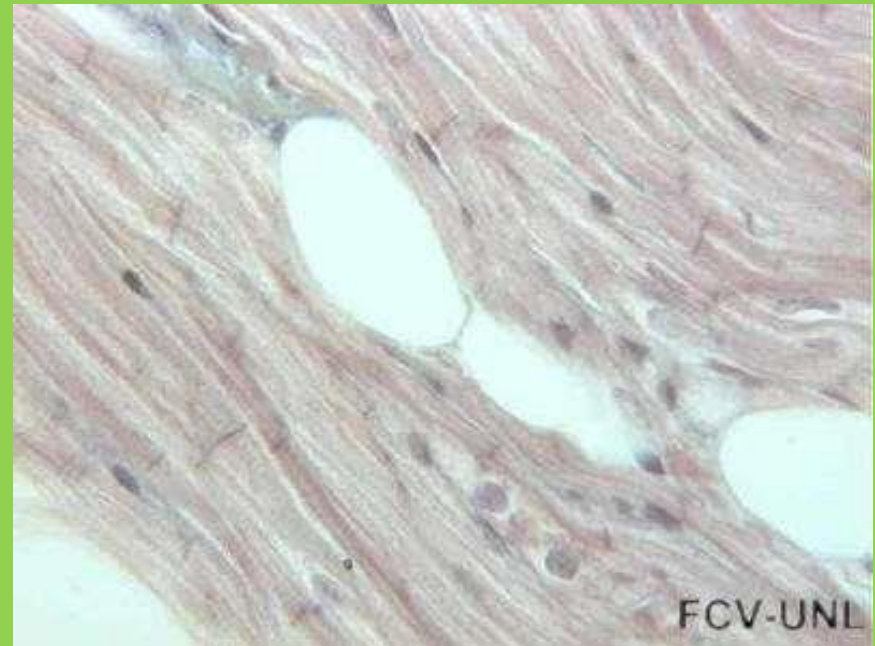
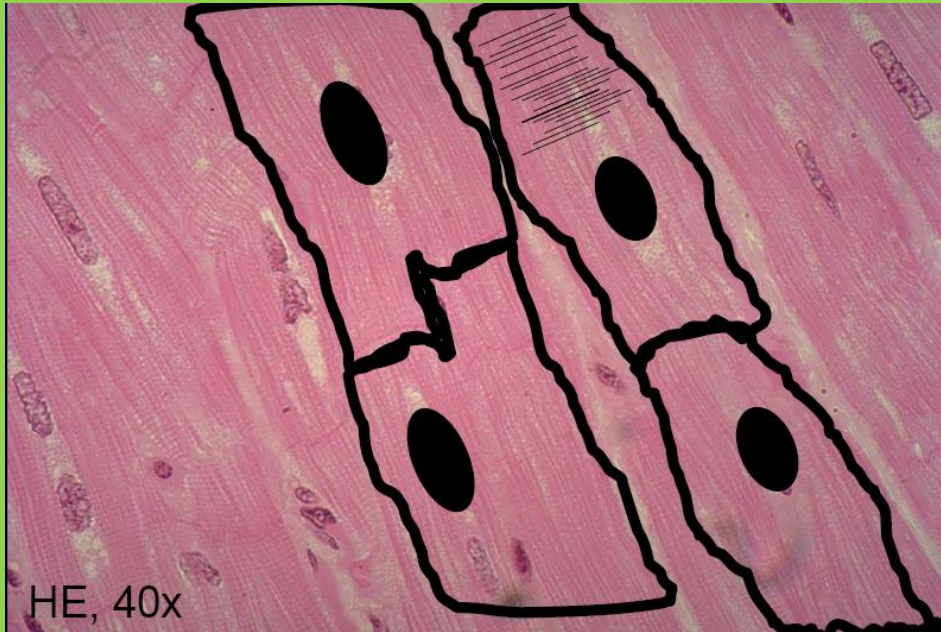


Complexo estimulante do coração e inervação cardíaca

Profa. Silvia Lacchini

Célula muscular estriada cardíaca



Automatismo do coração

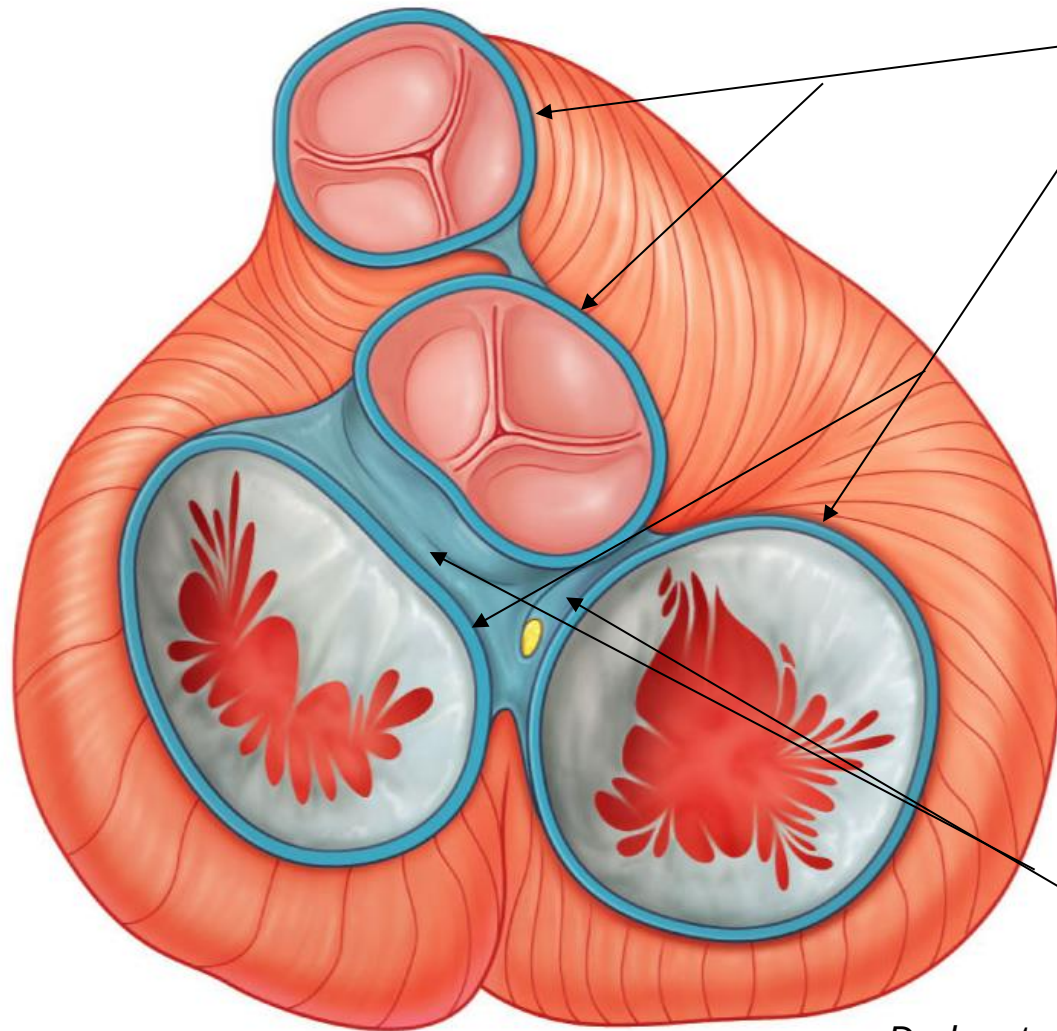
- As células especializadas do SISTEMA DE CONDUÇÃO CARDÍACA geram e coordenam a transmissão dos impulsos elétricos para as células miocárdicas.
- TRÊS CARACTERÍSTICAS:
 - automaticidade: capacidade de iniciar um impulso elétrico
 - Excitabilidade: capacidade de responder a um impulso elétrico
 - Condutividade: capacidade de transmitir um impulso elétrico de uma célula para outra - CONDUÇÃO MIOGÊNICA

Morfologia cardíaca – 4 câmaras



Netter

Esqueleto fibroso do coração



Anel fibroso das valvas

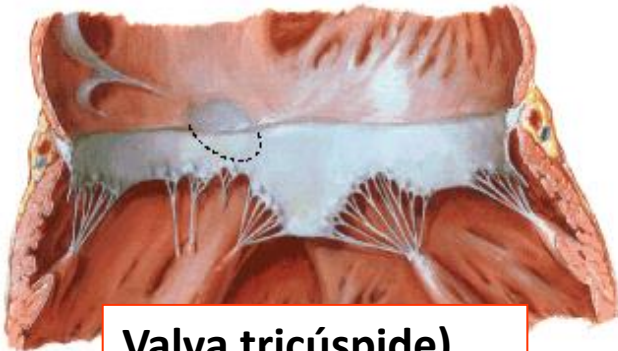
Funções:

Apoio às válvulas
Isolamento elétrico

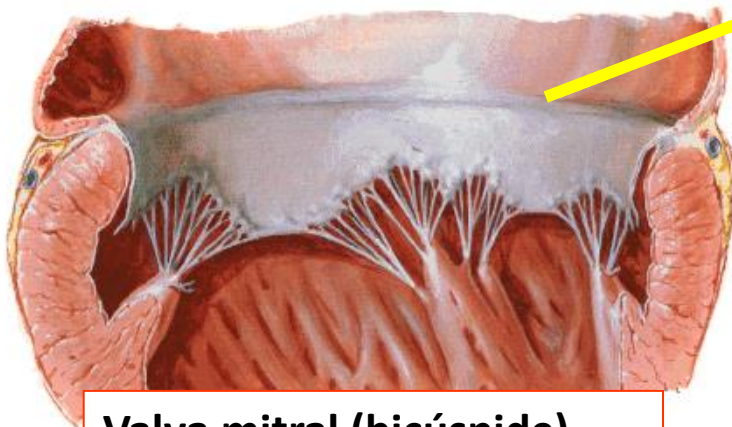
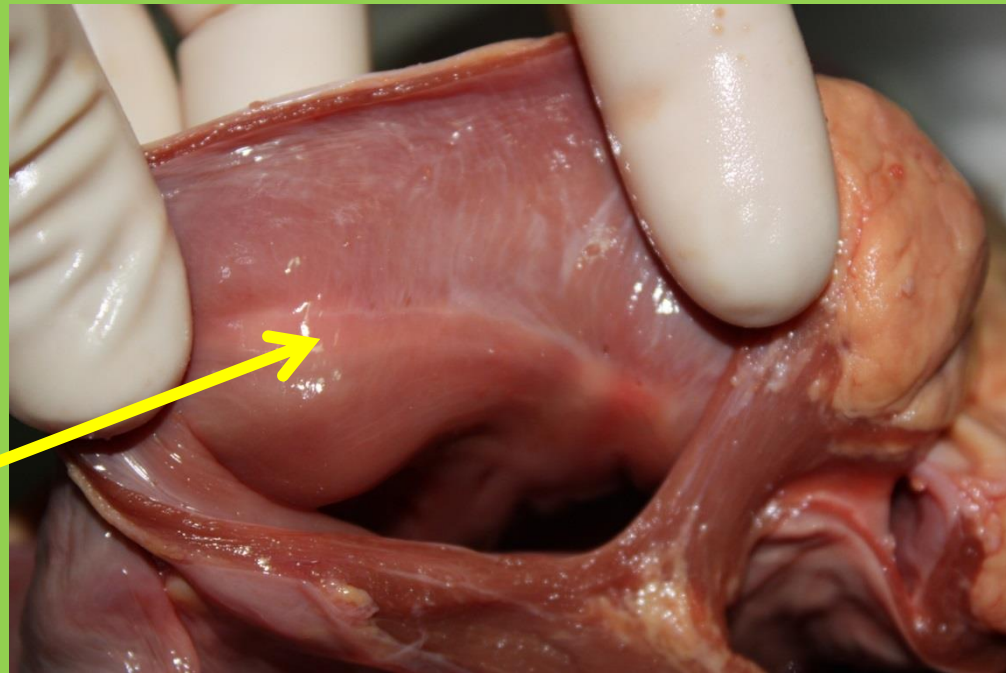
Trígonos fibrosos E e D

Drake et al

Esqueleto fibroso do coração



Valva tricúspide)



Valva mitral (bicúspide)

Componentes do complexo estimulante do coração

- nó sinoatrial (marcapasso cardíaco)



- nó atrioventricular

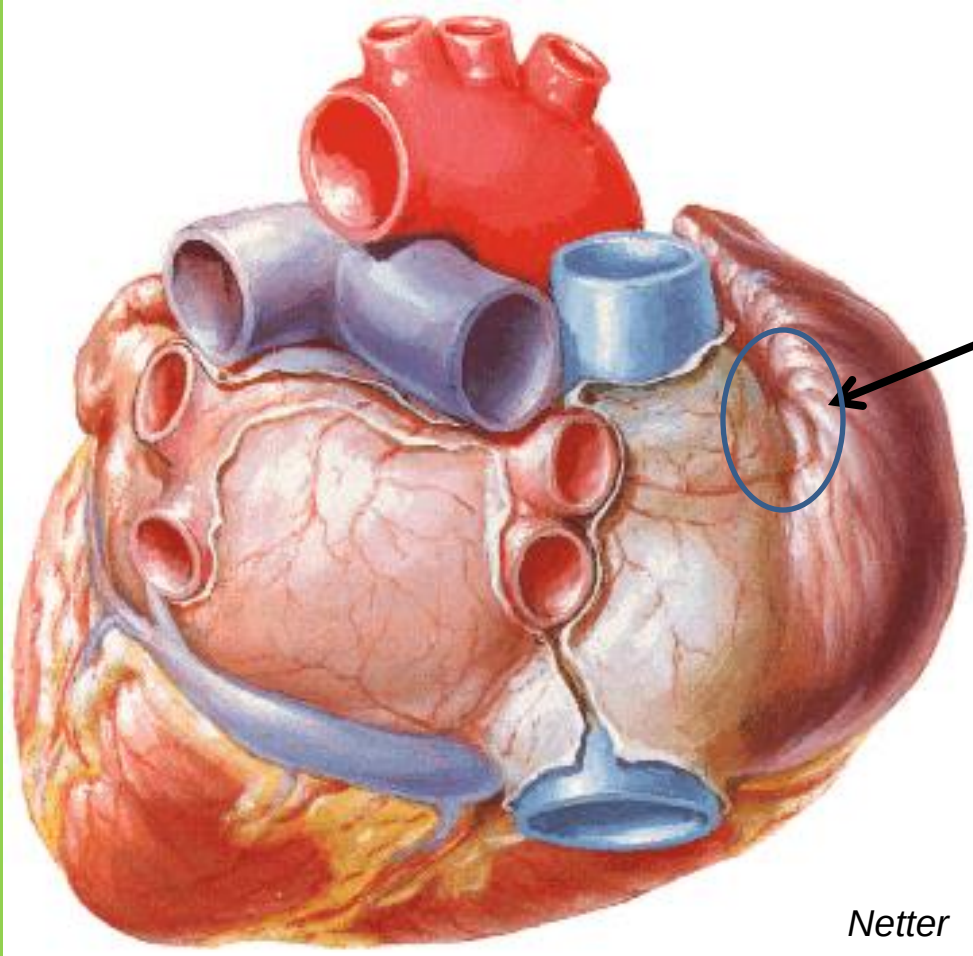


- Fascículo atrioventricular

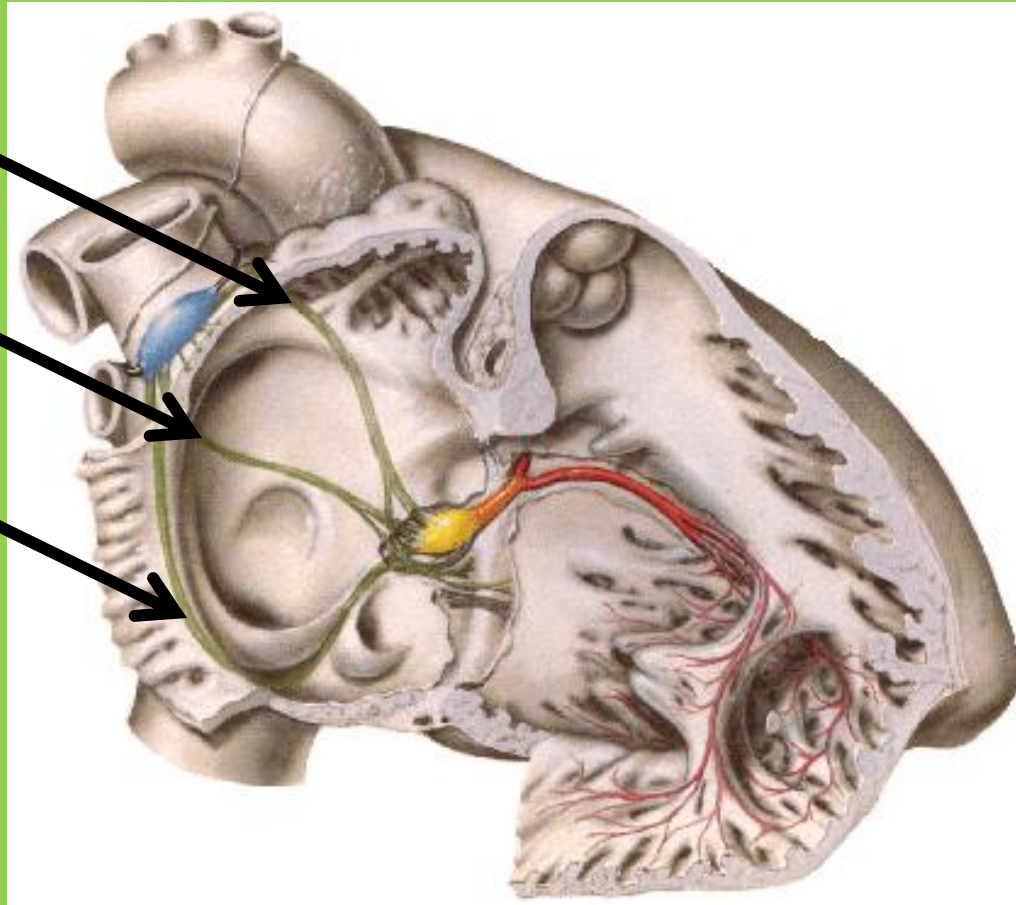
ramo direito

ramo esquerdo

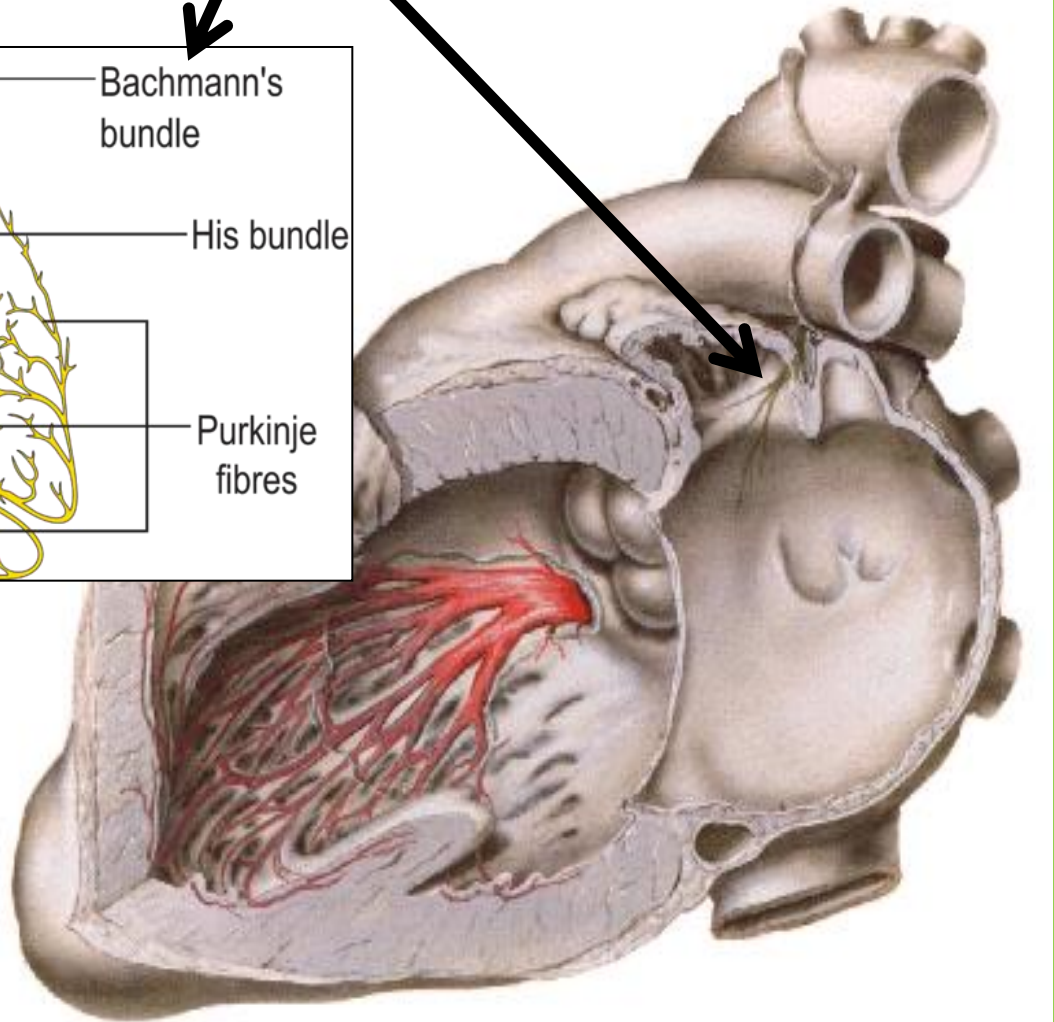
Nó sinoatrial



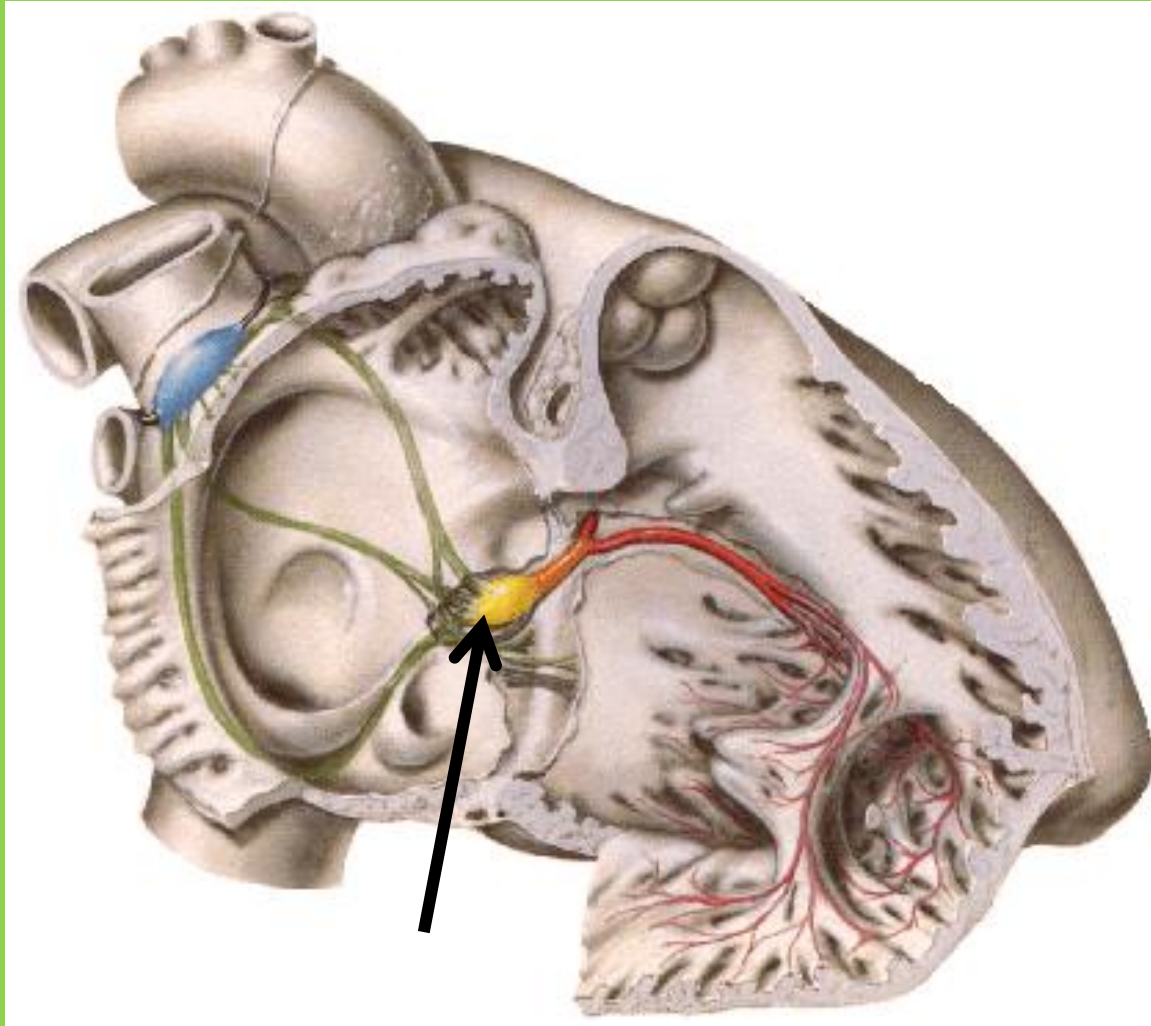
Fibras internodais



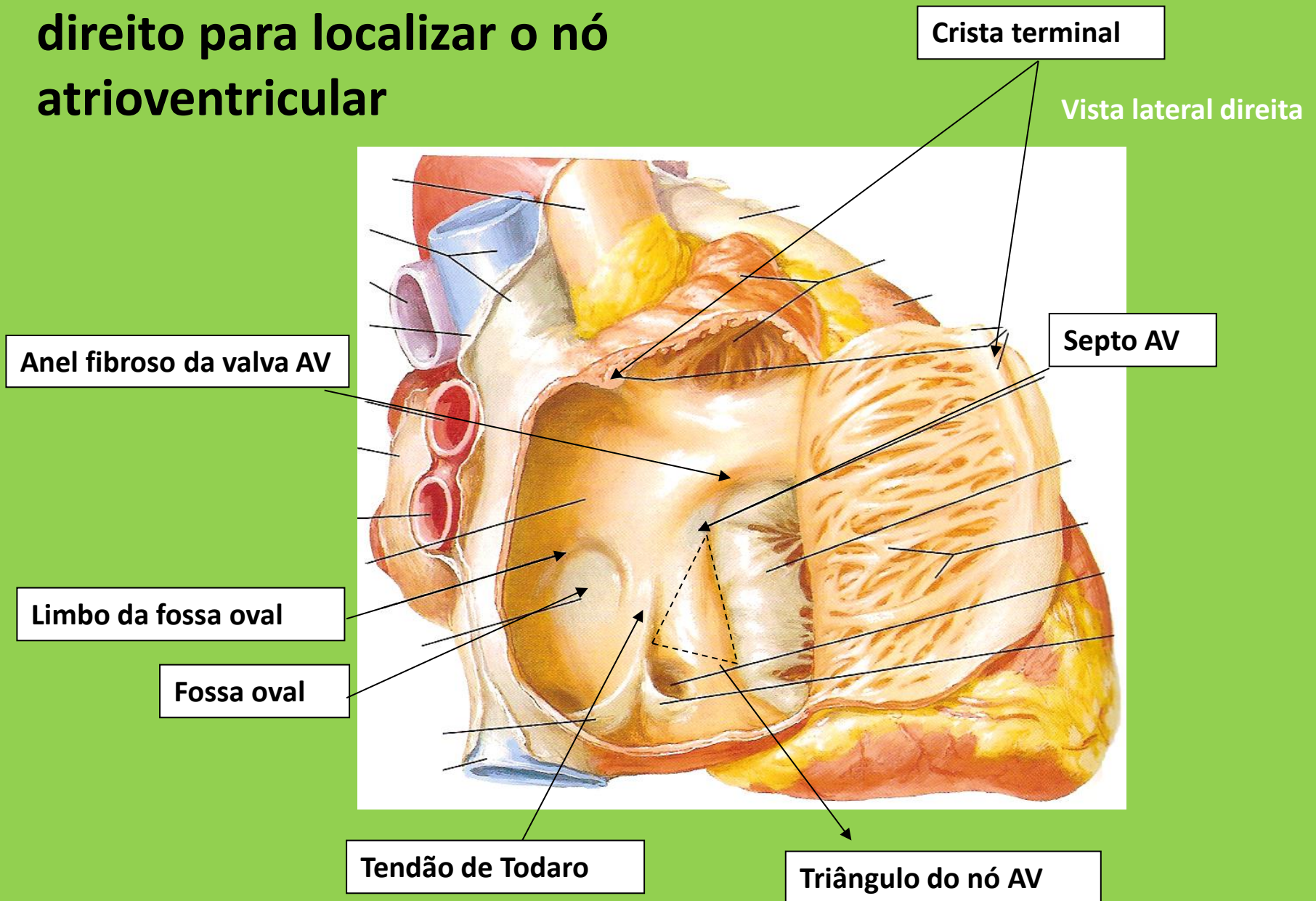
Feixe para o átrio esquerdo



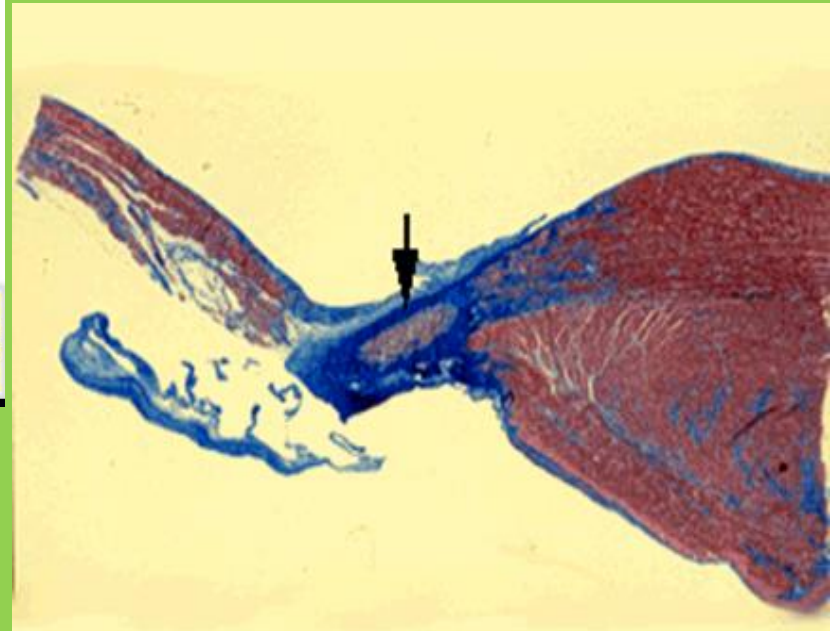
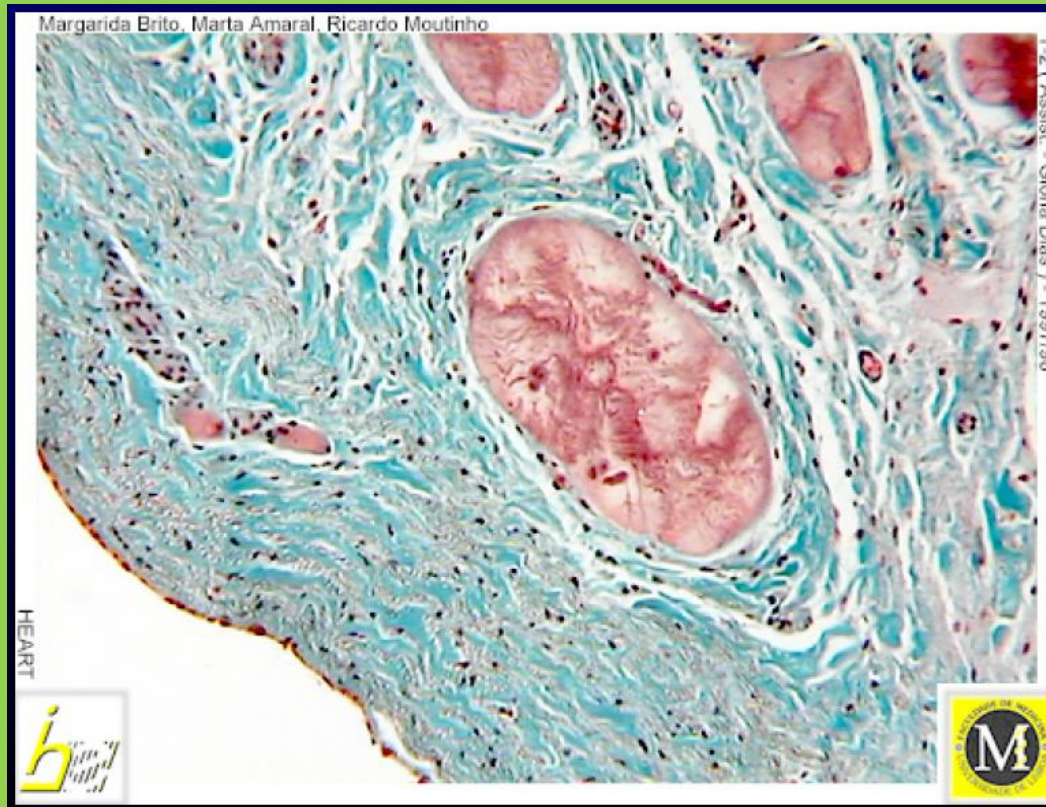
Nó atrioventricular



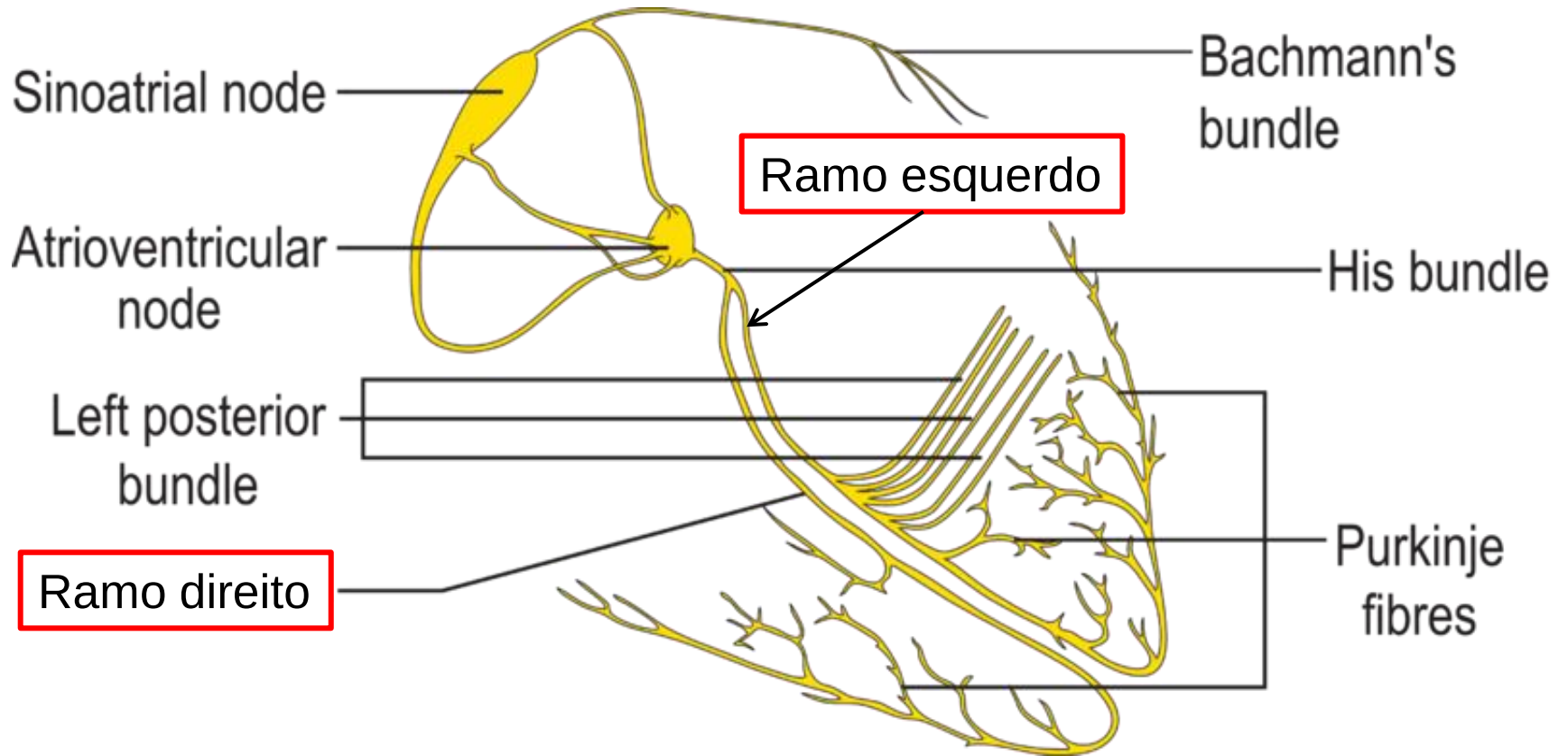
Referências anatômicas no átrio direito para localizar o nó atrioventricular



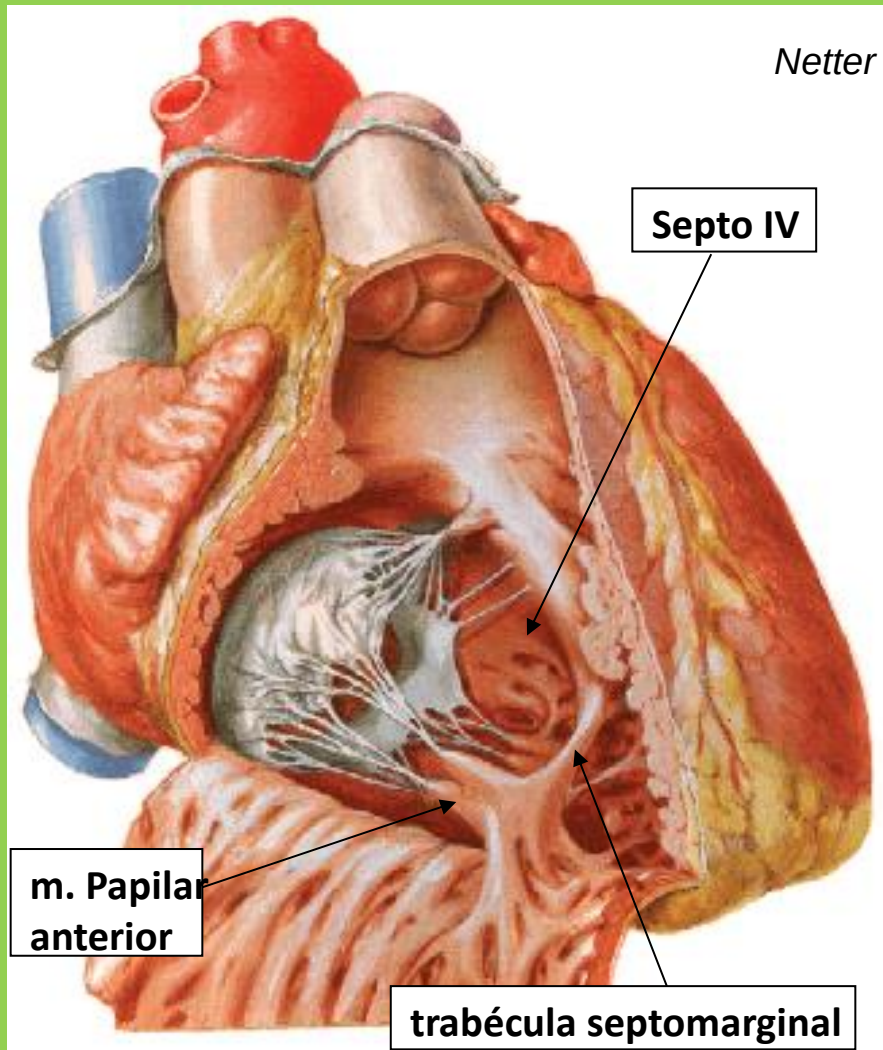
Nó atrioventricular e fascículo AV



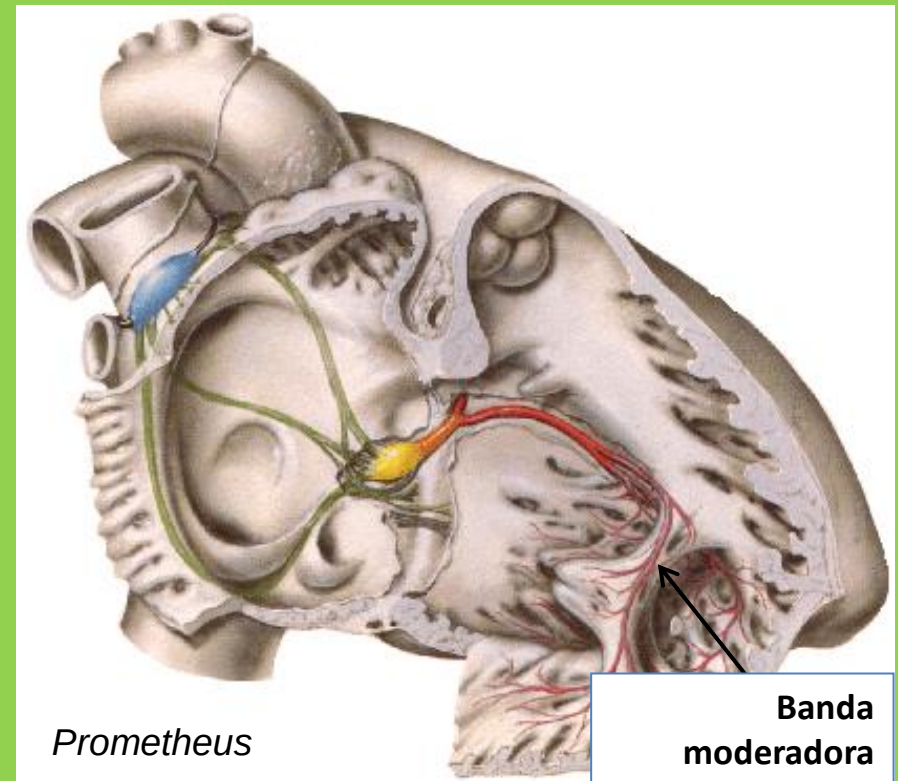
Ramos direito e esquerdo do fascículo AV



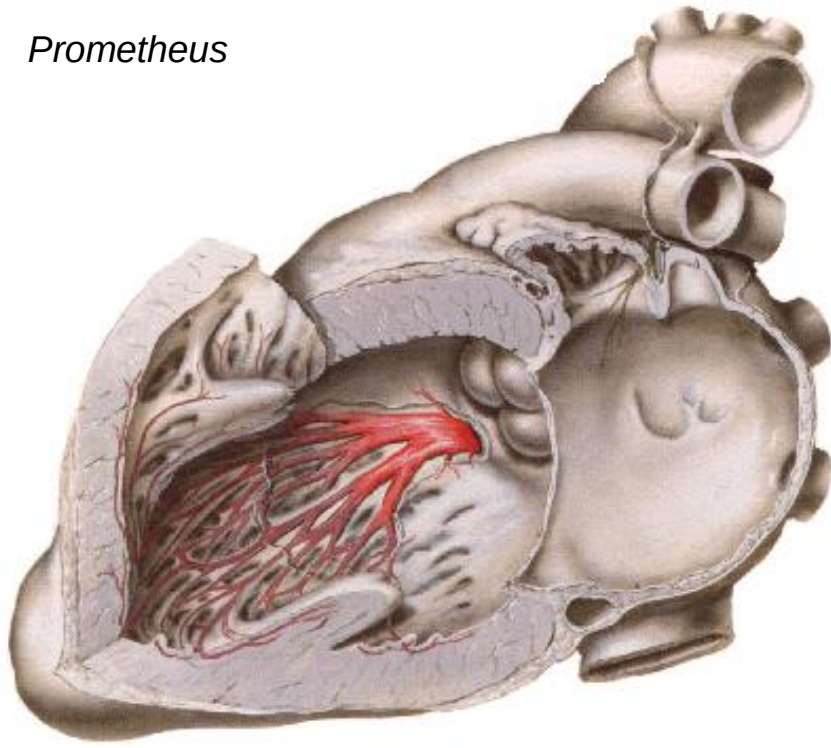
Ventrículo direito



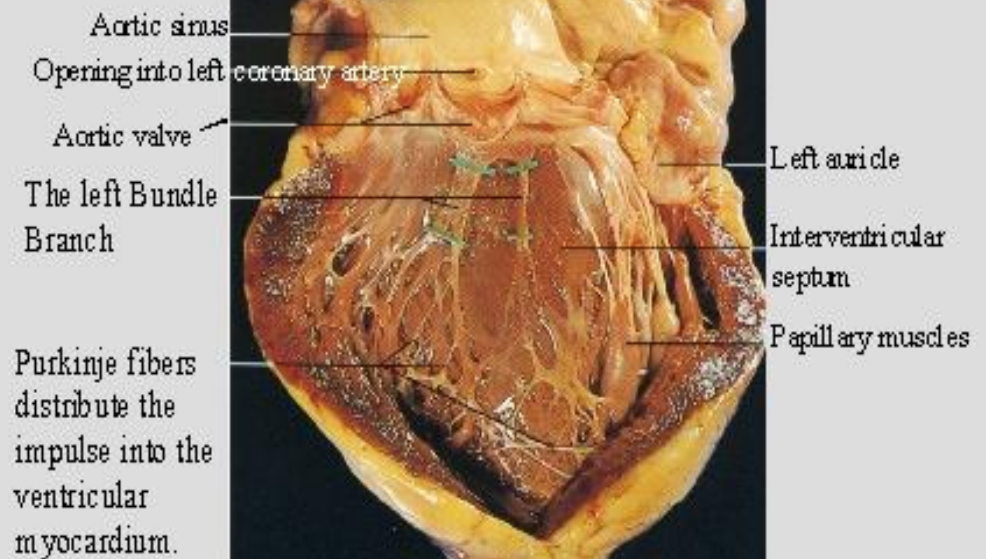
Ramo direito



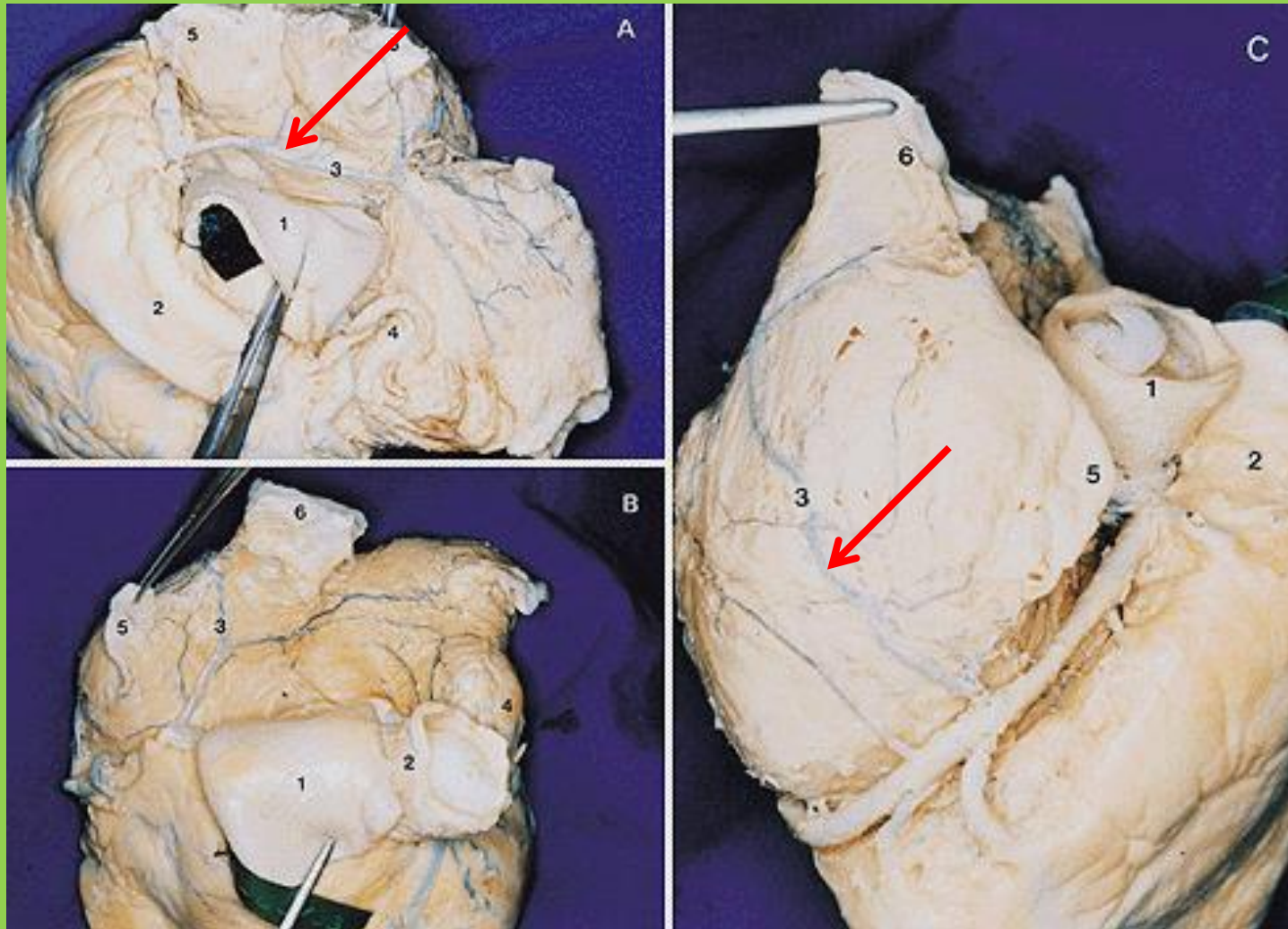
Prometheus

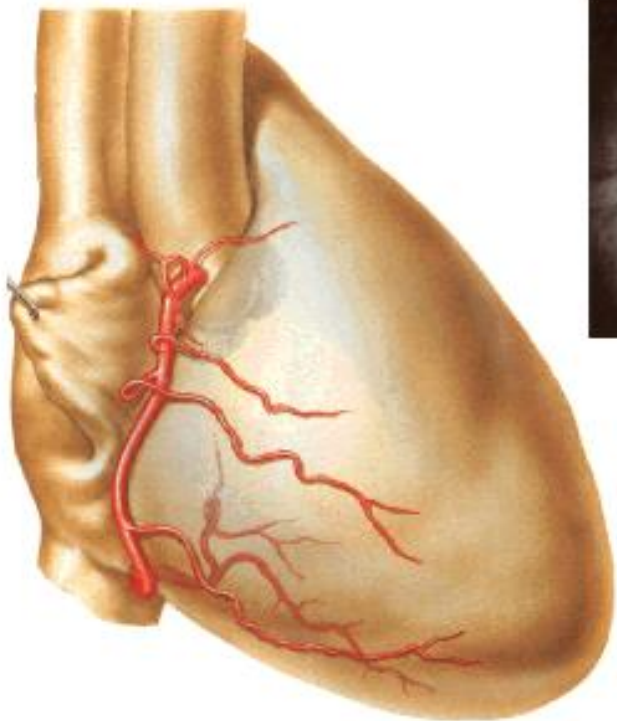


Ramo esquerdo



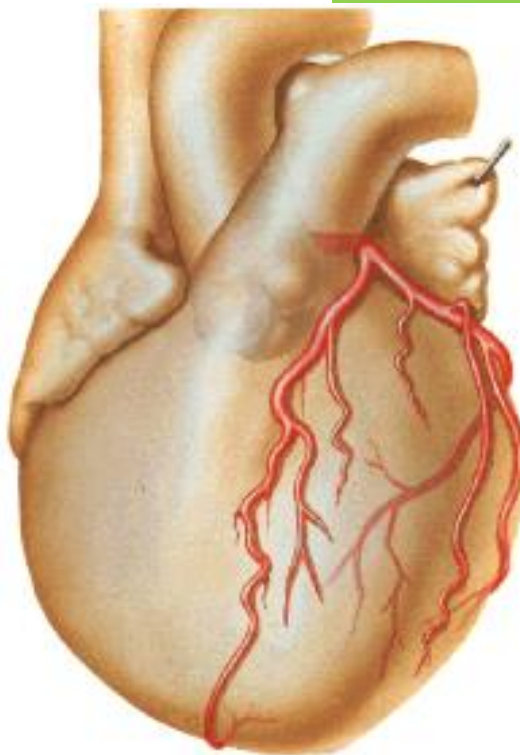
Irrigação do nó sinoatrial

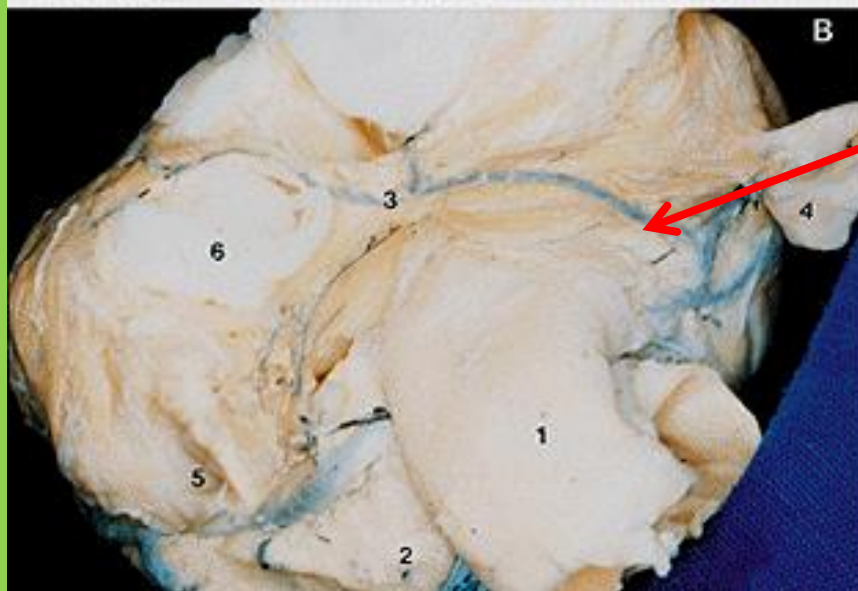
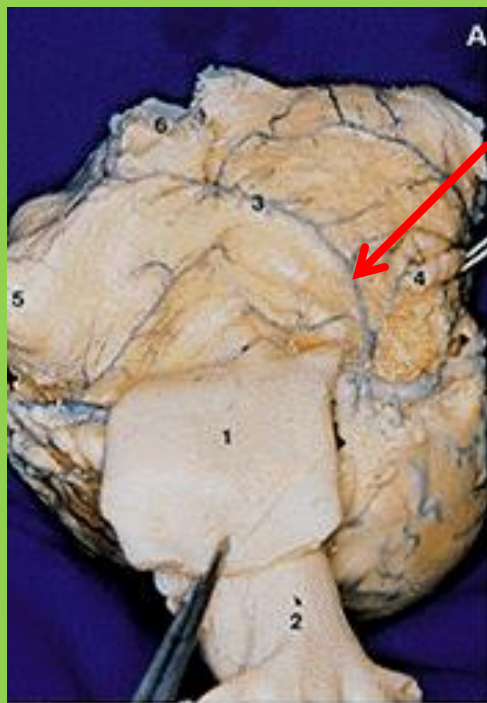




A partir da ACE – 40%

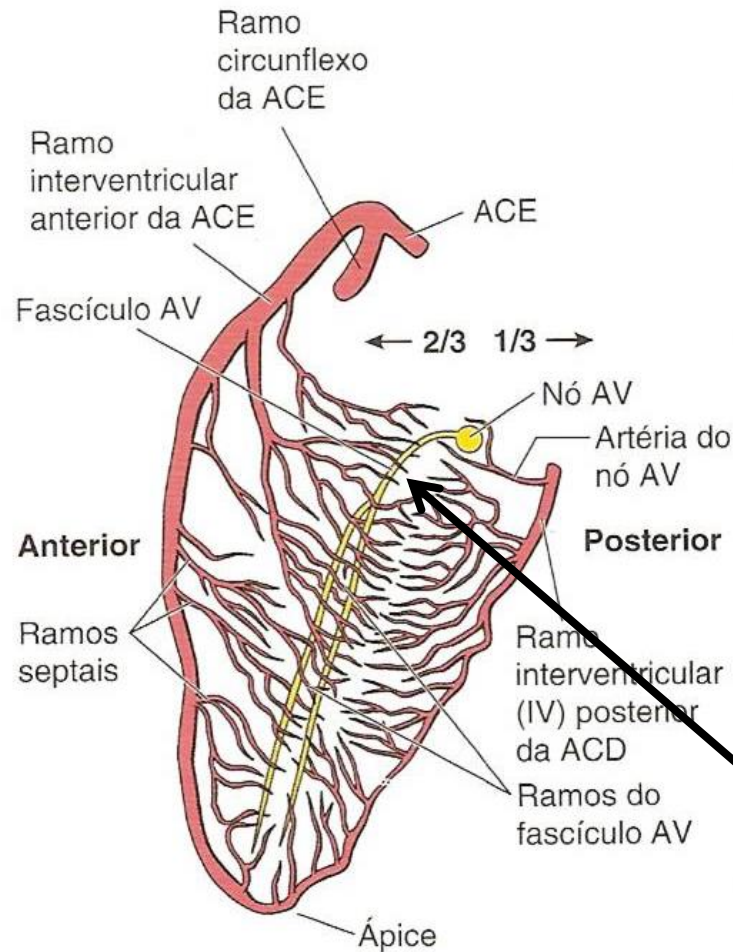
A partir da ACD – 60%





- 1 - Aorta
- 2 - Tronco pulmonar
- 3 - Artéria do nó sinoatrial
- 4 - Aurícula esquerda
- 5 - Aurícula direita
- 6 - Veia cava superior

Irrigação do nó atrioventricular



80%

Irrigação de 2/3 anteriores do fascículo AV



Ramo IV da ACE

(C) Artérias do septo interventricular isolado (do lado esquerdo)

Moore & Dalley

Formas de observação da atividade elétrica X posição anatômica

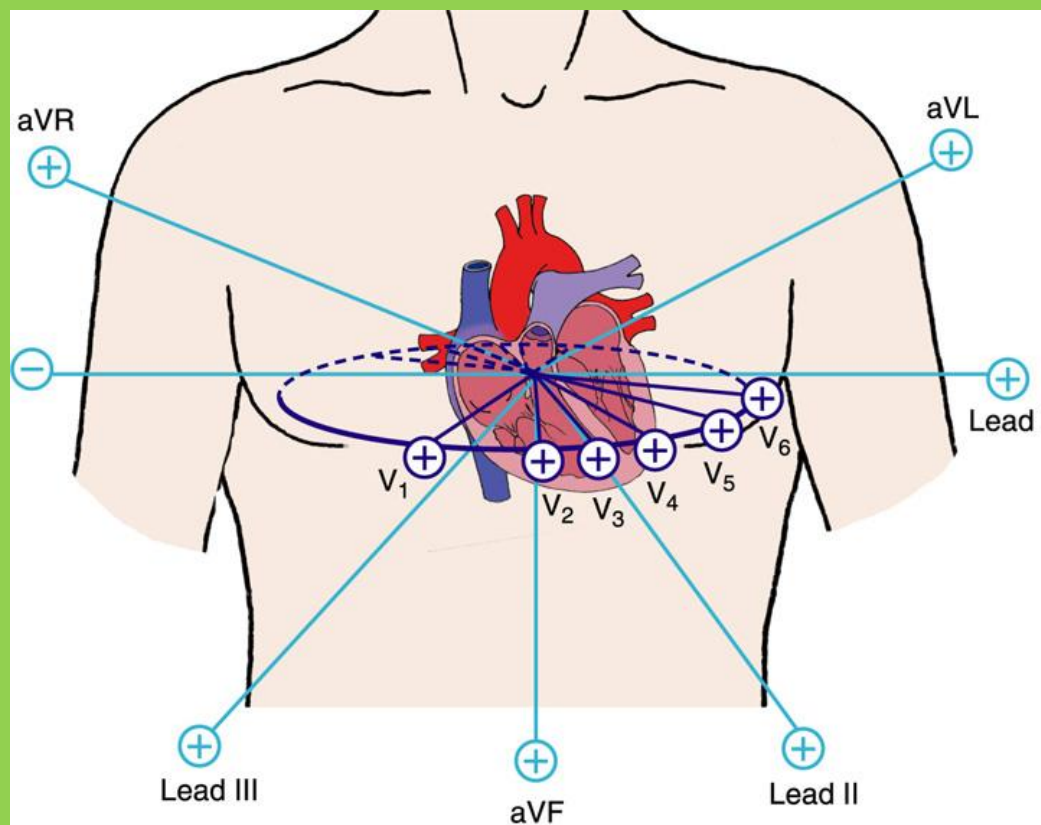
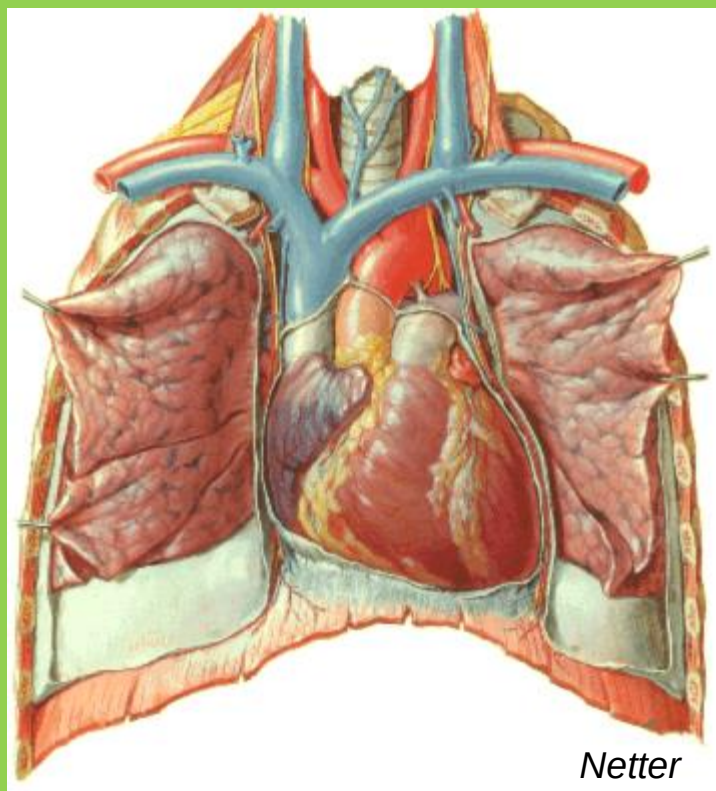


Figure 17-42 Electrocardiographic views of the heart.

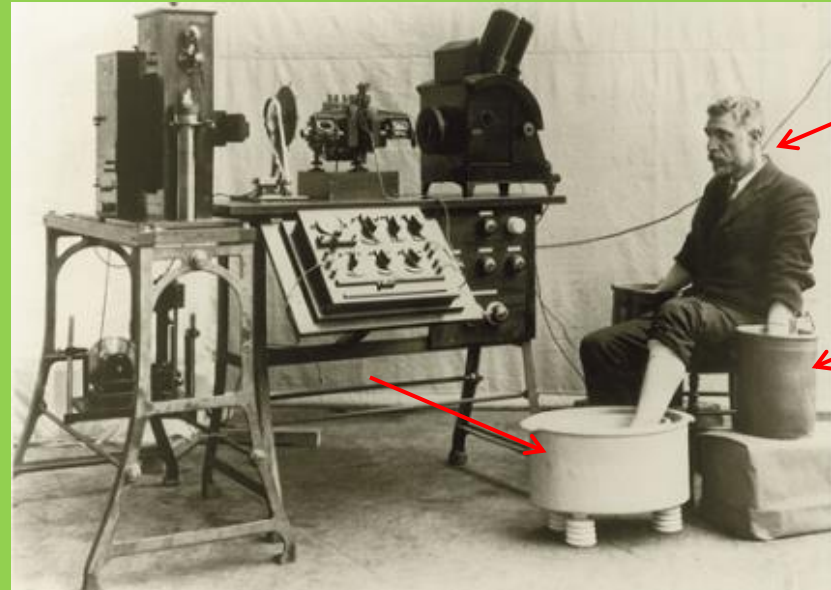
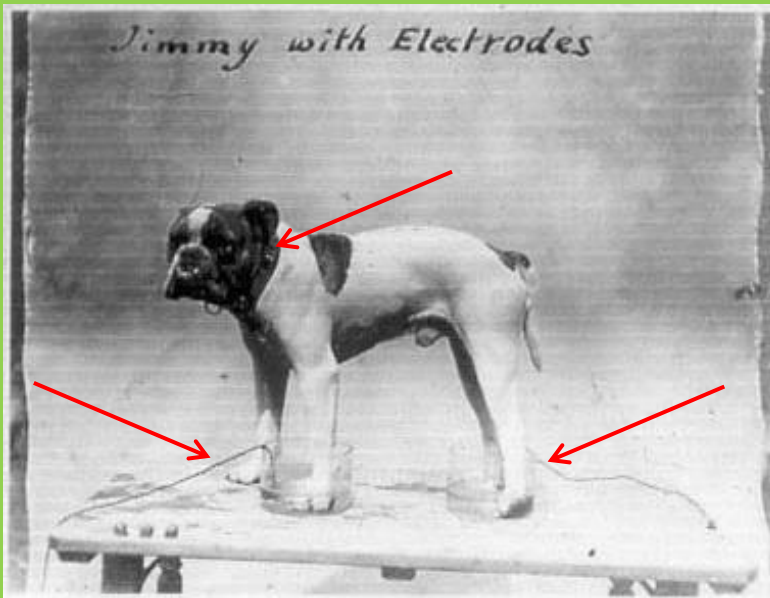
Copyright © 2005 Lippincott Williams & Wilkins. Instructor's Resource CD-ROM to Accompany Critical Care Nursing: A Holistic Approach, eighth edition.

Primeiro “eletrograma”

Augustus Waller e Jimmy
(1887)



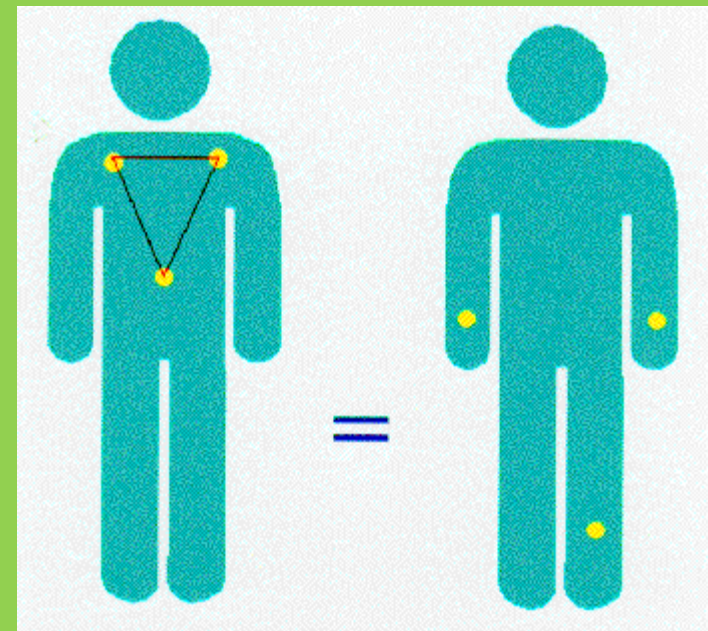
distribuição elétrica na
superfície do coração de
animais e humanos



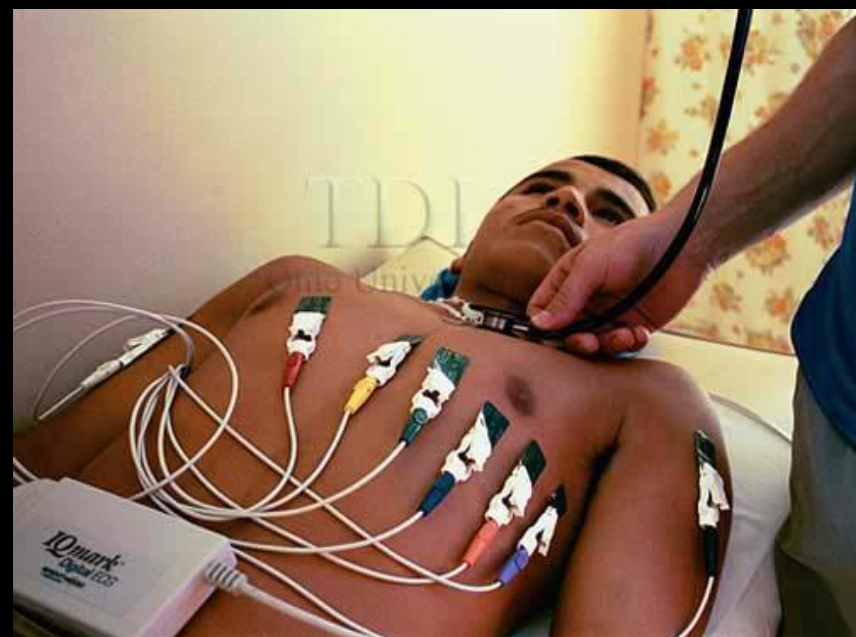
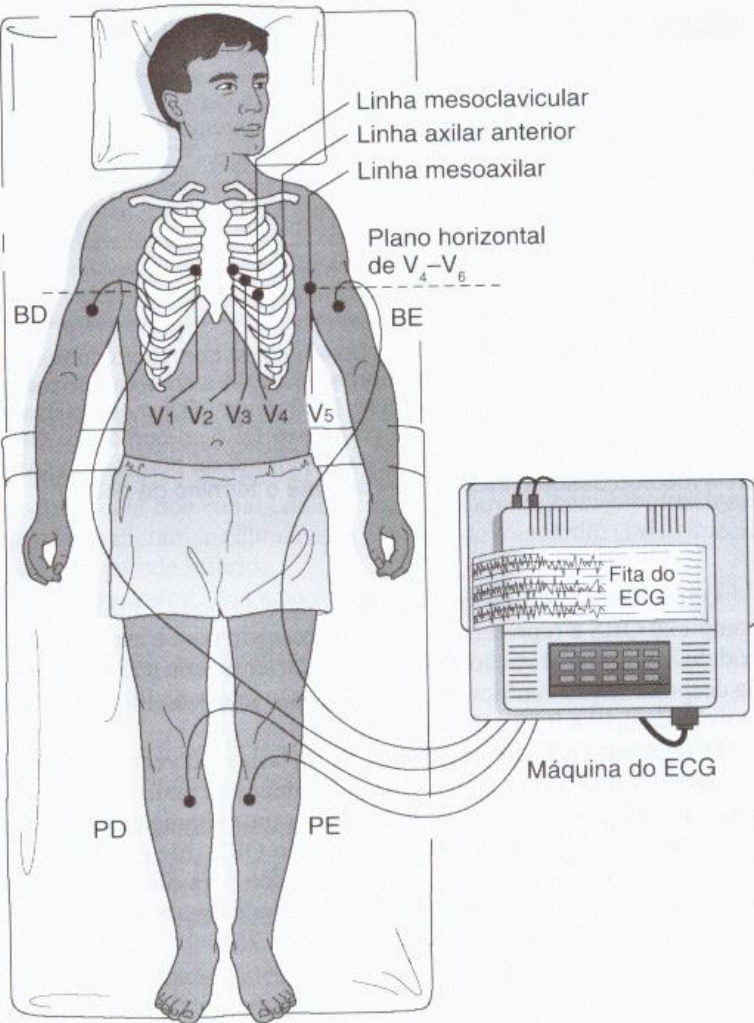
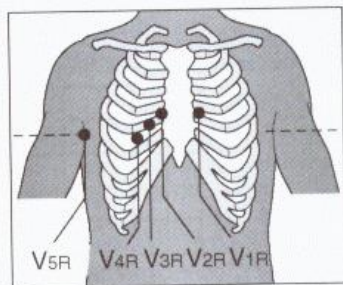
Como observar a direção dos impulsos elétricos?

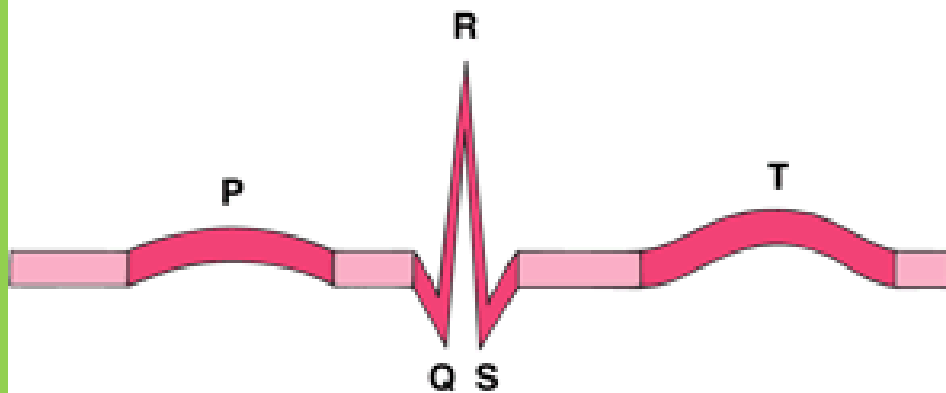
eletrocardiograma

1. 2 a 5 eletrodos colocados nos membros e no tórax
2. Cria-se uma linha imaginária chamada de derivação
3. Uma derivação é como o olho de uma câmera.

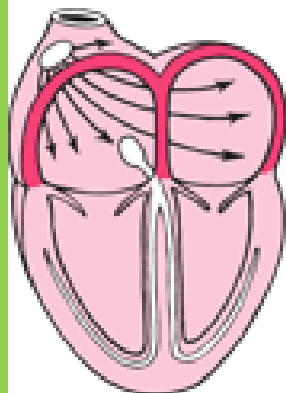


Derivações precordiais direitas suplementares



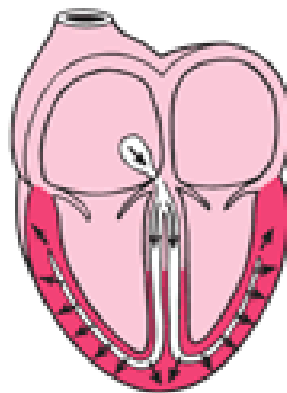


P Wave



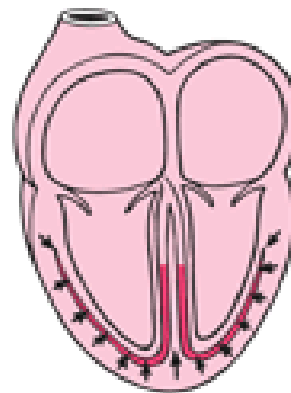
Activation of the
atria

QRS Complex



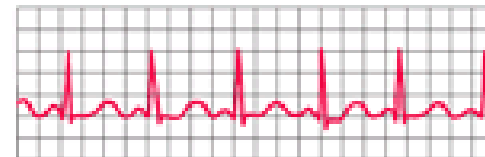
Activation of the
ventricles

T Wave

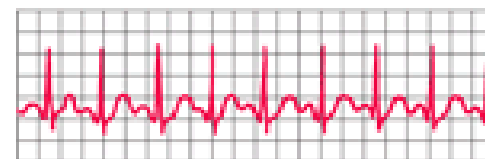


Recovery wave

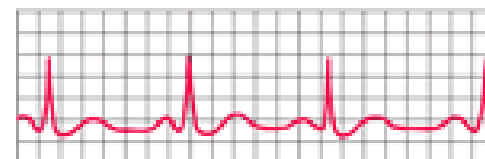
Normal Heartbeat



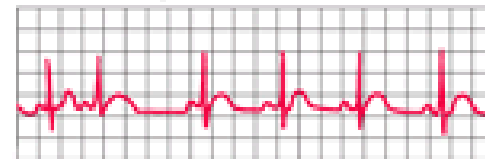
Fast Heartbeat



Slow Heartbeat



Irregular Heartbeat

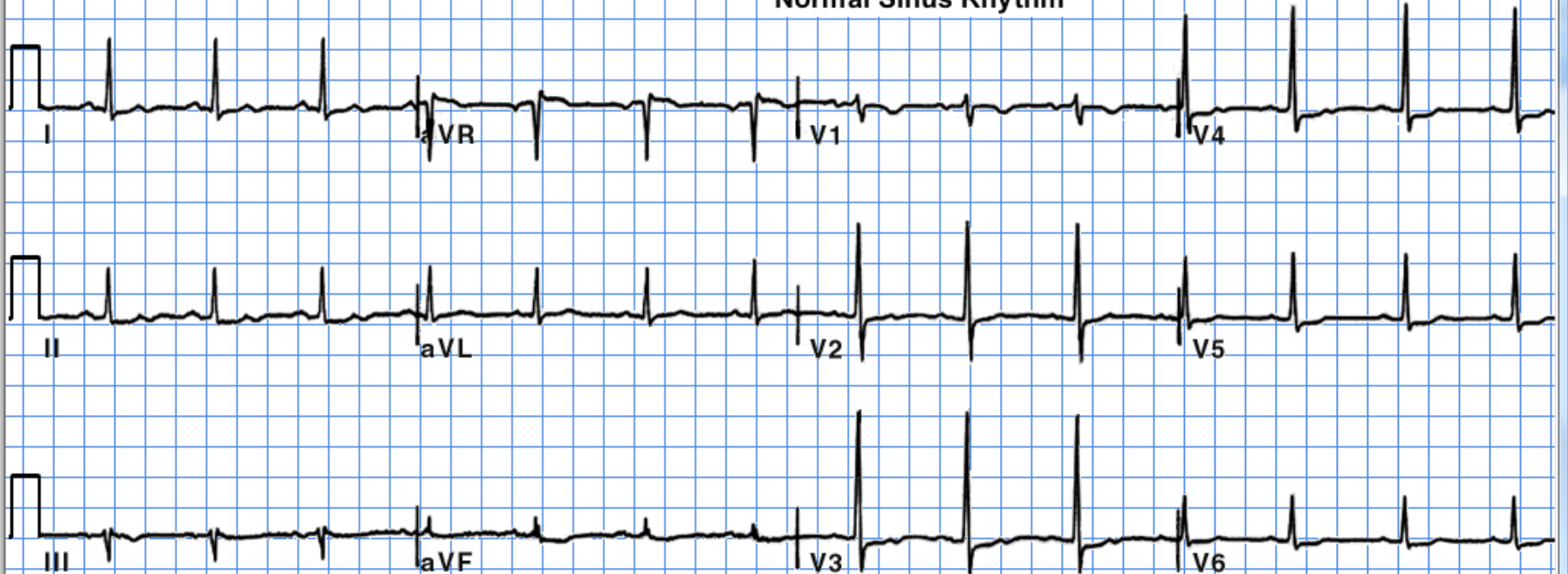


CONTENTS

PREV

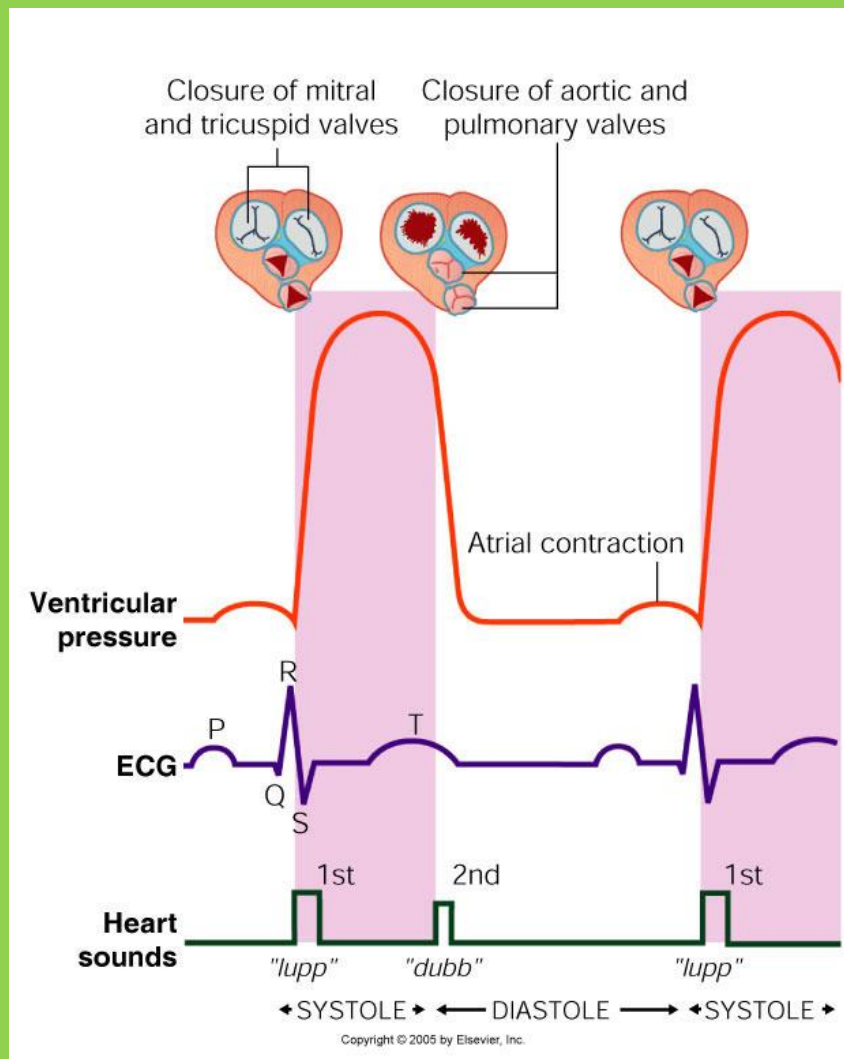
NEXT

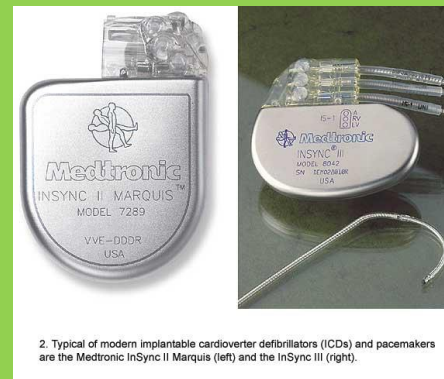
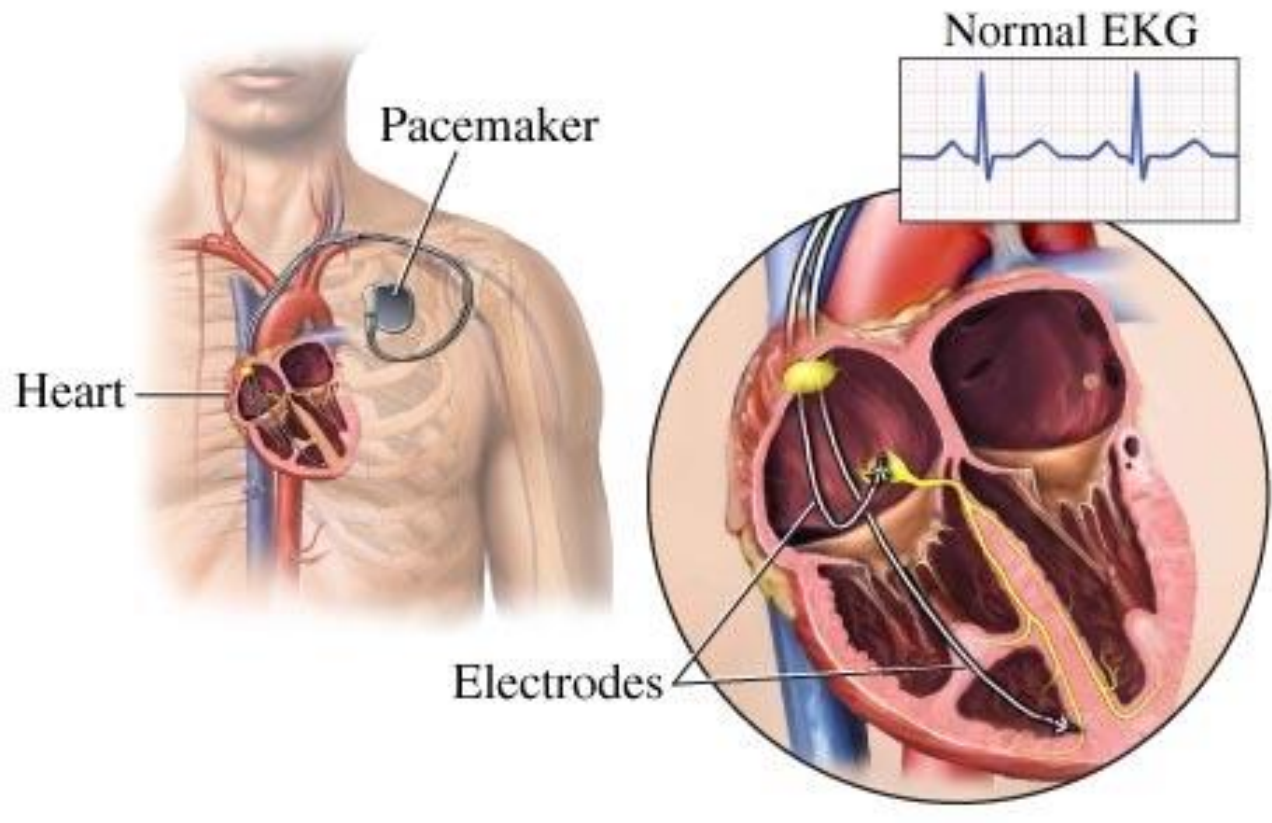
Normal Sinus Rhythm



I II III AVR **AVL** AVF V1 V2 V3 V4 V5 V6 ← ZOOM IN

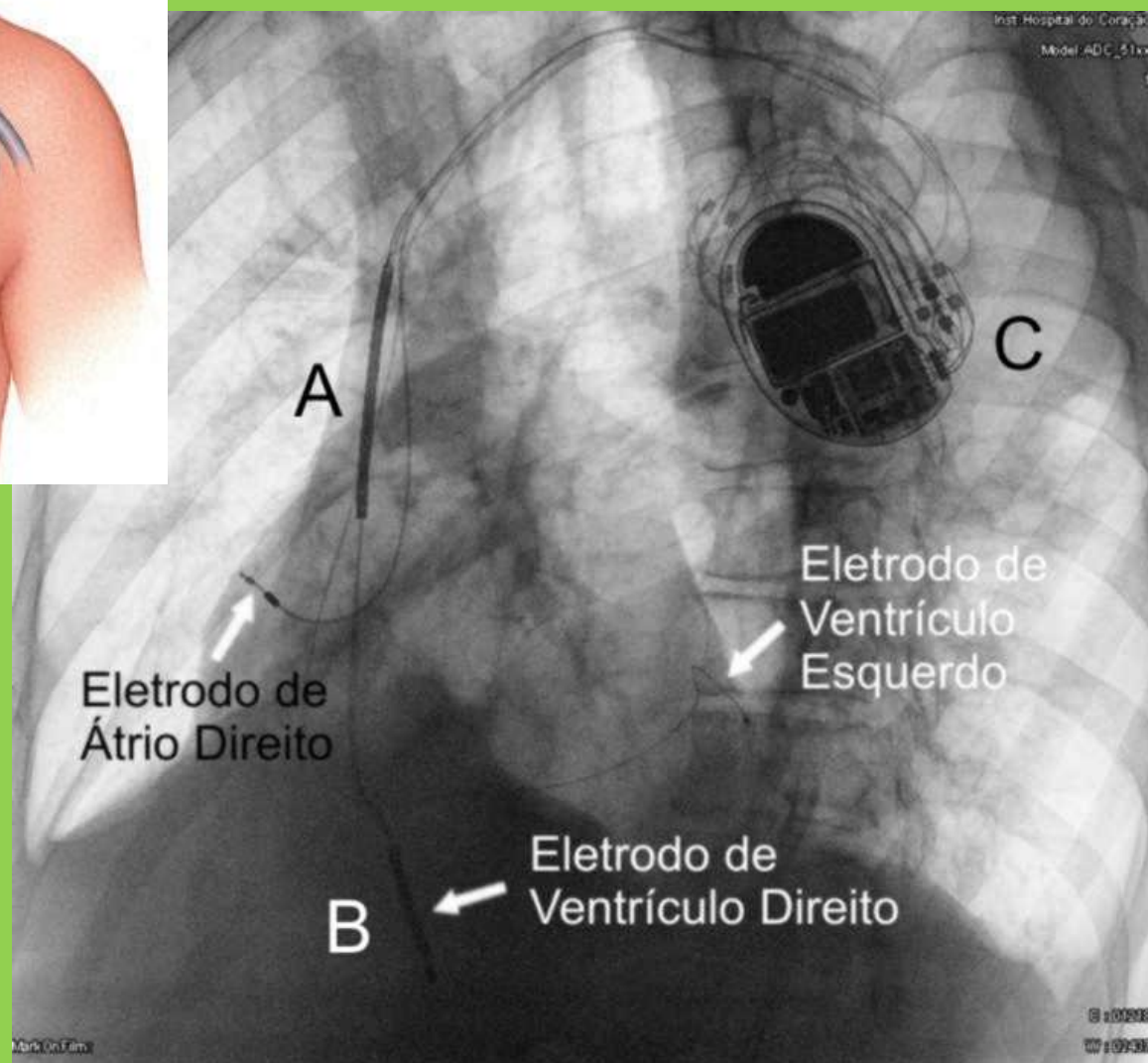
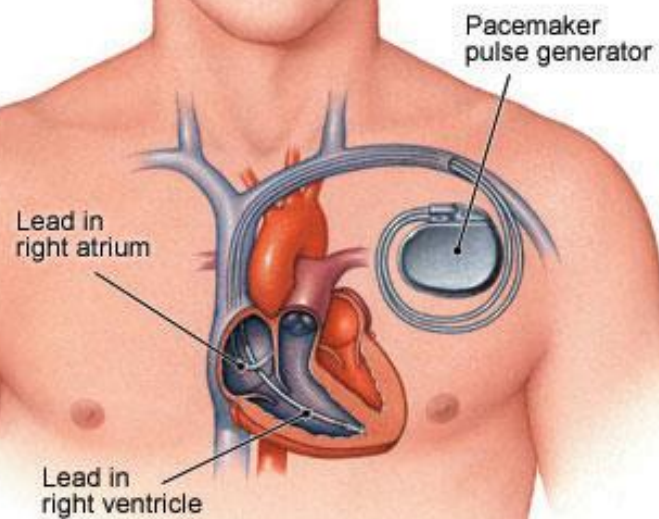
Relação com o ciclo cardíaco



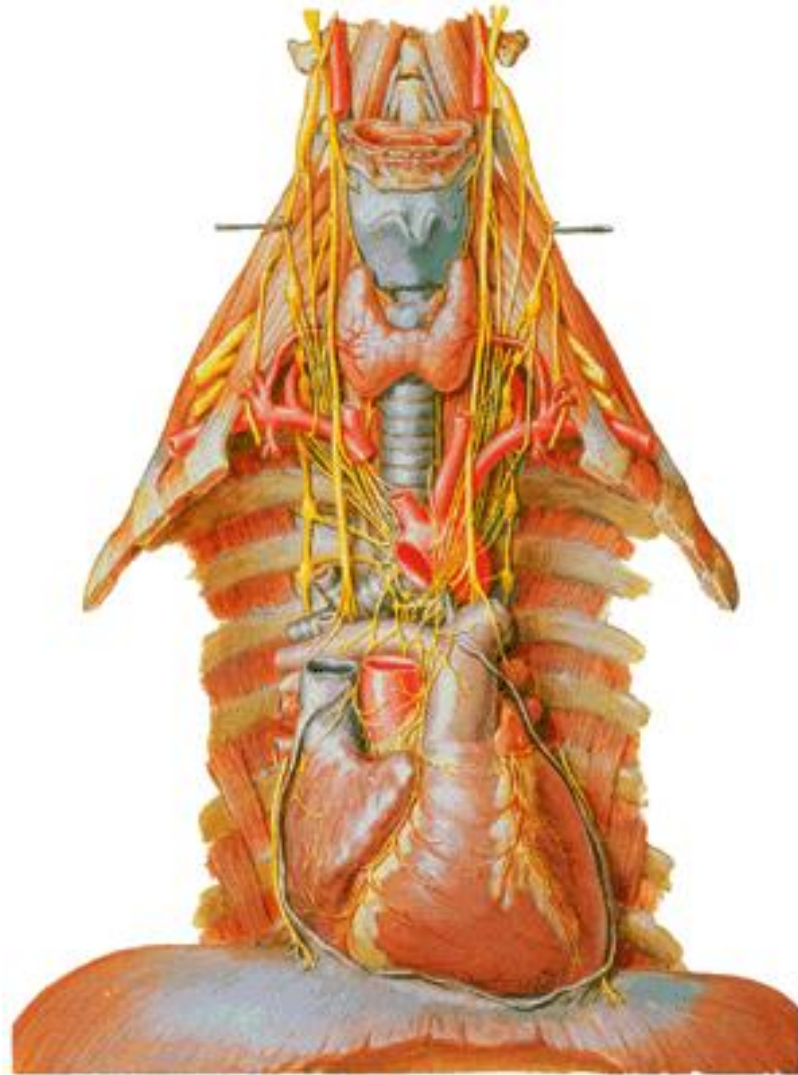


2. Typical of modern implantable cardioverter defibrillators (ICDs) and pacemakers are the Medtronic InSync II Marquis (left) and the InSync III (right).

Pacemaker



Inervação do Coração



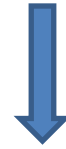
Sistema Neurovegetativo



Simpático

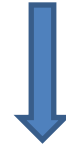
Parassimpático – n. vago

Ramos cardíacos



Nervos vagos (pré-ganglionares)

Troncos simpáticos (cervicais e torácicos superiores)

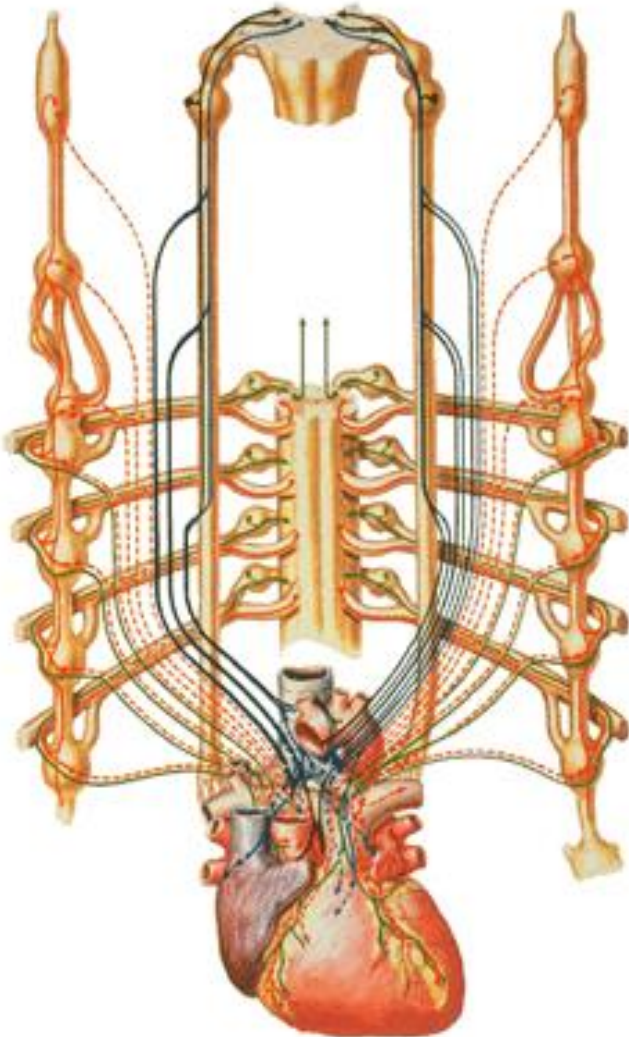


Plexo cardíaco e ramificações

Grandes plexos: combinação de fibras simpáticas e parassimpáticas



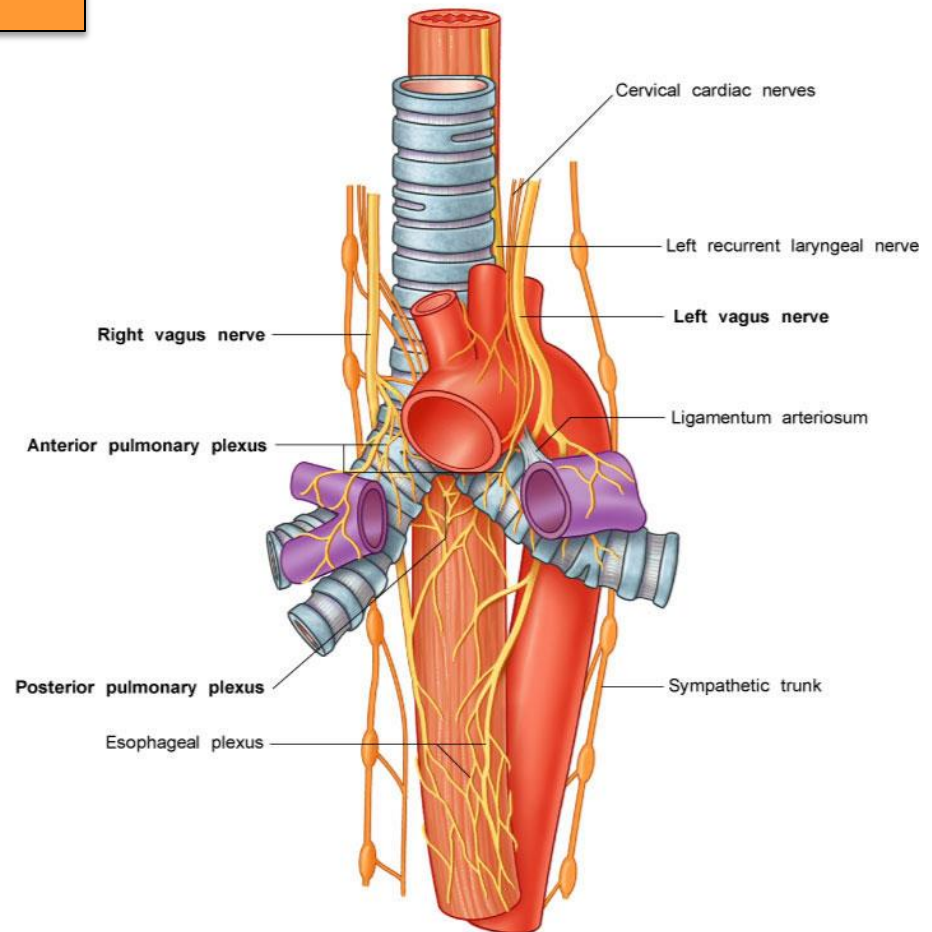
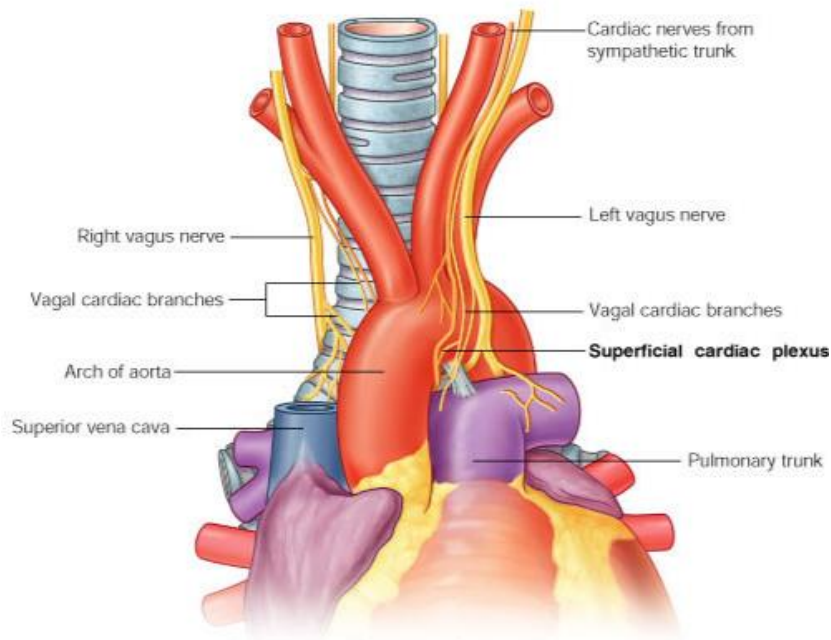
Tórax (cardíaco)
Abdome (celíaco)
Pelve (pélvico)



Plexo cardíaco – localizado na base do coração, junto à aorta

Divisões topográficas (não funcionais):

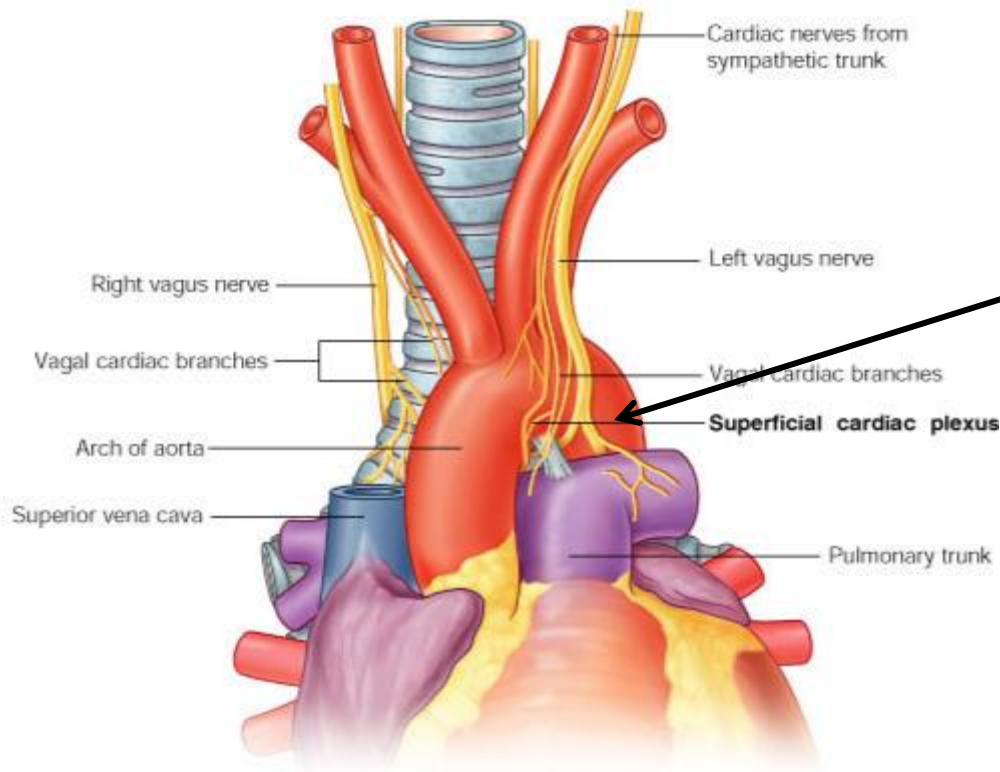
- Superficial
- Profundo



Divisão Superficial

- Ramo cardíaco cervical superior simpático E
- Ramos cardíacos superiores do n. vago E

•Às vezes encontrado gânglio cardíaco (de Wrisberg) - parassimp



Ramos do plexo superficial:

- a) Para plexo cardíaco profundo
- b) Para plexo coronário anterior
- c) Para plexo pulmonar anterior E

Parte profunda:

Direita:

- Ramos que seguem ao pulmão D
- Plexo coronário anterior (direito)



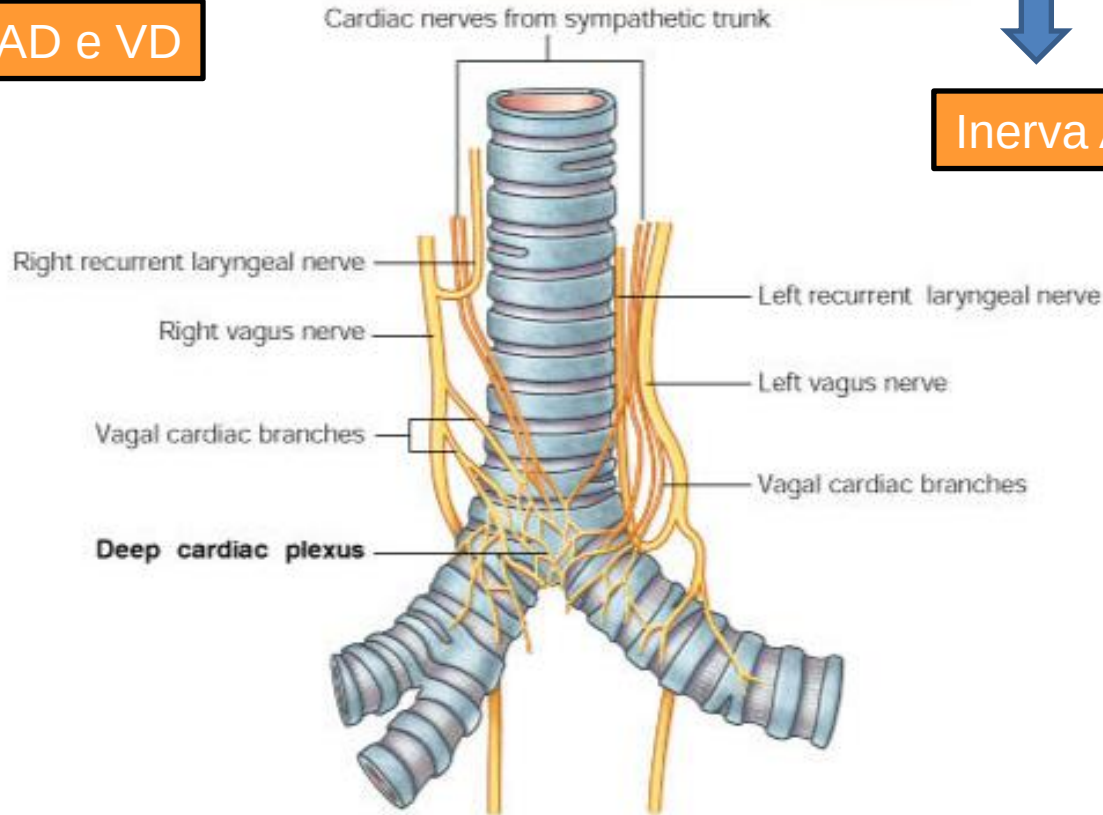
Inerva AD e VD

Esquerda:

- Ramos que seguem ao plexo superficial
- Ramos que seguem ao pulmão D
- Plexo coronário posterior (esquerdo)



Inerva AE e VE



Plexo subendocárdico

