31. A 55-year-old male with COPD on long-term steroids attends pulmonary rehab. During observation of stair-climb test he demonstrates winged scapula and proximal muscle weakness, complaining of new hip pain. The task: recognise steroid-induced myopathy and steroid-related osteoporosis risk leading to possible insufficiency fractures; decide investigations (DEXA, CK) and modify exercise prescription.

Options:
A. Refer for DEXA scan and discuss steroid review with physician; adapt program to low-impact resistance and fracture precautions.
B. Increase load and frequency of resistance training to rapidly regain muscle mass.
C. Assume pain is due to deconditioning and ignore bone health.
D. Recommend bed rest until steroid course ends.

Structured reasoning:

- Accuracy: A is appropriate—steroid side effects must be assessed; exercise adapted to reduce fracture risk.
- Efficiency & safety: A balances muscle recovery with bone protection; B may risk fractures.
- Resources & ethics: DEXA access and physician coordination needed; ethically protect vulnerable bones.
- Short vs long term: Bone health optimisation reduces long-term fracture risk; adapted rehab restores strength safely.

32. In a surgical outpatient you observe a 68-year-old male with prior abdominal aortic aneurysm (AAA) repair who complains of new lower limb claudication and diminished distal pulses. Gait shows shortened stride and cool, pale feet after walking small distances. The challenge: connect vascular haemodynamics (reduced distal perfusion, possible graft stenosis) with functional impairment and decide urgent vascular imaging (duplex/angiography) and safe physiotherapy approach.

Options:
A. Urgent vascular referral with imaging; prescribe supervised, graded walking to collateralise circulation only after clearance.
B. Start independent unsupervised walking program to build tolerance.
C. Recommend compression stockings and continue current activity.
D. Ignore vascular symptoms and focus on balance training.

Structured reasoning:

- Accuracy: A addresses possible graft complication and balances exercise with vascular safety. B/C/D may delay diagnosis or be ineffective.
- Efficiency & safety: A avoids limb ischemia and allows safe mobilisation planning.

- Resources & ethics: Imaging and vascular team input required; ethically prevent limb loss.
- Short vs long term: Early intervention can restore perfusion and prevent tissue loss; supervised walking improves long-term walking distance.

33. A 2-year-old child with known cerebral palsy presents for routine therapy; you notice recent weight loss, recurrent vomiting, and a new limp on the right side when weight bearing. On observation, hip abduction is limited and there is pain on passive rotation. The challenge: suspect slipped capital femoral epiphysis (SCFE) vs hip dislocation vs infection (septic arthritis) and decide urgent imaging and avoidance of weight bearing.

Options:
A. Urgent orthopaedic referral and hip X-ray; instruct non-weight bearing until evaluation.
B. Continue typical gait training; assume muscle imbalance.
C. Start strengthening hip abductors immediately.
D. Delay imaging and monitor for 2 weeks.

Structured reasoning:

- Accuracy: A is correct—SCFE or septic arthritis are urgent; early imaging prevents avascular necrosis.
- Efficiency & safety: A minimises long-term hip morbidity.
- Resources & ethics: X-ray and orthopaedic input needed urgently; ethically protect child's joint health.
- Short vs long term: Early orthopaedic management prevents permanent deformity and improves mobility.

34. While observing an ICU-stepdown patient who had a right hemispheric stroke 5 days ago, you notice subtle trunk shift to left during sit balance and a new bradycardia (HR 48) on monitor. The patient is diaphoretic and complains of nausea when basic transfers are attempted. The challenge: link autonomic instability possibly from raised intracranial pressure, posterior circulation involvement, or cardio-genic causes and decide immediate evaluation and safe cessation of therapy.

Options:
A. Stop therapy, call medical team for urgent neurological review and neuroimaging if indicated; monitor vitals continuously.
B. Continue with balance training as small deficits must be challenged early.
C. Administer oral fluids quickly to correct bradycardia.
D. Increase transfer speed to 'distract' from symptoms.

Structured reasoning:

- Accuracy: A recognises potential neurologic deterioration; C/D inappropriate. B risky if intracranial process.
- Efficiency & safety: A ensures prompt investigation and patient safety.
- Resources & ethics: Neurology/radiology required; ethically avoid provoking further neurologic injury.
- Short vs long term: Early recognition of complications prevents secondary injury and preserves function.

35. At a community clinic, a 9-year-old with recurrent otitis media demonstrates delayed speech and pronation during single-leg stance testing. Parents report poor school performance. The challenge: suspect hearing impairment contributing to motor and communication delays; link multisystem causes and decide initial screening (audiology referral) and safe therapy adjustments.

Options:
A. Refer for audiology and ENT evaluation; adapt therapy to visual cues and family education pending results.
B. Focus only on motor skills and ignore hearing concerns.
C. Begin intensive speech therapy before hearing assessment.
D. Reassure parents that school performance will improve with time.

Structured reasoning:

- Accuracy: A addresses root cause—hearing deficit affects language and motor learning. B/C/D may delay effective intervention.
- Efficiency & safety: A provides efficient pathway to targeted support.
- Resources & ethics: Audiology services and interdisciplinary work needed; ethically ensure holistic assessment.
- Short vs long term: Early correction of hearing issues improves learning and motor outcomes long term.

36. While supervising a 16-year-old with type 1 diabetes during netball practice, you notice recurrent ankle sprains and delayed wound healing of a small ankle abrasion. He appears fatigued and urinalysis previously showed microalbuminuria. The challenge: connect peripheral neuropathy and microvascular disease to musculoskeletal injury risk and select safe activity modifications and medical referrals (foot care podiatry, nephrology).

Options:
A. Refer for diabetic foot assessment and nephrology review; implement proprioception and ankle stability program with strict monitoring.

B. Continue high-impact sport and monitor wounds weekly.
C. Ignore microalbuminuria as it is unrelated to sport performance.
D. Advise cessation of all sports permanently.

Structured reasoning:

- Accuracy: A addresses systemic diabetes complications affecting tissue healing and neuropathy—appropriate. B/C risky; D unnecessary.
- Efficiency & safety: A prevents recurrent injury and organ progression.
- Resources & ethics: Requires podiatry/nephrology and patient education; ethically protect organ function and athletic goals.
- Short vs long term: Foot care reduces infection risk now; nephrology slows renal progression long term.

37. During a burn clinic follow-up, a 25-year-old male with 3rd-degree forearm burns (healed graft) exhibits limited wrist extension and tight scar at volar aspect. He holds wrist flexed and uses shoulder compensation during overhead tasks. The challenge: assess scar contracture biomechanics and balance early mobilisation vs risk to graft integrity, plan safe initial interventions (splinting, graded stretching) and indicate surgical referral if contracture progresses.

Options:
A. Introduce night splinting in extension, gentle scar massage, and graded ROM while coordinating with burns surgeon.
B. Aggressive stretching and forceful mobilisations to recover range quickly.
C. Avoid any stretching to protect graft and immobilise indefinitely.
D. Recommend immediate revision surgery without trial conservative care.

Structured reasoning:

- Accuracy: A aligns with burn rehab—protect graft while preventing contracture. B risks graft breakdown; C causes permanent contracture; D premature.
- Efficiency & safety: A balances protection and recovery efficiently.
- Resources & ethics: Requires burns team coordination; ethically preserve function and graft integrity.
- Short vs long term: Early conservative measures prevent contracture; surgery reserved if conservative fails.

38. You perform a workplace lifting evaluation for a 46-year-old with known ischemic heart disease and intermittent claudication. He reports chest tightness with climbing ladders and leg cramping during prolonged standing. Observed: restricted step height, forward trunk lean during load carry. The challenge: integrate coronary

haemodynamics and peripheral arterial disease into activity modification and determine safe fitness recommendations and diagnostic referrals.

Options:
A. Recommend cardiology stress testing and vascular assessment before resuming strenuous tasks; propose graduated low-impact conditioning.
B. Advise immediate return to full duties as symptoms are tolerable.
C. Suggest compression stockings will solve claudication.
D. Encourage heavy resistance training to increase tolerance.

Structured reasoning:

- Accuracy: A is comprehensive and safe—stress testing and vascular workup guide safe activity. B/C/D risk cardiac events or limb ischemia.
- Efficiency & safety: A protects patient while enabling rehabilitation planning.
- Resources & ethics: Requires cardiology/vascular access and workplace accommodations; ethically secure safe work conditions.
- Short vs long term: Proper medical workup prevents acute events and enables sustainable work capacity.

39. On a postoperative ward, a 59-year-old female after total thyroidectomy complains of shortness of breath and voice changes. While observing her swallow during a bedside mobility check, you notice hoarseness and a weak cough. The challenge: consider recurrent laryngeal nerve injury vs hypocalcaemia vs airway compromise, and decide immediate steps (monitor airway, check calcium, voice assessment).

Options:
A. Stop mobility, check airway patency, alert surgical team urgently for ENT review and serum calcium measurement.
B. Continue with mobility to prevent deconditioning.
C. Teach deep breathing and forceful coughing to clear secretions.
D. Reassure patient that voice change is normal and proceed.

Structured reasoning:

- Accuracy: A is correct—voice change and weak cough can herald nerve injury or hypocalcaemia leading to laryngospasm; airway priority.
- Efficiency & safety: A prevents airway emergencies.
- Resources & ethics: ENT and labs needed; ethically ensure airway protection.
- Short vs long term: Prompt correction reduces aspiration risk and long-term vocal dysfunction.

40. A 14-year-old adolescent with scoliosis attends a screening; you notice asymmetric shoulder height and a right thoracic prominence during forward bend. She reports occasional chest tightness on exertion. The task: relate spinal deformity to possible restrictive lung pattern and cardiovascular impact in severe curves; decide investigation (radiograph, pulmonary function testing) and initial safe physiotherapy options (postural correction, breathing exercises).

Options:
A. Refer for scoliosis X-ray and baseline spirometry; begin corrective posture and breathing drills in clinic.
B. Recommend no follow-up until adulthood as small curves are benign.
C. Start high-intensity core strengthening without imaging.
D. Immediately plan spinal fusion.

Structured reasoning:

- Accuracy: A is guideline concordant—document curve and pulmonary function; conservative therapy first for mild-moderate curves.
- Efficiency & safety: A detects potential restrictive physiology early and initiates safe rehab.
- Resources & ethics: Radiography and PFTs needed; ethically avoid overtreatment and enable informed decisions.
- Short vs long term: Early monitoring prevents progression and preserves pulmonary function.