What your body does

VOCABULARY PRACTICE

ADVANCED | C1

Name: _____ **Date:** _____

1 Match each advanced physiological concept with its meaning.

1 allostasis	____	a delivery of blood through tissue capillaries
2 negative feedback	____	b control by the involuntary nervous system
3 positive feedback	____	c ability to switch between energy sources
4 autonomic regulation	____	d adaptive stability achieved through physiological change
5 endocrine signalling	____	e signal amplifying the initial change until an endpoint
6 synaptic transmission	____	f capacity beyond ordinary demand that supports resilience
7 perfusion	____	g correction that counteracts deviation from a set range
8 osmotic balance	____	h communication through hormones released into circulation
9 metabolic flexibility	____	i transfer of information between nerve cells
10 physiological reserve	____	j regulation of water movement and solute concentration

2 Complete the systems-physiology collocations.

balance | feedback | flexibility | reserve | response | signalling | transmission | perfusion

1 maintain osmotic _____

2 activate a stress _____

3 restore stability through negative _____

4 coordinate endocrine _____

5 support synaptic _____

6 improve tissue _____

7 preserve physiological _____

8 demonstrate metabolic _____

3 Choose the concept that best captures the distinction.

1 Change anticipates future demand rather than restoring a fixed set point: *allostasis / homeostasis*.

2 A response reverses the initiating disturbance: *negative / positive feedback*.

3 A response amplifies contractions until birth: *positive / negative feedback*.

4 Heart rate changes without conscious control: *autonomic regulation / endocrine signalling*.

5 Neurons communicate across a junction: *synaptic transmission / perfusion*.

6 An organ tolerates extra demand before failure: *physiological reserve / osmotic balance*.

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4 Complete the integrative physiology review with terms from the box.

allostasis | autonomic regulation | endocrine signalling | metabolic flexibility | negative feedback | osmotic balance | perfusion | physiological reserve | positive feedback | synaptic transmission

Acute stress illustrates **1** _____: the body changes priorities to meet predicted demand. Rapid cardiovascular adjustment relies on **2** _____, while slower coordination uses **3** _____. Neural circuits depend on **4** _____. Tissue oxygen delivery requires adequate **5** _____, and kidney function maintains **6** _____. Most regulated variables use **7** _____, whereas clotting may involve **8** _____. Recovery depends partly on **9** _____ and available **10** _____.

5 Read the text and answer the questions concisely.

Adaptation and physiological cost

Short-term stress responses redirect energy, raise cardiovascular output and sharpen attention. These changes can be protective when demand is brief. If activation persists, however, repeated hormonal and autonomic signals create cumulative strain, sometimes called allostatic load. The same measured value may therefore have different meanings depending on timing, context and prior exposure. Researchers assess patterns across several systems rather than treating a single biomarker as a complete account of health.

1 What three changes occur during short-term stress? _____

2 When can these changes be protective? _____

3 What creates cumulative strain? _____

4 What is this strain sometimes called? _____

5 Why can one measured value have different meanings? _____

6 Why do researchers use several systems? _____

6 Paraphrase using the expression in capitals.

1 The response restored the variable towards its range. **NEGATIVE** ___

2 Blood delivery to the tissue was inadequate. **PERFUSION** ___

3 The body shifted efficiently between energy sources. **FLEXIBILITY** ___

4 The organ had spare capacity under stress. **RESERVE** _____

OVER TO YOU

Write a **160-190 word** explanation of how the body adapts to a sustained demand. Address regulation, signalling, energy use, perfusion, feedback, reserve and possible costs.

[ ] Use at least ten target terms or collocations. [ ] Separate acute adaptation from chronic strain. [ ] Explain mechanisms cautiously.

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ANSWER KEY

1 Advanced physiological concepts

1 **d** 2 **g** 3 **e** 4 **b** 5 **h** 6 **i** 7 **a** 8 **j** 9 **c** 10 **f**

2 Systems-physiology collocations

1 **balance** 2 **response** 3 **feedback** 4 **signalling** 5 **transmission** 6 **perfusion** 7 **reserve** 8 **flexibility**

3 Conceptual distinctions

1 **allostasis** 2 **negative feedback** 3 **positive feedback**
4 **autonomic regulation** 5 **synaptic transmission** 6 **physiological reserve**

4 Integrative physiology review

1 **allostasis** 2 **autonomic regulation** 3 **endocrine signalling** 4 **synaptic transmission** 5 **perfusion**
6 **osmotic balance** 7 **negative feedback** 8 **positive feedback** 9 **metabolic flexibility** 10 **physiological reserve**

5 Reading - suggested answers

1 Energy redirection, higher cardiovascular output and sharper attention. 2 When demand is brief. 3 Persistent hormonal and autonomic activation.
4 Allostatic load. 5 Timing, context and exposure differ. 6 One biomarker is incomplete.

6 Paraphrasing - possible answers

1 This was **negative feedback**. 2 Tissue **perfusion** was inadequate. 3 It showed metabolic **flexibility**. 4 The organ had physiological **reserve**.

Over to you: Answers will vary. Check integration, temporal distinctions, mechanisms and physiological costs.