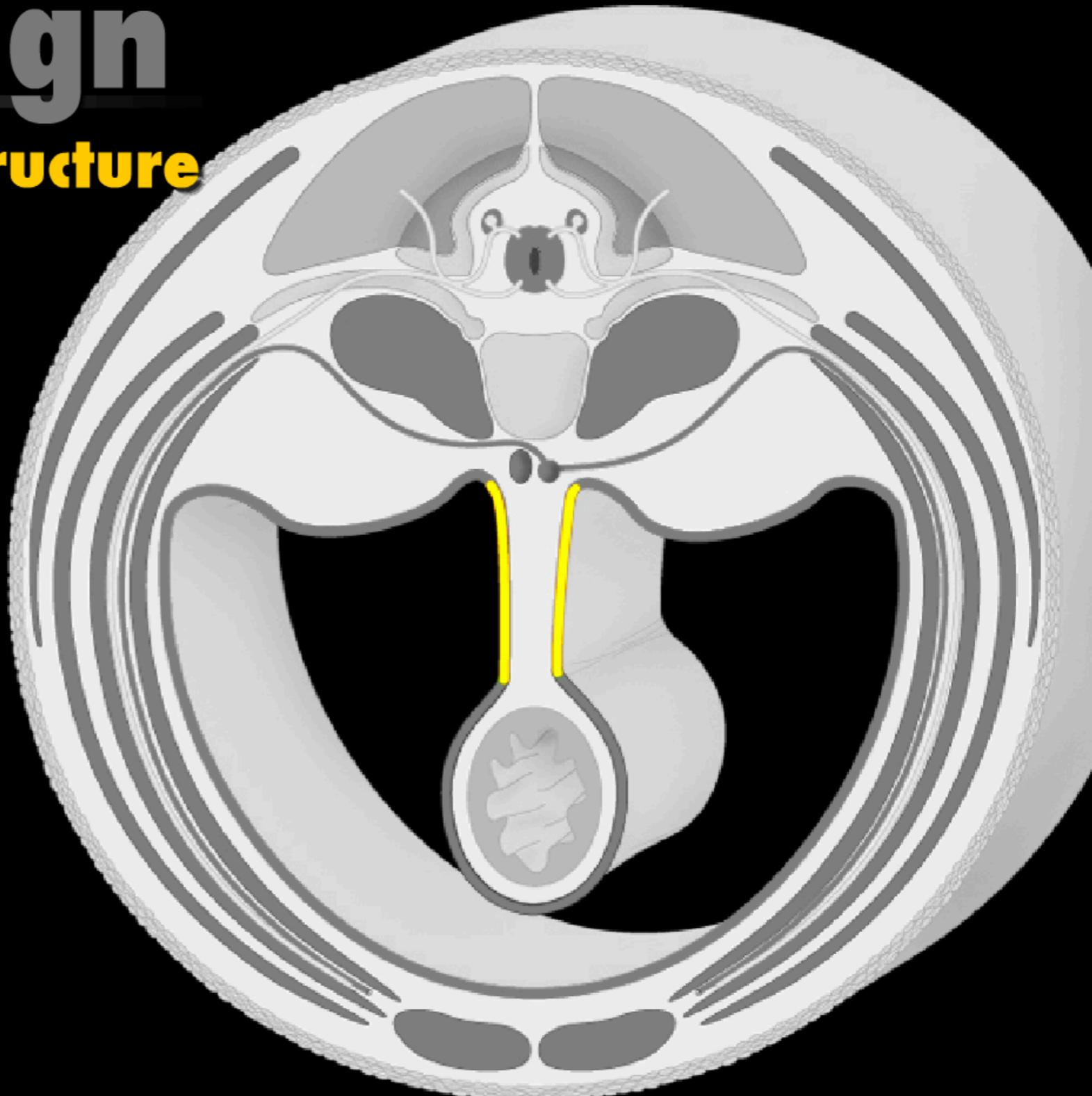


Trunk Design

Embryonic Trunk Design

Resulting Coelomic Structure

Mesentery



Trunk Design

Embryonic Trunk Design

Resulting Coelomic Structure

Coelomic cavity

What is in the coelomic cavity?

