DEPARTMENT OF PHYSIOTHERAPY

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PUZZLES QUESTION BANK - Exercise Therapy I

UNIT IV - Postural Control, Stabilization, and Safe Movement Execution

Case 1: Early Post-Op Core Activation You are a physiotherapy intern in an orthopedic ward seeing Ms. Garcia, a 55-year-old woman day 3 after lumbar discectomy. She is cleared for mobilization but shows poor trunk control when rolling and fears bending. Pain is mild (3/10) with movement. Principles emphasize early neutral spine stabilization and safe log-rolling before progressing to sitting. She is anxious about "damaging" the surgical site. You must choose the initial approach to build confidence and core awareness without provoking symptoms.

Options: A. Teach immediate bridging exercises in supine to activate glutes and core. B. Start with segmental breathing and gentle abdominal drawing-in while supine. C. Assist her to sit upright and practice unsupported posture drills. D. Instruct pelvic tilts with maximal range to mobilize the segment.

Structured Reasoning : B. Segmental breathing with gentle drawing-in establishes pain-free neutral spine activation early post-discectomy, building confidence before dynamic tasks. A bridging may compress site; C upright premature; D mobilizes excessively.

Case 2: Elderly Balance Impairment In a community falls clinic, as a junior clinician, you assess Mr. Wong, an 80-year-old with reduced postural sway control after a minor fall. He uses a cane and shows forward stoop with narrow base of support. Stabilization principles prioritize static balance before dynamic tasks. He fatigues quickly and fears falling again.

Options: A. Begin with tandem standing holding parallel bars for 30 seconds. B. Use semi-tandem stance with supervision and verbal cues for weight shift. C. Initiate single-leg stance drills with close guarding. D. Start with seated marching to build lower limb strength first.

Structured Reasoning : B. Semi-tandem stance provides moderate challenge with supervision, safely progressing static balance in high-fall-risk elderly. A tandem too difficult; C single-leg unsafe; D seated avoids standing demands.

Case 3: Office Worker with Rounded Shoulders You are guiding Mr. Khan, a 35-year-old IT professional with chronic rounded shoulders and mild upper back fatigue in a corporate wellness session. Safe movement execution stresses scapular setting and upright alignment during daily tasks. He spends long hours at a poorly set-up desk.

Options: A. Teach scapular retraction exercises with theraband rows from the start. B. Begin with postural awareness cues and gentle chin tucks in sitting. C. Prescribe prone extensions with arm lifts for immediate correction. D. Instruct wall angels with full range against resistance.

Structured Reasoning : B. Postural awareness with chin tucks integrates easily into workstation habits, promoting sustained correction without overload. A resistance secondary; C prone less practical daily; D full range risks strain.

Case 4: Post-Ankle Sprain Proprioception As a student in a sports clinic, you treat Sarah, a 22-year-old netball player 4 weeks post-lateral ankle sprain with lingering instability on uneven surfaces. Swelling is minimal. Stabilization focuses on closed-chain weight shifting and safe return to cutting movements.

Options: A. Initiate single-leg balance on stable floor with eyes closed. B. Start with double-leg weight shifts on foam pad for graded instability. C. Progress to star excursion balance test for dynamic reach. D. Use wobble board rocking aggressively in multiple planes.

Structured Reasoning : B. Double-leg shifts on foam introduce controlled instability post-sprain, enhancing proprioception safely before single-leg. A eyes-closed advanced; C star test dynamic later; D wobble aggressive.

Case 5: Adolescent Idiopathic Scoliosis Postural Training In a pediatric outpatient setting, you see Maya, a 14-year-old girl with mild thoracic scoliosis and asymmetric shoulder height. She is active but slouches during school. Principles emphasize symmetric loading and auto-correction cues for daily posture.

Options: A. Teach side-lying exercises to strengthen convex-side muscles immediately. B. Begin with mirror feedback for active postural correction in standing. C. Prescribe weighted asymmetric backpack carries for counterbalance. D. Initiate full spinal extensions in prone repeatedly.

Structured Reasoning : B. Mirror feedback fosters active self-correction and awareness, essential for adolescent compliance and mild scoliosis management. A asymmetric loading contraindicated; C reinforces poor habits; D extensions non-specific.

Case 6: Chronic Neck Pain with Poor Head Control You are a junior clinician treating Ms. Patel, a 42-year-old teacher with chronic neck pain and forward head posture during prolonged standing. Stabilization targets deep neck flexors and scapular stabilizers for safe head-on-trunk alignment.

Options: A. Start with craniocervical flexion in supine using pressure biofeedback. B. Begin standing head nods against wall with maximal effort. C. Prescribe heavy shoulder shrugs to build trapezius endurance. D. Use dynamic neck circles for multi-plane mobility first.

Structured Reasoning : A. Craniocervical flexion with biofeedback targets deep stabilizers precisely in pain-free position. B standing increases load; C shrugs reinforce upper traps; D circles provoke symptoms.

Case 7: Postpartum Diastasis Recti Stabilization In a women's health clinic, you assess Lisa, a 32-year-old new mother 8 weeks postpartum with mild diastasis recti and weak lower

abdominal control during lifting her baby. Safe execution principles prioritize transversus activation before functional tasks.

Options: A. Teach heel slides with abdominal drawing-in in supine. B. Begin with full planks on knees for core endurance. C. Prescribe oblique crunches to close the gap quickly. D. Instruct immediate baby-carrying drills with belt support.

Structured Reasoning : A. Heel slides with drawing-in activate transversus safely postpartum, respecting diastasis healing. B planks increase pressure; C crunches risk widening gap; D functional too early.

Case 8: Parkinson's Disease Postural Instability As an intern in neurology rehab, you work with Mr. Rossi, a 68-year-old with early Parkinson's showing retropulsion and small steps. Stabilization emphasizes widened base and external cues for safe movement initiation.

Options: A. Practice high-step marching in place with rhythmic counting. B. Begin narrow-base tandem walking with close supervision. C. Use weighted vest for immediate stability enhancement. D. Start with static standing balance on foam eyes open.

Structured Reasoning : A. Rhythmic marching with cues addresses freezing and postural instability effectively in early Parkinson's. B narrow base risky; C weighting unproven early; D static insufficient for gait.

Case 9: Knee Osteoarthritis Functional Stability You guide Mrs. Singh, a 70-year-old with medial knee OA and valgus instability during stair descent in a community program. Principles focus on controlled eccentric loading and alignment cues.

Options: A. Teach mini-squats with emphasis on knee-over-toe tracking. B. Begin step-downs from high box for eccentric control. C. Prescribe straight-leg raises only in supine. D. Use lateral band walks to strengthen abductors aggressively.

Structured Reasoning : A. Mini-squats teach alignment and controlled loading for OA stairs, with functional relevance. B high step-down excessive eccentric; C non-weight-bearing limited; D lateral walks secondary.

Case 10: Vestibular Hypofunction Balance Training In a vestibular rehab setting, you see Mr. Kim, a 50-year-old with unilateral hypofunction reporting dizziness on head turns. Stabilization starts with static gaze fixation before dynamic challenges.

Options: A. Initiate VOR ×1 gazing at target while nodding head. B. Begin walking with horizontal head turns at fast speed. C. Use static balance on narrow base with eyes closed first. D. Prescribe frenkel exercises with rapid limb movements.

Structured Reasoning : A. VOR ×1 gazing initiates adaptation at tolerable threshold for vestibular hypofunction. B fast walking provokes; C eyes-closed non-specific; D frenkel limb-focused later.

Answers for Unit IV

Case 1: B

Case 2: B

Case 3: B

Case 4: B

Case 5: B

Case 6: A

Case 7: A

Case 8: A

Case 9: A

Case 10: A