RUHANI COLLEGE

Registered Massage Therapy (RMT) Diploma Program

RU RMT 19 — Remedial Exercise & Kinesiology

Lecture 7 of the Remedial Exercise Series

Range of Motion as Remedial Exercise

From clinical technique to prescribed homecare — passive, active, and self-assisted range of motion, dosage principles, and joint-by-joint application. Reference: Kisner & Colby, Therapeutic Exercise (cited as K&C).

Learning Objectives

By the end of this lecture, the student will be able to:

- Explain the transition from in-clinic technique to client-performed remedial exercise and homecare.
- Define range of motion (ROM) and differentiate passive (PROM), active (AROM), and active-assisted / self-assisted (AAROM) ROM.
- State the indications, therapeutic uses, limitations, precautions, and contraindications for PROM and AROM.
- Identify the cardinal signs of inflammation and apply the pain-free motion principle.
- Prescribe appropriate ROM dosage — repetitions, sets, frequency, and speed — for homecare.
- Demonstrate and instruct joint-specific ROM for the cervical spine, shoulder, elbow, wrist, hip, knee, and ankle.
- Document ROM prescription and recognize scope-of-practice and safety considerations consistent with CMTO Standards of Practice and CMTCA competencies.

From Technique to Exercise

The transition from theory to real-life application is always a tricky one. Expecting our clients to perform the exercises we outline for them is no different.

Why the gap matters

In the treatment room the therapist controls the movement, the environment, and the dosage. At home the client must reproduce that work independently, with competing demands on their time, attention, and motivation.

The therapist's role

Remedial exercise is the bridge. Our job is to translate manual technique into simple, safe, repeatable movement the client can own between visits — and to coach the behavioural change that adherence requires.

Supporting Client Adherence (1 of 2)

A few ways to make the transition from technique to exercise easier:

Make it enjoyable and provide variety

Fun, varied programming reduces boredom and drop-out. Rotate exercises and offer options so the routine never feels like a chore.

Educate to shift perspective

Through education, help change the client's self-image from a 'couch-potato' mentality toward that of a more active, healthier individual. Understanding the 'why' drives buy-in.

Set a goal and use it as motivation

A meaningful, client-centred goal — returning to a sport, lifting a grandchild, sleeping pain-free — anchors effort and provides a reason to continue.

Supporting Client Adherence (2 of 2)

Keep reasonable expectations

Set realistic expectations for both the client and yourself. Progress is rarely linear; small, sustainable gains outlast heroic but short-lived effort.

Make time and build a schedule

Teach the importance of scheduling homecare into the daily routine. Habit-stacking onto existing anchors — morning coffee, before bed — improves consistency.

Reach out to others for support

Encourage the client to recruit family, friends, or training partners for accountability and encouragement.

Track and celebrate the success

Recording reps, ranges, or symptom change makes progress visible. Celebrate milestones to reinforce the new behaviour.

Clinical Considerations When Prescribing

When describing and instructing ROM, stretching, and strengthening exercises, we must always consider how the client can perform these activities themselves.

Factors to weigh for every prescription

- Time management — can the routine realistically fit the client's day?
- Ease of exercise — is the movement simple enough to perform correctly without supervision?
- Function — does it target the activities and roles the client needs to resume?
- Equipment and environment — what does the client have at home (wall, chair, towel, doorway)?
- Safety and stage of healing — is the tissue ready for this demand?

The purpose of homecare

Homecare is our opportunity to take what we learn in school and through life experience and help the client integrate it into daily life — extending the benefit of treatment beyond the table.

What Is Range of Motion?

Definition

Range of motion (ROM) is the amount of movement available at a joint as the bones move through their normal excursion. Full ROM depends on healthy joint surfaces, capsule and ligaments, and the length and control of the surrounding soft tissue.

Why prescribe ROM?

- Maintain mobility of joints and soft tissue.
- Preserve tissue extensibility.
- Reduce the effects of immobilization.
- Prepare tissue for progressive activity.

Three categories of ROM

- Passive ROM (PROM) — movement produced entirely by an external force; the client's muscles do not contract.
- Active ROM (AROM) — movement produced by the client's own voluntary muscle contraction.
- Active-Assisted ROM (AAROM) — active movement supplemented by an outside force (hand, equipment, or the client's opposite limb).

This lecture follows Kisner & Colby (K&C); page references cite the joint homecare chapters.

When to Prescribe ROM as Homecare

Prescribe ROM to:

- MAINTAIN joint and soft-tissue mobility.
- MINIMIZE loss of tissue flexibility and contracture formation.
- Reduce the effects of immobilization on a segment.
- Maintain movement in the regions above and below an injury.

Do NOT prescribe ROM when:

- Motion is disruptive to the healing process.
- Movement would increase pain or inflammation.

Clinical judgment

The decision always weighs the stage of healing against the goal. When in doubt, stay within pain-free range and re-assess.

Passive ROM (PROM)

Definition

Passive ROM is movement of a segment, within the unrestricted range, that is produced entirely by an external force. There is little to no voluntary muscle contraction by the client.

Sources of the external force

- The therapist's hands.
- A machine or device.
- Gravity.
- The client's own opposite (unaffected) limb.

Where it fits in healing

PROM is most useful early, when active contraction is unwanted or impossible, and whenever the goal is to move a joint without loading the healing tissue.

PROM: Indications

Indications for PROM

- During the ACUTE stage of healing, especially when AROM and AAROM are contraindicated.
- When the client is not able to — or is not supposed to — actively move a segment of the body.

Typical scenarios

- Post-surgical or acute injury, where contraction would stress the repairing tissue.
- Paralysis, severe weakness, or an unconscious client.
- When the clinician needs to assess passive (inert) structures — covered on a later slide.

PROM: Therapeutic Uses

Maintenance & circulation

- Maintain joint and connective-tissue mobility.
- Minimize contracture formation.
- Assist circulation and vascular dynamics.
- Enhance synovial movement in the joint spaces for cartilage nutrition.

Comfort & motor learning

- Decrease or inhibit pain.
- Assist with the healing process.
- Increase the client's awareness of movement.
- Help preserve the client's kinaesthetic sense of the segment.

PROM as an Assessment Tool

Beyond treatment, passive movement lets the clinician evaluate the non-contractile (inert) structures. PROM is used to:

- Assess soft-tissue structures.
- Determine limitations of motion — and the end-feel of the joint.
- Determine joint stability.
- Determine soft-tissue elasticity.

Because the muscles are relaxed, PROM isolates the joint, capsule, and ligaments from the contractile tissue that AROM and resisted testing evaluate.

What PROM Will NOT Do

PROM has clear boundaries. On its own it will NOT:

- Prevent muscle atrophy.
- Increase strength or endurance.
- Assist circulation to the same extent that active, voluntary muscle contraction does.

These limits are exactly why PROM is a starting point, not an end point — the program must progress to active work as healing allows.

PROM: Precautions

- Apply PROM only within the limits of PAIN-FREE motion.
- PROM should NOT increase pain or provoke the cardinal signs of inflammation.
- Move slowly and with control; never force through a restriction.
- Respect the stage of healing and any surgical or medical precautions.

If motion reproduces sharp pain or aggravates inflammation, stop and re-assess the appropriateness of the exercise and its dosage.

The Cardinal Signs of Inflammation

PROM — and all remedial exercise — must not increase the cardinal signs of inflammation. The classic Latin terms and their meanings:

- Dolor — pain.
- Calor — heat.
- Rubor — redness.
- Tumor — swelling.
- Functio laesa — loss of function.

Why it matters

An increase in any of these after exercise signals that the dosage or stage was inappropriate. Reduce the load, shorten the range, or defer the exercise until the tissue settles.

When Would We Prescribe PROM?

Some real-world examples of when passive ROM is the right choice:

- A long-term or permanent change to the body — for example, a client who uses a wheelchair and cannot actively move a segment.
- When a person is physically unable to move their own joints, and having someone else do it can reduce pain or dysfunction.
- Frequently during the initial phases of physical therapy or rehabilitation for an injury, before active movement is safe.

In each case the shared theme is the same: the tissue, or the person, cannot yet safely generate the movement actively.

Active ROM (AROM)

Definition

Active ROM is movement of a segment, within the unrestricted range, produced by the client's own voluntary muscle contraction, without external assistance.

What it demands

AROM requires adequate strength, motor control, and tissue tolerance to move the segment through the range independently.

Where it fits in healing

AROM generally follows PROM and AAROM as healing advances and the tissue can tolerate active loading. It is the foundation for restoring functional movement and for progressing to strengthening.

AROM: Indications

- As part of an AEROBIC conditioning program.
- When a segment of the body has been immobilized for a period of time and needs to be re-mobilized.
- On regions ABOVE and BELOW an injury site — to keep those areas 'normal' and to prepare for new activities (for example, learning to walk with crutches).

In short, AROM is indicated whenever the client can safely and correctly contract the muscles that produce the movement.

AROM: Goals

Goals of active range of motion

- Maintain the physiologic elasticity and contractility of the participating muscles.
- Provide sensory feedback from the contracting muscles.
- Provide a stimulus for bone and joint integrity.
- Increase circulation and help prevent thrombus (blood-clot) formation.
- Develop coordination and motor skills for functional activities.

What AROM Will NOT Do

Like PROM, AROM has limits. On its own it will NOT:

- Maintain or increase strength in muscles that are already strong — movement without sufficient resistance is not an overload.
- Develop skill or coordination except in the specific movement patterns actually used.

To build strength beyond the demands of the movement itself, the program must progress to resisted / strengthening exercise (a later lecture).

AROM: Precautions & Contraindications (1 of 2)

Withhold or modify AROM when:

- The client's response or condition is life-threatening.
- Motion would be disruptive to the healing process.
- Immediately after an acute muscle tear, fracture, or surgery.
- When ROM increases the inflammatory response or increases pain.

AROM: Precautions & Contraindications (2 of 2)

- Following a myocardial infarction (MI), bypass surgery, or angioplasty — until medically cleared.
- Severely elevated blood pressure.
- Paralysis or total sensory loss — the client cannot monitor or control the movement.
- Overstretching — stretching beyond normal ROM, resulting in hypermobility.

Several of these are medical red flags. When present, coordinate with the client's physician and stay within any prescribed limits.

When Would We Prescribe AROM?

Examples of situations that call for active ROM:

- Whenever you are trying to rebuild muscle and joint strength toward the pre-injury state.
- When a person has weak musculature and is unable to move a joint through the full desired range — active work (often assisted at first) rebuilds that capacity.
- When you are trying to mimic functional motions and movement patterns relevant to the person's needs.

Self-Assisted & Active-Assisted ROM (AAROM)

Pg. 56–60, K&C

Definition

Active-assisted ROM is active movement helped by an external force, used when the muscles need help to complete the range. It is often used to meet the goals of both PROM and AROM at the same time.

Self-assisted method

The client uses their other (unaffected) hand or limb to guide the segment through the range.

Equipment-assisted methods

- A wand or broomstick.
- A finger ladder / wall climbing.
- Ball rolling.
- Pulleys.

Why use it

AAROM protects healing tissue when more intensive muscle contraction is contraindicated, while still encouraging active participation and motor re-learning.

Prescribing ROM Exercises: Dosage

For the ROM exercises that follow, keep these principles in mind:

Quality of movement

- Ensure the exercises are PAIN-FREE.
- Movement should always be controlled.
- Speed of movement should be slower than normal speed.

Volume & frequency

- 7–10 repetitions.
- 3 sets.
- Performed daily.

Progression

Advance range, repetitions, or from assisted toward active only as symptoms and stage of healing allow.

Applying ROM Joint by Joint

The following slides outline homecare ROM for the major joints. For each region, movements can be performed as AROM, PROM, or self-assisted, depending on the client's stage and ability.

General instructions to give every client

- Work within pain-free range; move slowly and with control.
- Use the unaffected limb or simple equipment (wand, towel, pulley) to assist when needed.
- Follow the standard dosage: about 7–10 reps, 3 sets, daily.
- Stop and report any sharp pain, or any increase in swelling, heat, or redness.

Page ranges cite Kisner & Colby (K&C) for each joint.

Cervical ROM

Type: AROM

Example exercises

- Chin tucks (seated or supine).
- Neck flexion, side-bending, and rotation.
- Isometric flexion, extension, side-bending, and rotation.

Basic neck movement series

- Look up / look down.
- Turn left / turn right.
- Tilt right / tilt left.

Progressions

- Chin-tuck correction of forward-head posture.
- Isometric holds — push the head gently into the hand in each direction.
- Add trapezius and scalene stretches as tolerated.

Glenohumeral (GH) Joint ROM

Pg. 59–60, K&C

Type: AROM / PROM / Self-assisted

Methods

- Manual — use the unaffected arm to guide the affected arm.
- Broomstick or wand, and towels.
- Pendulum (Codman's) swings.
- Pulleys.

Movements to cover

- Flexion and extension.
- Abduction and adduction.
- Medial (internal) and lateral (external) rotation.
- Circumduction.

Coaching cue

Keep movements slow and pain-free. Pendulum exercises use gravity and a relaxed, hanging arm to open the joint gently.

Elbow Joint ROM

Pg. 49–50, K&C

Type: AROM / PROM / Self-assisted

Method

- Manual — use the unaffected arm to move the affected forearm.

Movements

- Elbow flexion and extension.
- Forearm pronation and supination.

Cue

Support the wrist, keep the shoulder still, and move only through the pain-free elbow range.

Wrist Joint ROM

Pg. 50–51, K&C

Type: AROM / PROM / Self-assisted

Method

- Manual — the unaffected hand grasps and guides the affected hand.

Movements

- Wrist flexion and extension.
- Radial and ulnar deviation.
- Keep the elbow bent or straight to bias the stretch.

Sample dosage (from source card)

- About 10 repetitions of each.
- 3 times per day.
- Hold end-range about 5 seconds, then relax.

Hip Joint ROM

Pg. 52–53, K&C

Type: AROM / PROM / Self-assisted

Methods

- Manual — assist with the hands / opposite limb.
- Equipment such as a towel or strap.

Movements

- Flexion with the knee bent, and with the knee extended.
- Hyperextension.
- Adduction and abduction.
- External and internal rotation.
- Rotation in flexion.

Watch for

Permanent flexion (a flexor contracture) limits extension — note it and work within the available range.

Knee Joint ROM

Pg. 53–54, K&C

Type: AROM / PROM / Self-assisted

Methods

- Manual assistance.
- Equipment such as a towel or strap.

Range to restore

- Full knee extension at 0°.
- Flexion through roughly 45°, 90°, and up to about 155°.

Cue

Use a towel heel-slide to assist flexion, and support the leg to relax into extension.

Ankle Joint ROM

Pg. 54, K&C

Type: AROM / PROM / Self-assisted

Methods

- Manual — using the unaffected hand.
- Equipment such as a towel or strap.
- The 'Alphabet' — trace the letters of the alphabet with the foot.

Movements

- Dorsiflexion and plantarflexion.
- Inversion and eversion.
- Circumduction.

Why the alphabet works

Writing the alphabet moves the ankle through every direction in a varied, engaging way — great for adherence.

Precautions & Contraindications: Summary

Never move into pain

- Keep all ROM within pain-free range.
- Stop if motion is sharp or provokes the cardinal signs (dolor, calor, rubor, tumor, functio laesa).

Respect the stage of healing

- Avoid ROM that disrupts healing tissue.
- Immediately after acute tear, fracture, or surgery, favour PROM within limits.

Medical red flags — withhold / refer

- Life-threatening or unstable condition.
- Post-MI, bypass, or angioplasty until cleared.
- Severely elevated blood pressure.
- Paralysis or total sensory loss.

Do not overdo it

- Do not overstretch into hypermobility.
- Do not stress tissues whose shortness is providing needed joint stability.

Documentation & CMTCA Practice Standards

Record the prescription

- Region and specific movements prescribed.
- Type — PROM / AAROM / AROM.
- Dosage — reps, sets, frequency, speed.
- Any assistive equipment.
- Precautions and stop signals given.

Track outcomes

- Baseline and follow-up ROM.
- Client-reported pain and function.
- Adherence and any adverse response.

Consent & communication

- Obtain informed consent for exercise instruction.
- Explain purpose, benefits, and risks in plain language.
- Confirm the client can perform the exercise safely and correctly.

Scope & competency

Remedial exercise prescription must remain within the RMT scope of practice and align with CMTO Standards of Practice and CMTCA entry-to-practice competencies. Refer when findings exceed scope.

Safety, Scope & Clinical Reasoning

Sound clinical reasoning ties every ROM decision to the individual in front of you:

- Match the type of ROM to the stage of healing — acute → PROM; sub-acute → AAROM/AROM; remodeling → AROM toward strengthening.
- Reassess frequently — progress or regress the program based on the tissue's response, not a fixed calendar.
- Prioritize function — choose movements that restore the roles and activities the client values.
- Educate the client to self-monitor pain and inflammation, and to stop when in doubt.
- Know your limits — refer to the appropriate health professional when findings fall outside RMT scope.

ROM in the Continuum of Care

Remedial exercise is a progression, not a single tool. A typical path:

- PROM — move the joint without loading healing tissue; maintain mobility, reduce pain, nourish the joint.
- AAROM (self-assisted) — begin active participation with help from the opposite limb or equipment.
- AROM — the client moves independently, restoring control, feedback, and functional patterns.
- Stretching and strengthening — added as tissue tolerates, to restore extensibility, strength, and endurance (Lecture 8 and beyond).

The therapist advances the client along this continuum only as symptoms and the stage of healing allow.

Key Takeaways

- Homecare turns clinical technique into client-owned exercise; adherence is coached, not assumed.
- PROM, AROM, and AAROM differ by who produces the movement and how much the tissue is loaded.
- Every prescription stays pain-free, controlled, and matched to the stage of healing.
- The cardinal signs of inflammation are the universal 'stop' signal.
- Standard ROM dosage: 7–10 reps, 3 sets, daily, slower than normal speed.
- Joint-specific ROM (cervical → ankle) uses manual, self-assisted, and equipment methods within pain-free range.

Review Questions

- Differentiate PROM, AROM, and AAROM, and give one clinical indication for each.
- List four therapeutic uses of PROM and three things PROM will NOT do.
- Name the five cardinal signs of inflammation in Latin and English.
- State the standard homecare ROM dosage and three quality-of-movement rules.
- Identify three medical red flags that would cause you to withhold AROM.
- For the shoulder and the ankle, describe two self-assisted or equipment-based ROM methods.

References & Further Reading

- Kisner, C., & Colby, L. A. Therapeutic Exercise: Foundations and Techniques (cited throughout as 'K&C'; see pp. 49–60 for joint ROM).
- College of Massage Therapists of Ontario (CMTO). Standards of Practice.
- Canadian Massage Therapy Council for Accreditation (CMTCA). Accreditation standards and entry-to-practice competencies.

Note: page numbers and specific figures follow the source lecture and should be verified against the current edition of Kisner & Colby and the current CMTO / CMTCA documents before distribution.