

41. A 66-year-old male with newly diagnosed atrial fibrillation presents to cardiac rehab and experiences sudden worsening of breathlessness after minimal exertion. On observation, he is pale, sweaty, with jugular venous distention and basal crackles. Movement: he is unable to perform gentle step-ups without severe dyspnea. The challenge: relate arrhythmia to haemodynamics (loss of atrial kick, decreased cardiac output, pulmonary congestion) and decide urgent management steps.

Options:

- A. Stop exercise and summon cardiology for rate/rhythm control and diuresis; monitor oxygenation and vitals.
- B. Continue low intensity exercises with supervision to build tolerance.
- C. Give oral beta-blocker immediately without medical input.
- D. Encourage fluid loading to improve circulation.

Structured reasoning:

- Accuracy: A aligns with management of acute decompensated heart failure in AF—stabilize and treat rhythm/volume. C/D inappropriate without medical direction.
- Efficiency & safety: A prevents worsening pulmonary oedema; B unsafe.
- Resources & ethics: Requires inpatient cardiology and monitoring; ethically avoid autonomous medication changes.
- Short vs long term: Immediate treatment stabilises hemodynamics and allows safe rehab later.

42. In rural outreach you encounter a 5-year-old with recurrent lower limb fractures and blue sclerae. He walks with genu valgum and uses a stick. The challenge: consider osteogenesis imperfecta vs rickets vs child abuse; plan safe immediate care and investigations (X-ray, genetic workup, bone density) and cautious physiotherapy approach to prevent fractures.

Options:

- A. Arrange urgent paediatric and orthopaedic assessment with imaging and genetic referral; use protective handling and low-impact strength training.
- B. Emphasise high-impact sports to build bone quickly.
- C. Ignore fractures as accidental and proceed with standard therapy.
- D. Recommend family discipline to prevent injury.

Structured reasoning:

- Accuracy: A correctly addresses possible genetic bone fragility and rules out non-accidental injury. B/C/D dangerous/inappropriate.
- Efficiency & safety: A prevents further fractures and secures diagnosis.

- Resources & ethics: Imaging, genetic counseling, and safeguarding processes required; ethically protect child and family.
 - Short vs long term: Diagnosis allows bisphosphonate therapy and protective strategies to reduce fracture risk long term.
43. While assisting in emergency triage, you notice an elderly man with sudden unilateral weakness who is unable to lift his arm but remains alert. You time his symptom onset to be 45 minutes prior. You must integrate stroke time window (thrombolysis golden period), movement deficits (hemiparesis), and haemodynamic stability in deciding immediate actions.

Options:

- A. Activate stroke code—urgent CT head and neurology consult for potential thrombolysis/endovascular therapy.
- B. Wait for lab results and observe neurological status for several hours.
- C. Start physiotherapy assessment and mobilisation immediately.
- D. Give aspirin and discharge.

Structured reasoning:

- Accuracy: A is correct—rapid imaging to determine ischemic vs hemorrhagic stroke within thrombolysis window. B/C/D are hazardous and delay reperfusion.
 - Efficiency & safety: A maximizes chance of salvaging penumbra and functional recovery.
 - Resources & ethics: Requires rapid imaging and stroke team; ethically urgent action to save function.
 - Short vs long term: Timely reperfusion yields major long-term gains in independence.
44. A 33-year-old postpartum woman with severe leg swelling and calf pain presents to physiotherapy clinic. She is 3 weeks after C-section. You observe pitting edema up to mid-thigh and labored breathing when supine. HR 110. The challenge: suspect DVT with possible PE and link to postpartum hypercoagulability; decide immediate investigation and activity restriction.

Options:

- A. Urgent duplex ultrasound and D-dimer, with immediate immobilisation and surgical/medical team notification.
- B. Begin lower-limb strengthening to reduce swelling.
- C. Reassure as postpartum swelling is normal and continue exercises.
- D. Apply hot compression and advise walking.

Structured reasoning:

- Accuracy: A aligns with thromboembolism suspicion in postpartum period; B/C/D inappropriate and potentially harmful.
- Efficiency & safety: A prevents PE and guides anticoagulation.
- Resources & ethics: Vascular imaging and rapid treatment needed; ethically urgent.
- Short vs long term: Immediate management prevents fatal PE; anticoagulation reduces recurrence risk.

45. In a school screening, a 10-year-old displays persistent ankle clonus and upgoing plantar response; he has a scissoring gait and increased tone when observed running. Parents report perinatal hypoxia. The challenge: identify upper motor neuron signs suggesting spastic cerebral palsy vs other progressive conditions and decide safe therapy goals and referrals.

Options:

- A. Refer for neurological review and spasticity management options (botulinum, orthoses) and continue tailored physiotherapy focusing on stretching and functional training.
- B. Push for maximal strength gains with high-resistance training.
- C. Assume transient developmental lag and discharge.
- D. Start systemic steroids.

Structured reasoning:

- Accuracy: A fits likely spastic CP; coordinated management improves function. B may increase spasticity; D inappropriate.
- Efficiency & safety: A provides comprehensive care while controlling tone.
- Resources & ethics: Neurology and rehab services required; ethically provide appropriate interventions.
- Short vs long term: Early spasticity management improves gait and independence long term.

46. A 29-year-old male with suspected community-acquired pneumonia is performing gentle bedside transfers. He suddenly becomes more breathless with pleuritic chest pain on deep inspiration and a new tachycardia. You observe unilateral decreased breath sounds. The challenge: suspect pleural effusion or possible pneumothorax and link to respiratory mechanics and haemodynamics (reduced venous return in tension pneumothorax) to decide immediate imaging and therapy cessation.

Options:

- A. Stop activity, measure vitals and oxygen saturation, call for urgent chest X-ray and medical review.
- B. Encourage deeper breathing and increased activity to clear secretions.

C. Continue therapy as planned but with shorter sessions.

D. Give oral analgesia and resume transfers.

Structured reasoning:

- Accuracy: A prioritises diagnosis of a potentially life-threatening condition; B/C/D could worsen pneumothorax or decompensation.
- Efficiency & safety: A prevents deterioration and is appropriate urgent care.
- Resources & ethics: Requires radiology and physician involvement; ethically ensure patient safety first.
- Short vs long term: Prompt imaging/treatment prevents acute respiratory failure and long-term complications.

47. You evaluate a 52-year-old with chronic liver disease attending outpatient rehab. He reports progressive muscle wasting and easy bruising. Observed balance impairment and bilateral ankle edema. The challenge: connect hypoalbuminemia and coagulopathy to functional decline and fall risk, choose safe exercise prescription and needed medical tests (LFTs, CBC, coagulation profile).

Options:

A. Liaise with hepatology for labs and design tailored low-intensity strengthening and fall-prevention program, monitoring bleeding risk.

B. Begin high-intensity interval training to reverse sarcopenia rapidly.

C. Ignore bruising and continue standard weight training.

D. Recommend bed rest to conserve energy.

Structured reasoning:

- Accuracy: A recognises systemic effects and adjusts exercise safely. B/C may risk bleeding and fatigue; D worsens sarcopenia.
- Efficiency & safety: A balances risk and rehabilitation benefits.
- Resources & ethics: Requires lab monitoring; ethically ensure interventions match physiologic reserves.
- Short vs long term: Careful exercise improves function over time while minimising bleeding risk.

48. A 17-year-old with a history of anorexia nervosa presents for physiotherapy with generalized weakness and syncopal episodes. You observe poor coordination and muscle wasting; BP 90/60. The challenge: identify medical instability (electrolyte abnormalities, arrhythmia risk), decide immediate medical referral, and adapt physiotherapy to refeeding and medical safety constraints.

Options:

- A. Stop exercise and urgently refer for medical stabilization (electrolytes, ECG) and begin very gentle, monitored activity once cleared.
- B. Start vigorous strength training to reverse wasting quickly.
- C. Continue normal sessions but increase caloric intake advice.
- D. Ignore syncopal episodes as they are stress-related.

Structured reasoning:

- Accuracy: A is essential—medical stabilization before active rehab prevents arrhythmia and collapse.
- Efficiency & safety: A ensures safety and multidisciplinary care.
- Resources & ethics: Medical, nutritional, and psychiatric collaboration needed; ethically sensitive care is required.
- Short vs long term: Stabilization enables safe rehabilitation and improves long-term recovery.

49. While assessing a 40-year-old with ulcerative colitis in remission, you note chronic fatigue and reduced exercise tolerance. During sit-to-stand observation you see decreased cadence and compensatory upper-body momentum. Labs show microcytic anemia on prior record. The challenge: link anemia to reduced aerobic capacity and movement compensations, decide initial investigations and safe intensity for conditioning.

Options:

- A. Coordinate with physician for hemoglobin testing and iron studies; commence low-intensity aerobic training progressing as hematologic status improves.
- B. Start high-intensity interval training to overcome fatigue.
- C. Ignore anemia and refer for standard cardiac rehab.
- D. Advise complete rest.

Structured reasoning:

- Accuracy: A treats systemic cause and tailors exercise intensity for safety. B risks decompensation; C/D inappropriate.
- Efficiency & safety: A allows safe improvement in capacity with medical oversight.
- Resources & ethics: Requires labs and physician coordination; ethically avoid overexertion while supporting function.
- Short vs long term: Correcting anemia improves exercise tolerance and participation long term.

50. You observe a 70-year-old man in a falls clinic with orthostatic hypotension symptoms during active stand test: systolic drop 30 mmHg with dizziness. He uses multiple antihypertensives and an SSRI. Gait shows shuffling and short steps. The challenge: identify medication-induced hypotension, autonomic dysfunction, or dehydration as contributors; decide safe interventions and role for physiotherapy.

Options:

- A. Recommend medication review with prescribing physician, advise slow positional changes, compression stockings, and graded tilt-table or assisted standing exercises.
- B. Encourage rapid standing and long walks to recondition orthostatic reflexes.
- C. Stop all medications immediately.
- D. Tell patient to avoid standing altogether.

Structured reasoning:

- Accuracy: A addresses multifactorial causes and applies safe physio strategies. B/C/D risky/overly simplistic.
- Efficiency & safety: A reduces syncope risk and improves orthostatic tolerance gradually.
- Resources & ethics: Involves medical review; ethically avoid unilateral med changes and support autonomy.
- Short vs long term: Medication optimisation reduces immediate risk; graded rehab

restores functional standing capacity long term.