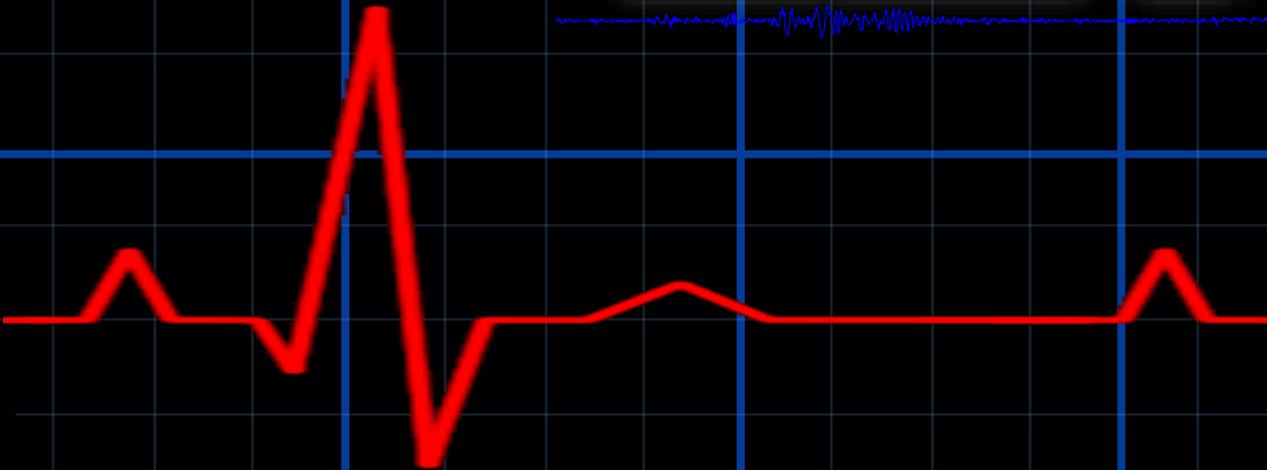
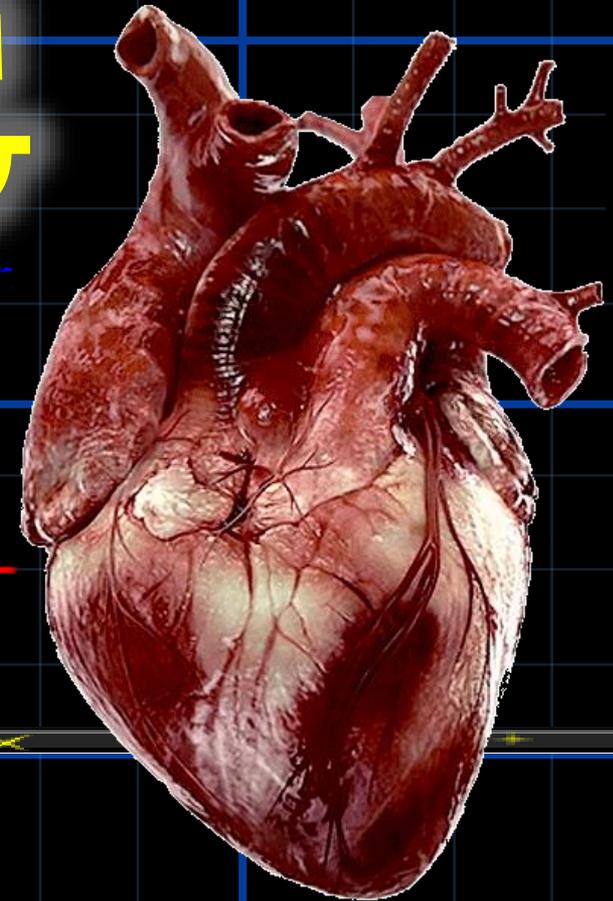
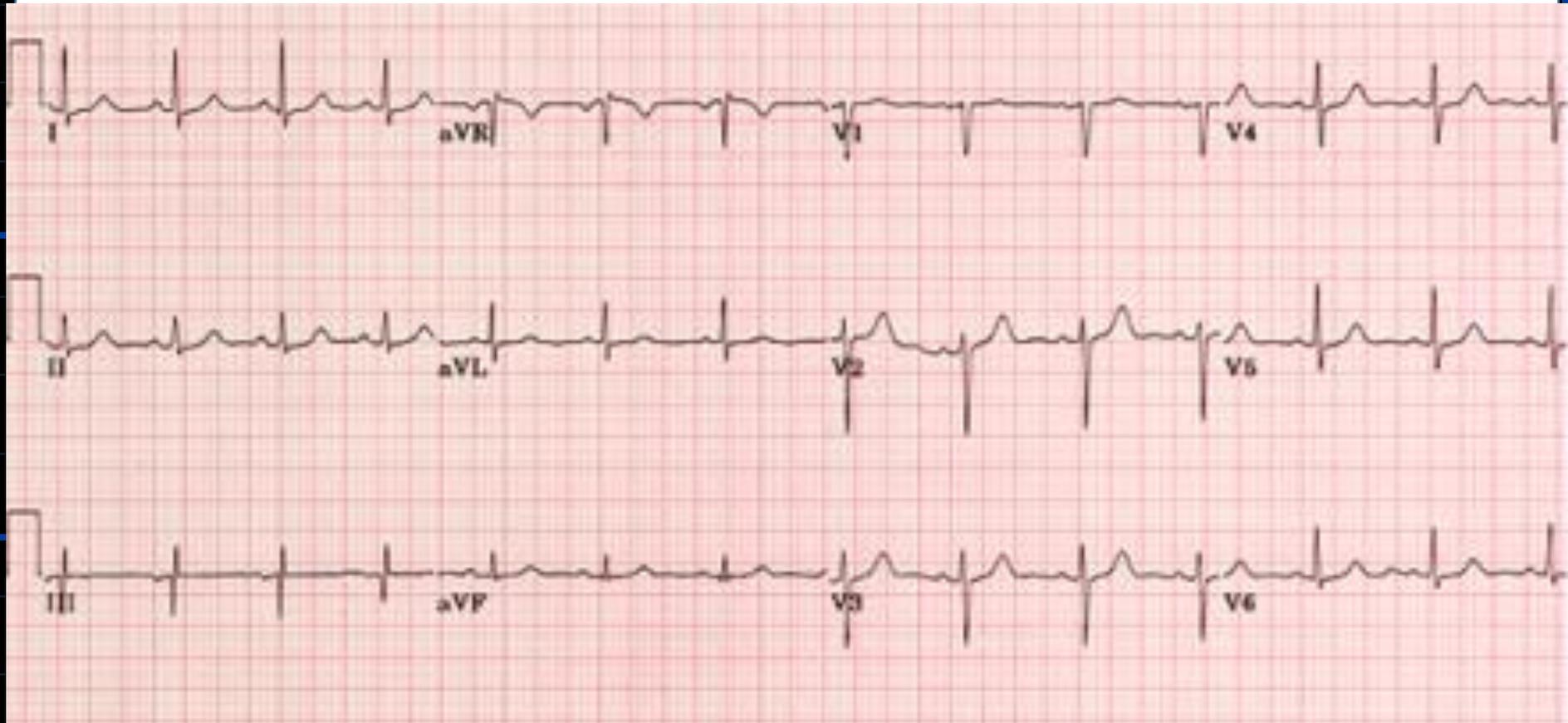
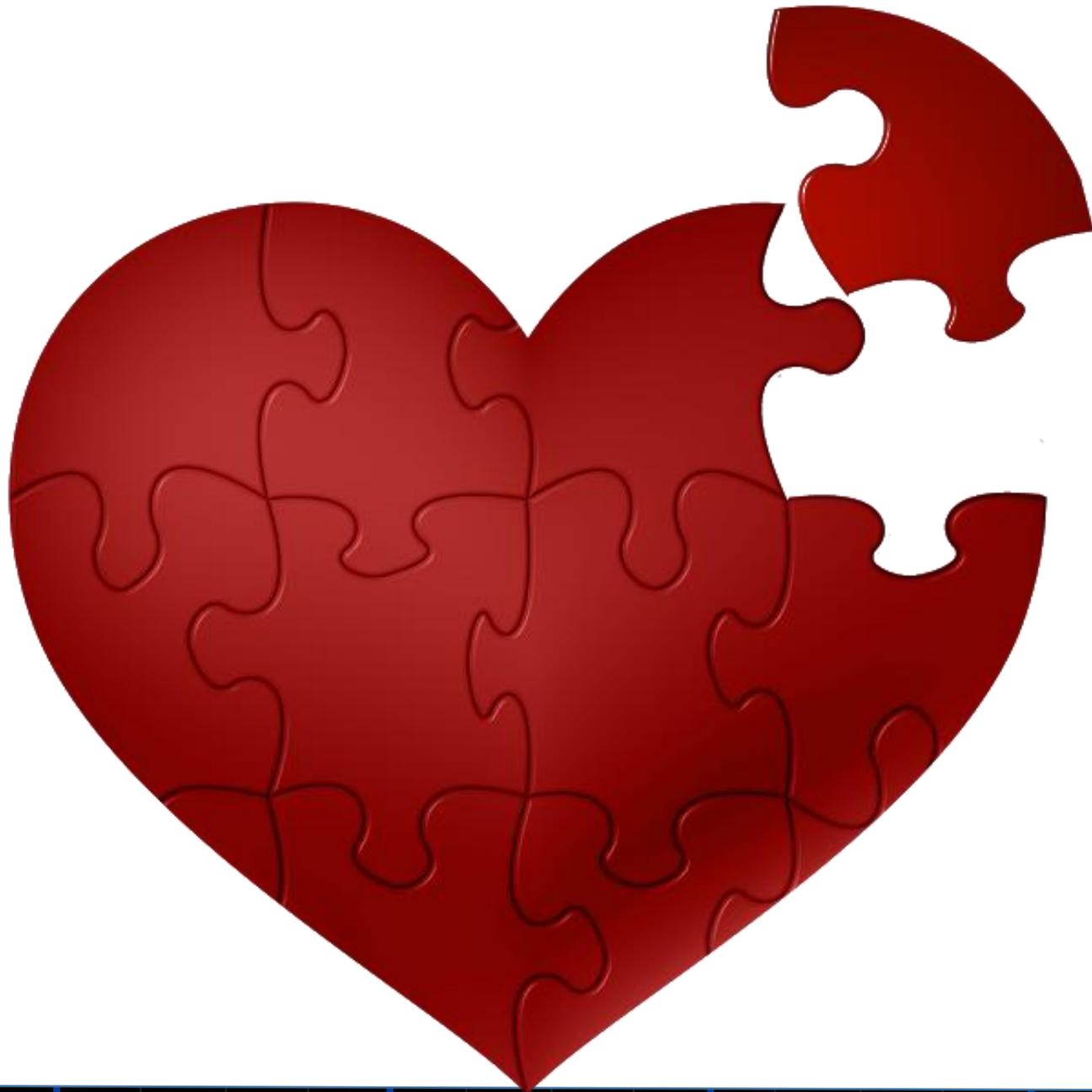


Reconocimiento de **EKG**

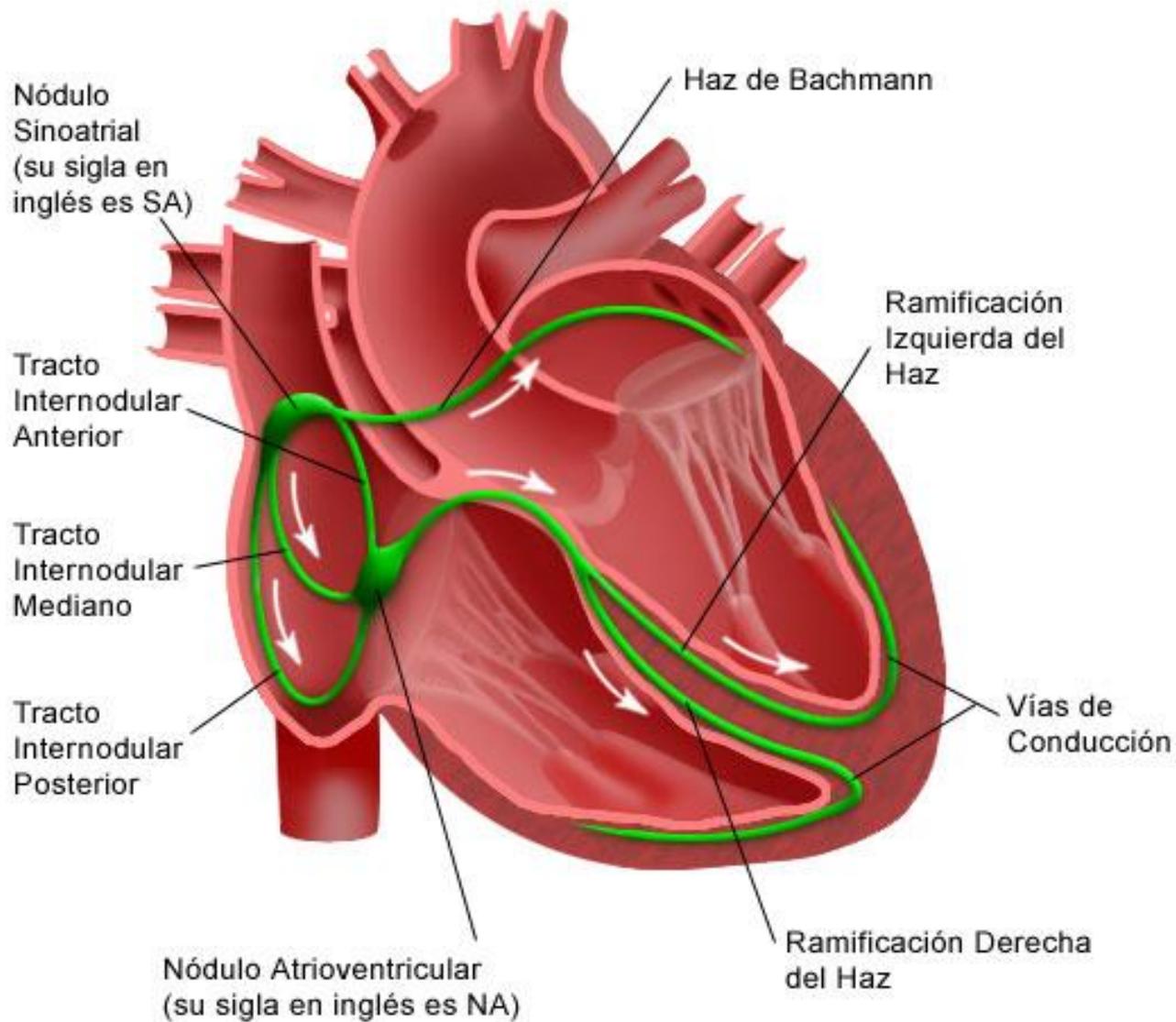


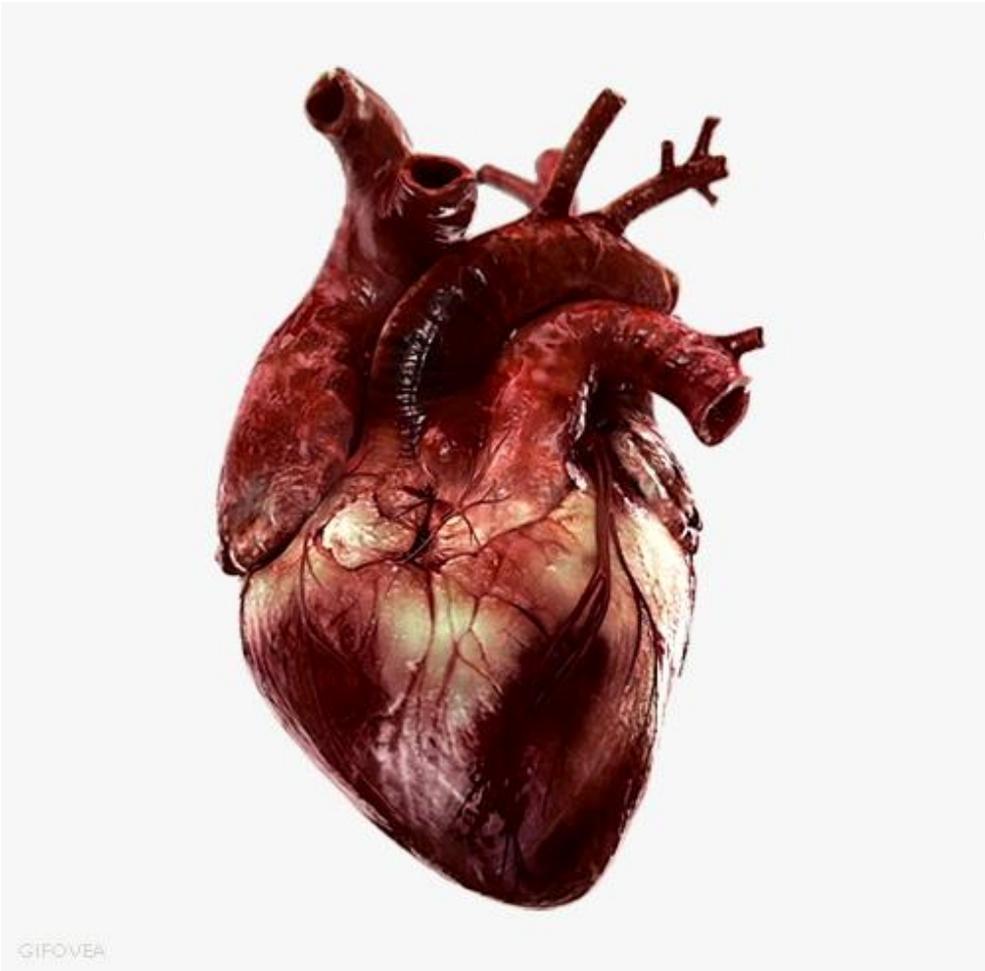
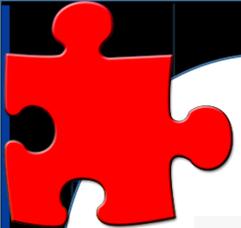
Elver Luyo Valera



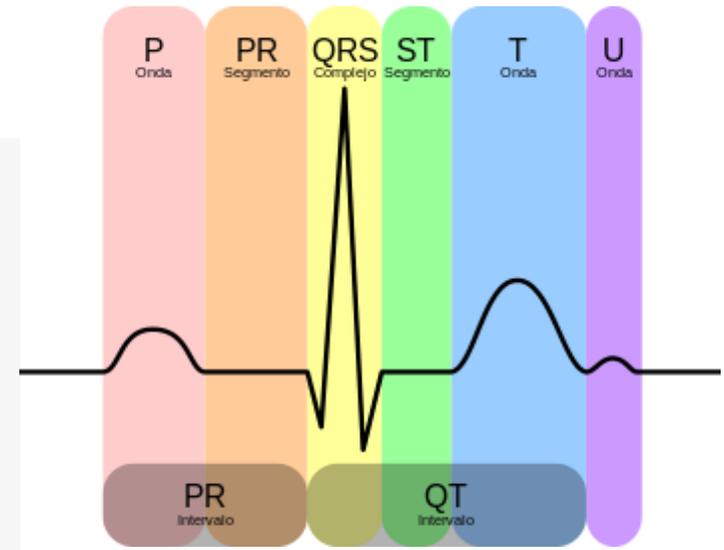


El Sistema Eléctrico del Corazón





GIFOVEA



A Normal heart rhythm recording (EKG)

B Heart rhythm recorded on a machine to produce an electrocardiogram (EKG)

Nurse monitoring EKG procedure

Electrodes connected to EKG machine

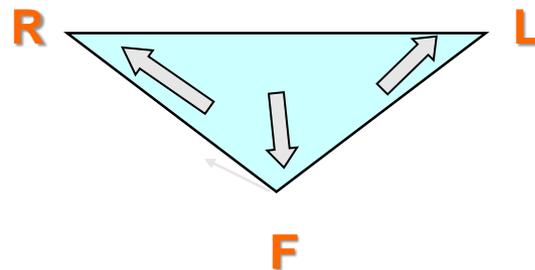


UNIPOLARES

ó STANDARD

ó AMPLIFICADAS DE LOS MIEMBROS

ó DIRECTAS



Determinan vértices
Triángulo
Einthoven

aVR a = amplificada

aVL v = voltaje

aVF R.L.F.= miembro superior derecho

 miembro superior izquierdo

 miembros inferior izquierdo



BIPOLARES

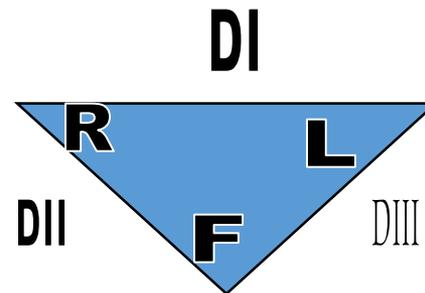
o indirectas

Registran las diferencias de potencial entre dos puntos del espacio.

$$DI = a_{VL} - a_{VR}$$

$$DII = a_{VF} - a_{VR}$$

$$DIII = a_{VF} - a_{VL}$$



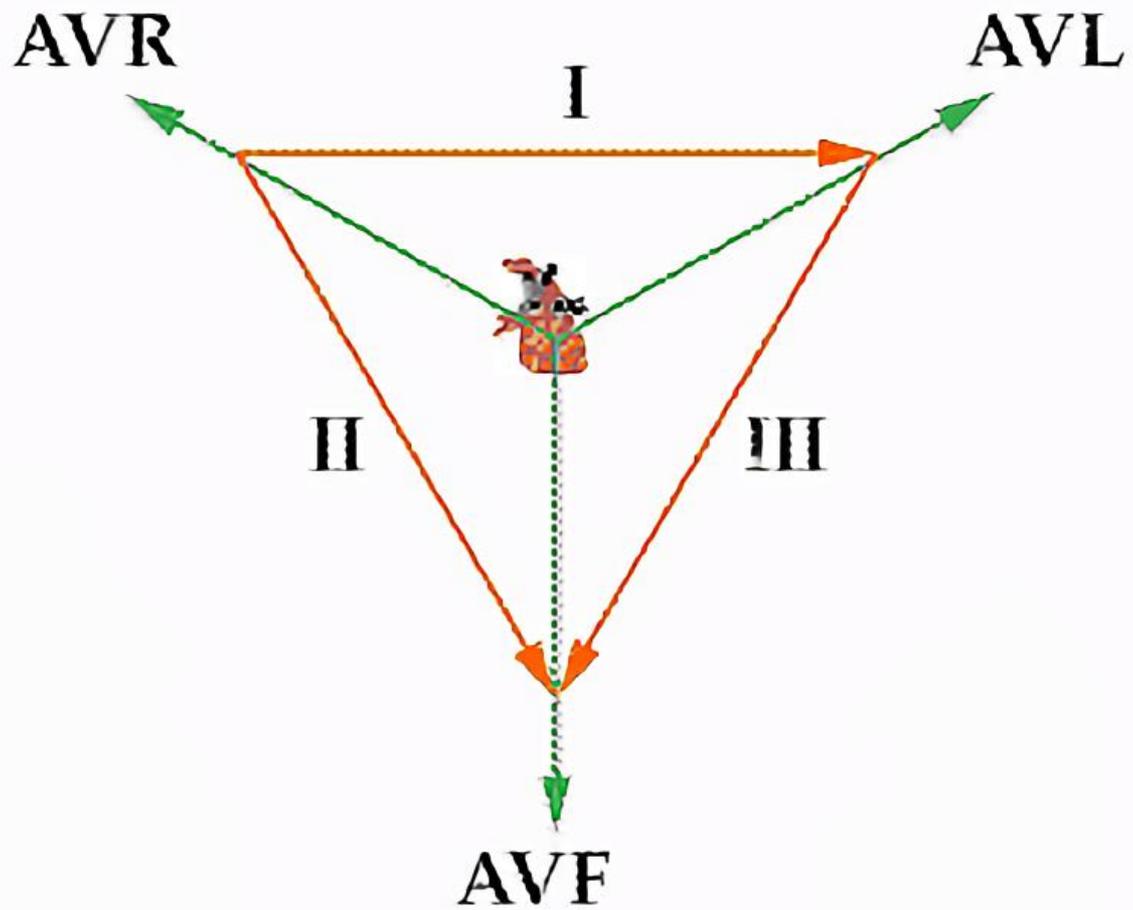
Estas 6 derivaciones nos permiten conocer la actividad eléctrica del corazón en el **plano frontal. (Cordiales)**

Porque en el **plano horizontal** y en sentido antero posterior la exploran las: Precordiales



DI DII DIII aVR aVL aVF





V1

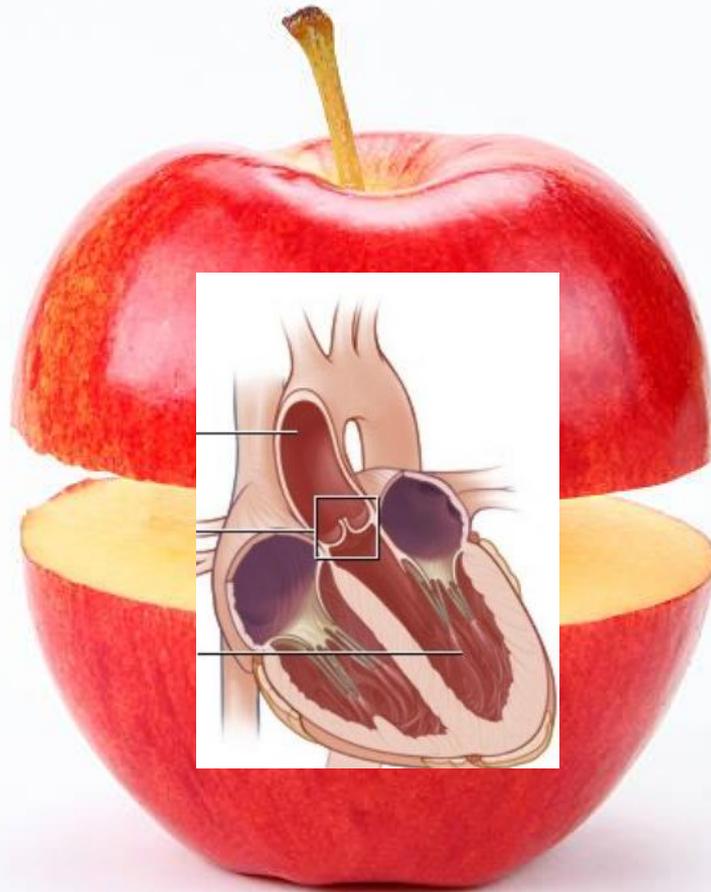
V2

V3

V4

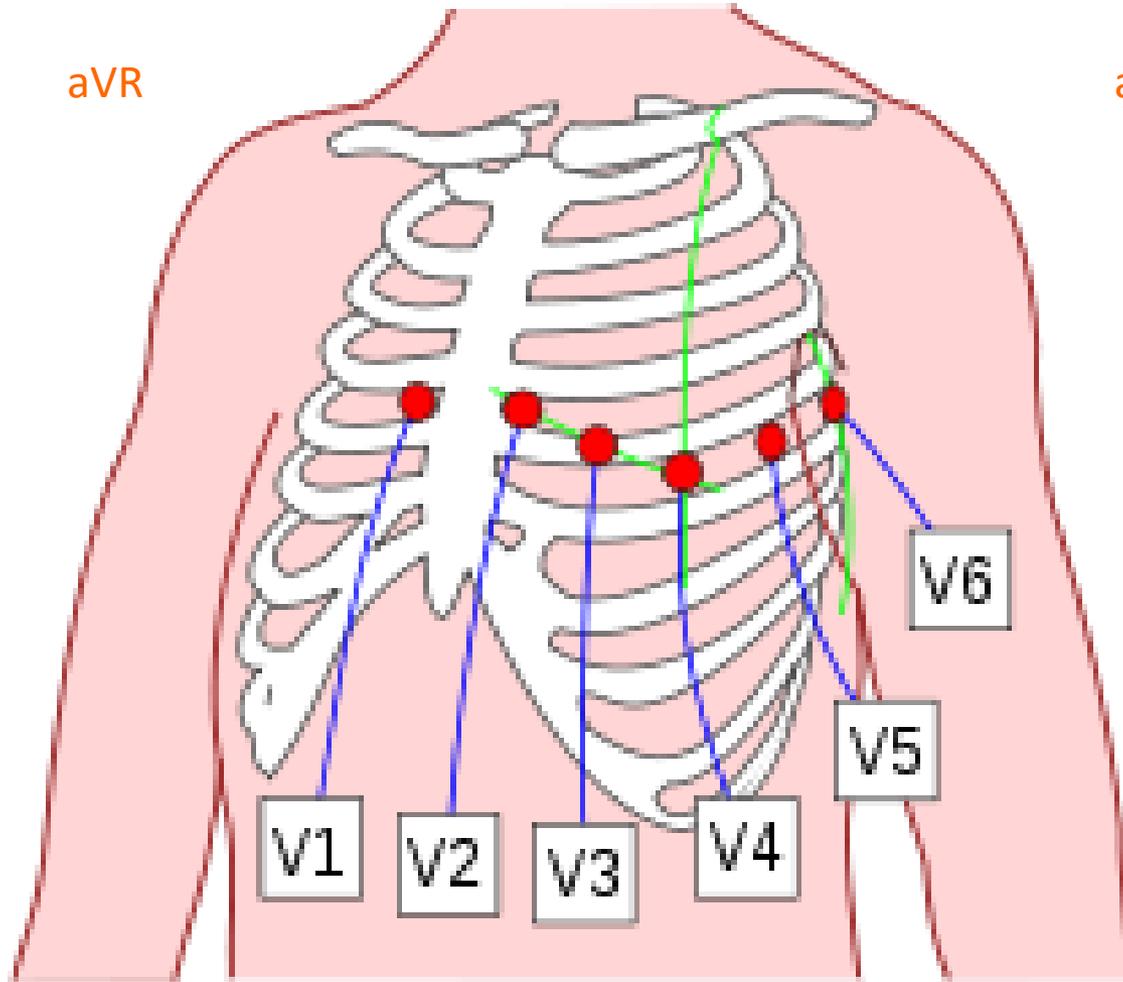
V5

V6



aVR

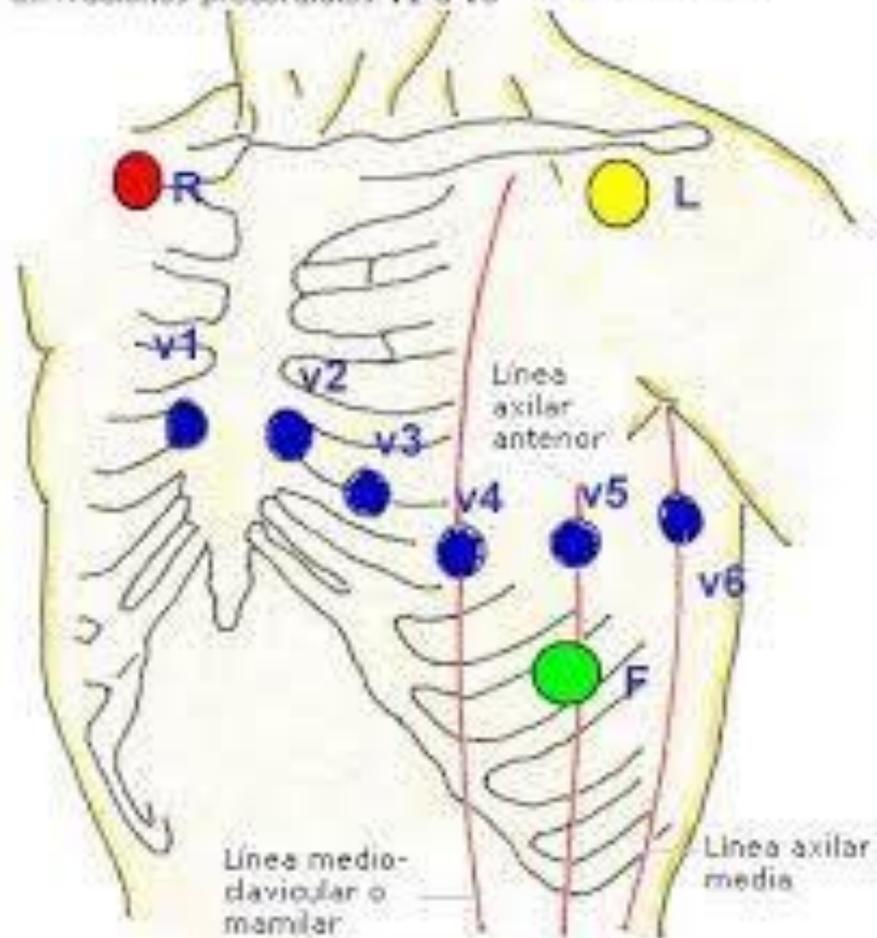
aVL



aVF

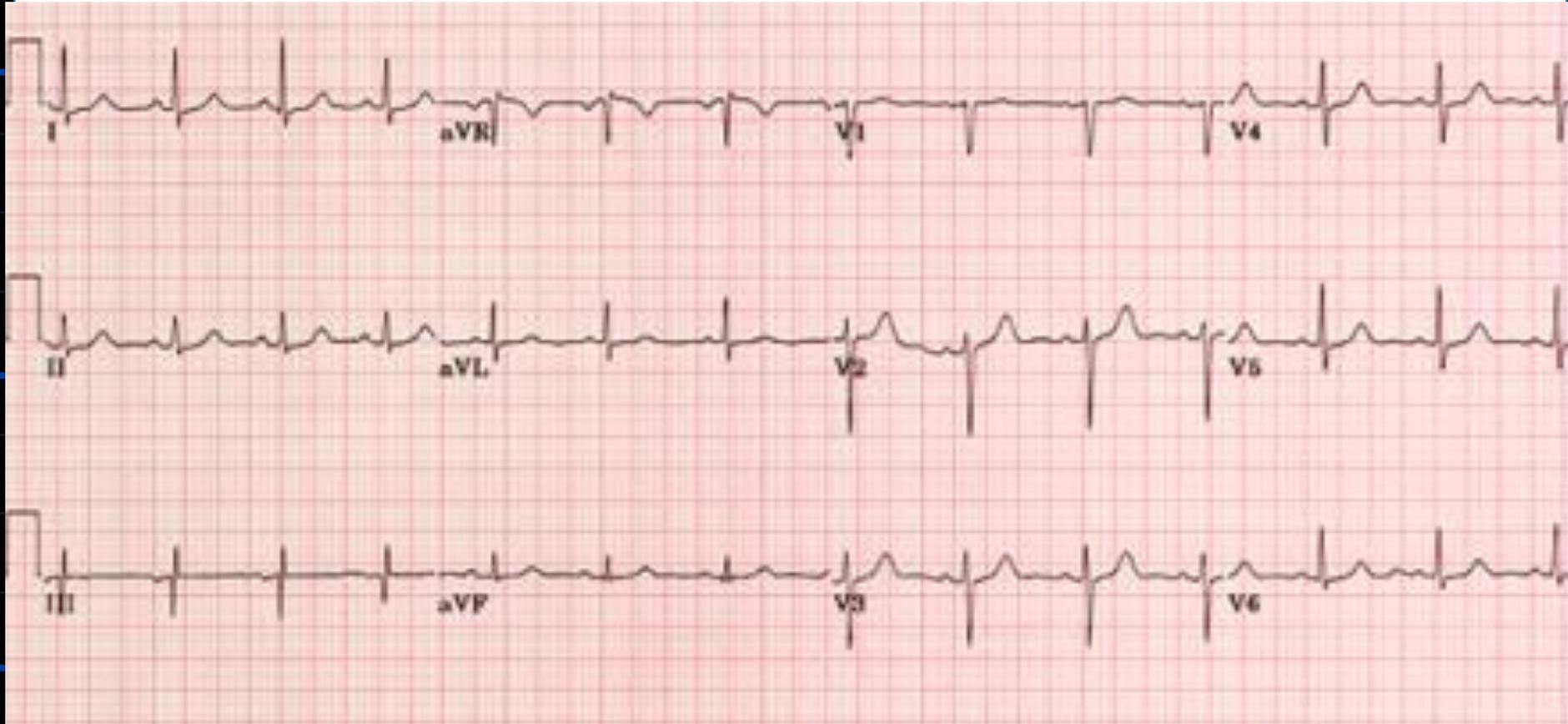


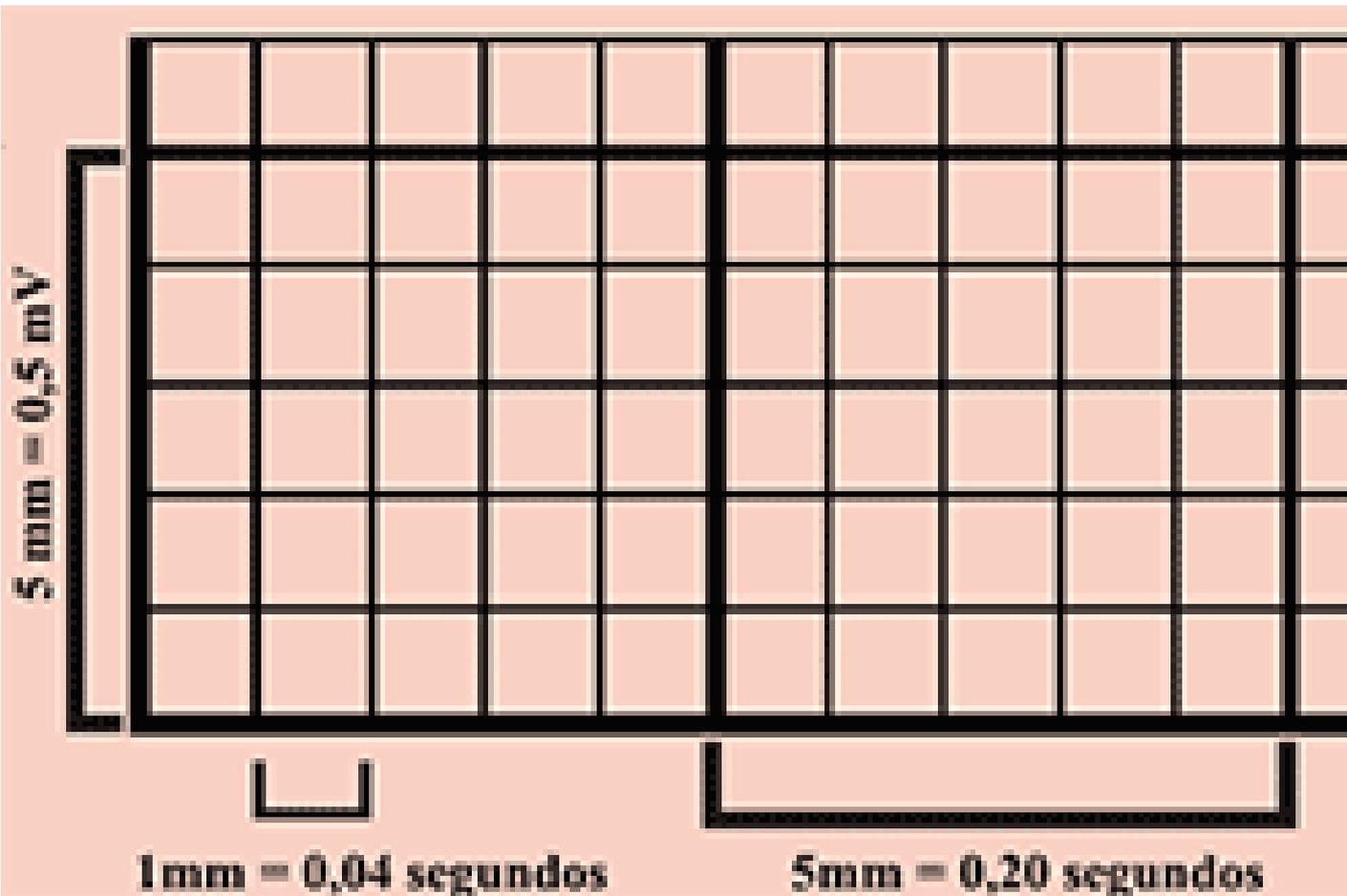
Localización de los electrodos correspondientes a las derivaciones precordiales V1 a V6



DI DII DIII aVR aVL aVF

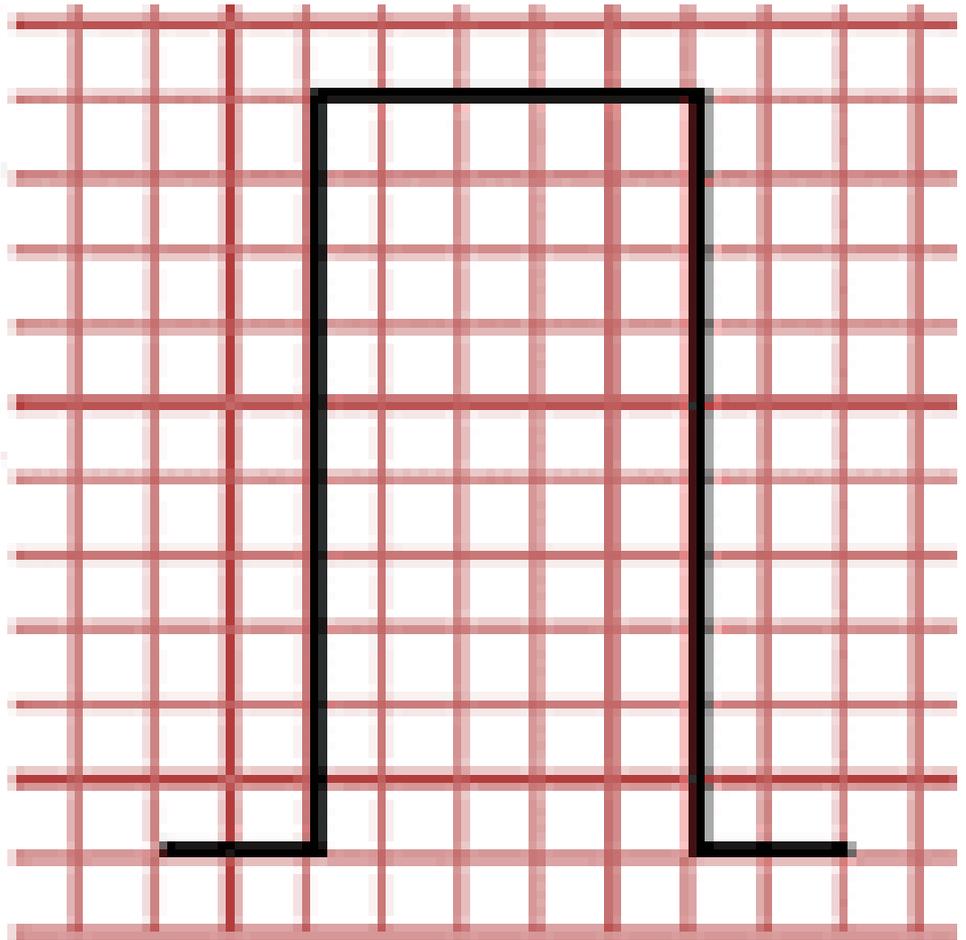
V1 V2 V3 V4 V5 V6





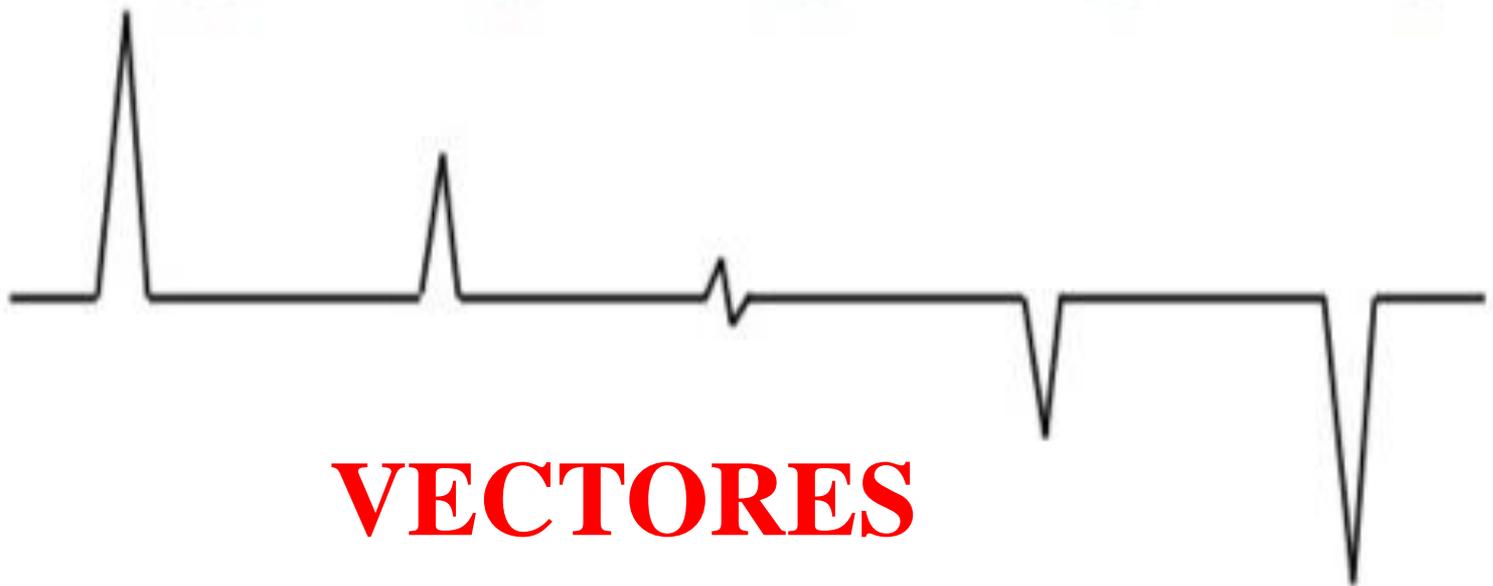
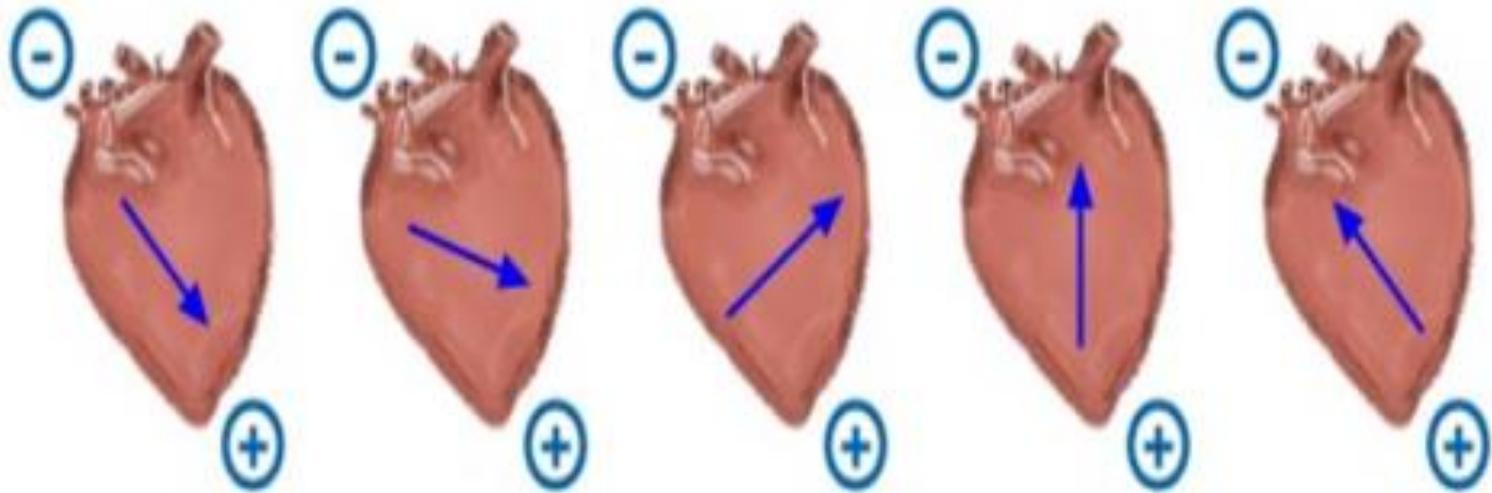


1 mV (10 mm)



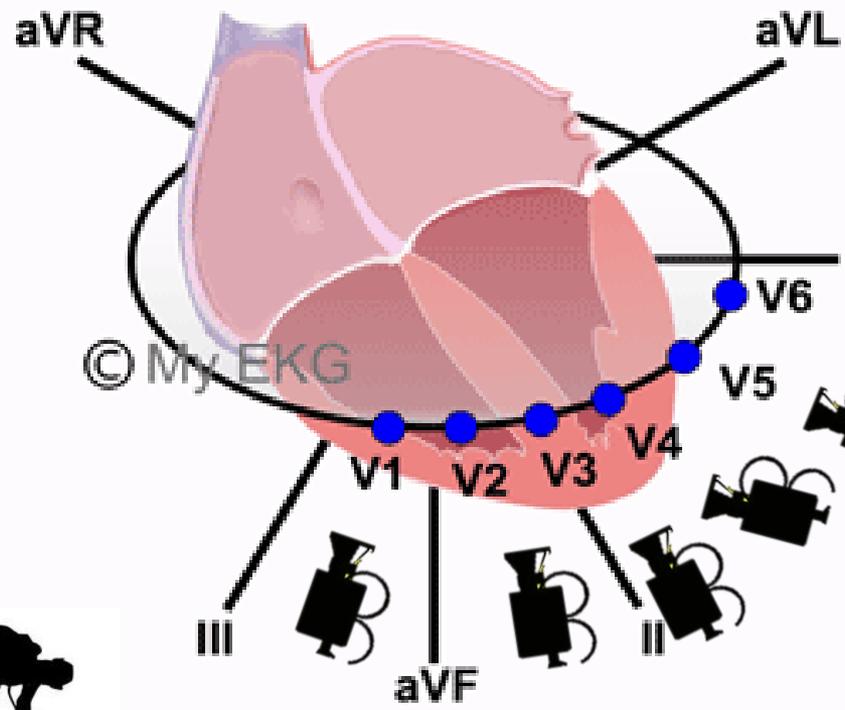
0.20 s (5 mm)





VECTORES





Datex-Ohmeda

0070 80V-20 17:08

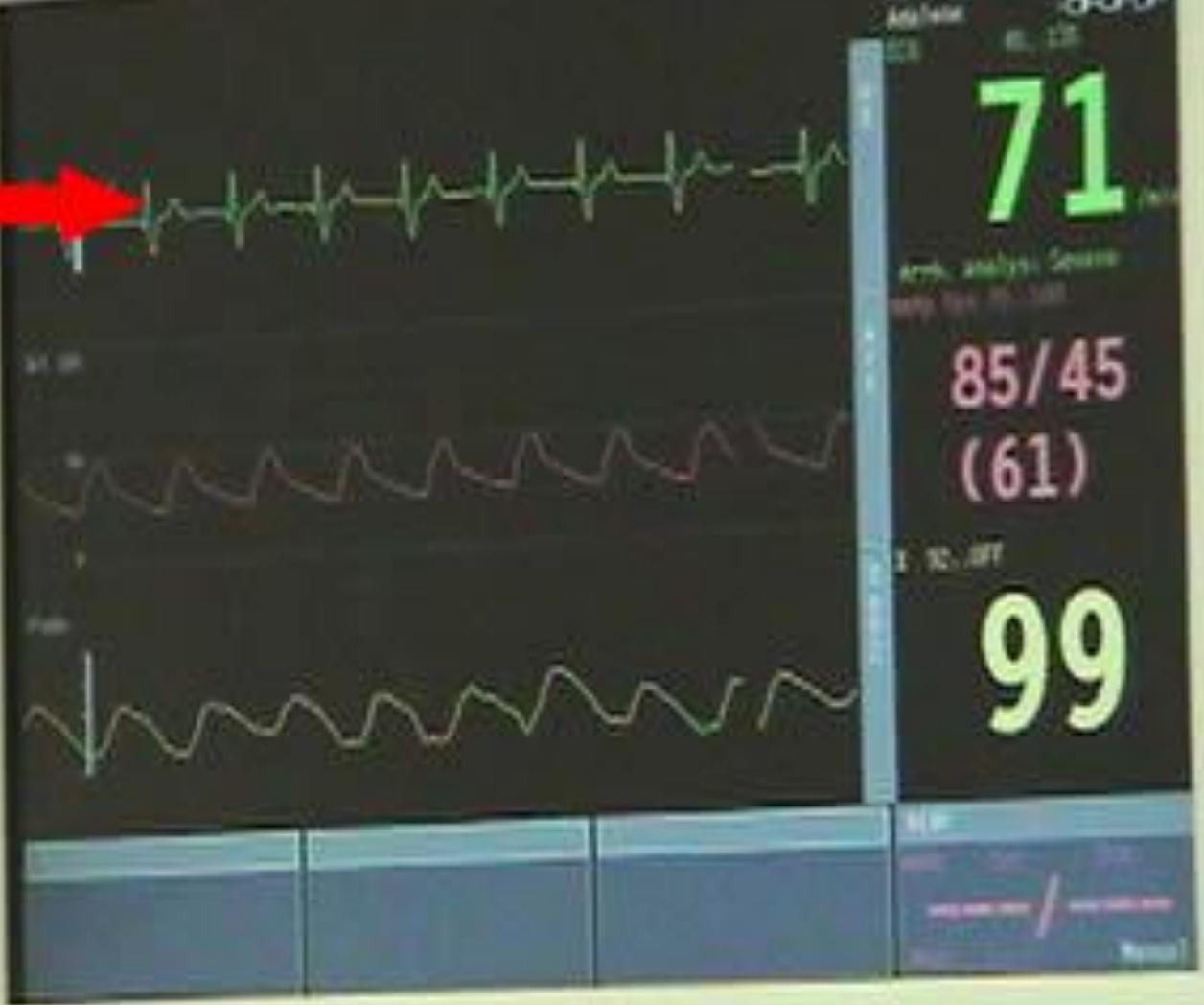
Next Log On
Analysis 000

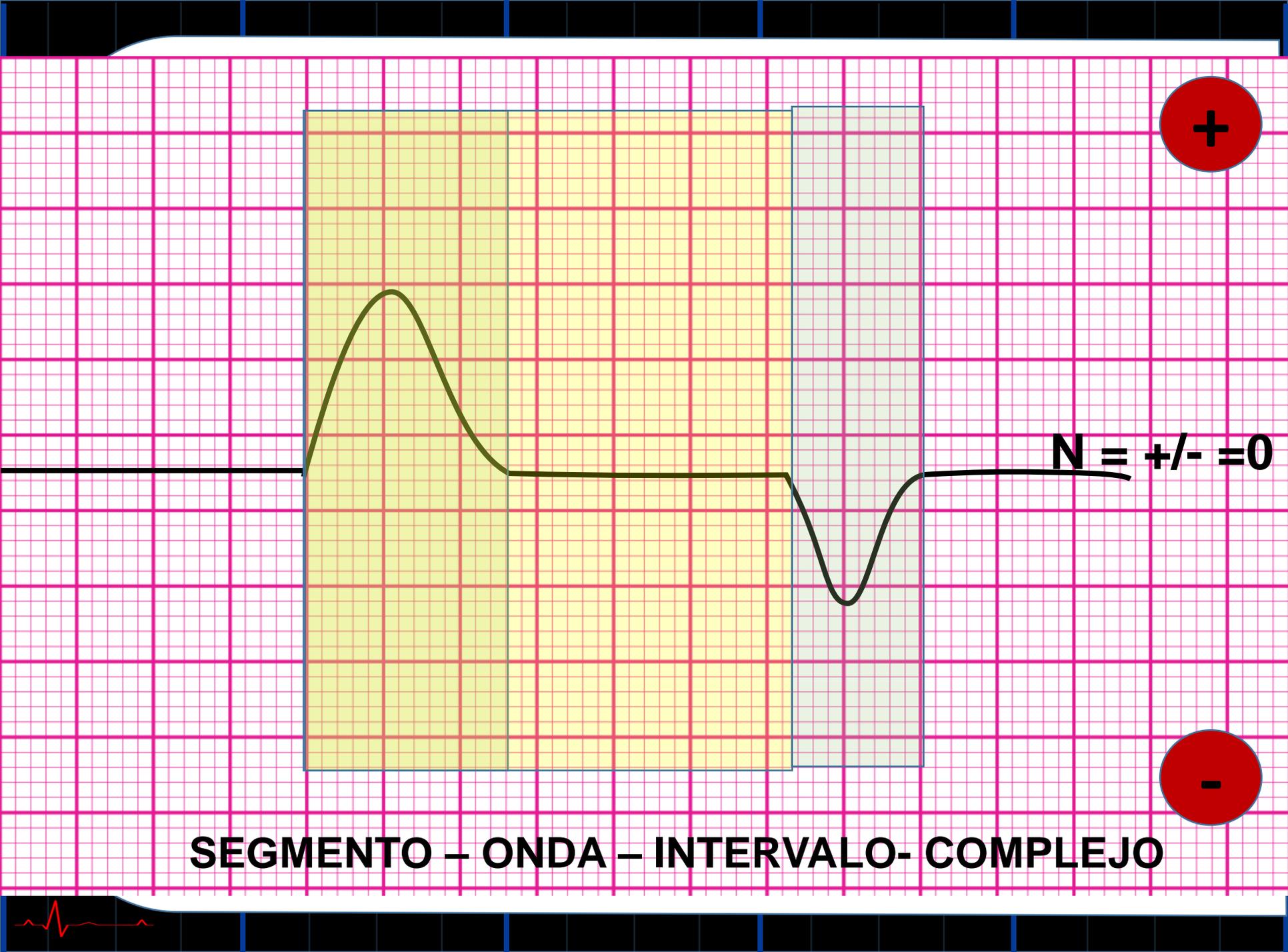
71

85/45
(61)

99

DII





SEGMENTO – ONDA – INTERVALO- COMPLEJO





P
Onda

PR
Segmento

QRS
Complejo

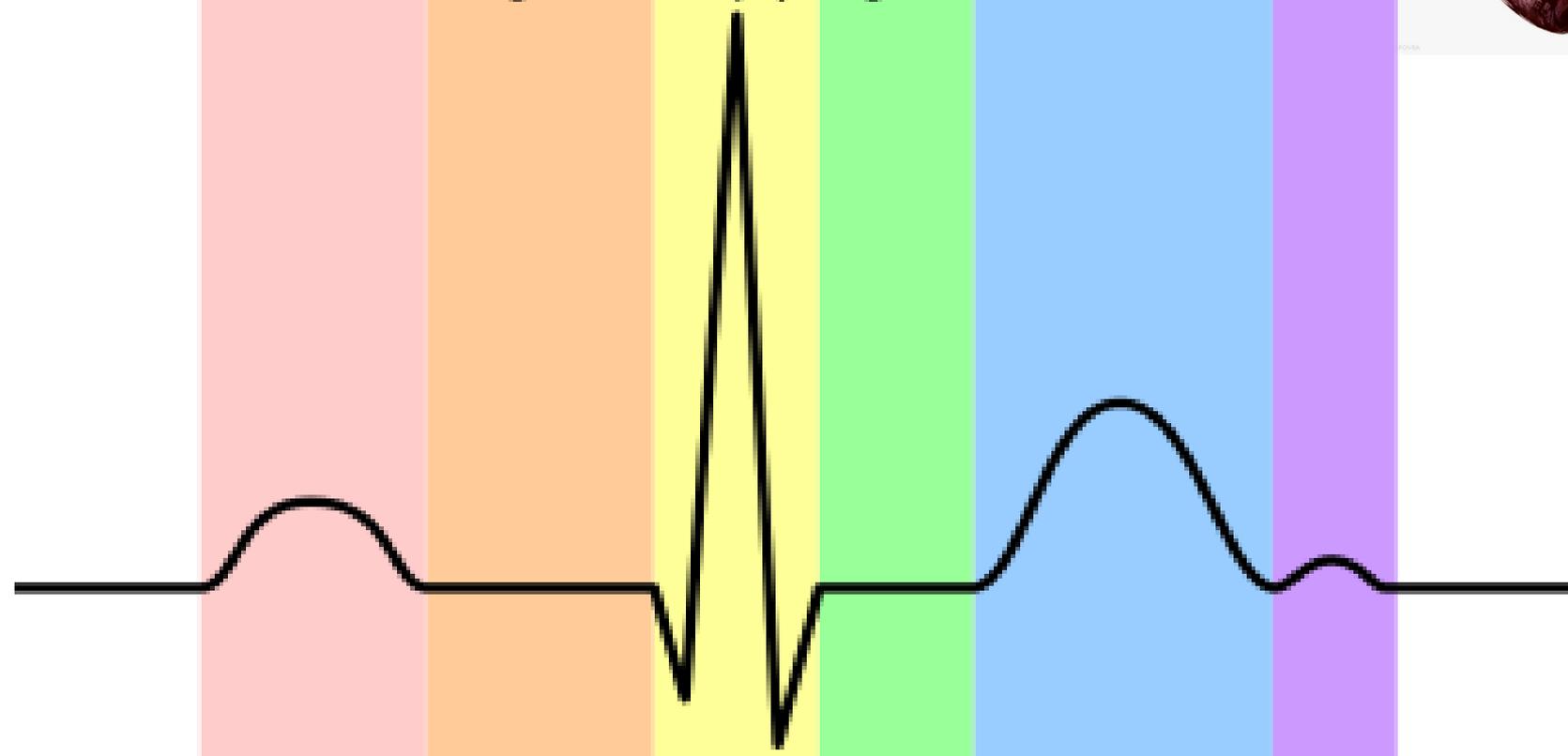
ST
Segmento

T
Onda

U
Onda

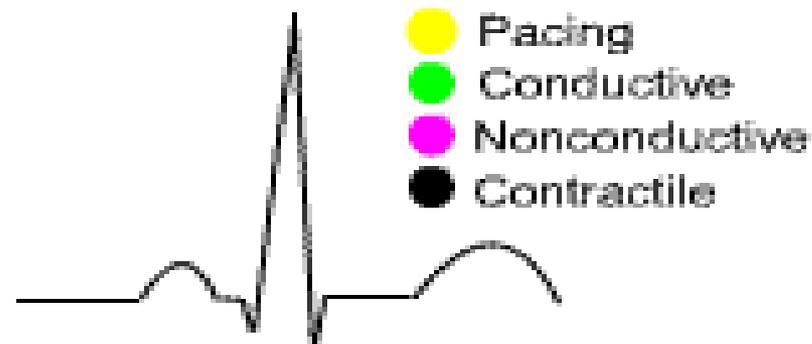
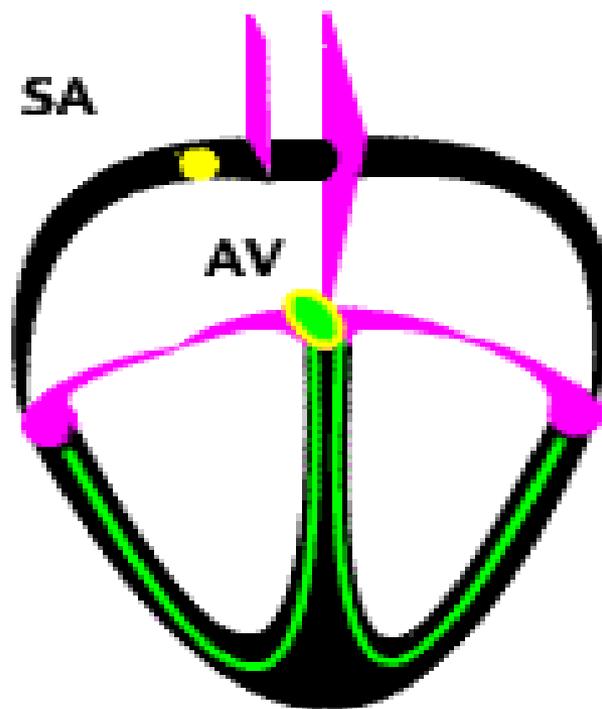
PR
Intervalo

QT
Intervalo



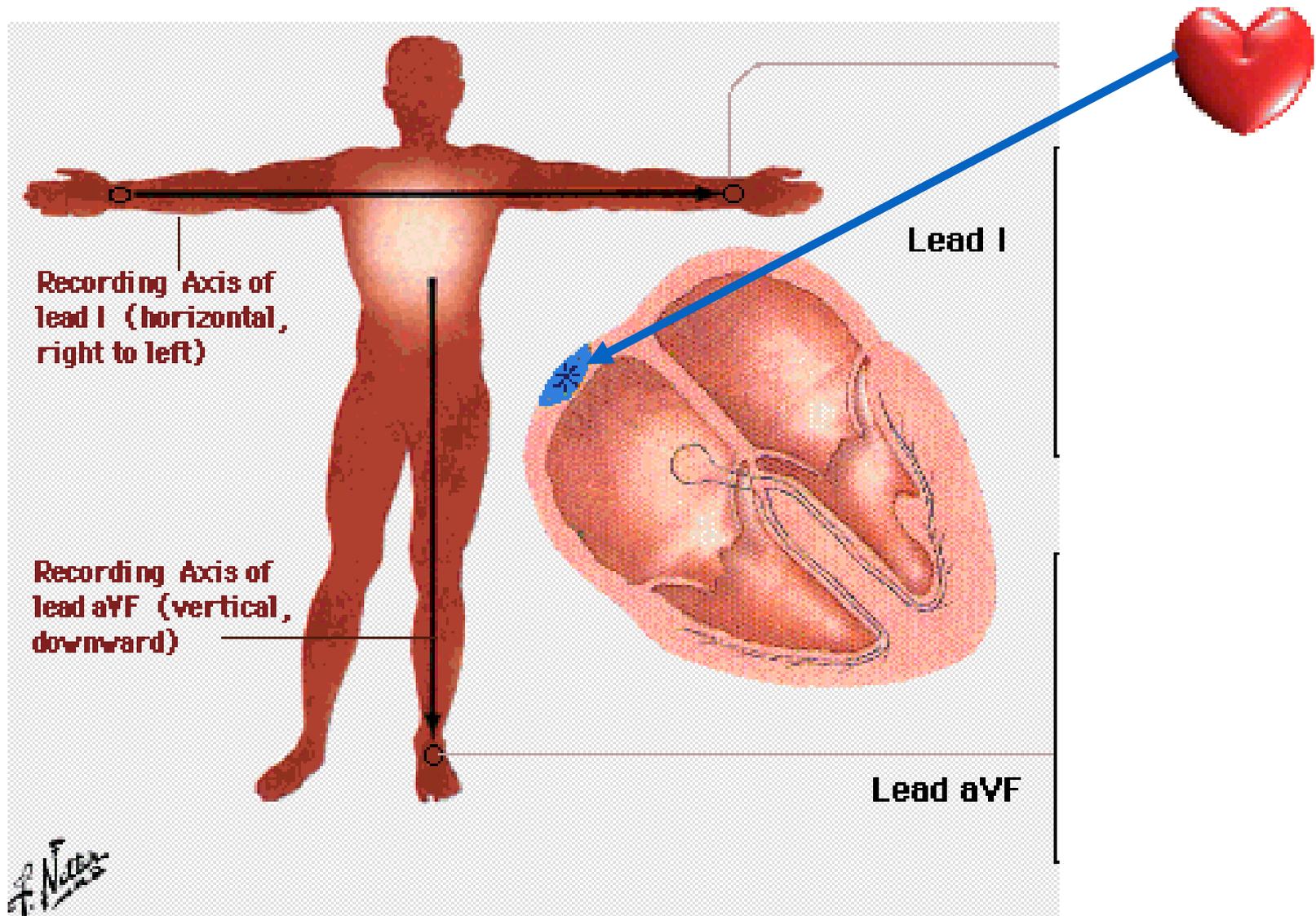
¿Qué hace el ECG?

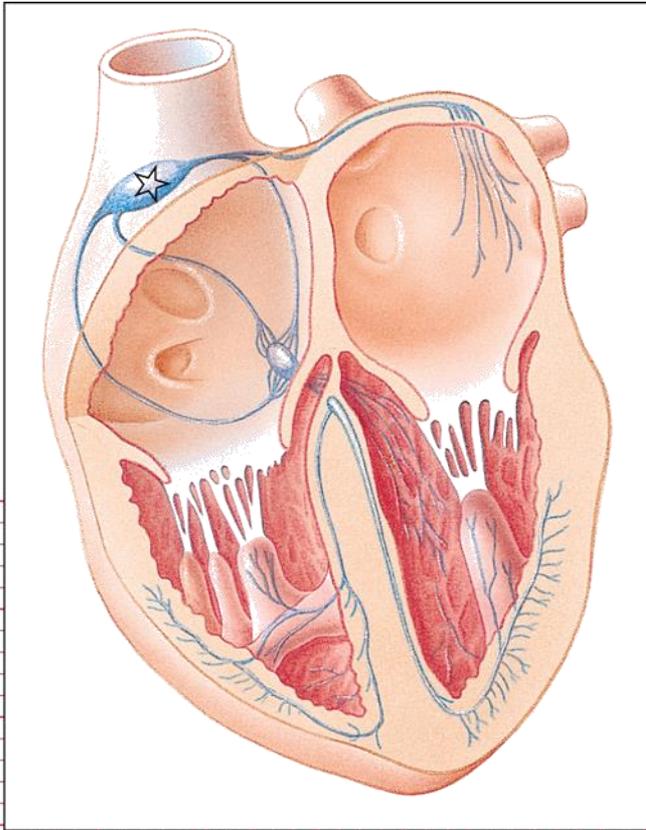
El ECG capta, desde la superficie del cuerpo mediante electrodos, la activación eléctrica de los ventrículos y las aurículas.



- Pacing
- Conductive
- Nonconductive
- Contractile

Estimulación del Nodo sinusal





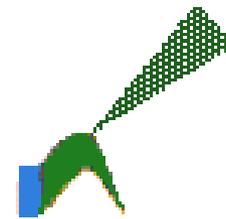
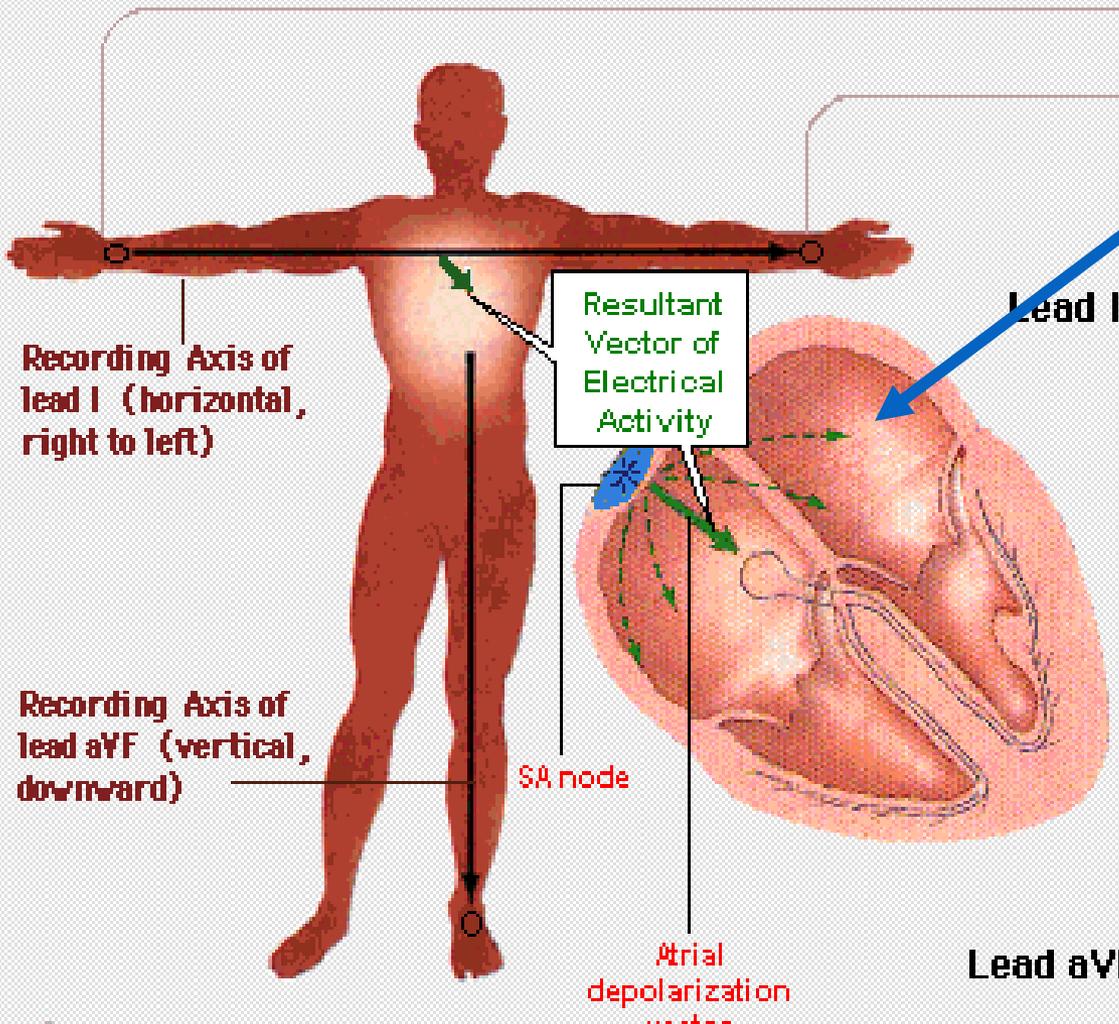
Onda P
Impulso iniciado en el nodo sinusal



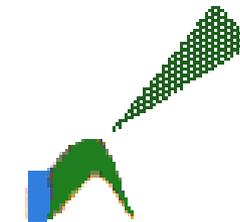
Secuencia Normal de Despolarización y Repolarización ATRIAL



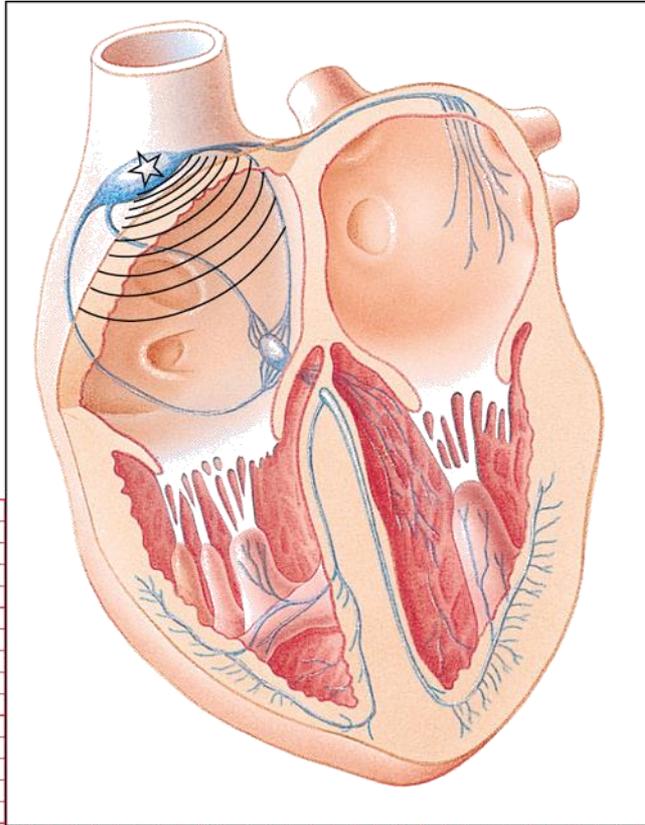
[Click here to see text](#)



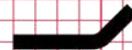
P wave

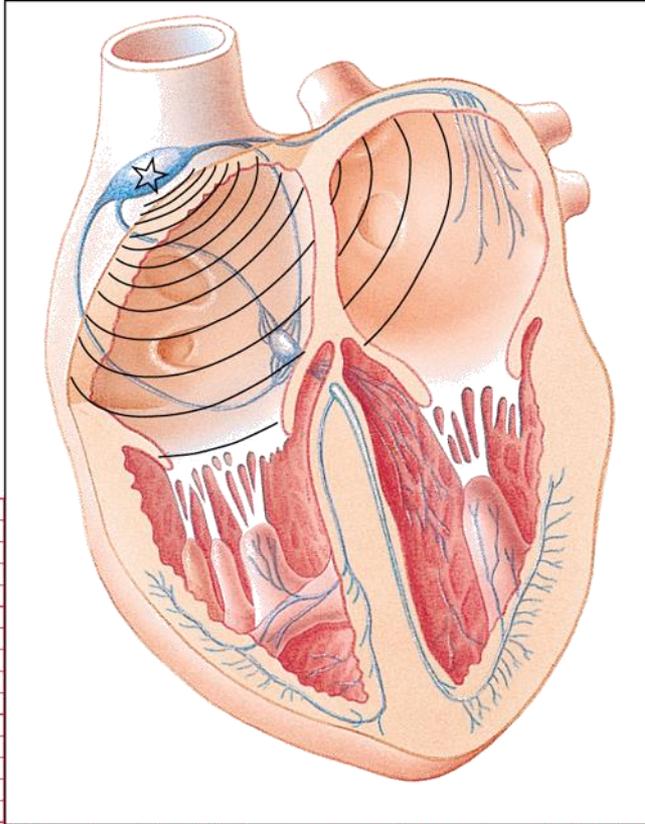


Lead aVF



Onda P positiva en DII
Comienza despolarización de la aurícula

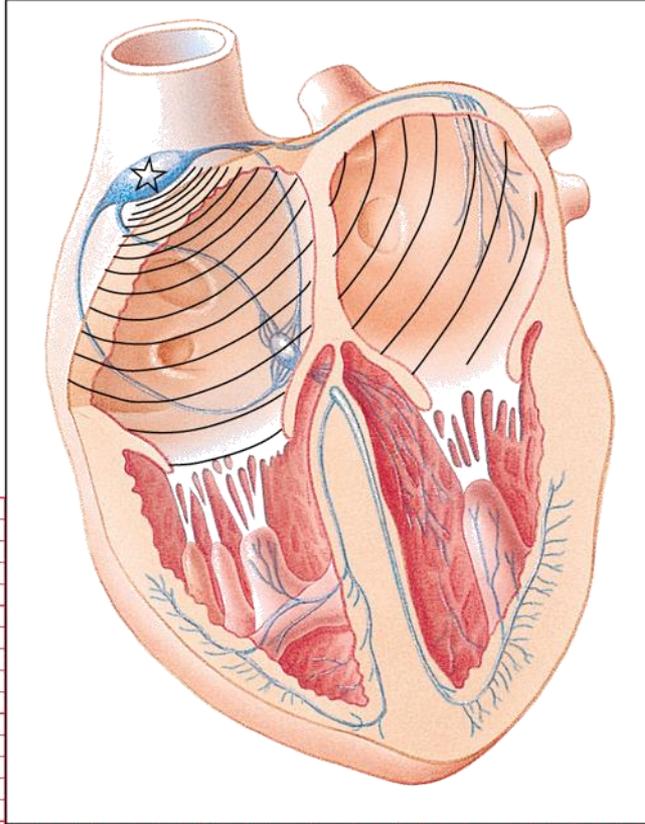




Onda P
Despolarización de la aurícula



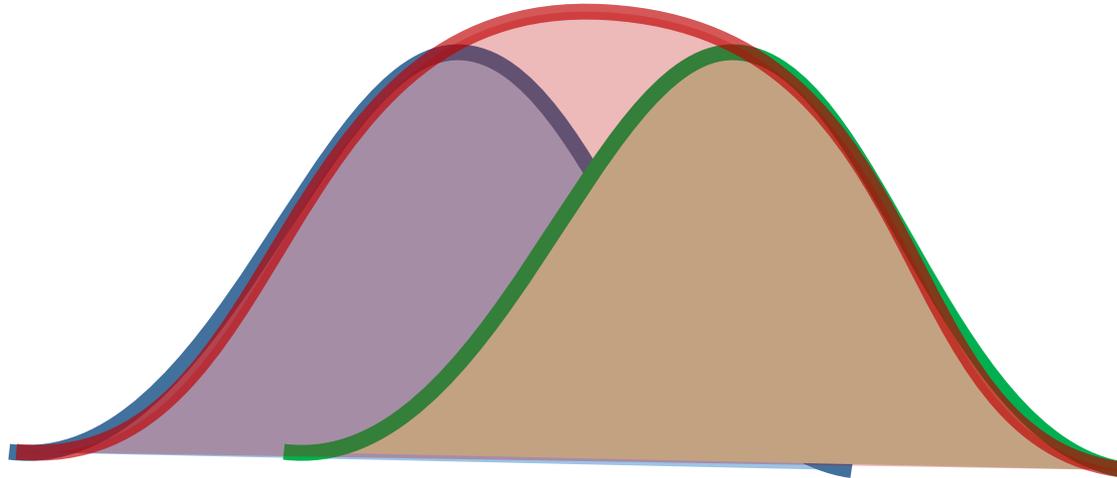
El electrocardiograma



Onda P
Despolarización completa de la aurícula

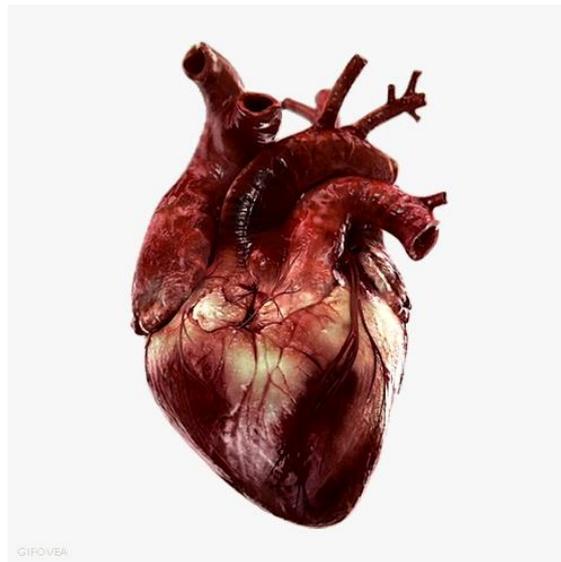


Onda P



Aurícula Derecha

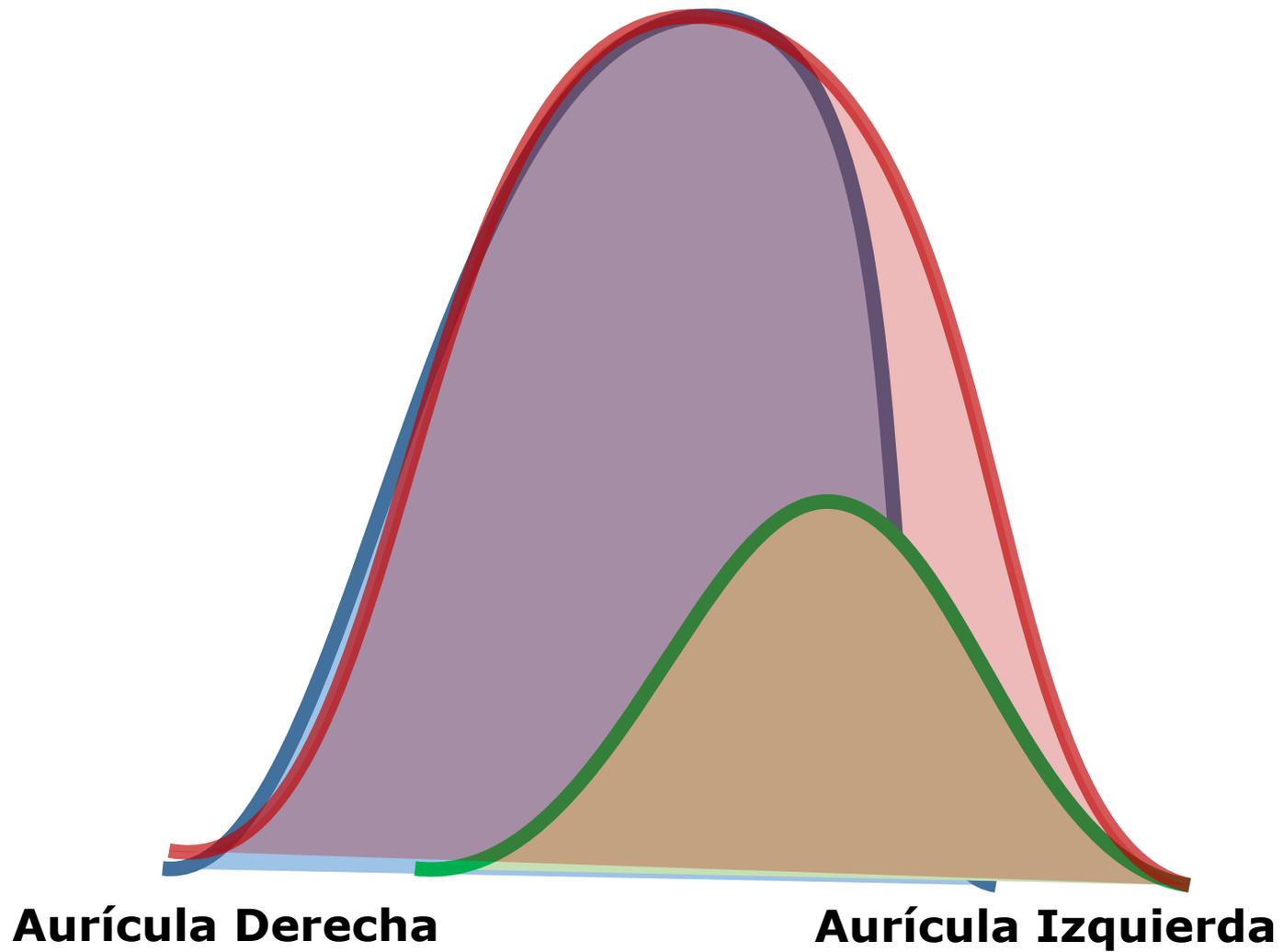
Aurícula Izquierda



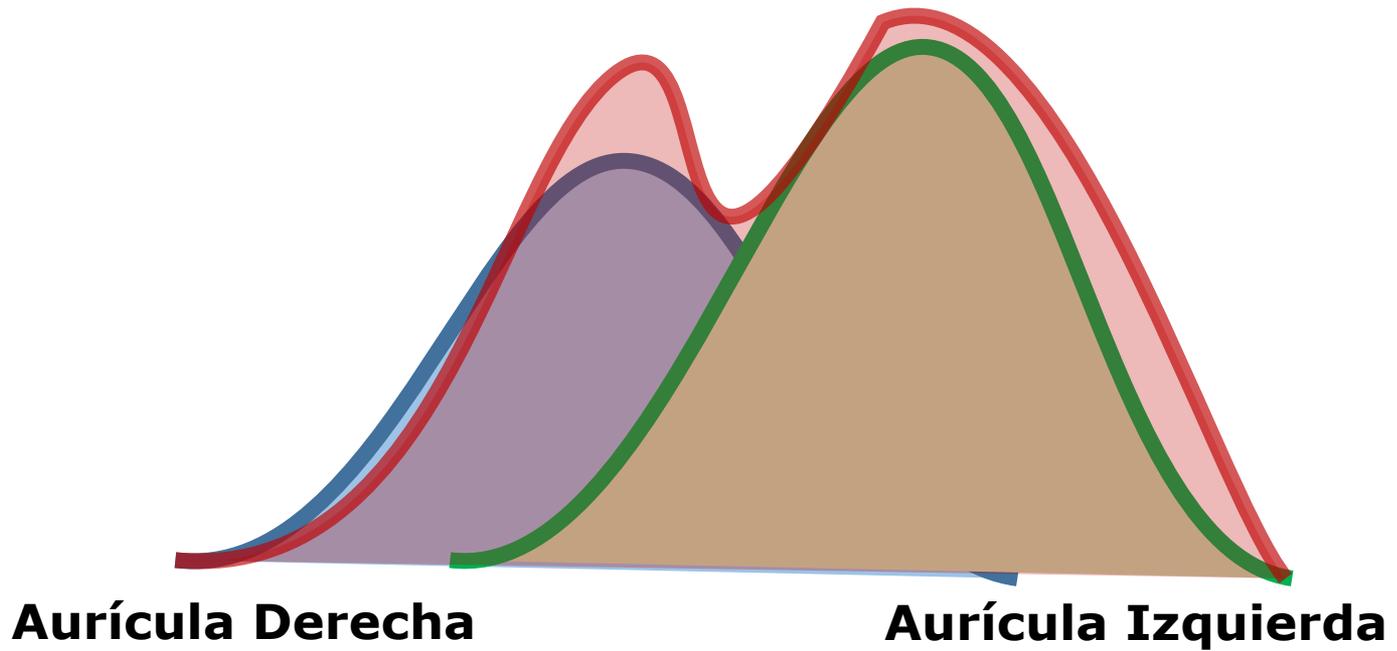
GIFOVEA



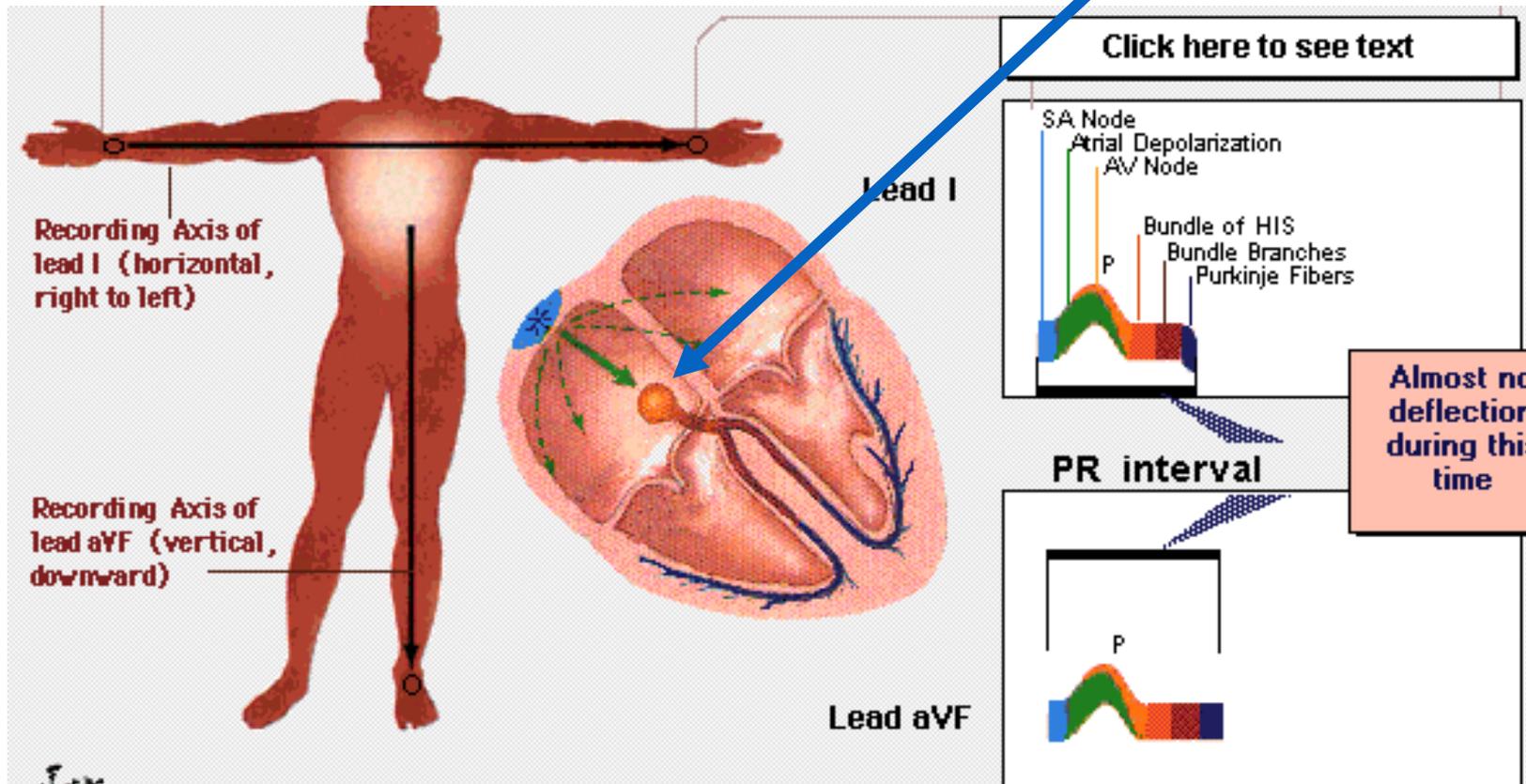
Onda P



Onda P



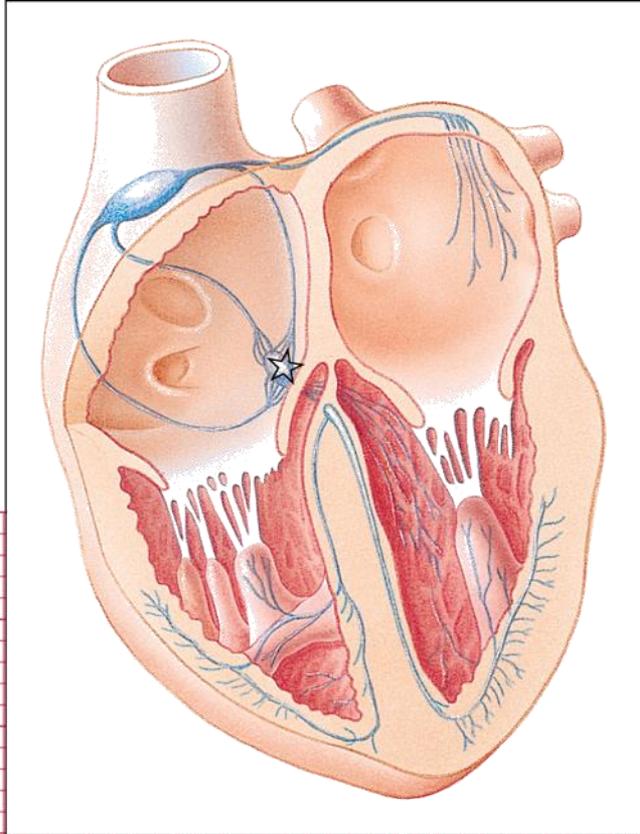
La señal eléctrica llega al nodo A-V. Allí, la señal se detiene para dar tiempo a los ventrículos a llenarse con sangre



of Nurses



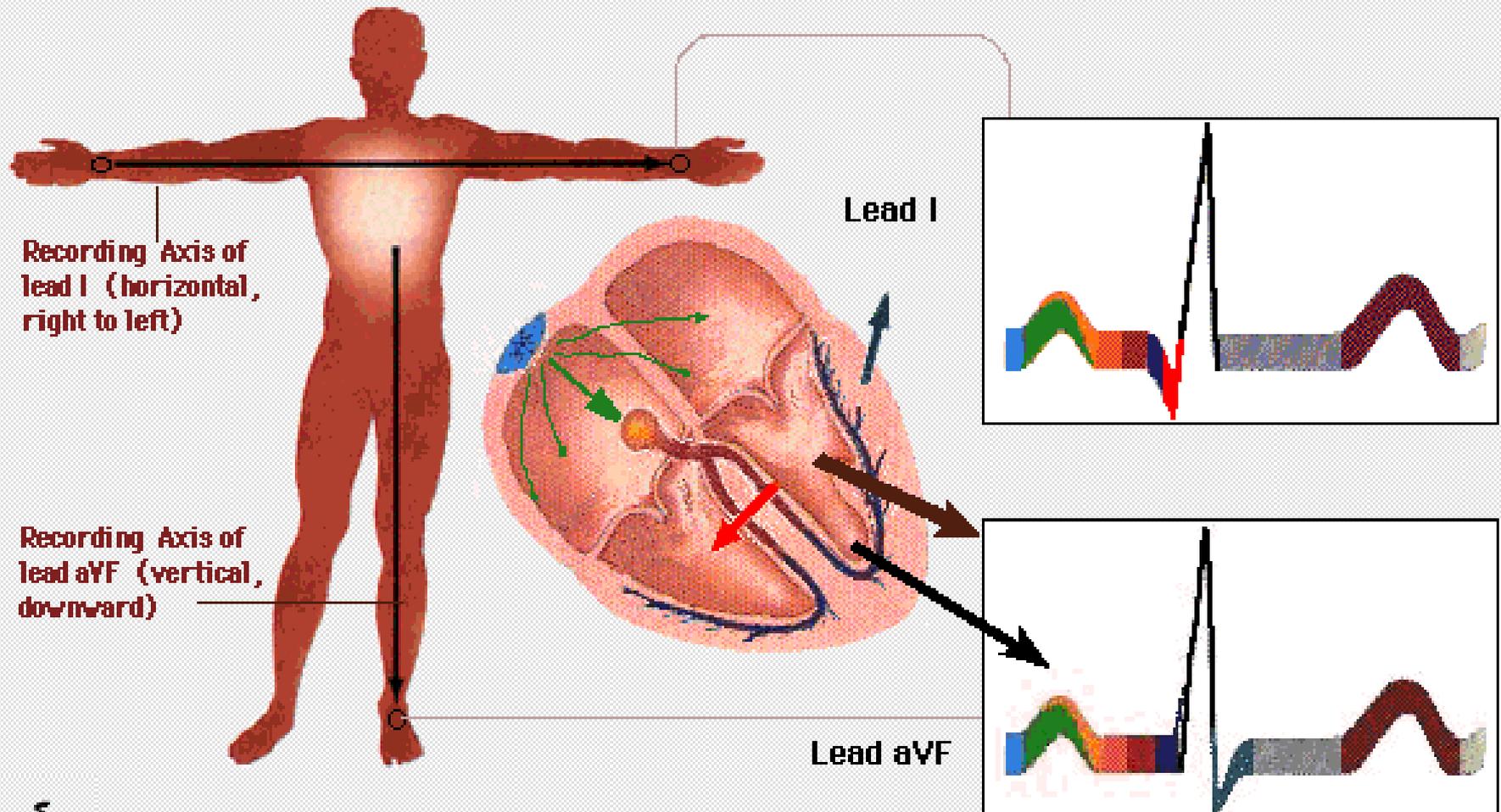
El electrocardiograma

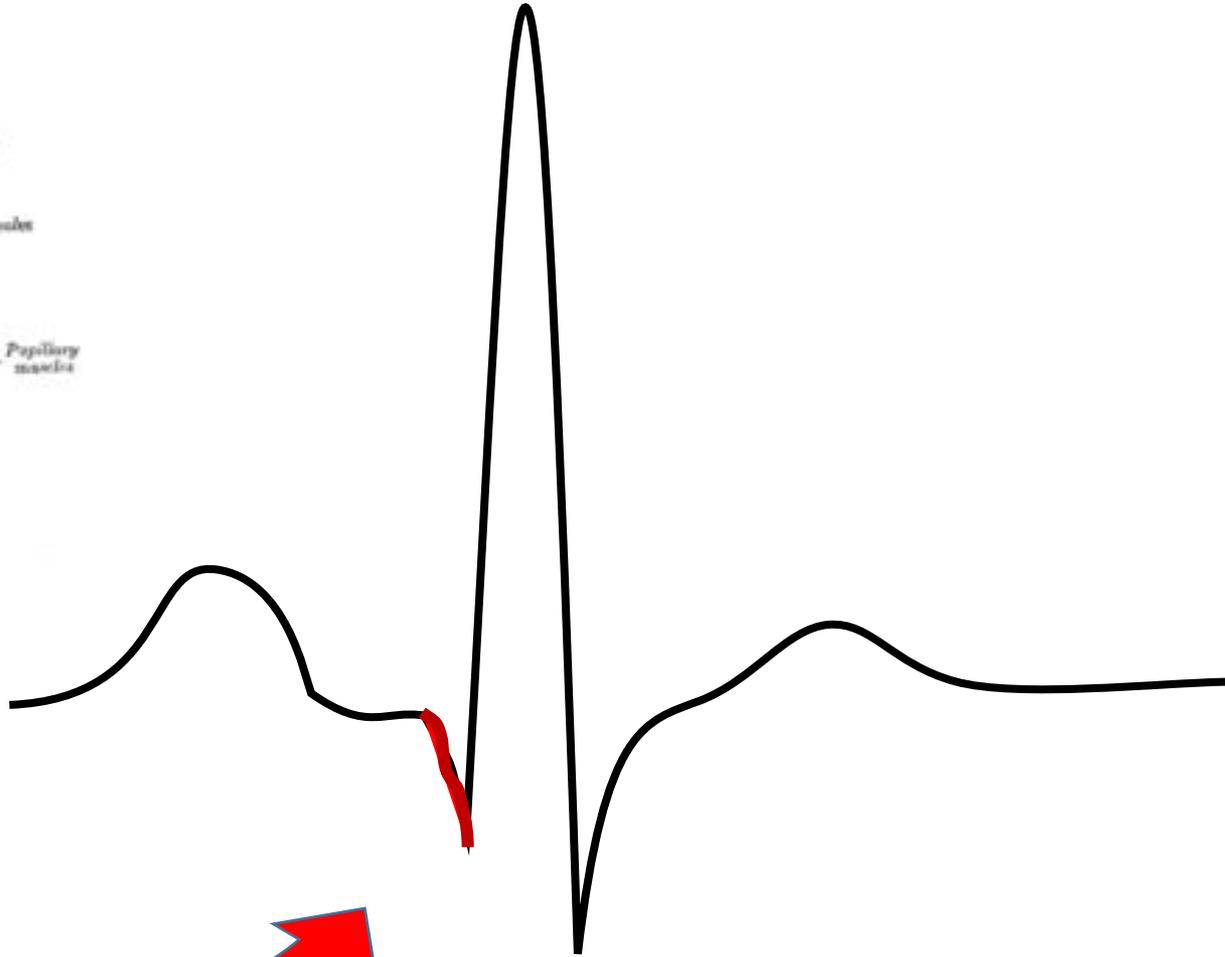
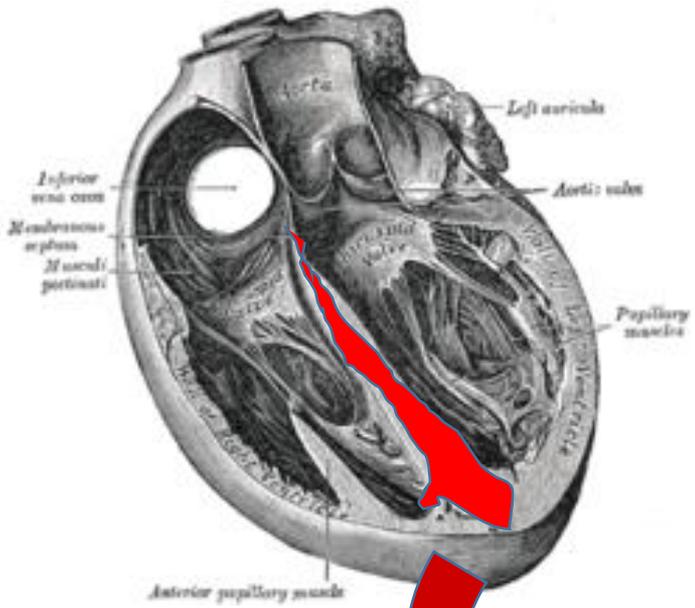


Intervalo P-R
Retardo de la conducción en el nodo AV

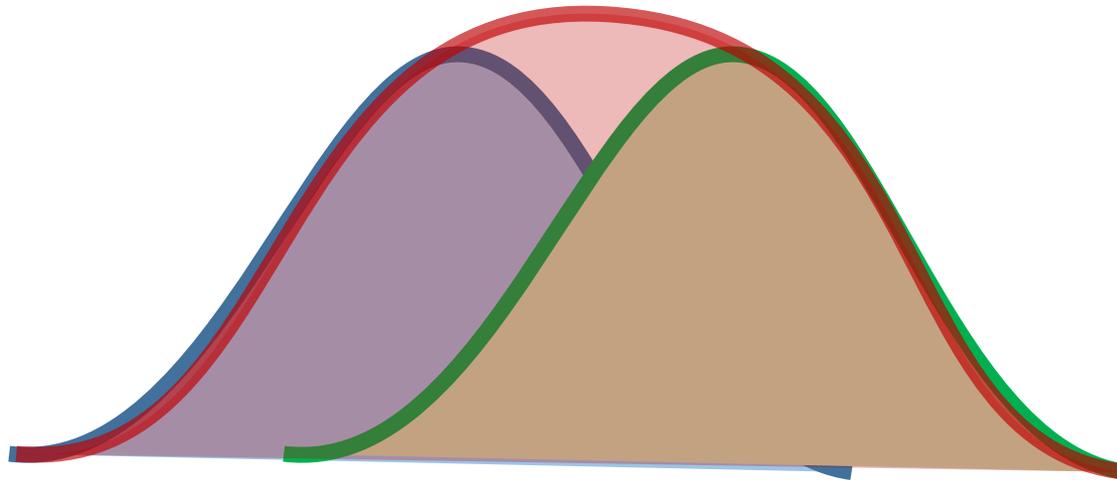


DESPOLARIZACION VENTRICULAR



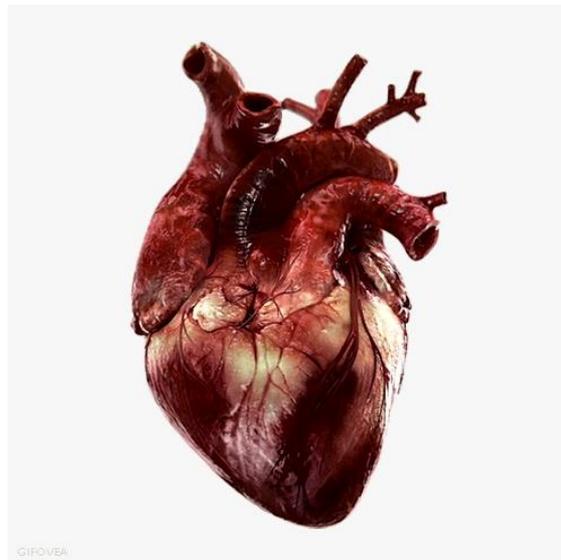


Onda P



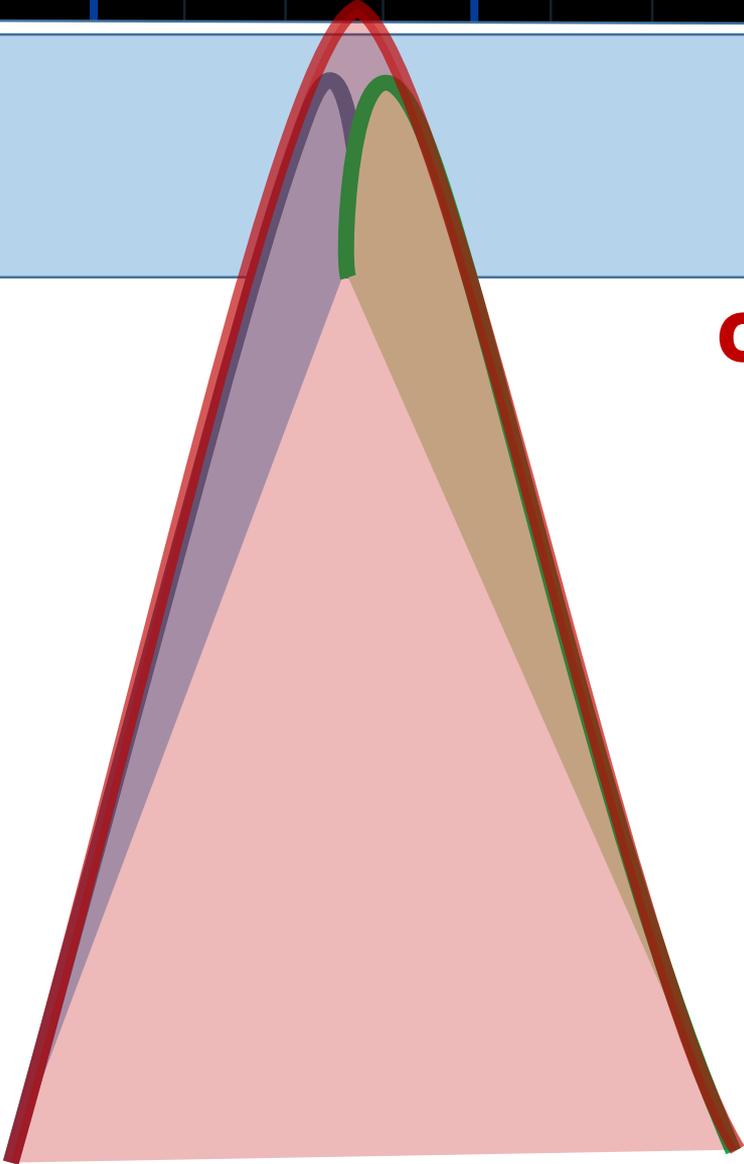
Aurícula Derecha

Aurícula Izquierda



GIFOVEA





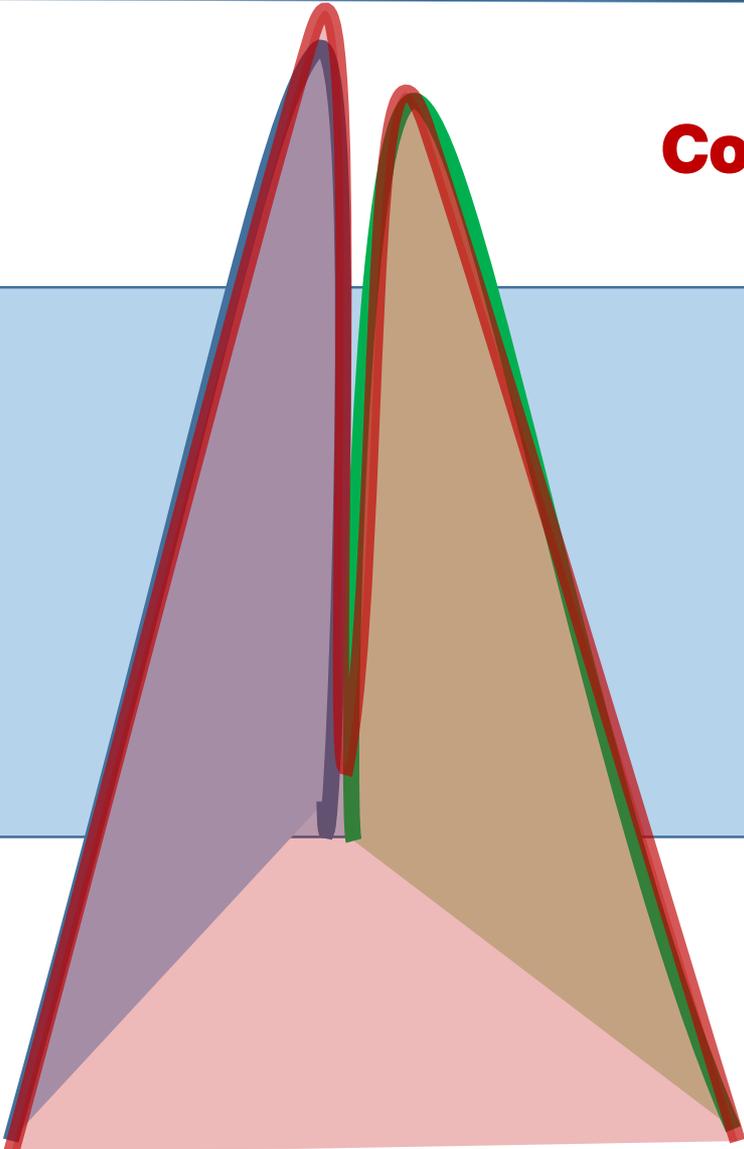
Complejo QRS

Ventrículo Izquierdo

Ventrículo Derecho



Complejo QRS

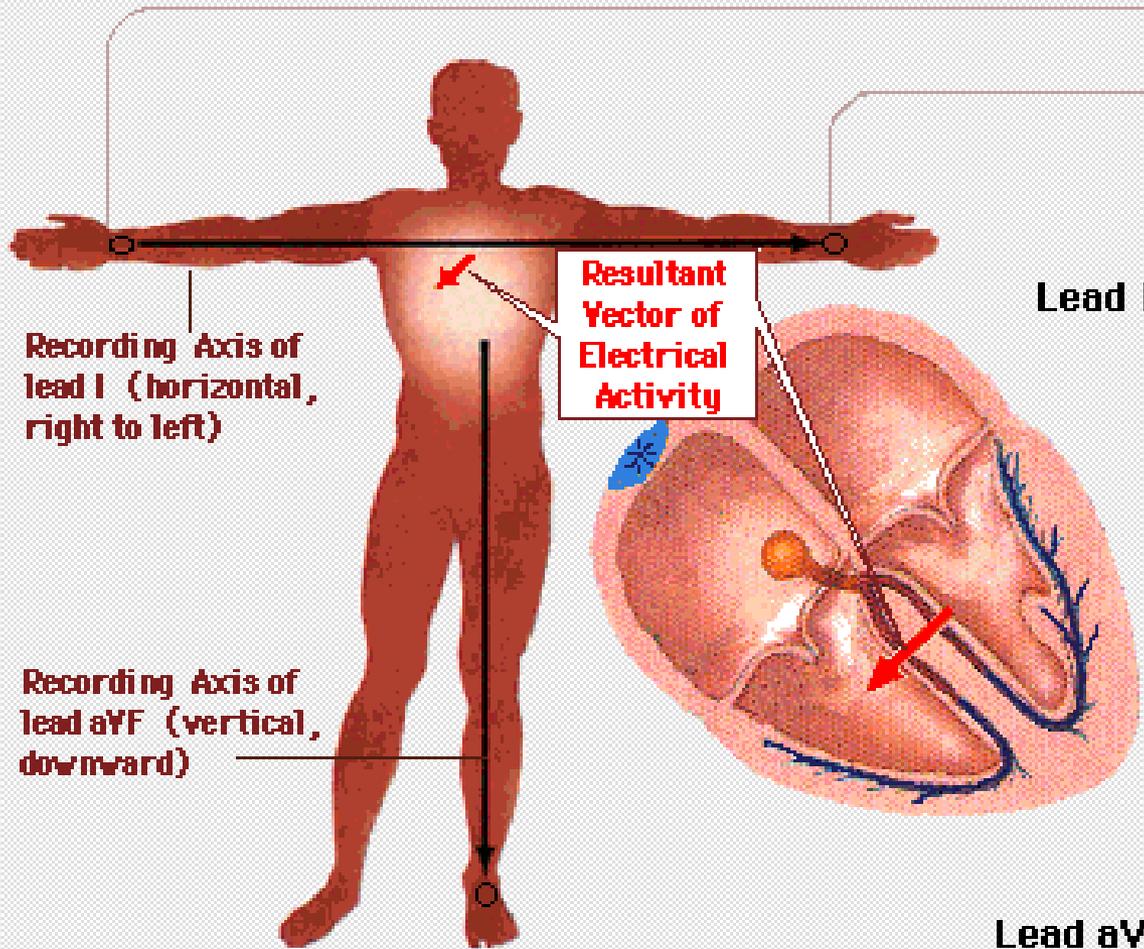


Ventrículo Izquierdo

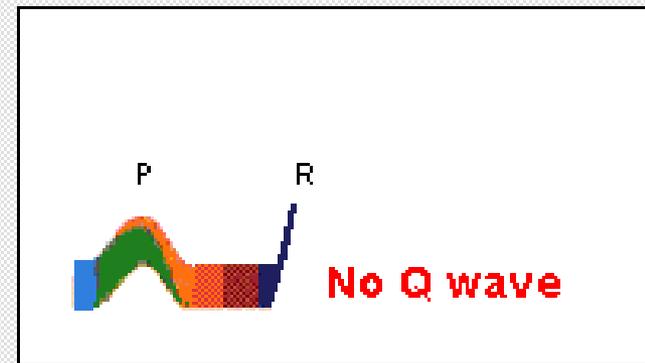
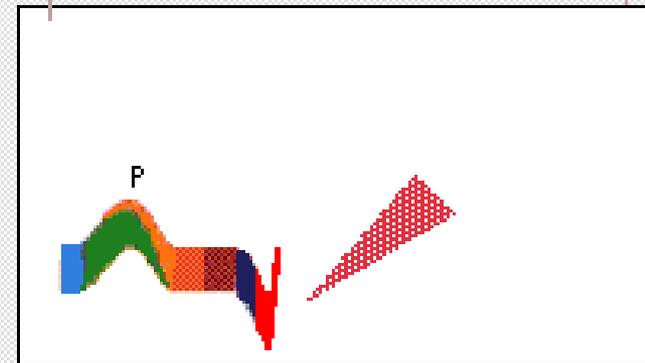
Ventrículo Derecho



DESPOLARIZACION VENTRICULAR



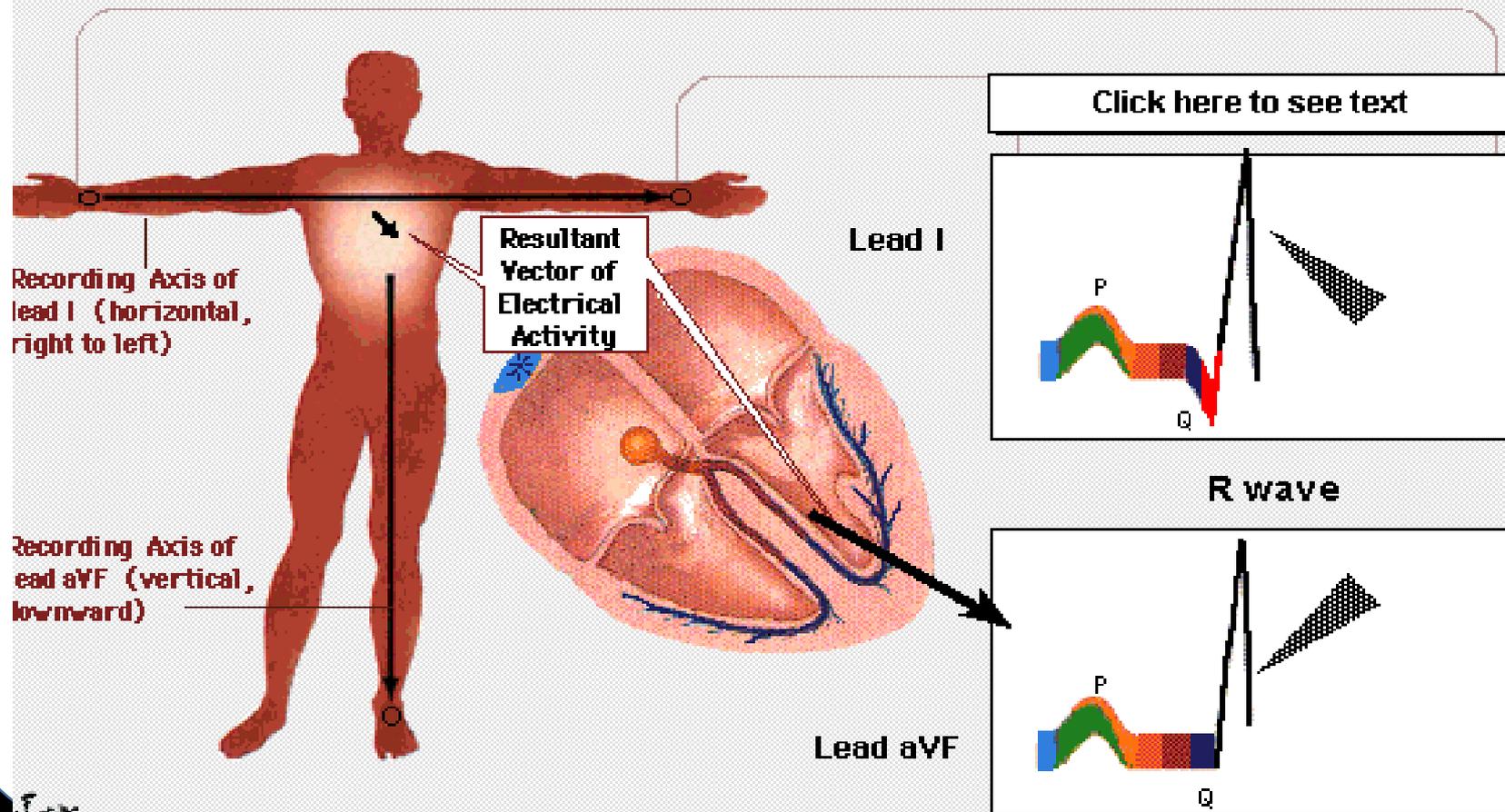
[Click here to see text](#)



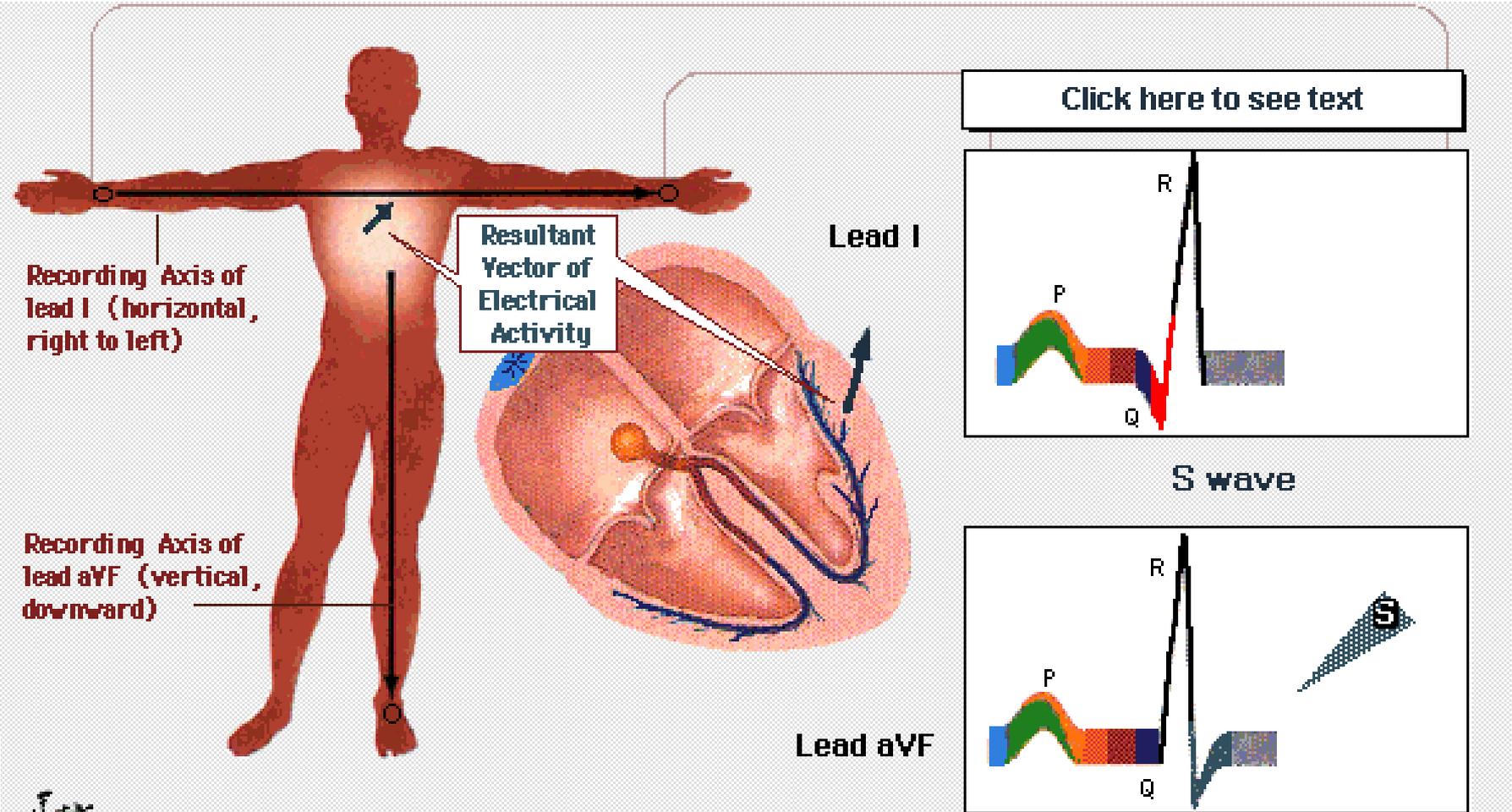
DESPOLARIZACION VENTRICULAR



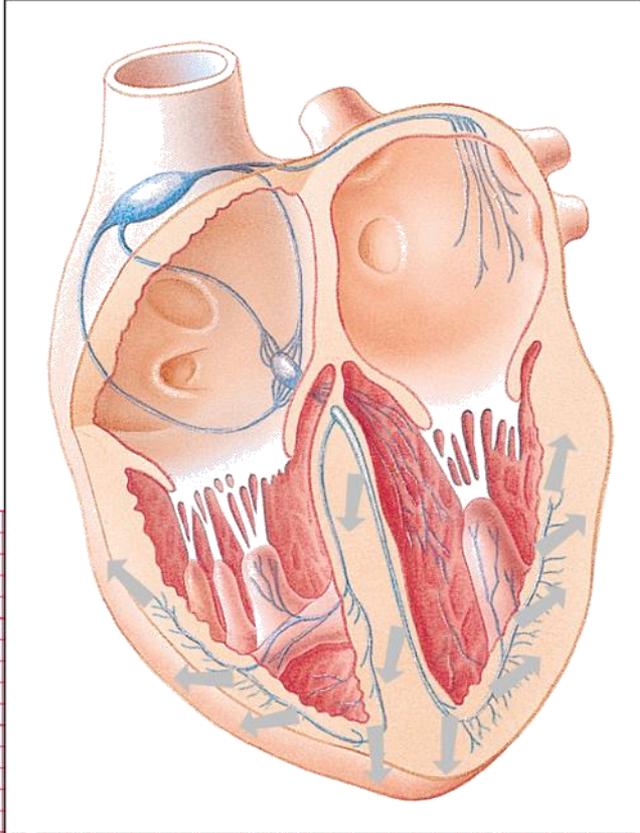
and repolarization (T)



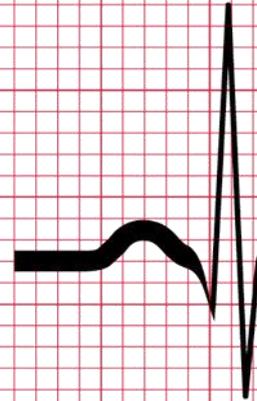
DESPOLARIZACION VENTRICULAR

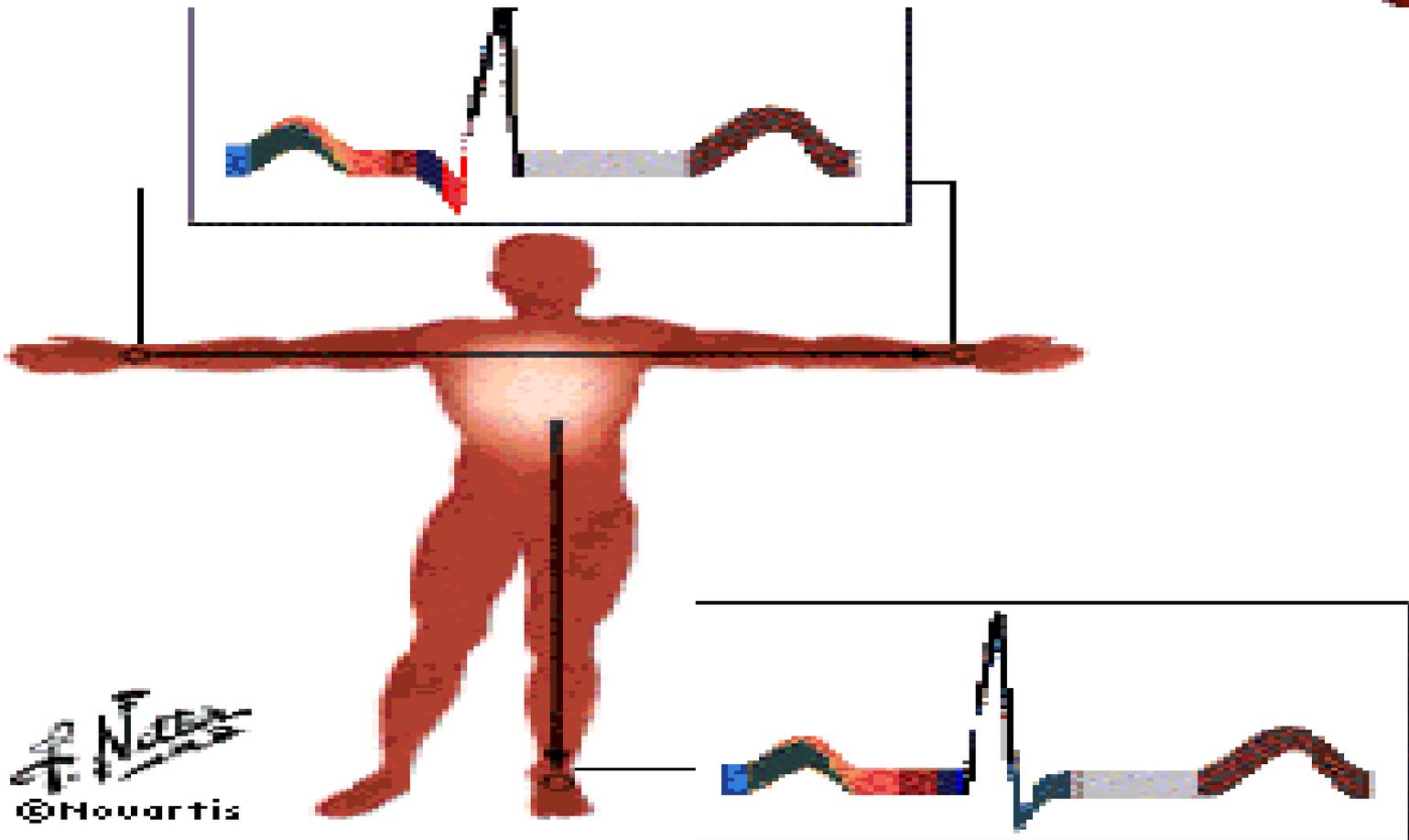
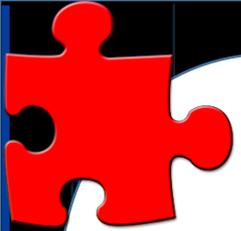


El electrocardiograma



Complejo QRS
Despolarización de los ventrículos

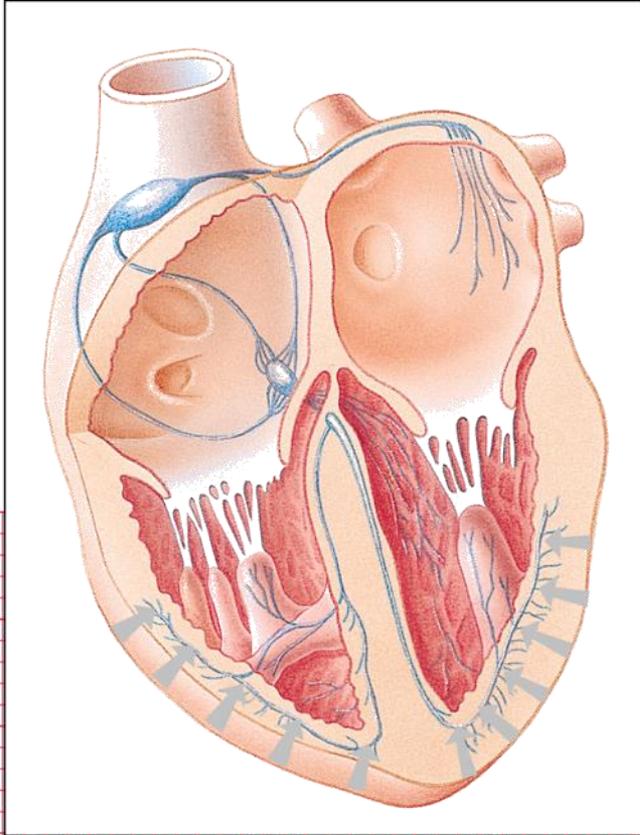




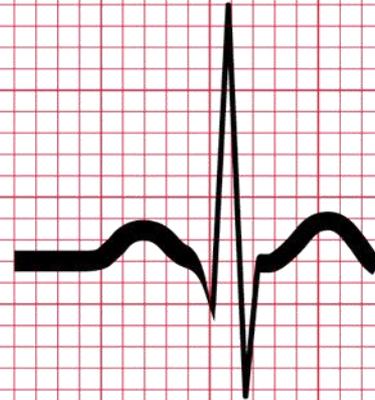

©Novartis

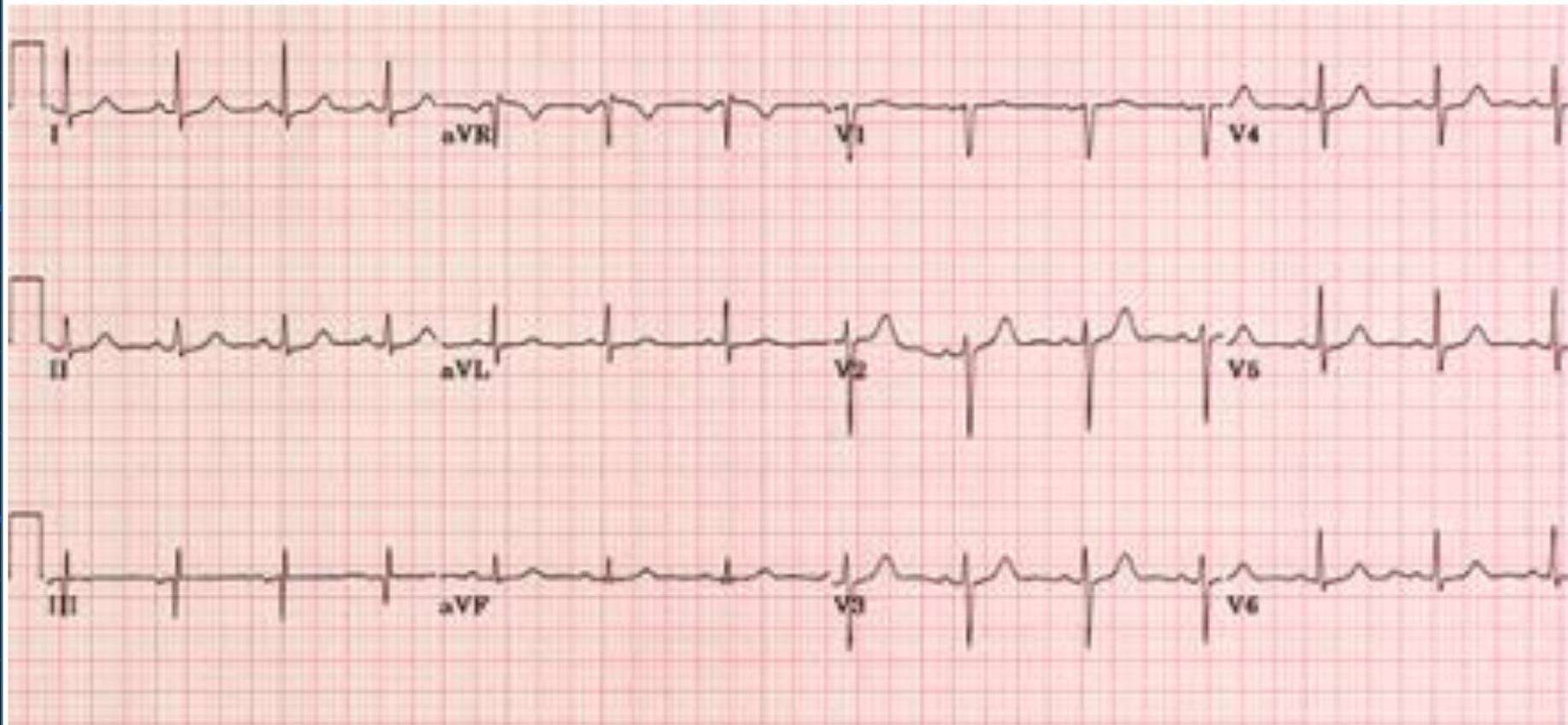


El electrocardiograma



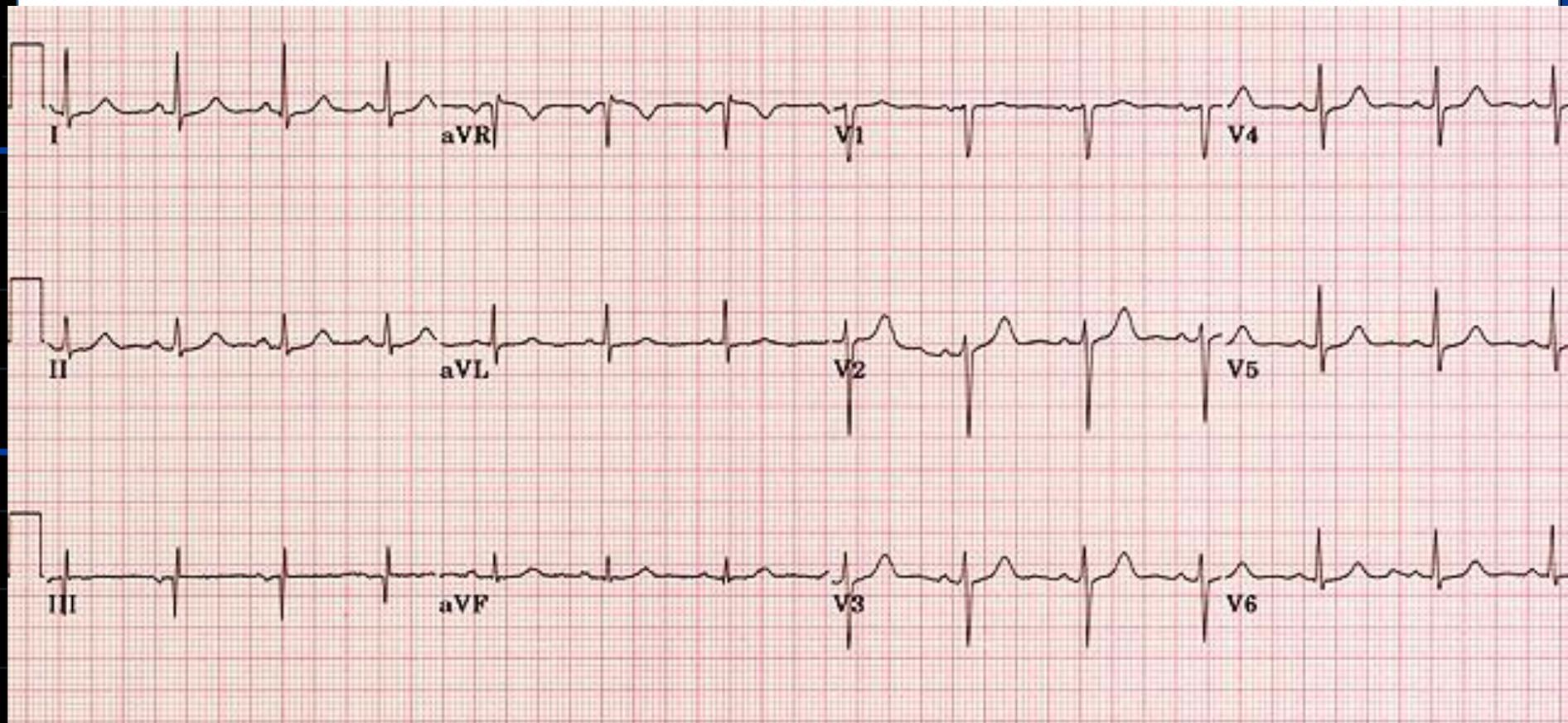
Onda T
Repolarización de los ventrículos





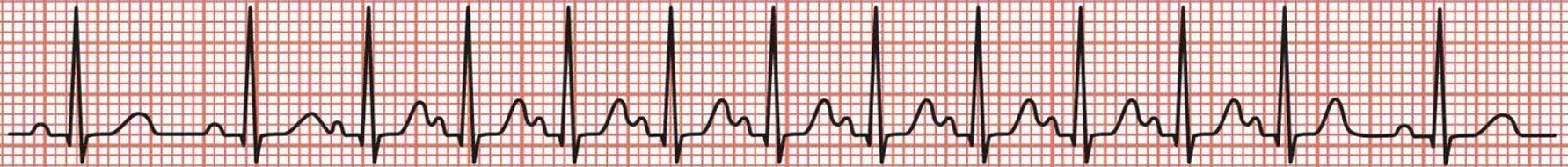
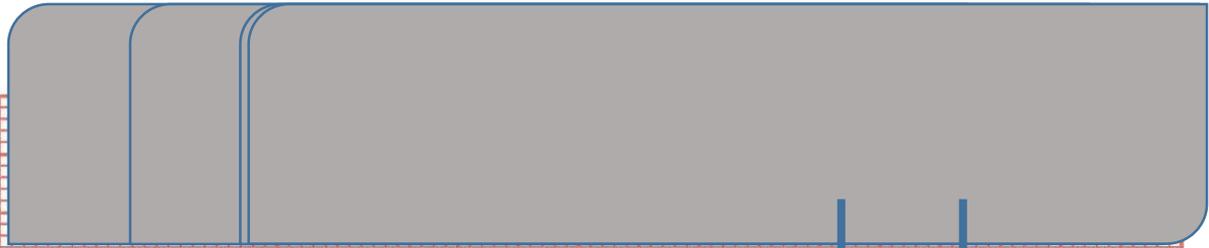
1

REGULAR O IRREGULAR



REGULAR O IRREGULAR

Tira de ritmo DII
25 mm/seg - 1cm/mV



2

FRECUENCIA CARDIACA

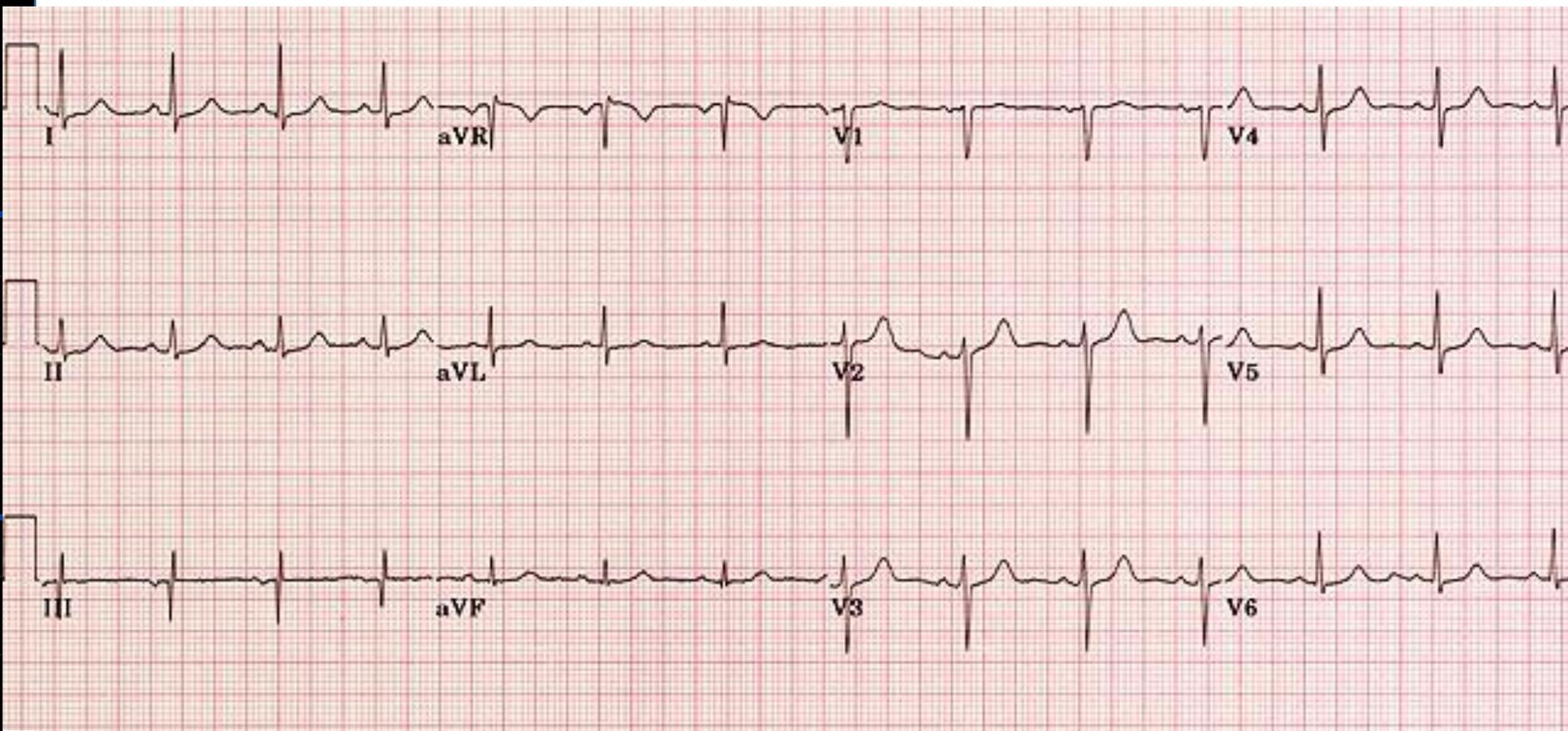


Figura 5. Frecuencia cardiaca a 100 lpm



FRECUENCIA CARDIACA IRREGULAR

1''

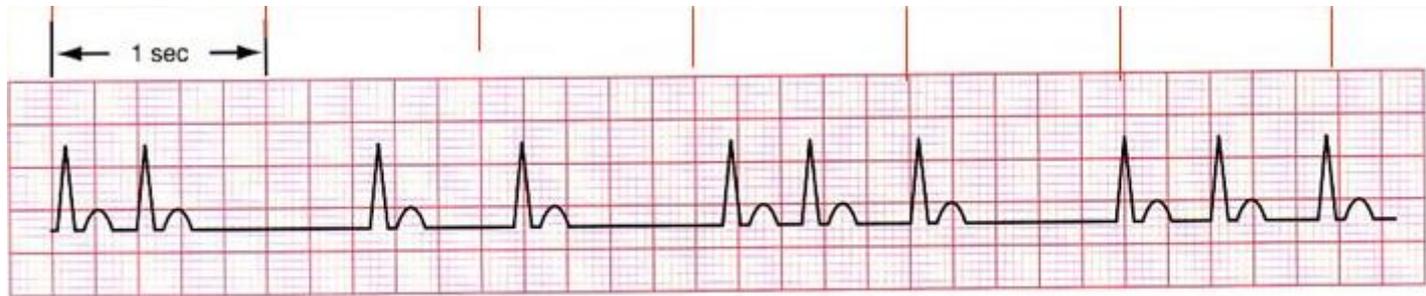
2''

3''

4''

5''

6''

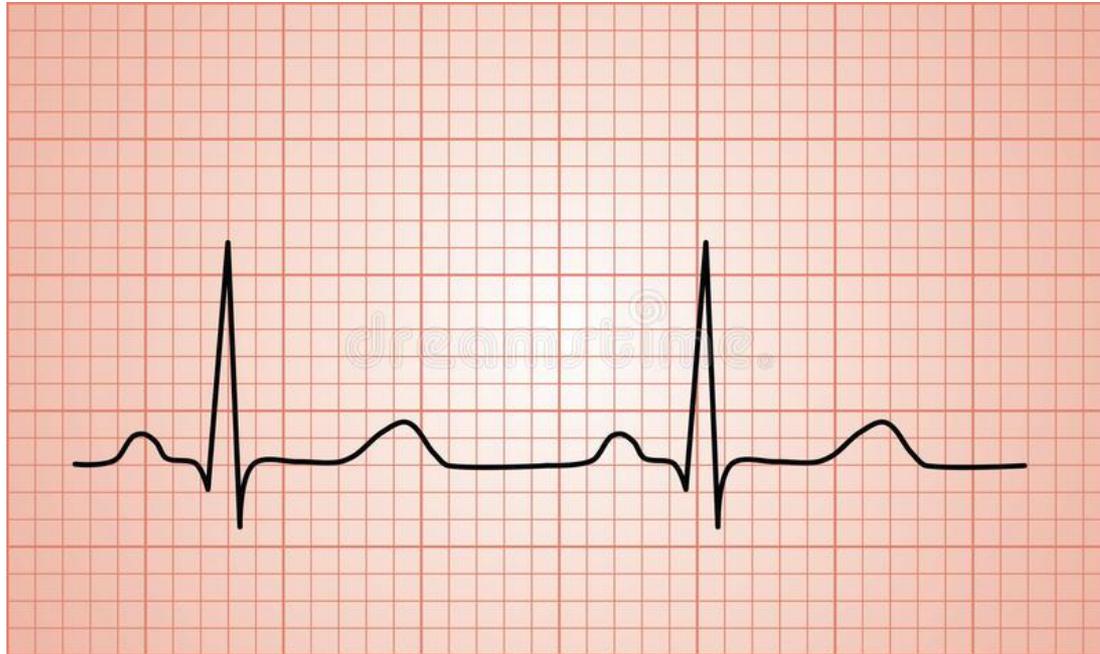


$$F_c = n^{\circ} \text{ Latidos (6 segundos) } \times 10$$



3

ACTIVIDAD AURICULAR



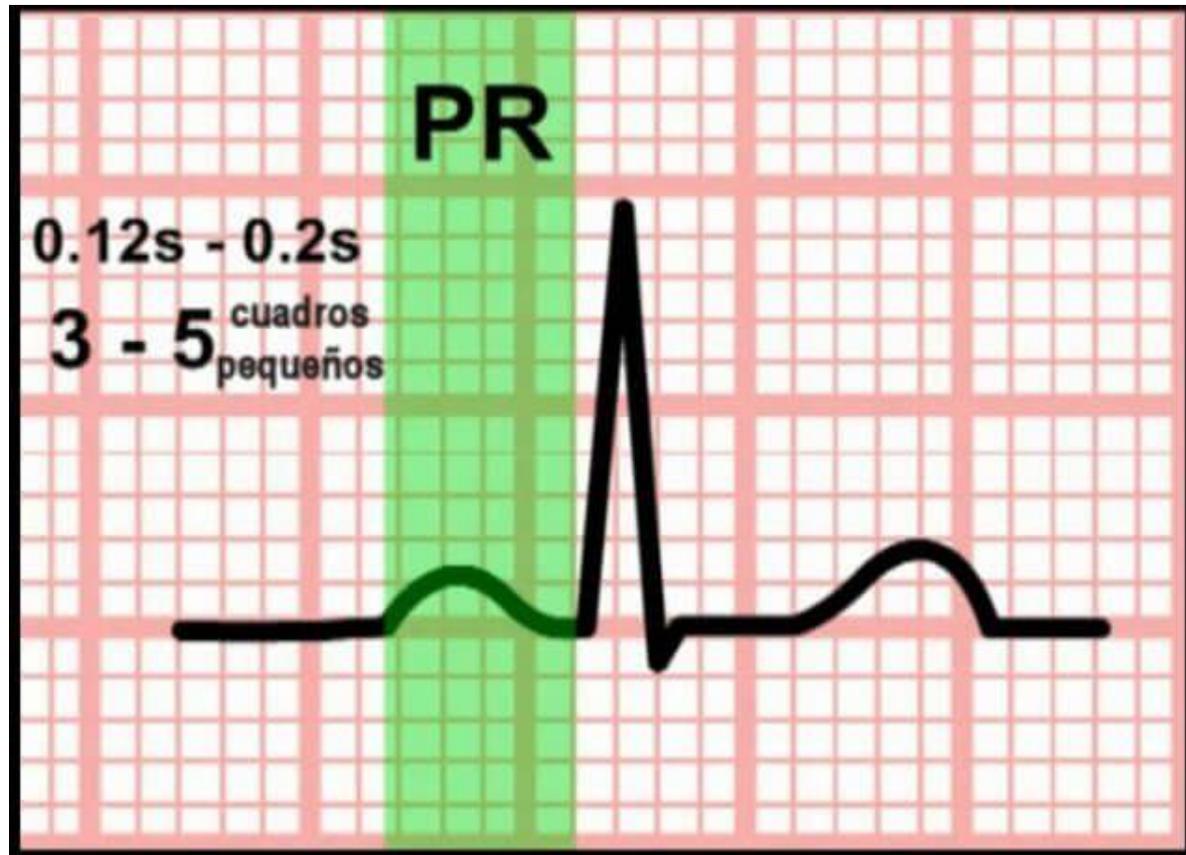
ONDA "P"

Representa la despolarización auricular.

Mide: Altura: Hasta 2.5mm

Duración: Hasta 0.12"



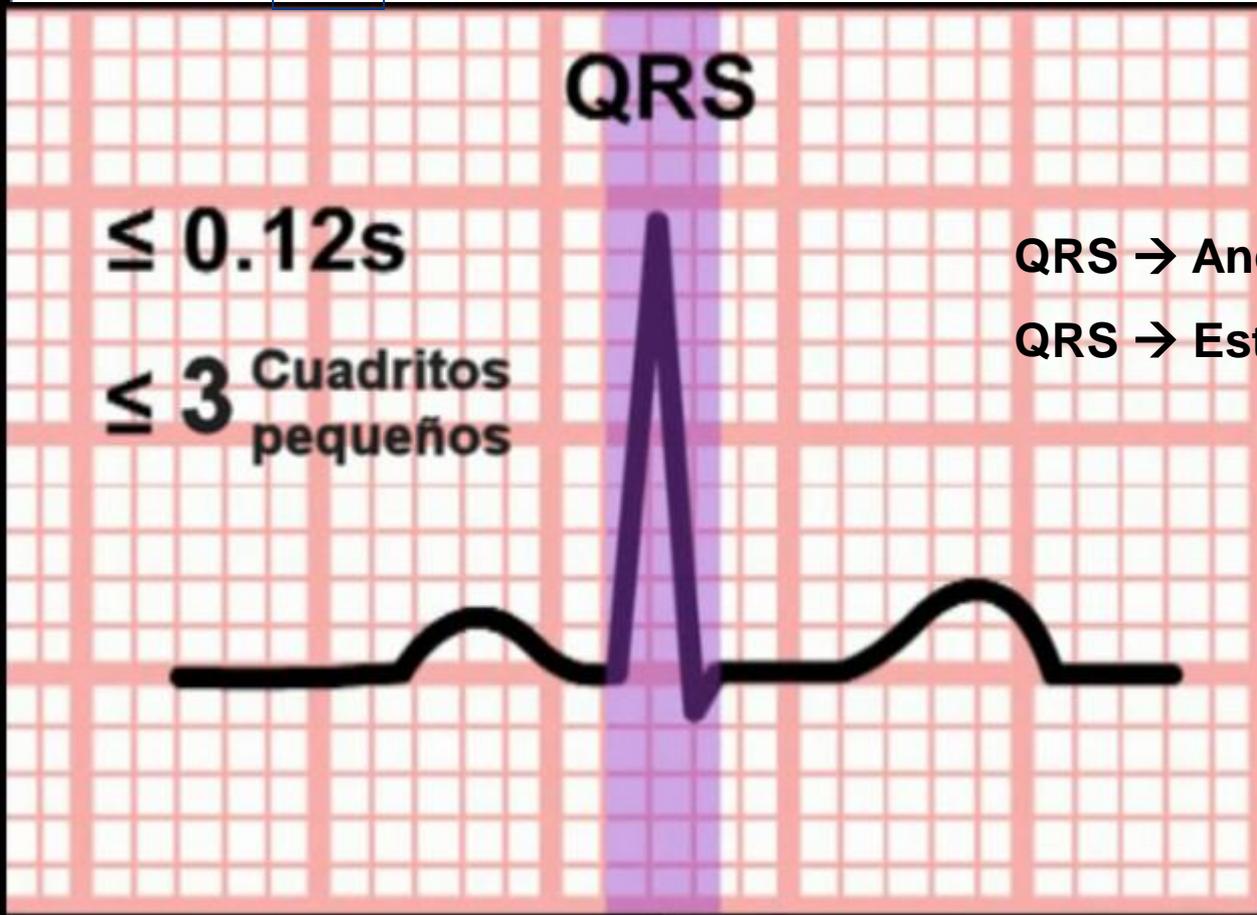


PR Corto = Sind. Wolff Prakinson White
PR Largo = Bloqueo AV.



4

COMPLEJO QRS



QRS → Ancho = Ventricular.

QRS → Estrecho = Supraventricular.

COMPLEJO QRS.- Representa la despolarización ventricular.

Duración: No mayor a 0,12"

Amplitud: Entre 10 y 25mv



MAR 08

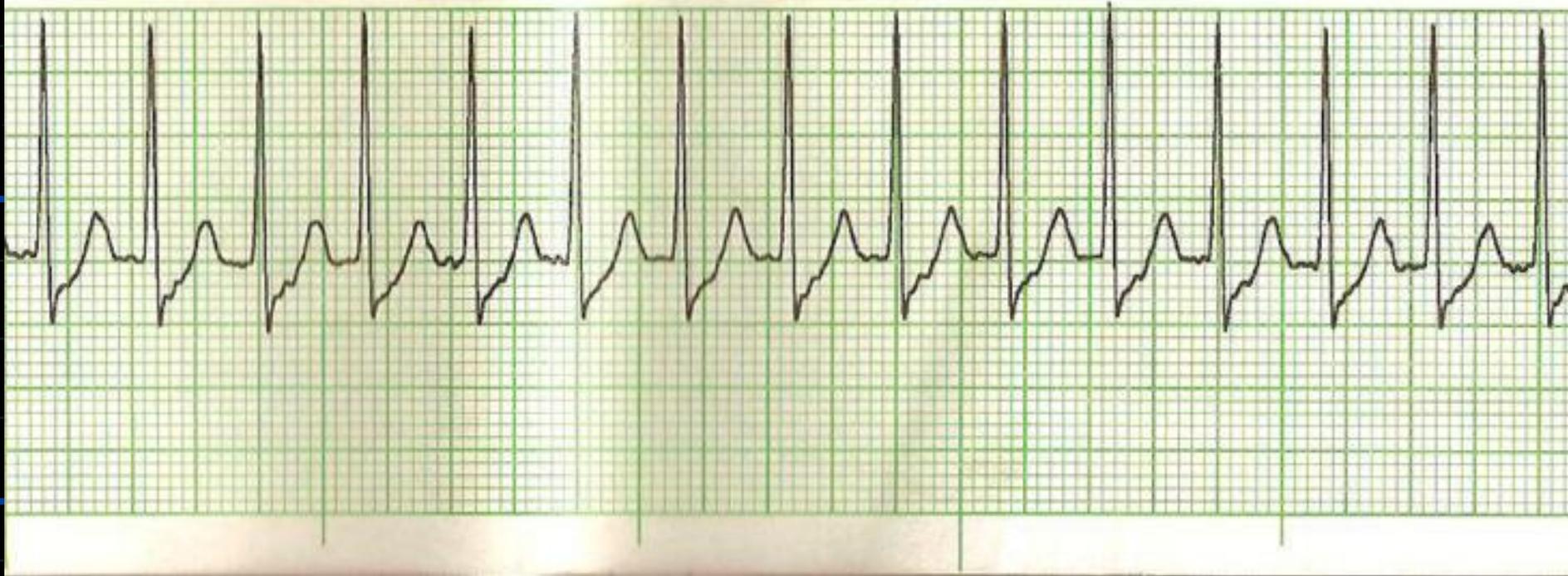
11:43:27

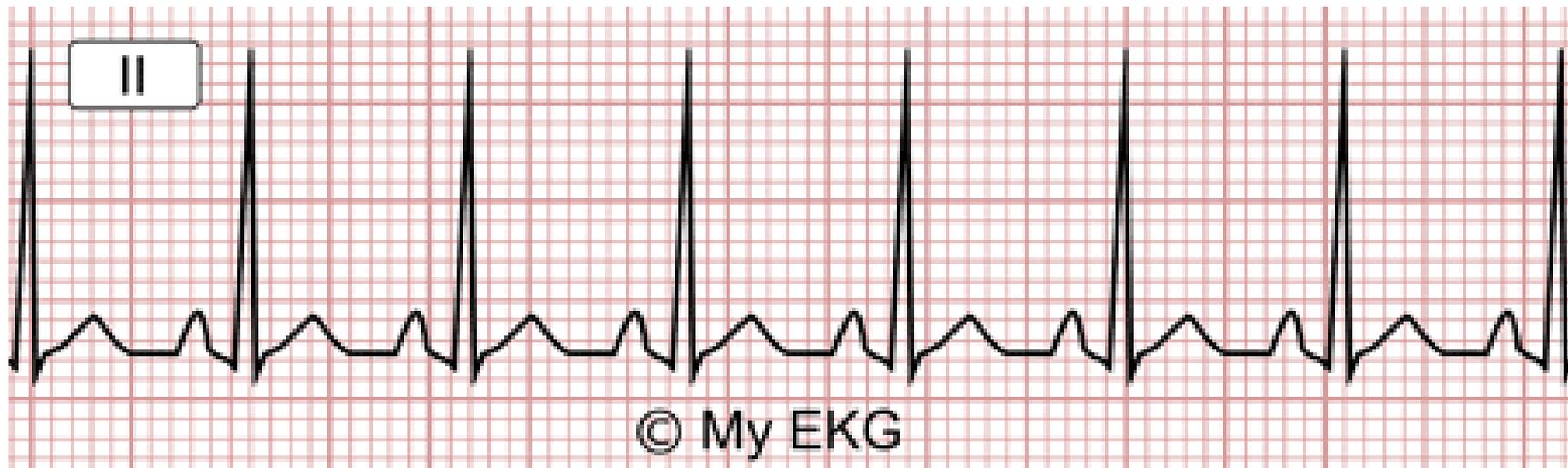
HR179

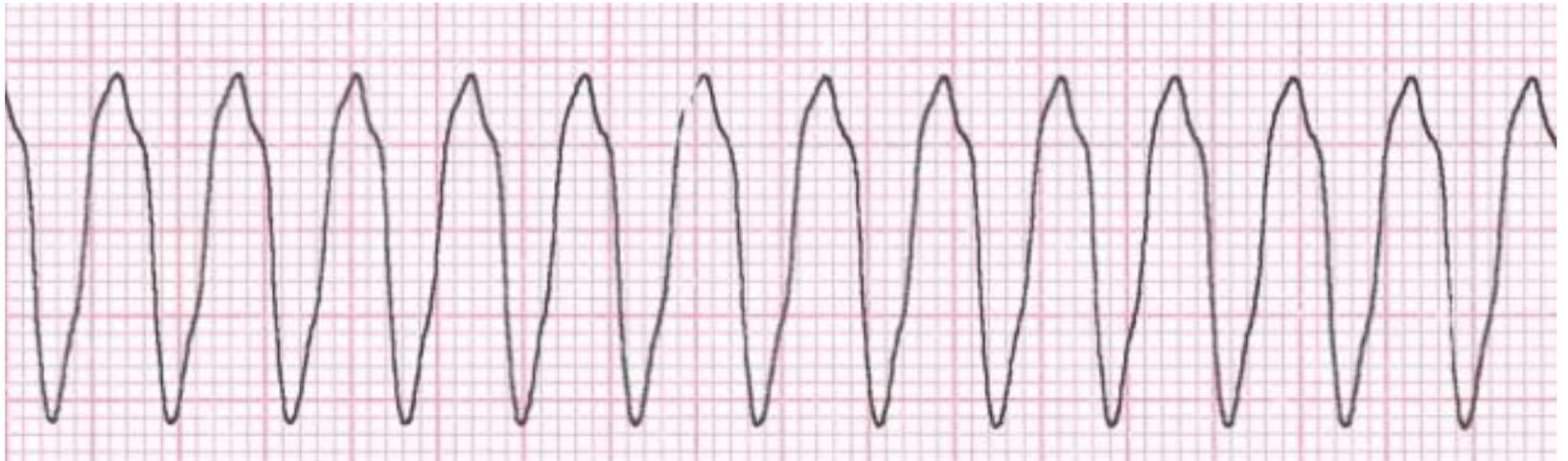
LEAD II

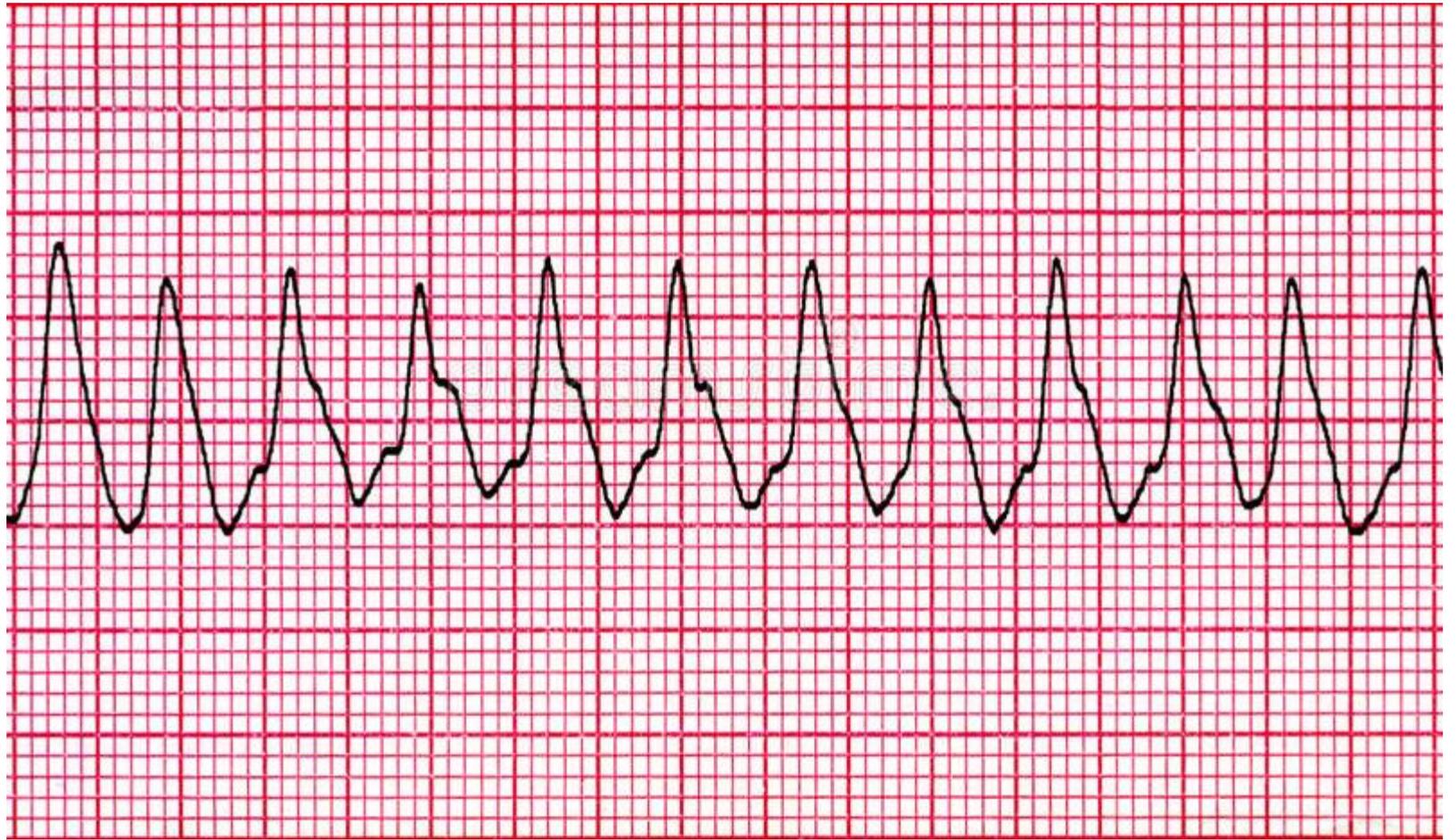
x1.00

DELA





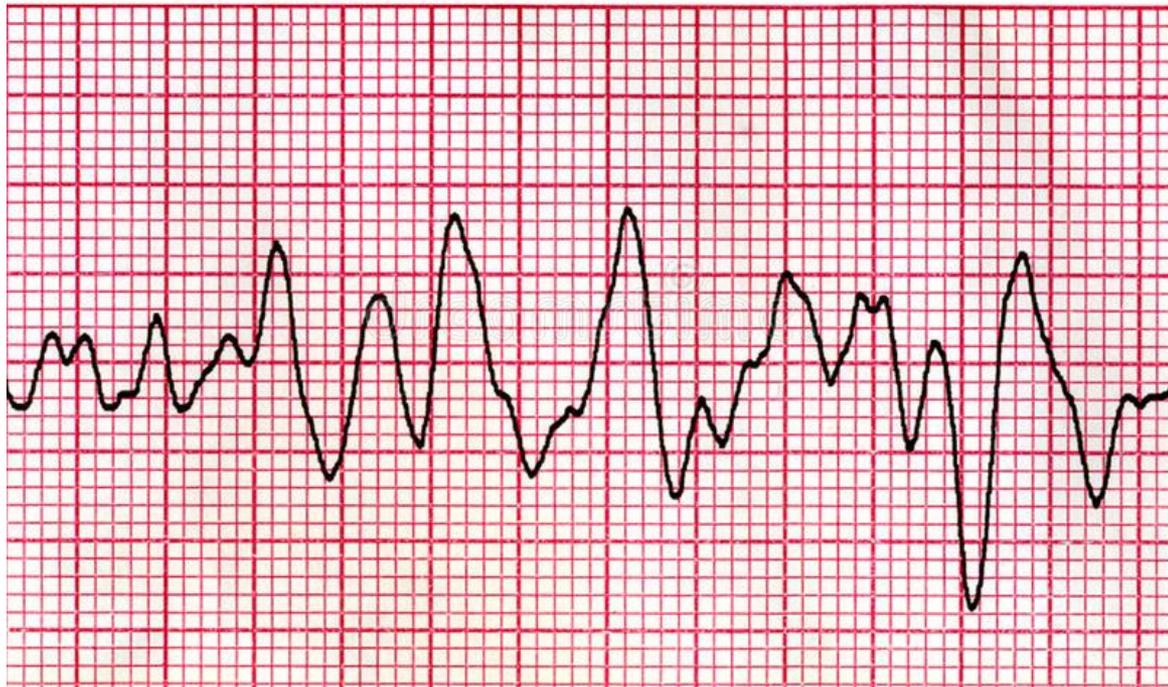




5

FIBRILACION AURICULAR FIBRILACION VENTRICULAR

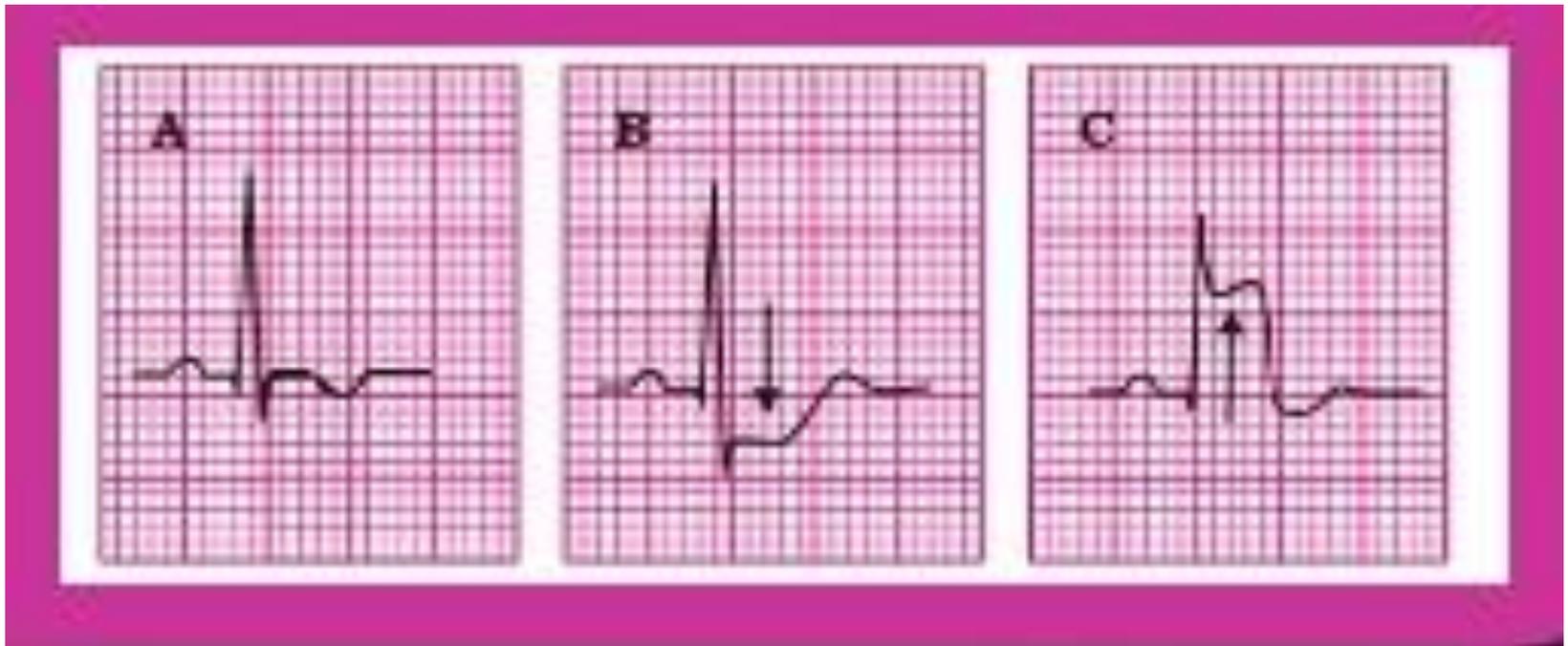
Ventricular Fibrillation



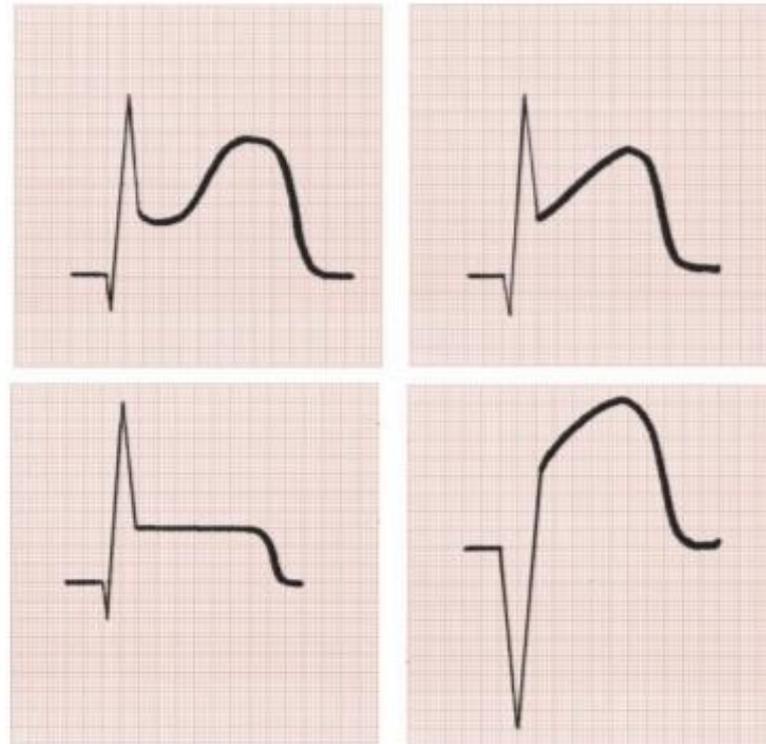
6

COMPORTAMIENTO DEL “ST”

PUNTO “J”



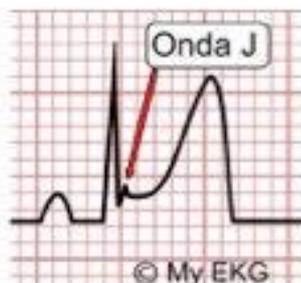
Variable Shapes Of ST Segment Elevations in AMI



Goldberger AL. Goldberger: Clinical Electrocardiography: A Simplified Approach. 7th ed: Mosby Elsevier; 2006.

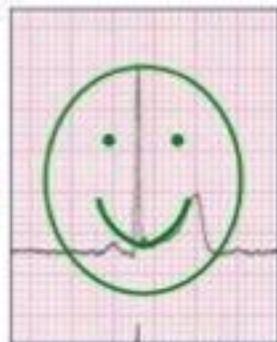


Onda J

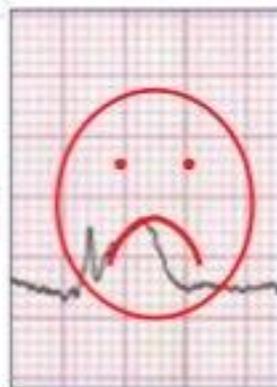


La **Onda J** es una onda pequeña, positiva y redondeada, que aparece justo al final del QRS.

Repolarización precoz

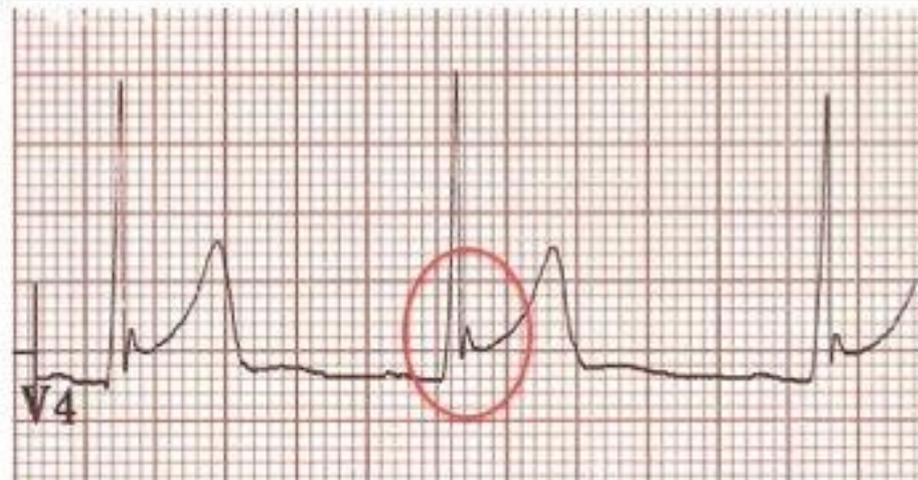


IAMCEST



Algunas Causas de elevación del punto J:

- Repolarización Precoz
- Síndrome de Brugada
- Hipotermia
- Hipercalcemia
- Aumento del tono vagal
- Lesiones medulares.

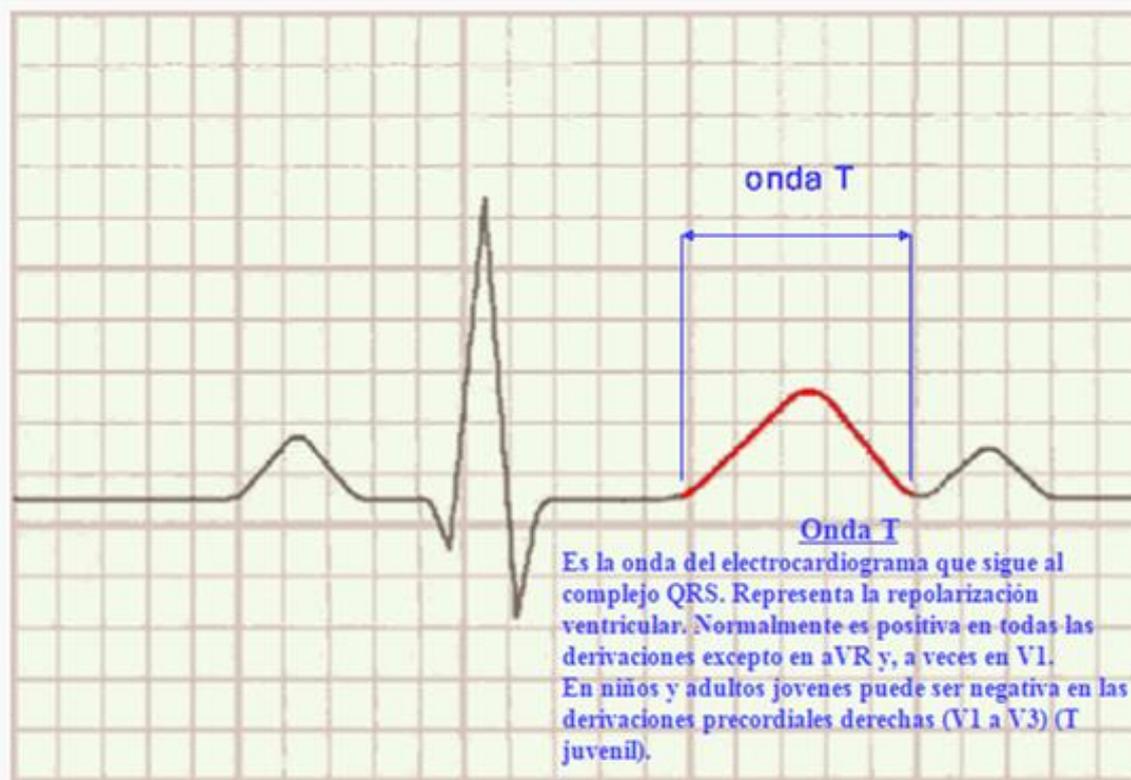


<http://www.tlcmofm.com/wp-content/uploads/2015/02/Repolarizacion%20y%20QRS%20con%20ondas%20J.pdf>

Pargolkar VS, Perez MV, Jindal A, Mathur MB, Myers J, Froelicher VF. Long-Term Prognosis of Early Repolarization with J-Wave and QRS Slur Patterns on the Resting Electrocardiogram. A Cohort Study. *Annals of Internal Medicine* 2015; 163(10): 747-758.

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COMPORTAMIENTO DE LA ONDA “T”



Amplitud máx. 5 mm



ondas T altas:

- hiperpotasemia
- repolarización precoz
- pericarditis aguda



ondas T negativas o planas:

- hipopotasemia
- TEP
- bloqueos de rama

Gracias ...



...A Dios sea la Gloria



Elver Luyo Valera

