



Unit 5: Conditioning and Long-Term Prevention Strategies

PAPER 8 — Injury Prevention

Unit 5: Conditioning and Long-Term Prevention Strategies

(Strength & flexibility for therapists • Lifestyle & recovery • Diet & hydration • Yoga/martial integration • Safety culture)

Strengthening and flexibility routines for therapists

Therapists and instructors are “industrial athletes”: you repeat partial squats, hip hinges, forearm loading, and long periods of standing. Conditioning must therefore prioritize (1) **posture endurance** for spine and scapulae, (2) **grip without wrist strain**, (3) **hip/ankle mobility** to spare knees and low back, and (4) **cardiovascular base** that makes long days feel easy.

A practical approach is a **12-15 minute daily prehab circuit** plus **2-3 short strength sessions per week**. The daily circuit keeps tissues elastic and the nervous system calm; strength sessions raise capacity so routine work sits further below your limits. Emphasize **hip-dominant strength** (hinge, glute bridge/hip thrust), **mid-back control** (serratus and lower trapezius), and **forearm endurance** (extensors more than flexors). Flexibility should target **ankle dorsiflexion**, **hip flexors**, **thoracic extension/rotation**, and **pectoral opening**—ranges that influence every stance and stroke. Favor **active mobility** (controlled, breath-paced) over long passive holds, except as a cool-down.

Balanced lifestyle and recovery practices

Capacity is not built by training alone; it is built by **training plus recovery**. Recovery stacks are simple: **sleep, breath, heat/cold exposure only when appropriate**, and **unloaded movement**. Quality sleep (consistent schedule, dark room, screens down early) drives collagen turnover and motor learning. Between clients, take **micro-breaks** (60-90 seconds) to shake out hands, reset posture, and perform a nasal **4-in/6-out** breathing set; this reduces autonomic load and restores fine motor control. Schedule work to avoid long runs of heavy sessions; use **deload weeks** (reduce volume 30-40% every 4th week) to let connective tissue catch up. Recovery walks, gentle joint circles, and light mobility in the evening keep fascia hydrated without fatigue.

Role of diet and hydration in tissue resilience

Tendons and ligaments adapt slowly and need raw materials. A simple framework: **protein at each meal, vitamin C-rich produce, adequate minerals**, and **steady hydration**. Active adults commonly do well aiming for **roughly 1.4-1.8 g protein/kg/day** spread across meals; include fish, eggs, dairy, legumes, or high-quality plant combinations. Before grip-heavy days, a small **protein + fruit** snack can help maintain energy without heaviness. Hydration is more than water: begin the day with a glass of water, sip regularly, and add a pinch of electrolytes during hot or long shifts. For skin and fascia comfort, avoid working **dehydrated**—you will push harder to achieve the same tissue change and tire faster. Align meal timing so you're never treating or training on an empty tank; aim for **balanced plates** (protein + vegetables + whole-grain or starchy veg + healthy fats).

Integration of yoga or martial practices for injury resistance

Choose complementary practices that **feed your weak links**. **Yoga** can develop breath control, joint positioning, and end-range strength; **martial basics** (including Kalari vadiuvu) train elasticity, footwork, and reactive balance. Prioritize methods that emphasize **alignment and control** over extremes. For therapists, **surya namaskar** variations with attention to hip hinge and scapular setting make a powerful short routine; **Iyengar-style props** can teach safe shoulder mechanics useful for overhead weapon arcs. For Kalari practitioners, brief **stance ladders** (progressively deeper holds with perfect knee tracking) and **eccentric hamstring drills** reduce strain in high kicks. Always conclude with **breath-led down-regulation** to shift from sympathetic arousal (practice) to parasympathetic recovery (life).



Creating a safety culture in professional practice

Injury prevention becomes durable when it is a **system**, not a slogan. Establish **pre-session checklists** (room temperature, floor dry, table height, oils labeled), **stop rules** (pain ≥6/10, dizziness, new numbness), and **incident reporting** that is blame-free and fast. Standardize **table heights** by task (lower for forearm glides, higher for precision), enforce **bolster and towel** protocols, and schedule **peer reviews** where colleagues observe body mechanics for 10 minutes and give one actionable cue. Keep **client consent** and **after-care** sheets consistent. Finally, protect clinician capacity: limit back-to-back heavy sessions, rotate tasks, and make micro-breaks mandatory. Safety culture is simply **predictable good habits**, repeated until they are automatic.

Summary Tables (LMS quick-reference)

A) Daily 12-15 minute prehab circuit (no equipment)

Block	Drill	Dose	Why it helps
Breath & spine	Nasal 4-in/6-out + pelvic tilts	1-2 min	Down-regulate tone; organize ribs-pelvis
Hips (hinge)	Hip hinge to wall + glute bridge	2x10 slow each	Spare lumbar; power from hips
Ankles	Knee-to-wall dorsiflexion	2x10/side	Saves knees; deeper, safer stances
Scapulae	Serratus wall slides + Y-T's	2x8-10 each	Upward rotation; cuff clearance
Wrists/forearms	Wrist extensor eccentrics (fist to open) + prayer stretch	2x12 + 30 s	Protects against thumb/wrist RSI
Thoracic mobility	Open-book rotations	1x8/side	Frees shoulder arcs; reduces neck load

B) Twice-weekly strength template (20-30 minutes)

Pattern	Exercise options	SetsxReps	Notes
Hinge	Hip thrust / Romanian DL / kettlebell deadlift	3x6-8	Slow lowering (3 s)
Squat pattern	Goblet squat to box	3x6-8	Knees track 2nd-3rd toe
Pull	Row (cable/band)	3x8-10	Elbows low, scap set
Push	Incline push-up / landmine press	3x8-10	Rib cage quiet
Anti-rotation	Pallof press / dead bug	2x10	Breathe; don't brace max
Forearm	Wrist extension lifts + rice-bucket open/close	2x12-15	Balance heavy gripping

C) Recovery habit stack

Moment	Action	Duration	Effect
Between clients	4-in/6-out, shake-outs, two hip hinges	60-90 s	Reset tone; spare hands/back
End of shift	10-min easy walk + calf/hip flexor/pec door stretch	10-12 min	Clear metabolites; open posture
Weekly	Deload every 4th week (-30-40% volume)	7 days	Tendon/ligament catch-up
Night routine	Screens down, cool/dark room, consistent bedtime	-	Sleep quality ↑, tissue repair ↑

D) Fueling & fluids cheat-sheet

Item	Practical target	Notes
Protein	~1.4-1.8 g/kg/day, split across meals	Add vitamin-C foods to one meal for collagen support
Produce	5+ servings/day	Color variety supports recovery
Hydration	Start with one glass on waking; sip each hour	Add electrolytes for hot/long shifts
Work snacks	Yogurt/banana; nuts/fruit; milk + dates	Light + steady energy
Don'ts	Skip meals; work dehydrated	Both raise injury risk and fatigue



E) Yoga & martial integration (15-25 minutes)

Need	Sequence	Focus cues
Shoulder health	Cat-cow → thoracic rotations → sphinx → serratus wall slides → easy down-dog	Upward rotation, ribs quiet
Hip/hamstring resilience	Lunge series → half-split eccentrics → bridge march	Pelvis level, slow eccentrics
Stance control	Kalari vadiyu ladder (shallow→moderate holds) + ankle dorsiflexion drills	Knees over toes, breath steady
Down-regulation	5-minute supine 4-in/6-out → brief seated stillness	Longer exhale, soft jaw

F) Safety culture checklist (clinic & dojo)

Area	Must-do habit
Pre-session room	Floor dry, temperature comfortable, clutter cleared
Equipment	Table height by task; bolsters placed; oil bottles labeled & closed
Stop rules	Pain $\geq 6/10$, dizziness, new numbness— stop and modify
Reporting	One-page incident form; debrief within 24 h; action item assigned
Scheduling	Limit heavy back-to-back blocks; plan micro-breaks
Peer review	10-min monthly mechanics check with one clear cue
Education	Annual refreshers on marma safety, heat handling, consent

Key take-aways

1. A small **daily prehab** plus **two short strength sessions** outperforms occasional long workouts.
2. Recovery is a **skill**: sleep, breath, micro-breaks, and deload weeks keep tissues responsive.
3. Food and fluids are **structural inputs**—steady protein, produce, and hydration make tissues tougher and sessions easier.
4. Integrate **yoga or stance work** to improve alignment, eccentrics, and breath control—then close with down-regulation.
5. Make safety a **culture**: checklists, stop rules, peer review, and documentation turn good intentions into durable practice.