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Jeremy P. T. Ward, Roger W. A. Linden

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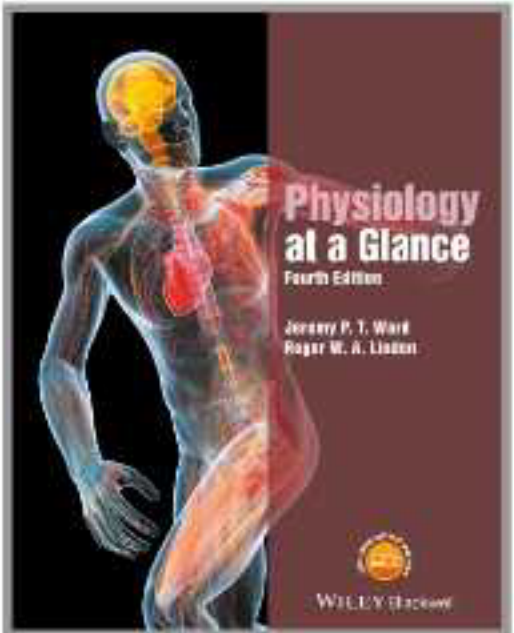
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Multiple Choice: Chapter 22 Initiation of the heart beat and excitation-contraction coupling

Question 22.1 Action potentials in ventricular muscles

- A are identical to those in skeletal muscles except for the duration of the action potential
- B have a plateau phase caused by the delay in the opening of K^+ channels
- C are initiated when ventricular myocytes are depolarized to a threshold potential of -50 mV
- D have a refractory period which prevents another action potential being initiated until the muscle relaxes

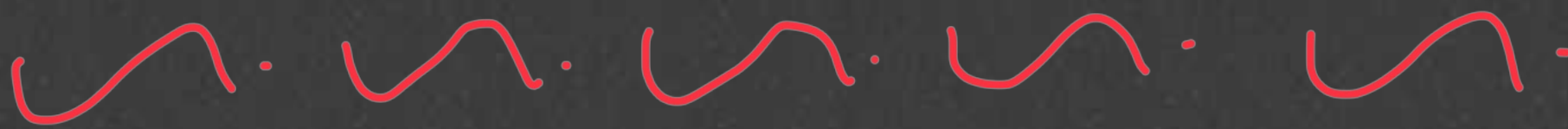
Well done, you have selected the right answer.

The correct answer is D.

Next Question



والله أخرجكم من بطون أمهاتكم لا تعلمون شيئاً وجعل لكم السمع والأبصار والأفئدة لعلكم تشكرون





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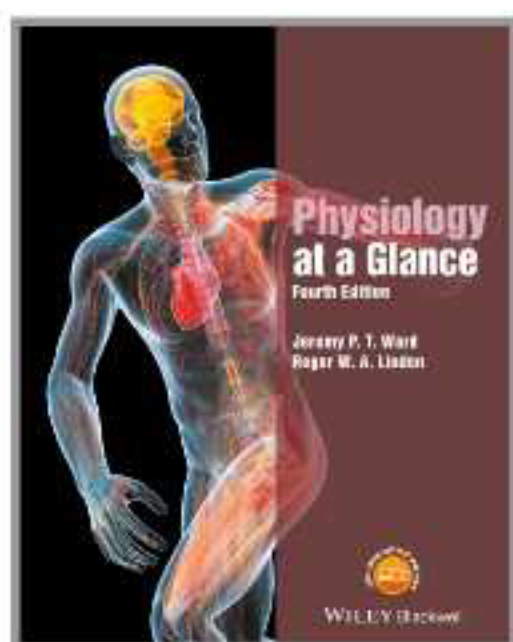
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Multiple Choice: Chapter 27 Local control of blood flow and specific circulations

Question 27.4 Blood flow

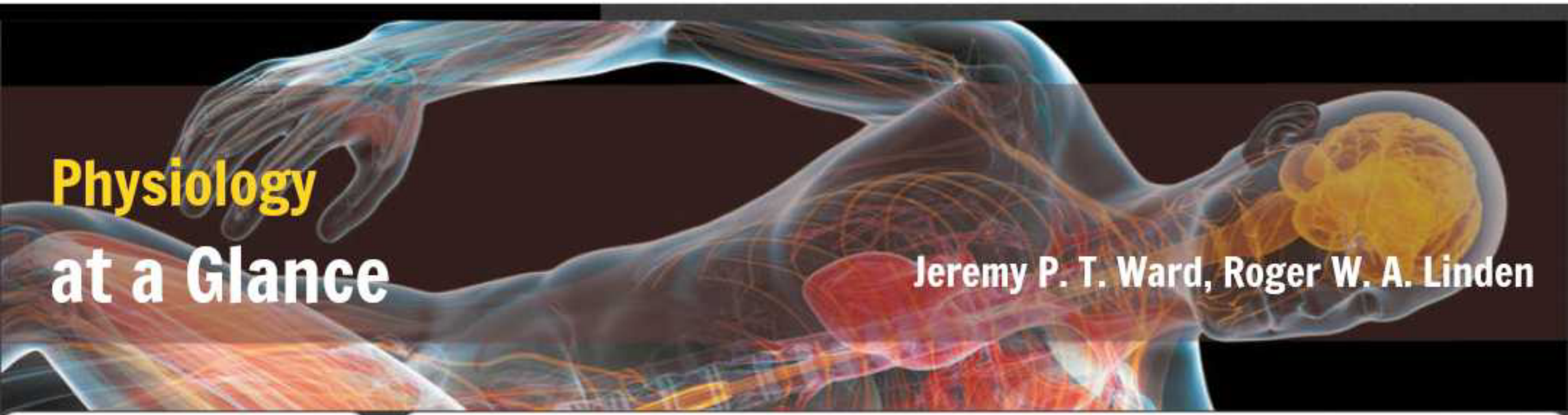
- A in the brain is controlled by both sympathetic and parasympathetic nerve fibres
- B through skeletal muscle involves arteriovenous anastomoses which directly link arterioles and venules, by-passing the capillaries
- C in the pulmonary circulation is not controlled by autonomic nerves or metabolic products
- D in the pulmonary circulation is increased during hypoxia due to vasodilatation in small arteries

Sorry, you have selected the wrong answer.

The correct answer is C.

Next Chapter

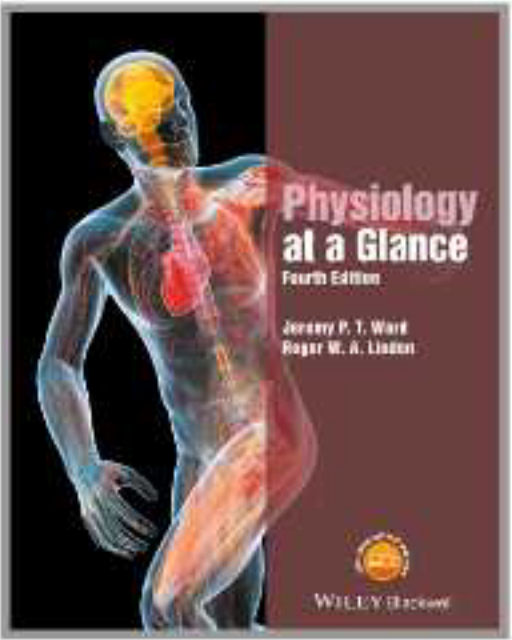




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Multiple Choice: Chapter 25 Control of blood pressure and blood volume

Question 25.1 An increase in the mean arterial blood pressure may result from

- A an increase in peripheral resistance
- B an increase in the heart rate
- C an increase in venous return
- D a, b and c

Well done, you have selected the right answer.
The correct answer is D.

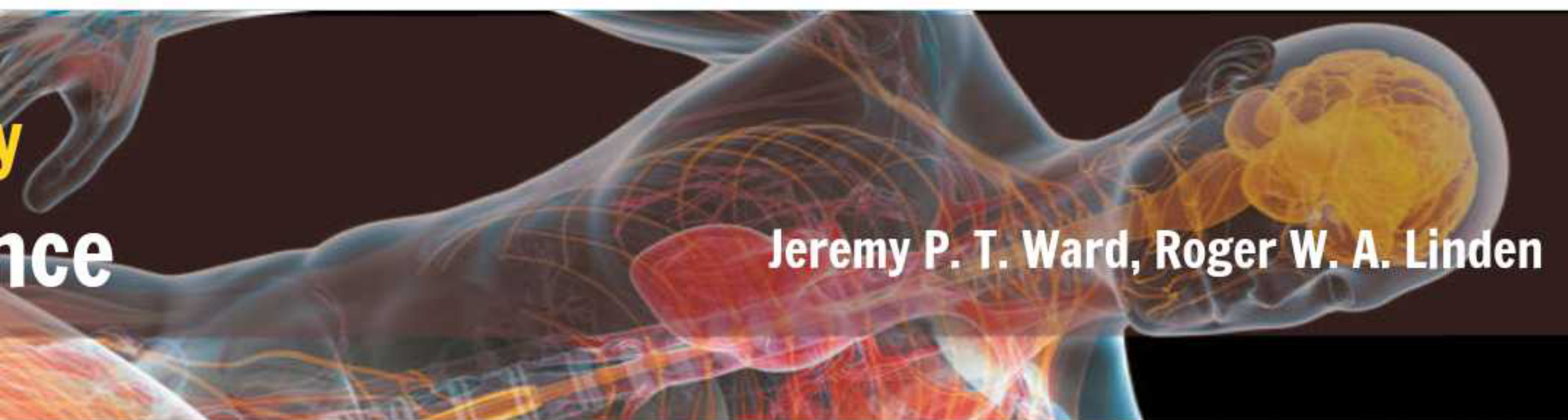
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Multiple Choice: Chapter 23 Control of cardiac output and Starling's law of the heart

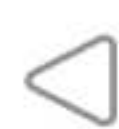
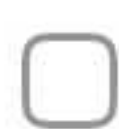
Question 23.3 Constriction of the veins

- A decreases venous compliance and therefore increases CVP
- B increases venous resistance and therefore decreases CVP
- C increases the slope of the vascular function curve
- D reduces venous return

Well done, you have selected the right answer.

The correct answer is C.

Next Question





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Multiple Choice: Chapter 24 Blood vessels

Question 24.4 The endothelium

- A can synthesize a number of important vasoconstrictors such as nitric oxide (NO)
- B can synthesize a number of important vasodilators such as endothelium-derived relaxing factor (EDRF)
- C can only synthesize vasodilators
- D plays a minor role in the regulation of vascular tone

Sorry, you have selected the wrong answer.

The correct answer is B.

Next Chapter





Multiple Choice: Chapter 23 Control of cardiac output and Starling's law of the heart

Question 23.2 Starling's law of the heart

- A states that 'the stroke volumes of the left and right ventricles are matched'
- B concerns the relationship between the degree of stretch of cardiac muscle and the force of contraction
- C causes an increase of contractility of cardiac muscle
- D can equally be applied to skeletal as well as cardiac muscle

Sorry, you have selected the wrong answer.

The correct answer is B.

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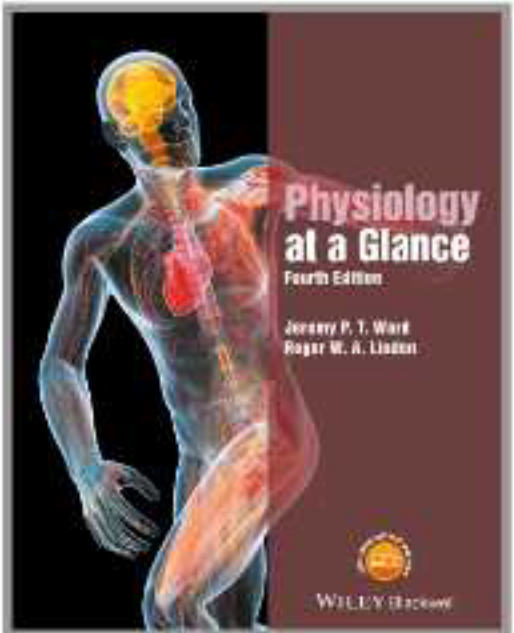
Multiple Choice: Chapter 25 Control of blood pressure and blood volume

Question 25.3 A fall in mean arterial blood pressure

- A causes an increase in baroreceptor activity and a reduction in renal perfusion pressure
- B along with sympathetic stimulation will activate the renin-angiotensin system and the production of angiotensin II
- C increases Na^+ and water excretion
- D is sensed by atrial baroreceptors

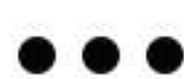
Well done, you have selected the right answer.

The correct answer is B.

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Multiple Choice: Chapter 19 Introduction to the cardiovascular

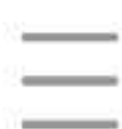
Question 19.2 Smooth muscle is not to be found in the walls of

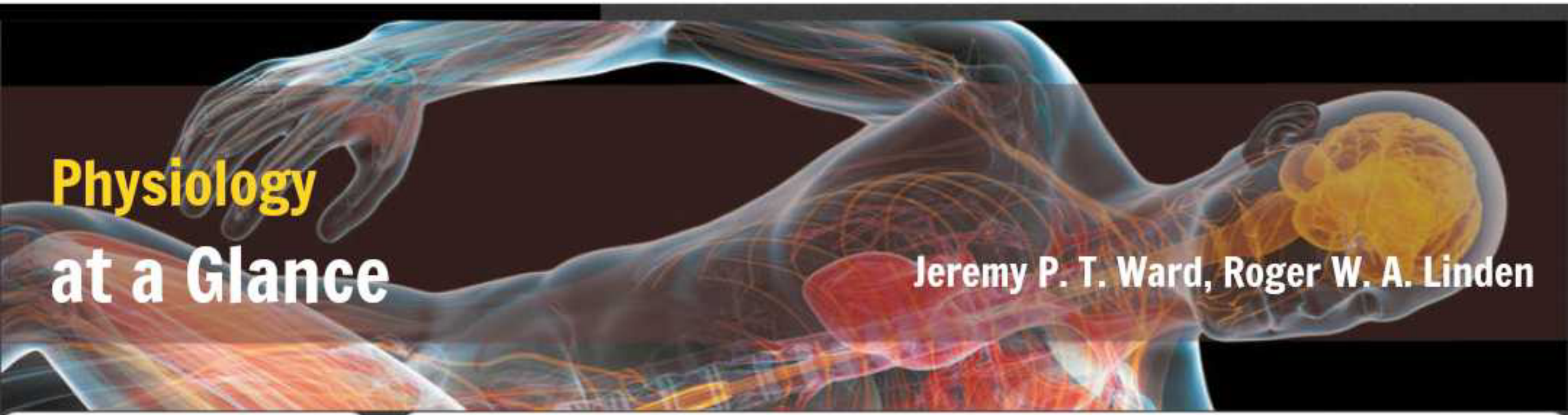
- A veins
- B venules
- C arterioles
- D capillaries

Well done, you have selected the right answer.

The correct answer is D.

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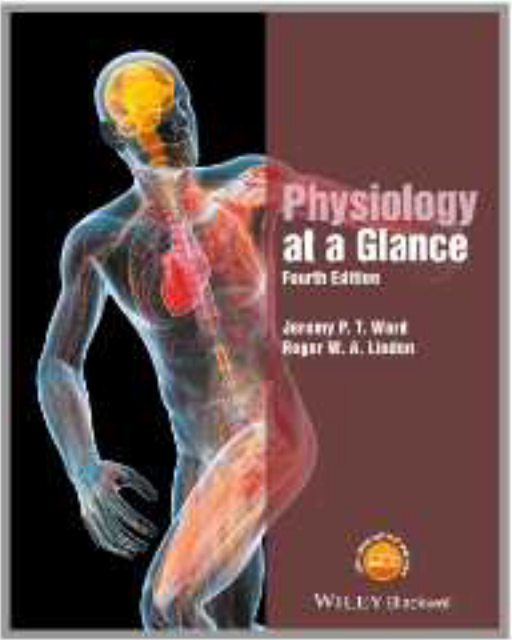




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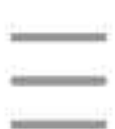
Multiple Choice: Chapter 25 Control of blood pressure and blood volume

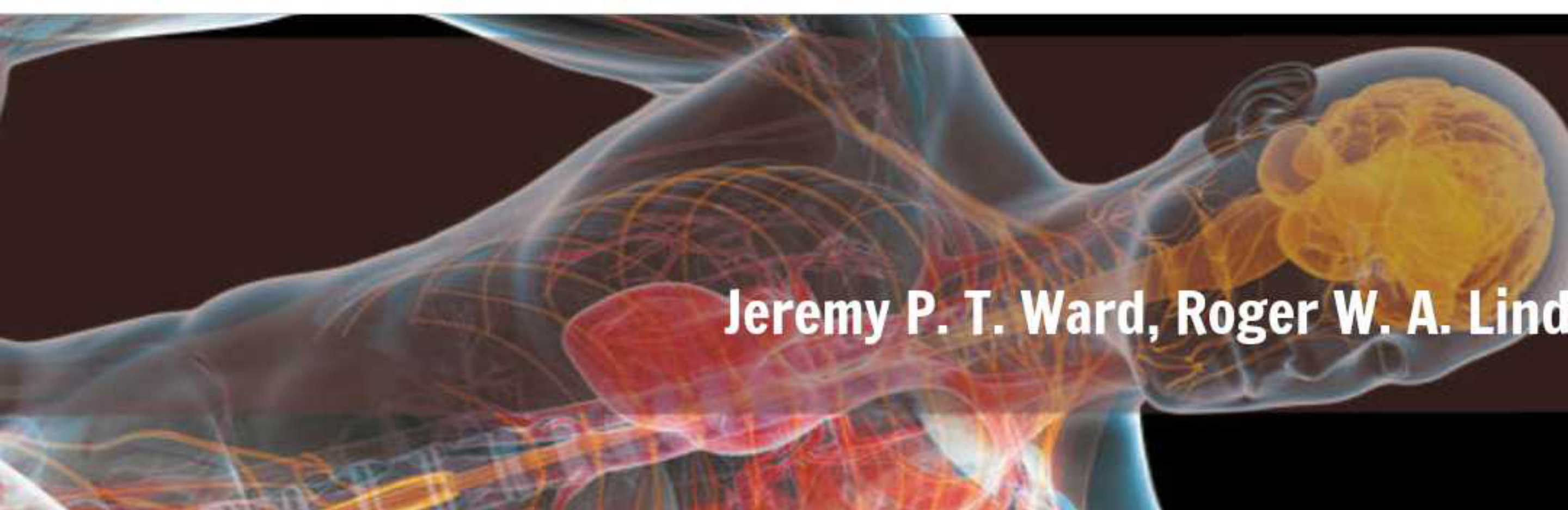
Question 25.2 Baroreceptors

- A in the carotid and aortic bodies send impulses via the glossopharyngeal and vagus nerves to the medulla of the brain stem
- B are sensors for mean arterial blood pressure that respond to stretching of the carotid sinus and aortic arch
- C do not exhibit adaptation
- D are most sensitive between 120 and 180 mmHg

Sorry, you have selected the wrong answer. The correct answer is B.

Next Question





Multiple Choice: Chapter 19 Introduction to the cardiovascular system

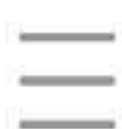
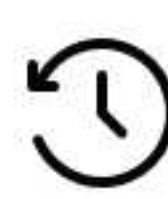
Question 19.1 The cardiovascular system

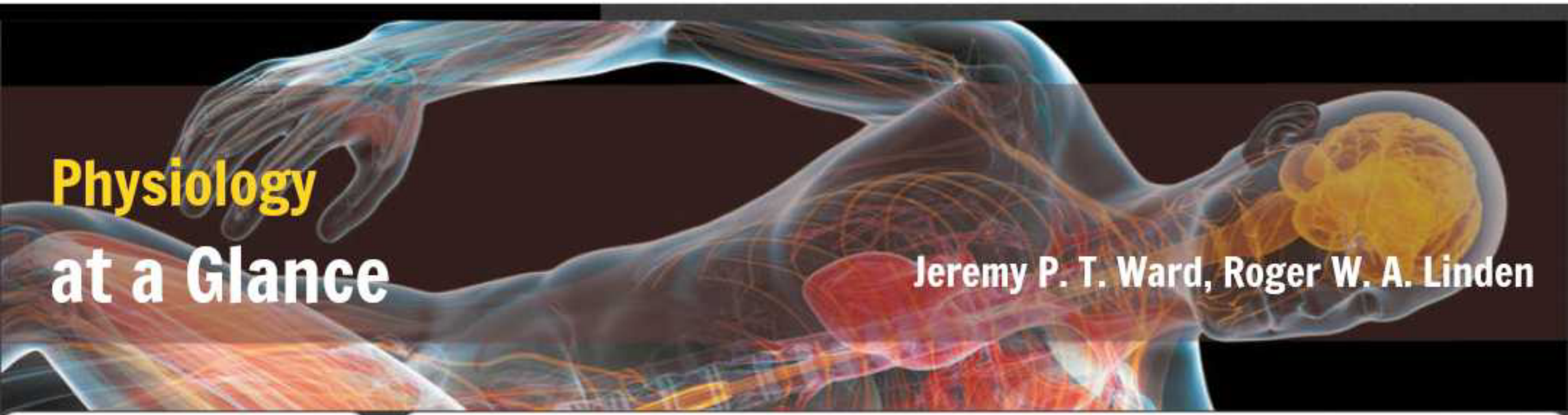
- A contains approximately 7 L of blood in a 70 kg man
- B is arranged mostly in series with each tissue receiving blood from the aorta
- C is arranged mostly in parallel with each tissue receiving blood from the aorta
- D maintains a constant pressure throughout the system

Sorry, you have selected the wrong answer.

The correct answer is C.

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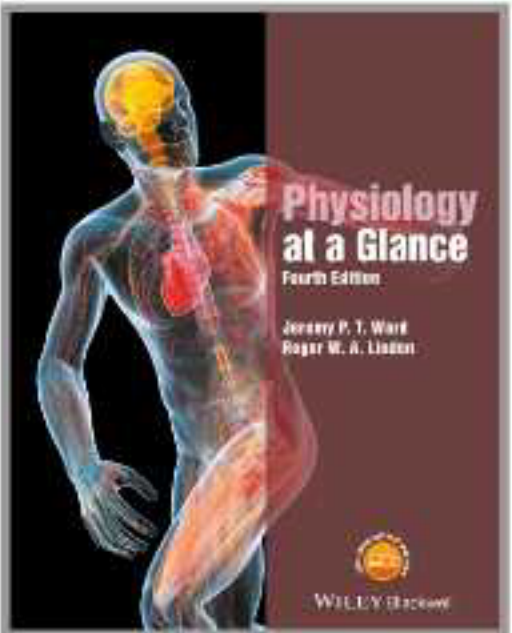
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Multiple Choice: Chapter 24 Blood vessels

Question 24.1 Smooth muscle and elastin filaments are found in the

- A tunica intima
- B tunica adventitia
- C tunica media
- D elastic lamina

Sorry, you have selected the wrong answer.
The correct answer is C.

Next Question





Multiple Choice: Chapter 22 Initiation of the heart beat and excitation-contraction coupling

Question 22.3 Excitation-contraction coupling in cardiac ventricular cells requires

- A efflux of Na^+ ions
- B efflux of K^+ ions
- C influx of Ca^{2+} ions
- D influx of Cl^- ions

Well done, you have selected the right answer.

The correct answer is C.

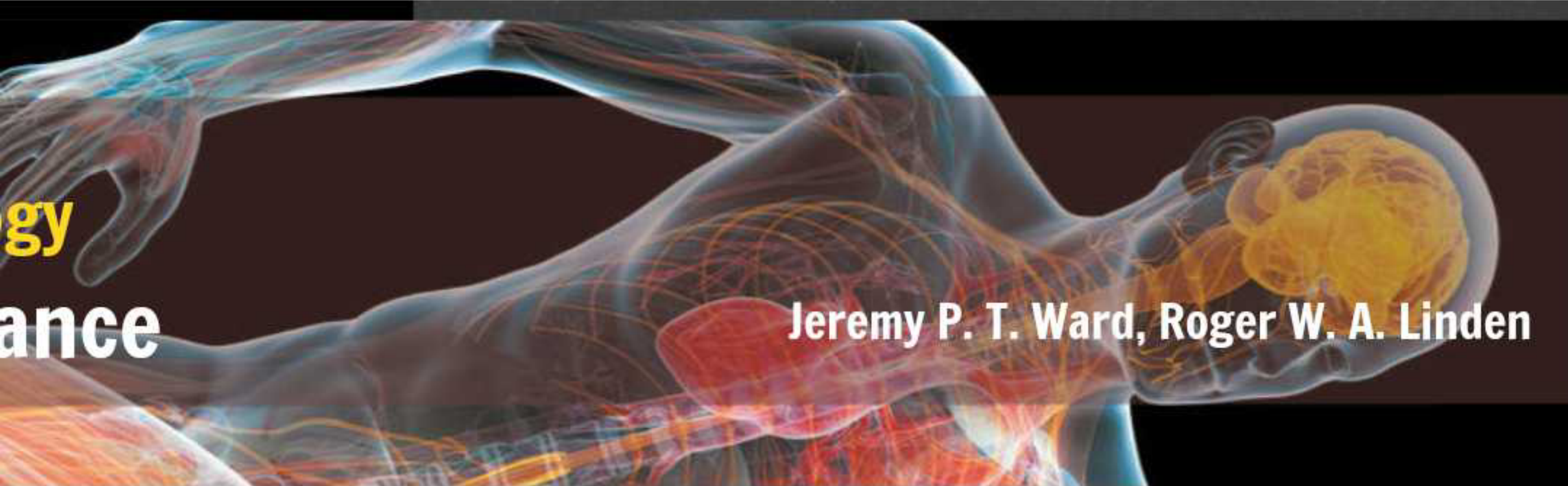
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Multiple Choice: Chapter 22 Initiation of the heart beat and excitation-contraction coupling

Question 22.2 The cells of the sinoatrial node

- A have a resting potential of -90 mV
- B have action potentials which exhibit a slow upstroke because of the presence of L-type calcium channels
- C are the only cells in the heart that can act as pacemaker cells
- D are directly affected by noradrenaline and acetylcholine in that they slow down and speed up the heart respectively

Sorry, you have selected the wrong answer.

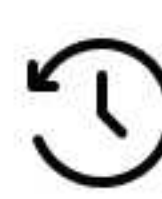
The correct answer is B.

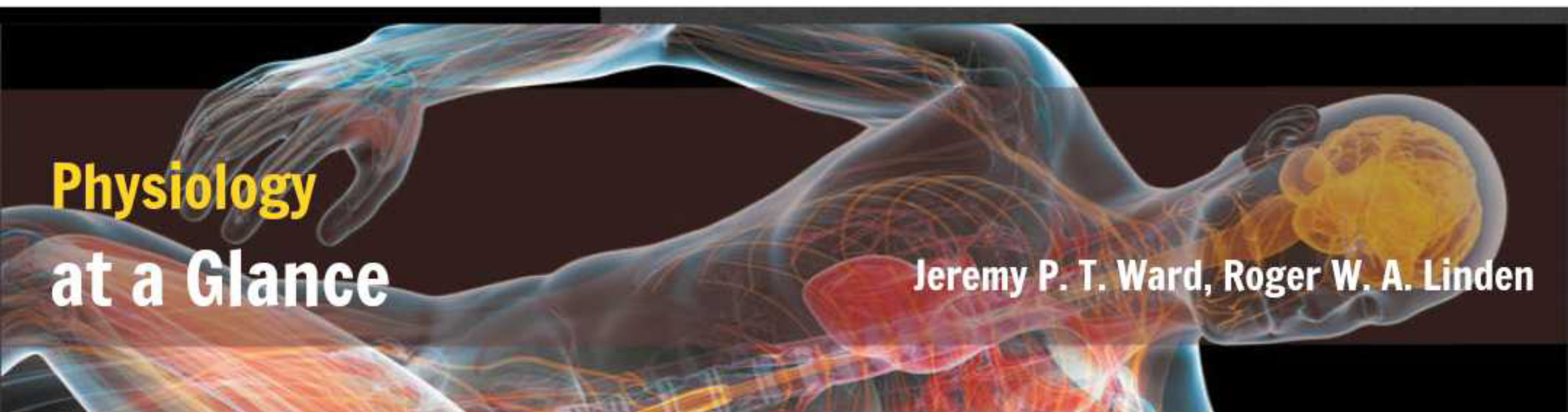
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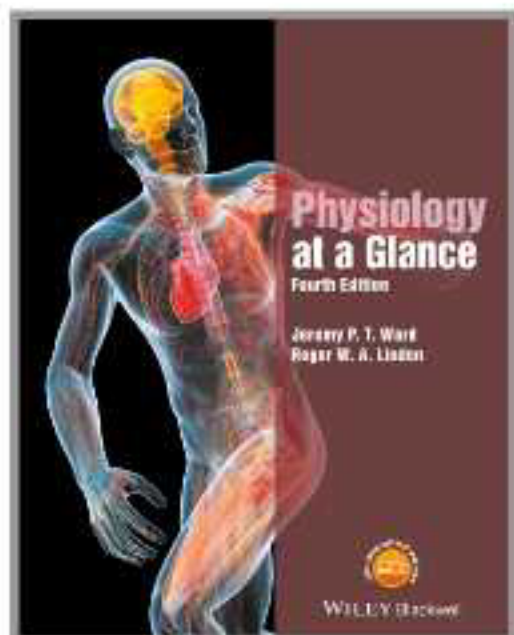




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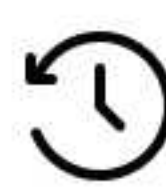
Multiple Choice: Chapter 24 Blood vessels

Question 24.3 The following substances are all vasodilators.

- A angiotensin II, histamine and bradykinin
- B histamine, bradykinin and substance P
- C acetylcholine, bradykinin and endothelin-1
- D substance P, noradrenaline and phospholipase C

Well done, you have selected the right answer.
The correct answer is B.

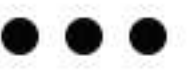
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Multiple Choice: Chapter 24 Blood vessels

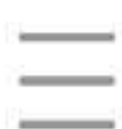
Question 24.2 Fenestrated capillaries

- A are more permeable than continuous capillaries and are found in the skin and muscle
- B are less permeable than continuous capillaries and are found in endocrine glands and intestinal villi
- C have less tight junctions than continuous capillaries and have pores in their endothelial cells
- D are found in bone marrow, liver and spleen

Sorry, you have selected the wrong answer.

The correct answer is C.

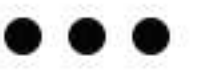
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Multiple Choice: Chapter 22 Initiation of the heart beat and excitation-contraction coupling

Question 22.4 Noradrenaline

- A has a positive inotropic effect on the heart muscle cells whilst acetylcholine has a negative inotropic effect
- B is released by the sympathetic fibres innervating the SA node only
- C has a positive chronotropic effect on cardiac cells by increasing the rate of decay of the pacemaker potential
- D slows down the Ca^{2+} sequestration into the sarcoplasmic reticulum thereby increasing contractility of the cardiac cells

Sorry, you have selected the wrong answer.

The correct answer is C.

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Multiple Choice: Chapter 25 Control of blood pressure and blood volume

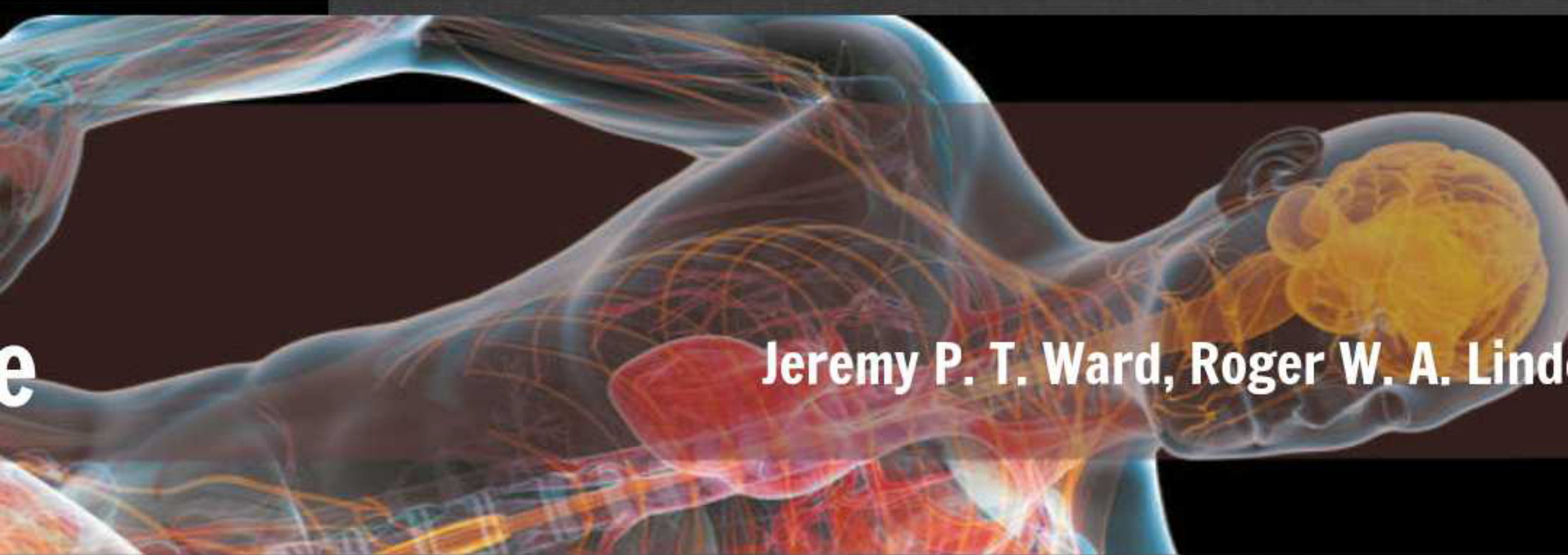
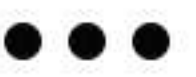
Question 25.4 Which of the following statements is NOT true?

- A 20% of the blood volume can be lost without significant problems
- B An acute fall in mean arterial blood pressure can result from a sudden blood loss, a profound vasodilatation or an acute failure of the heart to pump blood
- C Following the loss of less than 20% of the blood volume, the volume of blood is restored within minutes of the blood loss due to arteriolar constriction
- D A loss of 30–50% of blood volume can be survived if a blood transfusion is given within an hour

Sorry, you have selected the wrong answer.

The correct answer is C.

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Multiple Choice: Chapter 19 Introduction to the cardiovascular system

Question 19.4 The mean arterial blood pressure is

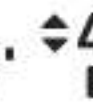
- A 110 mmHg in a healthy person
- B calculated by averaging the systolic blood pressure and the diastolic blood pressure
- C estimated as the diastolic blood pressure plus one third of the systolic blood pressure
- D estimated as the diastolic blood pressure plus one third of the pulse pressure

Well done, you have selected the right answer.

The correct answer is D.

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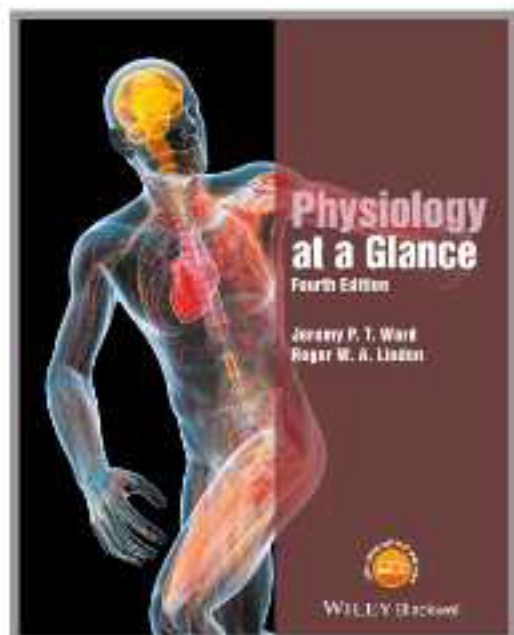
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Multiple Choice: Chapter 19 Introduction to the cardiovascular system

Question 19.3 In the heart, the cardiac output is approximately _____/min at rest, rising to above _____/min during exercise. The stroke volume at rest is approximately _____.

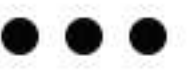
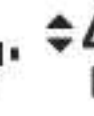
- A 20 L, 100 L, 1 L
- B 5 L, 100 L, 70 mL
- C 500 mL, 20 L, 7 mL
- D 5 L, 20 L, 70 mL

Well done, you have selected the right answer.

The correct answer is D.

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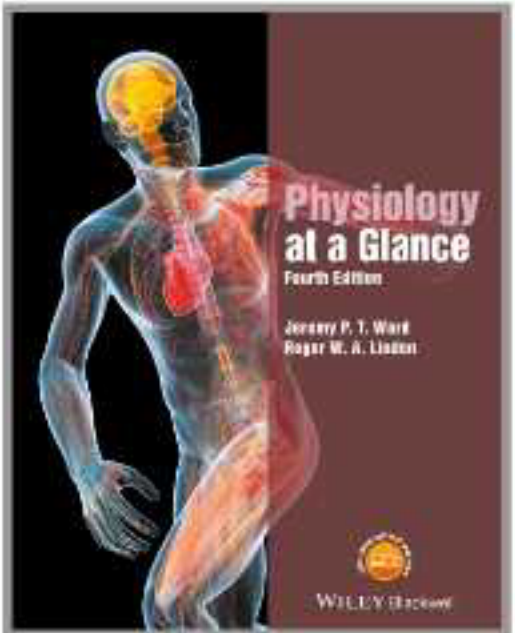
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Multiple Choice: Chapter 20 The heart

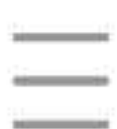
Question 20.2 Conduction of impulses between the atria and the ventricles is channelled through the

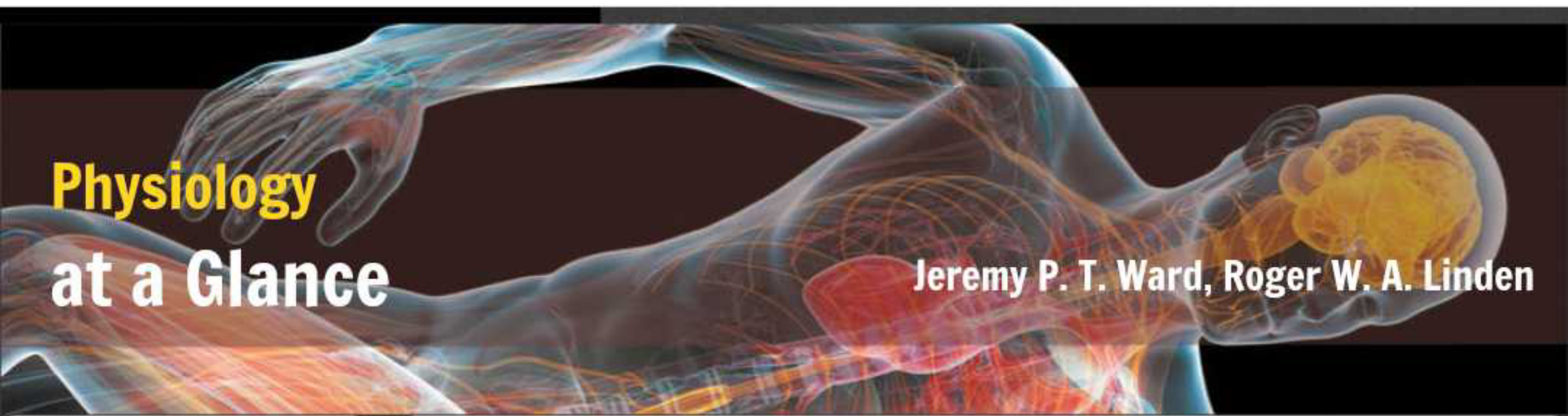
- A AV node
- B annulus fibrosus
- C SA node
- D bundle of His

Well done, you have selected the right answer.

The correct answer is A.

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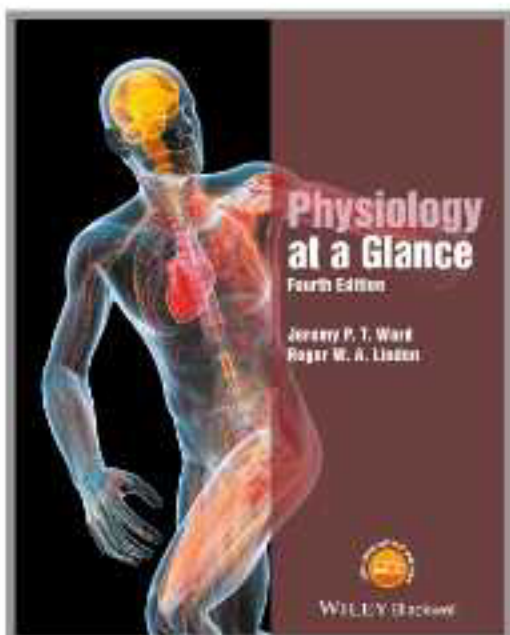




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Multiple Choice: Chapter 20 The heart

Question 20.1 Blood flows from the right atrium into the right ventricle via

- A the mitral valve
- B the semilunar valves
- C the tricuspid valve
- D the AV node

Well done, you have selected the right answer.
The correct answer is C.

Next Question



Multiple Choice: Chapter 23 Control of cardiac output and S the heart

Question 23.1 Cardiac output is

- A the volume of blood pumped per minute by both ventricles
- B the volume of blood flowing through the systemic circulation per minute
- C not affected by the filling pressure (preload)
- D approximately 5 L/min at rest rising to over 100 L/min during exercise

Sorry, you have selected the wrong answer.

The correct answer is B.

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Multiple Choice: Chapter 26 The microcirculation, filtration and lymphatic

Question 26.4 Which of the following statement is NOT true?

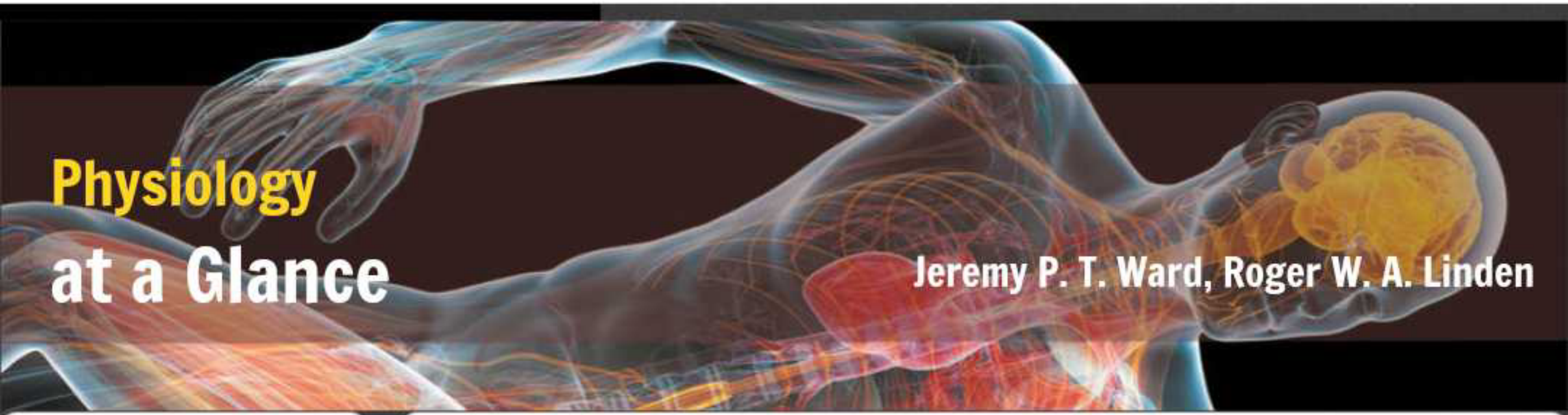
- A Oedema is the swelling of the tissues due to excess fluid in the interstitial space
- B Oedema can be caused by an increased venous pressure
- C The colloidal osmotic pressure normally varies between
 - ~25 mmHg at the arteriolar end of the capillary and
 - ~15 mmHg at the venous end
- D Lymphatic capillaries are blind-ended bulbous tubes approximately 15–75 μm in diameter

Sorry, you have selected the wrong answer.

The correct answer is C.

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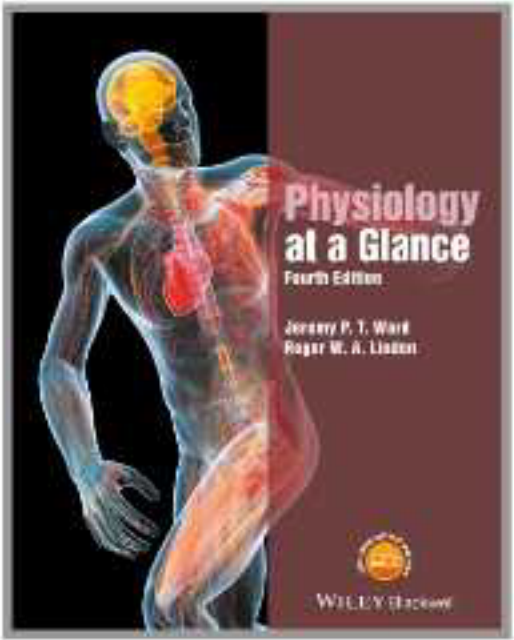




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Multiple Choice: Chapter 12 Principles of diffusion and flow

Question 12.3 The flow through the majority of the cardiovascular system at rest

- A is laminar
- B is turbulent
- C is described by Poiseuille's law which states that flow is dependent on the pressure difference across the ends of a tube and the resistance provided by the tube
- D is not affected by changes in the viscosity of blood

Well done, you have selected the right answer.
The correct answer is A.

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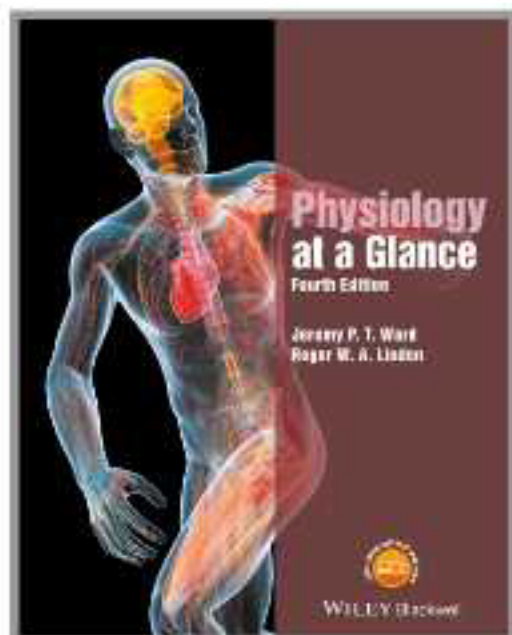
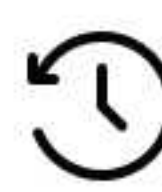
Multiple Choice: Chapter 26 The microcirculation, filtration and lymphatics

Question 26.3 Lymph fluid is returned into the general circulation via the

- A left atrium
- B superior vena cava
- C subclavian vein
- D azygous vein

Sorry, you have selected the wrong answer.

The correct answer is C.

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Multiple Choice: Chapter 27 Local control of blood flow and specific circulations

Question 27.2 The following substances are autocooids (i.e. local hormones)

- A bradykinin, nitric oxide and histamine
- B serotonin, histamine and adenosine
- C bradykinin, histamine and serotonin
- D nitric oxide, adenosine and carbon dioxide

Well done, you have selected the right answer.

The correct answer is C.

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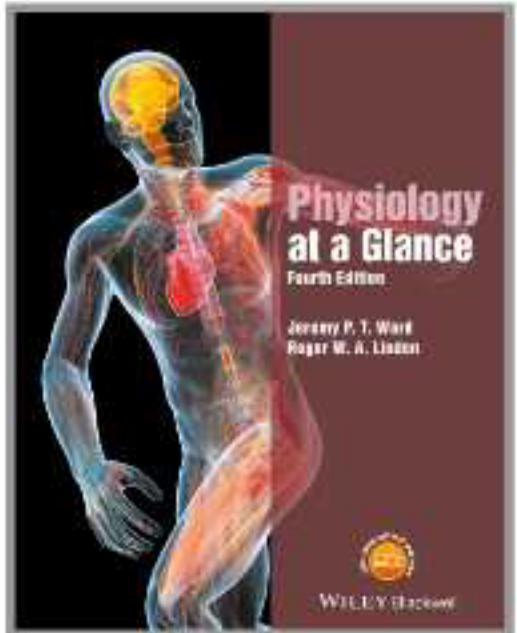
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Multiple Choice: Chapter 21 The cardiac cycle

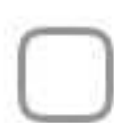
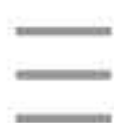
Question 21.2 Which of the following indicates the causes of the first and second heart sound in the correct order?

- A atrial systole – ventricular systole
- B semilunar valve closure – atrioventricular valve closure
- C ventricular diastole – semilunar valve closure
- D ventricular systole – ventricular diastole

Sorry, you have selected the wrong answer.

The correct answer is D.

[Next Question](#)





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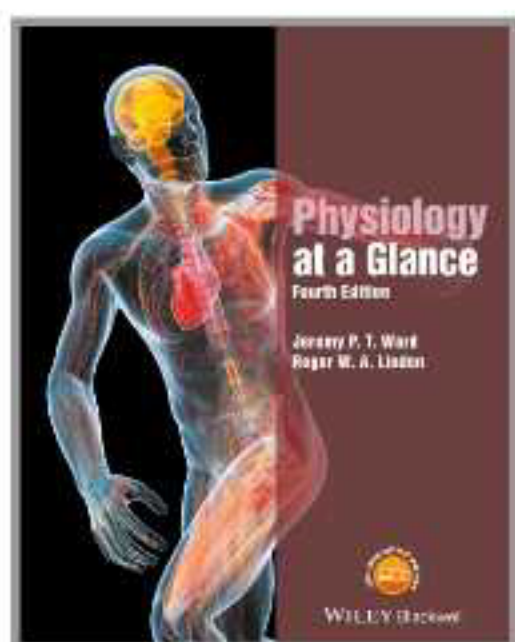
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Multiple Choice: Chapter 27 Local control of blood flow and specific circulations

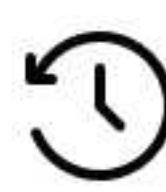
Question 27.1 Autoregulation is the ability of a tissue to maintain a constant blood flow in the face of variations of pressure. It is particularly important in the

- A brain, kidneys and heart
- B skin and gut
- C skeletal muscle
- D lungs

Well done, you have selected the right answer.
The correct answer is A.

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Multiple Choice: Chapter 21 The cardiac cycle

Question 21.1 The aortic valve

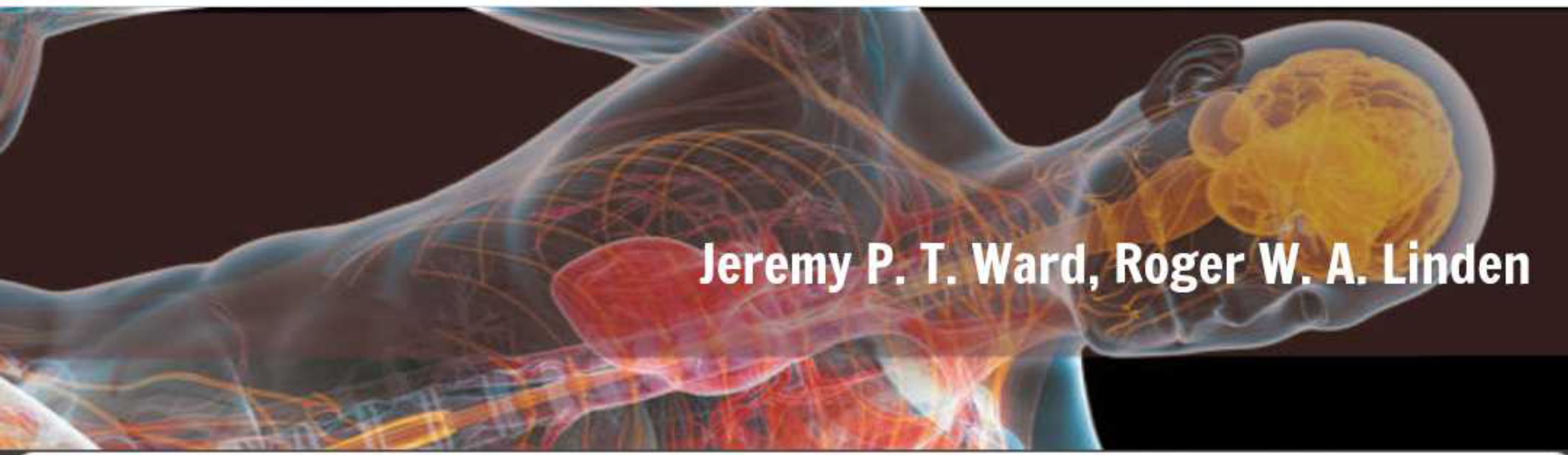
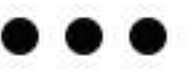
- A prevents the backflow of blood into the aorta during ventricular diastole
- B prevents the backflow of blood into the left ventricle during ventricular diastole
- C prevents the backflow of blood into the left ventricle during ventricular systole
- D prevents the backflow of blood into the aorta during ventricular systole

Sorry, you have selected the wrong answer.

The correct answer is B.

Next Question





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Multiple Choice: Chapter 20 The heart

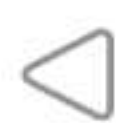
Question 20.3 The atrioventricular node

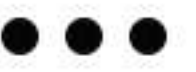
- A conducts impulses rapidly allowing almost immediate activation of ventricular muscle
- B delays impulses for about 200 ms, allowing time for atrial contraction to complete ventricular filling
- C is connected to specialized wide, fast conducting myocytes in the bundle of His and Purkinje fibres
- D is a band of fibrous connective tissue which separates the atria from the ventricles

Sorry, you have selected the wrong answer.

The correct answer is C.

Next Question





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Multiple Choice: Chapter 26 The microcirculation, filtration and lymphatics

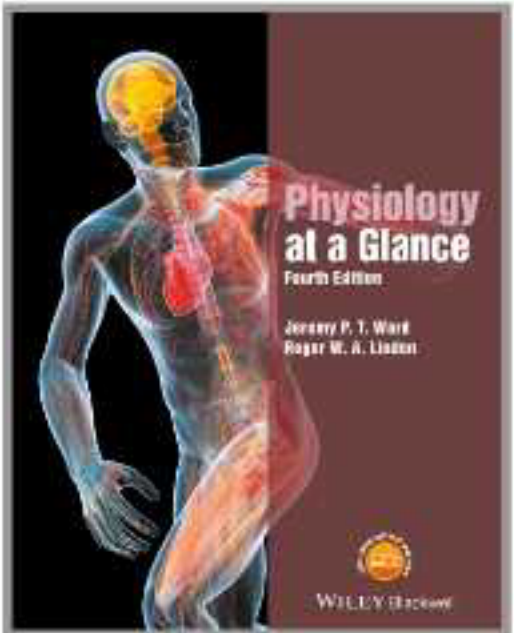
Question 26.2 In a capillary, the net flow of water between the blood and the interstitial fluid can change in its direction between the arterial and venous ends of the capillary. This difference at the two ends reflects a change in which of the following factors?

- A osmotic pressure
 B vessel diameter
 C blood velocity
 D blood pressure

Sorry, you have selected the wrong answer.

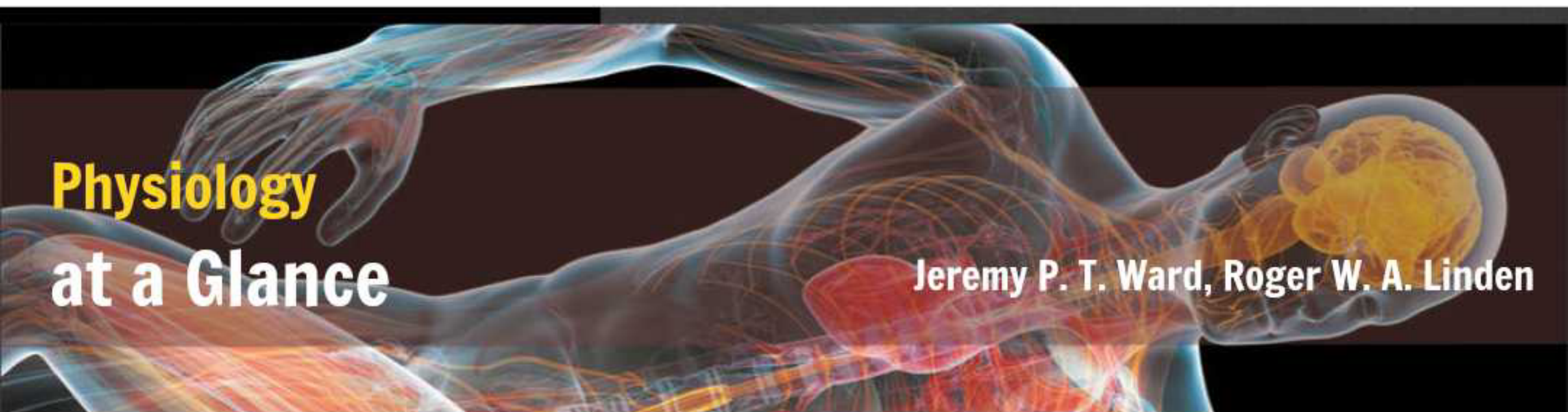
The correct answer is D.

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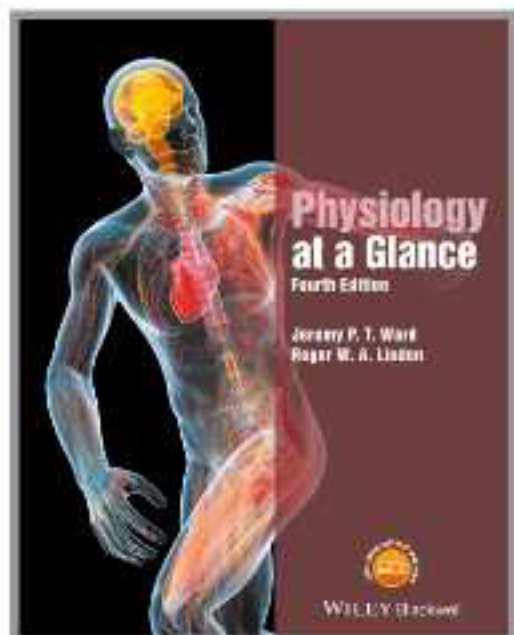




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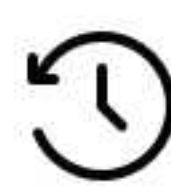
Multiple Choice: Chapter 12 Principles of diffusion and flow

Question 12.1 Passive diffusion

- A involves a carrier medium
- B requires the expenditure of energy
- C refers to movement down a concentration gradient
- D is described by Darcy's law

Well done, you have selected the right answer.
The correct answer is C.

Next Question





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Multiple Choice: Chapter 26 The microcirculation, filtration and lymphatics

Question 26.1 Which of the following substances are highly lipophilic and therefore can cross the endothelial lipid bilayer membrane easily?

- A oxygen and carbon dioxide
- B water
- C glucose and Na^+ ions
- D plasma proteins

Sorry, you have selected the wrong answer.

The correct answer is A.

Next Question





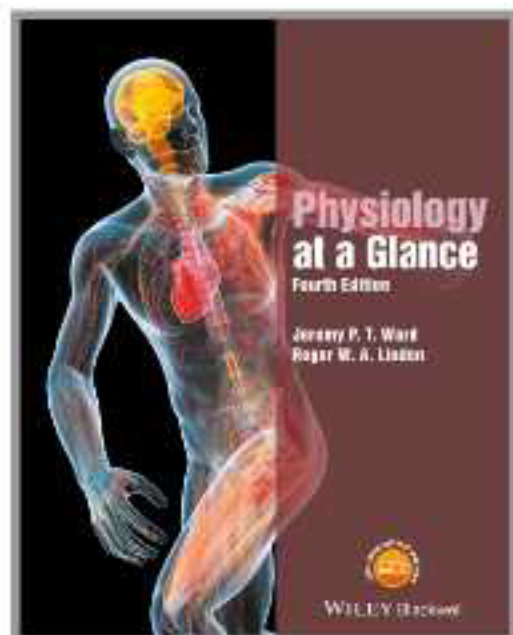
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Multiple Choice: Chapter 20 The heart

Question 20.4 Which of the following statements concerning coronary circulation is true?

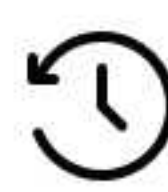
- A Left ventricular perfusion only occurs during diastole
- B The heart receives a rich blood supply from the left and right coronary arteries arising from the coronary sinus
- C The coronary veins run parallel to the right coronary arteries and empty into the aortic sinus
- D During systole, contraction of the ventricles compresses the coronary arteries and suppresses blood flow

Sorry, you have selected the wrong answer.

The correct answer is D.

[Next Chapter](#)

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Multiple Choice: Chapter 21 The cardiac cycle

Question 21.4 The ventricular end-diastolic volume in man is approximately _____ and the end-diastolic pressure is _____

- A 130 mL, >100 mmHg
- B 130 mL, <10 mmHg
- C 70 mL, <10 mmHg
- D 70 mL, >100 mmHg

140 ml & 0 mmHg

Sorry, you have selected the wrong answer.

The correct answer is B.

Next Chapter





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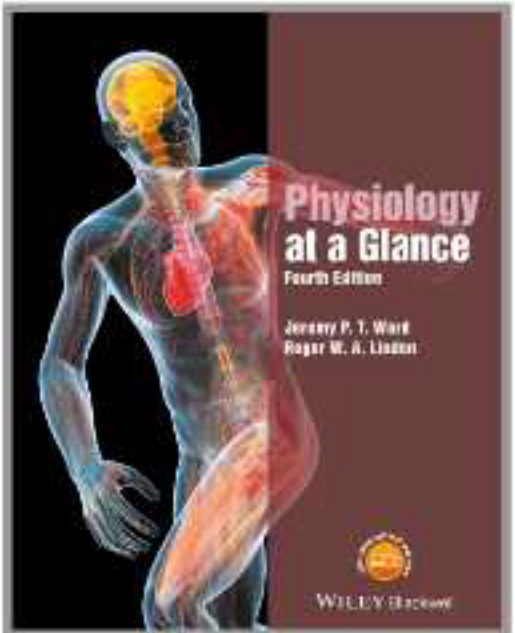
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Multiple Choice: Chapter 27 Local control of blood flow and specific circulations

Question 27.3 Which of the following statements is true?

- A Skeletal muscle comprises approximately 20% of body weight yet in exercise can take over 80% of cardiac output
- B In skeletal muscles at rest, the majority of capillaries are not perfused, as their arterioles are constricted
- C In skeletal muscle, capillaries are recruited during exercise by metabolic hyperaemia caused by the release of CO_2 and Ca^{2+}
- D The endothelial cells of the capillaries in the brain have very few tight junctions so there is free movement of fluids between the blood and the cerebrospinal fluid

Well done, you have selected the right answer.

The correct answer is B.

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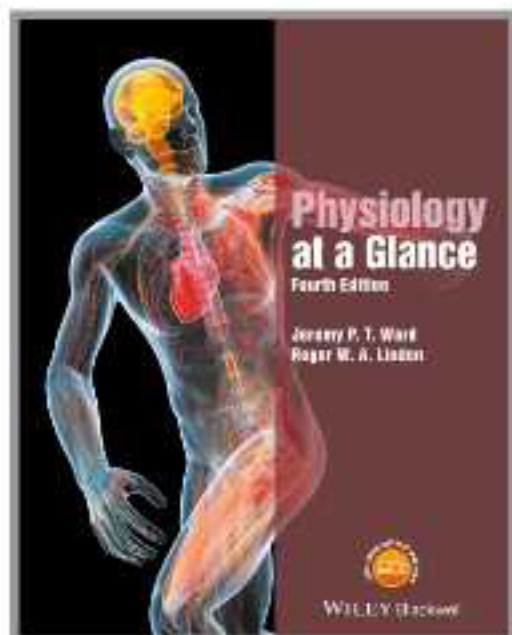
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Multiple Choice: Chapter 21 The cardiac cycle

Question 21.3 During which phases of the cardiac cycle do the atrioventricular valves remain open?

- A atrial diastole
- B isovolumetric ventricular relaxation
- C isovolumetric ventricular contraction
- D passive filling

Well done, you have selected the right answer.

The correct answer is D.

Next Question

