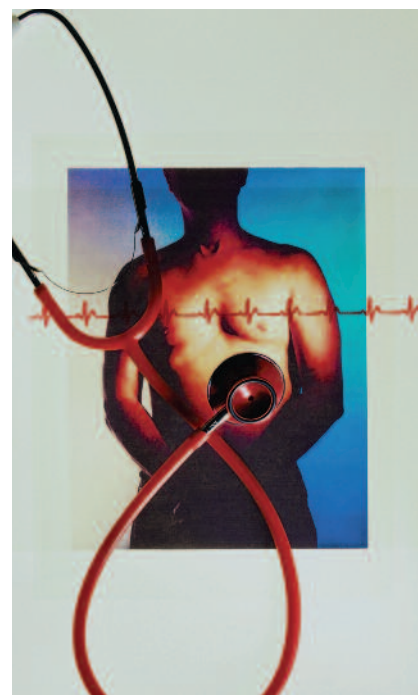


Test your knowledge

Almost everyone knows how to measure a pulse, but how to interpret the result is not always as clear. How accurate is your understanding of this most basic physical sign?

The multiple choice questions in this quiz may have more than one answer.

- What is the resting daytime pulse rate for a well 30-year-old man?
 - 40 to 50 beats per minute
 - 50 to 60 beats per minute
 - 60 to 70 beats per minute
 - 70 to 80 beats per minute
 - 80 to 90 beats per minute
- For a well man under the age of 80 years, what is the average decrease from daytime resting pulse rate to the rate that occurs during sleep?
 - 5 beats per minute
 - 10 beats per minute
 - 17 beats per minute
 - 20 beats per minute
 - 24 beats per minute
- One of the most common transient causes of bradycardia is a vasovagal episode. What is responsible for slowing the heart rate in this situation?
 - reduced parasympathetic tone
 - excessive parasympathetic tone
 - bundle branch block
 - transient atrial fibrillation
 - a short run of ventricular tachycardia
- Which of the following are well recognised causes of bradycardia induced by a vasovagal episode?
 - micturition
 - vomiting
 - sexual intercourse
 - defaecation
 - severe coughing
- Which of the following can cause bradycardia?
 - digoxin
 - thyroxine
 - calcium channel blockers
 - beta blockers
 - theophylline
- Sick sinus syndrome (sinus node dysfunction) is one of the most common abnormalities requiring a pacemaker. Which of the following are associated with sick sinus syndrome?
 - bradycardia
 - bradycardia–tachycardia syndrome
 - ventricular tachycardia
 - ventricular fibrillation
 - complete heart block
- What is first degree heart block?
 - a PR interval between 0.1 and 0.2 second
 - a PR interval that exceeds 0.2 seconds
 - not all atrial impulses being conducted into the ventricle, but some relationship being maintained between the atrial and the ventricular electrical activity
 - no conduction of the atrial electrical impulse into the ventricle
 - an alternative name for left bundle branch block
- Which of the following patients require a pacemaker?
 - a 25-year-old woman with first degree heart block
 - a 40-year-old man with an undetectable pulse for 20 seconds



- after fainting following venesection, and an ECG showing a sinus rhythm of 55 beats per minute when he regains consciousness
- a gym instructor with a heart rate of 40 beats per minute during sleep
- a 68-year-old woman with complete heart block
- a 70-year-old man who has bradycardia–tachycardia syndrome caused by sick sinus syndrome with no obvious extrinsic cause who has had a number of episodes of loss of consciousness. **MT**

Reference

- Mangrum JM, DiMarco JP. The evaluation and management of bradycardia. *N Engl J Med* 2000; 342: 703-709.

Answers appear on the inside back cover

Clinical quiz answers

(to questions on page 133)

1. b, c, d, e

A resting daytime pulse rate between 50 and 90 beats per minute is normal for a well 30-year-old man.

2. e

For a well man under the age of 80 years, the average decrease in pulse rate from daytime resting level to the level that occurs during sleep is 24 beats per minute.

3. b

A vasovagal episode is caused by excessive parasympathetic tone that occurs in response to a period of excessive sympathetic tone.

4. a, b, d, e

Micturition, defaecation, vomiting and cough can all be associated with bradycardia and a vasovagal faint.

5. a, c, d

Digoxin, calcium channel blockers and beta blockers can cause bradycardia. Thyroxine and theophylline can cause tachycardia.

6. a, b

Sick sinus syndrome can be intrinsic or caused by extrinsic factors such as hypothermia, hypothyroidism or medication. Two common manifestations are bradycardia or bradycardia-tachycardia syndrome. The condition also predisposes to atrial fibrillation and flutter. Ventricular fibrillation and tachycardia originate in the ventricle, and complete heart block is caused by an abnormality of the atrioventricular node.

7. b

First degree heart block is a PR interval that exceeds 0.2 seconds. It is common and does not cause symptoms or bradycardia, but can be a marker for more profound atrioventricular node disease.

8. d, e

Only the 68-year-old woman who has a complete heart block and the 70-year-old man with bradycardia-tachycardia syndrome require a pacemaker. A heart rate of 40 beats per minute is not pathological in a very fit athlete.