

# THE BRIDGE

CLINIC FOR FUNCTIONAL ANATOMY AND  
DIAGNOSTIC APPLICATION FOR REHAB SCIENCE  
STUDENTS & NEW PRACTITIONERS

## Details / Outline

- Day 1

## DAY 1

Laying down the groundwork for this course and we will take a journey from the physiological level through to functional performance. But, in order for you to *really* understand what and why you are doing something - we NEED to understand these components as OTPs.

## Skeletal System

The axial skeleton

The appendicular skeleton

Planes of Movement and Axes

- Frontal Plane
- Sagittal Plane
- Horizontal/Transverse plane

## Connective Tissue

Properties

- Stretch
- Plasticity
- Thixotropy
- Colloidal
- Elasticity
- Creep
- Tensile Strength
- Piezoelectric Effect

Types (structural)

- Liquid
- Loose
- Dense
- Cartilaginous
- Osseous

#### Types (functional)

- Cartilage
- Bone
- Tension Tissues →
  - Sheets (Proper Fascia)
    - **Fascia Profunda “Deep Fascia”**
    - **Aponeurosis**
    - Retinaculum
    - **Septum**
    - **Muscle Envelope**
    - **Joint Capsule**
  - Cables
    - Tendon
    - Ligament
  - Soft and other
    - Superficial Fascia
    - Periosteum

## Joints

### Functional Elements

- Synovial [structural class]
- Diarthrosis [functional class]

### Bony Landmarks

- Divided into 2 main categories
  - Depressions/openings
  - Projections

### Joint Positions

- A. Closed Packed Position
- B. Open Pack Position

### Kinematic Chain vs Kinetic Chain

- A. Kinetic Chain “Kinetic Link Theory”

- a. Open Chain
- b. Closed Chain
- B. Kinematics

## Muscles

### Labeling the muscles for treatments

- Agonist
- Neutralizer
- Antagonist
- Stabilizers
- Synergist

### Properties of Muscle Tissue

- Length-Tension Relationship
- Fibers

### How do [Skeletal] muscles work?

- Motor Units
- How much and how fast
  - Recruitment
  - Wave Summation
  - Sequencing and Timing // Speed and Precision
  - Refractory period
- Muscle Fibers
  - Slow fibers (Type 1)
  - Fast fibers (Type 2a)
  - Fast Fibers (Type 2b)
- Muscle Contractions
  - Isometric
  - Isotonic
    - Concentric Contractions
    - Eccentric Contractions

## IMBALANCES between Muscle and Fascia

- Tight Muscles
- Short Muscles
- Long Muscles
- Myofascial Adhesions (trigger points)
- Referred Pain

## Principles of Range of motion

- Types
  - AROM
  - AAROM
  - PROM
  - Resistive ROM
- End-Feels
  - Normal
    - Soft
    - Firm
    - Hard
  - Abnormal
    - Soft
    - Firm
    - Hard
    - Empty

## References

[1-13]The Bridge Day 1

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