# 60 Puzzle-Style Endocrine Physiology Case Scenarios

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**Case 1: Fatigue After Morning Workout**

1. During a clinical internship, Arun observes a client who trains early morning reporting fatigue and low energy despite eating breakfast.

   **Options:**

1. Suggest checking blood glucose pre- and post-workout.
2. Encourage skipping breakfast to train fasted.
3. Recommend more caffeine before training.

   **Reasoning:**

   Option 1 is physiologically sound — cortisol peaks early morning and may affect glucose handling. Option 2 risks hypoglycemia. Option 3 may mask fatigue without addressing hormonal cause.

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**Case 2: Late-Night Training Sessions**

2. A physiotherapy intern notices several clients prefer training after 10 p.m. but complain of trouble sleeping.

   **Options:**

1. Recommend training earlier to respect melatonin cycles.
2. Suggest bright light exposure post-training.
3. Ignore — exercise timing does not affect sleep.

   **Reasoning:**

   Option 1 supports circadian rhythm and endocrine recovery (growth hormone pulses peak at night). Option 2 delays melatonin release further. Option 3 disregards sleep physiology.

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**Case 3: Excessive Sweating During Rehab**

3. A client sweats profusely during mild activity.

   **Options:**

1. Consider thyroid function screening referral.

2. Increase exercise intensity to build tolerance.
3. Recommend electrolyte supplements only.

**Reasoning:**

Option 1 respects the possibility of hyperthyroidism affecting metabolic rate. Option 2 risks overheating. Option 3 treats symptom, not cause.

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**Case 4: Afternoon Energy Slump**

4. During gait retraining, a patient becomes sluggish around 3 p.m. daily.

**Options:**

1. Educate on cortisol diurnal rhythm.
2. Advise skipping lunch to stay alert.
3. Suggest heavy caffeine use.

**Reasoning:**

Option 1 encourages alignment with natural endocrine rhythm. Option 2 worsens glucose dips. Option 3 disrupts sleep cycle later.

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**Case 5: Delayed Recovery After Strength Training**

5. An athlete's muscle recovery seems slower than peers despite similar workload.

**Options:**

1. Review sleep quality for growth hormone release.
2. Increase training intensity to force adaptation.
3. Add anabolic supplements.

**Reasoning:**

Option 1 addresses hormonal recovery window. Option 2 risks overtraining. Option 3 raises ethical and health concerns.

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**Case 6: Frequent Mood Swings**

6. During balance training, a participant frequently switches between irritability and lethargy.

**Options:**

7. Recommend blood glucose pattern tracking.
8. Increase exercise load to stabilize mood.
9. Ignore and proceed with session.

**Reasoning:**

Option 1 looks for dysregulated insulin/glucose responses. Option 2 may worsen symptoms. Option 3 fails to address physiology.

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**Case 7: Night Sweats and Weight Loss**

10. During community screening, you notice an active participant complaining of unexplained weight loss and sweating at night.

    **Options:**

1. Refer for endocrine evaluation.
2. Encourage higher caloric intake only.
3. Ignore since BMI is normal.

    **Reasoning:**

    Option 1 prioritizes thyroid/adrenal screening. Option 2 addresses energy but misses underlying cause. Option 3 risks delay in care.

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**Case 8: Excessive Thirst During Class**

11. A client repeatedly stops exercise to drink water.

    **Options:**

1. Screen for polydipsia/polyuria pattern.
2. Restrict water to improve training flow.
3. Provide more salty snacks.

    **Reasoning:**

    Option 1 rules out endocrine disorders like diabetes. Option 2 risks dehydration. Option 3 may worsen thirst.

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**Case 9: Menstrual Irregularities in Athlete**

12. You observe a runner with irregular periods during high training load.

    **Options:**

1. Review nutrition and energy availability.
2. Encourage harder training for performance.
3. Ignore since it doesn’t affect gait.

    **Reasoning:**

    Option 1 addresses hypothalamic-pituitary-ovarian axis disruption. Option 2 worsens imbalance. Option 3 ignores endocrine health.

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**Case 10: Low Morning Heart Rate**

13. A physiotherapy intern notes a swimmer’s heart rate is abnormally low in the morning, but they are alert.

    **Options:**

1. Monitor thyroid function if bradycardia persists.
2. Reduce training load immediately.
3. Encourage more caffeine.

**Reasoning:**

Option 1 explores hypothyroidism as possible cause. Option 2 may not be needed if athlete is asymptomatic. Option 3 only masks fatigue.

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**Case 11: Overeating After Intense Session**

14. Client binges on sugary food post-workout.

**Options:**

1. Educate about insulin sensitivity post-exercise.
2. Encourage fasting to avoid overeating.
3. Provide appetite suppressants.

**Reasoning:**

Option 1 respects physiology and helps plan balanced meals. Option 2 risks hypoglycemia. Option 3 is inappropriate ethically.

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**Case 12: Sleep-Deprived Worker**

15. A shift worker reports poor sleep and weight gain.

**Options:**

1. Discuss cortisol and insulin resistance relationship.
2. Increase caffeine intake.
3. Ignore and continue exercise plan.

**Reasoning:**

Option 1 addresses root cause. Option 2 worsens sleep. Option 3 ignores endocrine adaptation.

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**Case 13: Slow Reflexes in Elderly Client**

16. During chair rise test, reflexes seem delayed.

**Options:**

1. Consider thyroid function screen.
2. Increase exercise intensity immediately.
3. Ignore as normal aging.

**Reasoning:**

Option 1 considers hypothyroidism effects on neuromuscular function. Option 2 may be unsafe. Option 3 may miss treatable cause.

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**Case 14: Frequent Fractures in Adolescent**

17. During sports class, a teen reports multiple fractures in past year.

    **Options:**

1. Refer for calcium and vitamin D level check.
2. Focus solely on strength training.
3. Ignore since fractures are healed.

    **Reasoning:**

    Option 1 looks for endocrine causes of bone fragility (PTH, vitamin D). Option 2 may help but not address root cause. Option 3 unsafe.

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**Case 15: Excessive Hair Growth**

18. A female athlete reports facial hair growth after strength training.

    **Options:**

1. Suggest endocrine review for androgen excess.
2. Ignore since training causes muscle growth.
3. Recommend hair removal only.

    **Reasoning:**

    Option 1 addresses PCOS or adrenal hyperandrogenism. Option 2 misses pathology. Option 3 treats symptom only.

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**Case 16: Repeated Low Blood Pressure**

19. A participant feels dizzy during exercise warm-up.

    **Options:**

1. Assess adrenal function and cortisol levels.
2. Stop exercise permanently.
3. Increase salt intake arbitrarily.

    **Reasoning:**

    Option 1 identifies Addison's disease possibility. Option 2 is excessive. Option 3 may be risky unsupervised.

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**Case 17: Sudden Weight Gain**

20. You notice a patient's weight has increased rapidly in two months despite normal activity.

    **Options:**

1. Explore thyroid function and cortisol levels.

2. Simply increase exercise prescription.
3. Ignore as lifestyle issue.

**Reasoning:**

Option 1 explores metabolic cause. Option 2 may be ineffective if hormonal. Option 3 risks worsening underlying issue.

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**Case 18: Irregular Growth Pattern**

21. An adolescent in rehab appears shorter than peers with delayed puberty signs.

**Options:**

1. Suggest growth hormone axis evaluation.
2. Increase resistance training.
3. Ignore — child will "catch up."

**Reasoning:**

Option 1 may reveal treatable endocrine delay. Option 2 may stunt growth if not managed. Option 3 delays intervention.

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**Case 19: Sweating and Tremors**

22. During treadmill session, client becomes shaky and diaphoretic.

**Options:**

1. Check blood sugar immediately.
2. Push through session for adaptation.
3. Offer cold water only.

**Reasoning:**

Option 1 is urgent for hypoglycemia. Option 2 unsafe. Option 3 treats symptom not cause.

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**Case 20: Persistent Muscle Weakness**

23. A client struggles with basic strengthening despite training.

**Options:**

1. Consider screening for adrenal insufficiency or hypothyroidism.
2. Add more resistance training.
3. Ignore — slow learner.

**Reasoning:**

Option 1 explores hormonal cause. Option 2 risks overtraining. Option 3 neglects physiology.