

# Rotator Cuff & Intermuscular Spaces

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## Rotator Cuff (SITS Muscles)

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### Components

- Supraspinatus
- Infraspinatus
- Teres minor
- Subscapularis

### Attachments

- Surround head of humerus and blend with shoulder joint capsule.

### Functions

- Stabilize humeral head in glenoid cavity.
- Provide dynamic support during movements.
- Individual actions:
  - Supraspinatus ? initiates abduction (0–15°).
  - Infraspinatus + Teres minor ? lateral rotation.
  - Subscapularis ? medial rotation, adduction.

## Clinical Anatomy

- **Rotator cuff tear** (most commonly supraspinatus tendon) ? painful abduction.
- **Painful arc syndrome** ? pain in 60–120° abduction.
- Weakness of rotation depending on tendon involved.
- Clinical tests:
  - Empty can test (supraspinatus).
  - External rotation test (infraspinatus/teres minor).
  - Lift-off test (subscapularis).

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## Intermuscular Spaces of the Scapular Region

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### 1. Quadrangular Space

- **Boundaries:**
  - Above ? teres minor.
  - Below ? teres major.
  - Medial ? long head of triceps.
  - Lateral ? surgical neck of humerus.
- **Contents:**

- Axillary nerve.
- Posterior circumflex humeral artery & vein.

- **Clinical:**

- Axillary nerve injury here ? deltoid paralysis, regimental badge anesthesia.

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## 2. Upper Triangular Space

- **Boundaries:**

- Above ? teres minor.
- Below ? teres major.
- Lateral ? long head of triceps.

- **Contents:**

- Circumflex scapular artery.

- **Clinical:**

- Important part of scapular anastomosis.

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## 3. Lower Triangular Space (Triangular Interval)

- **Boundaries:**

- Above ? teres major.
- Medial ? long head of triceps.
- Lateral ? lateral head of triceps/humerus.

- **Contents:**

- Radial nerve.
- Profunda brachii artery.

- **Clinical:**

- Radial nerve vulnerable here ? wrist drop if injured.

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## Dissection of Scapular Region (Rotator Cuff + Spaces)

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### Step 1: Exposure

- Incise skin over scapula and shoulder.
- Reflect skin and superficial fascia to expose deltoid.

### Step 2: Reflect Deltoid

- Cut deltoid near its origin and reflect laterally.
- This exposes underlying **rotator cuff muscles** (supraspinatus, infraspinatus, teres minor, subscapularis).

### Step 3: Identification of Muscles

- Above spine ? supraspinatus.
- Below spine ? infraspinatus.
- Lateral border ? teres minor (superior), teres major (inferior).
- Anterior scapula ? subscapularis.

#### **Step 4: Expose Intermuscular Spaces**

- Trace long head of triceps between teres minor and teres major ? forms medial boundary of quadrangular and triangular spaces.
- Identify contents:
  - Axillary nerve and posterior circumflex humeral vessels in quadrangular space.
  - Circumflex scapular artery in upper triangular space.
  - Radial nerve and profunda brachii artery in lower triangular space.

#### **Step 5: Clinical Demonstration**

- Palpate for posterior shoulder injuries involving axillary nerve.
- Demonstrate overhead abduction ? showing rotator cuff stabilization.