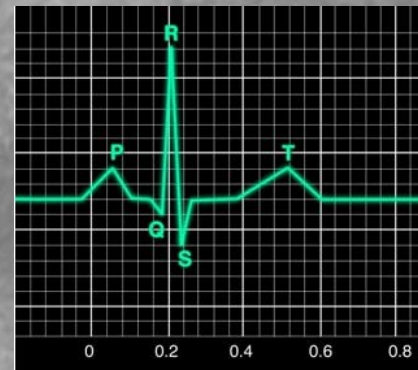
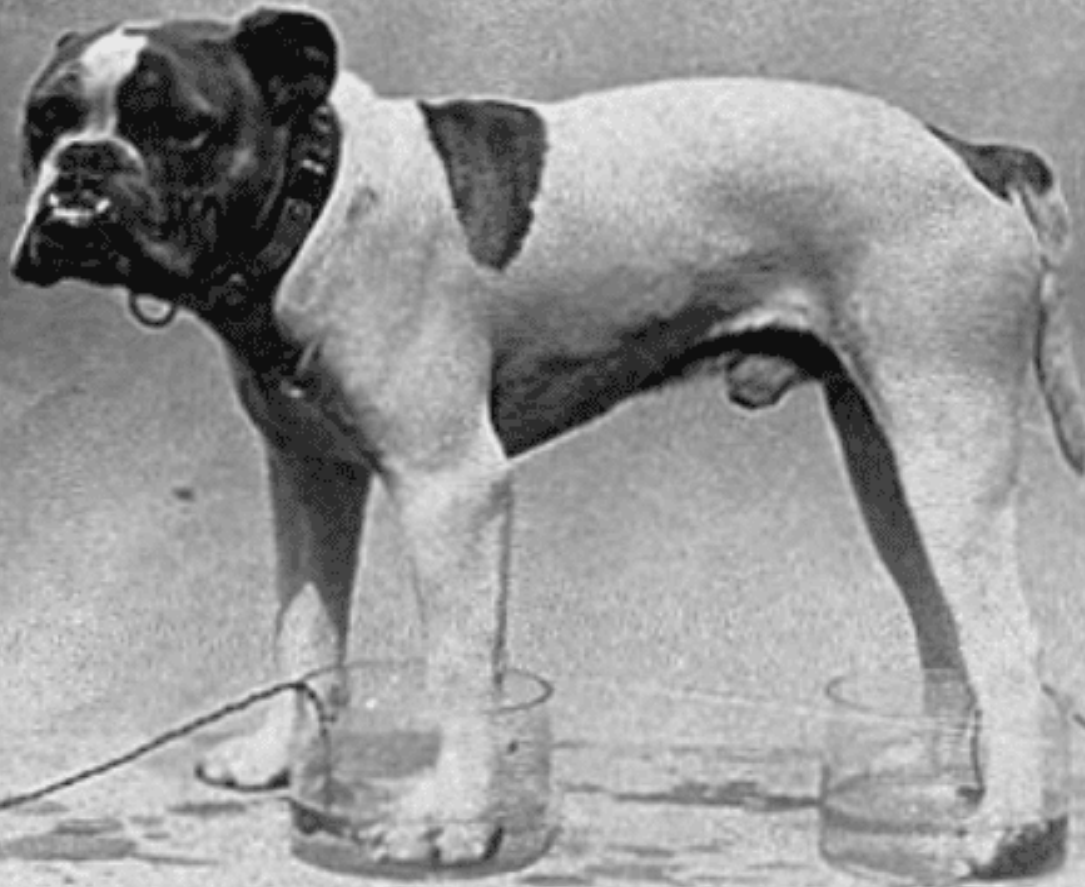


# Elektro Kardio Grafie



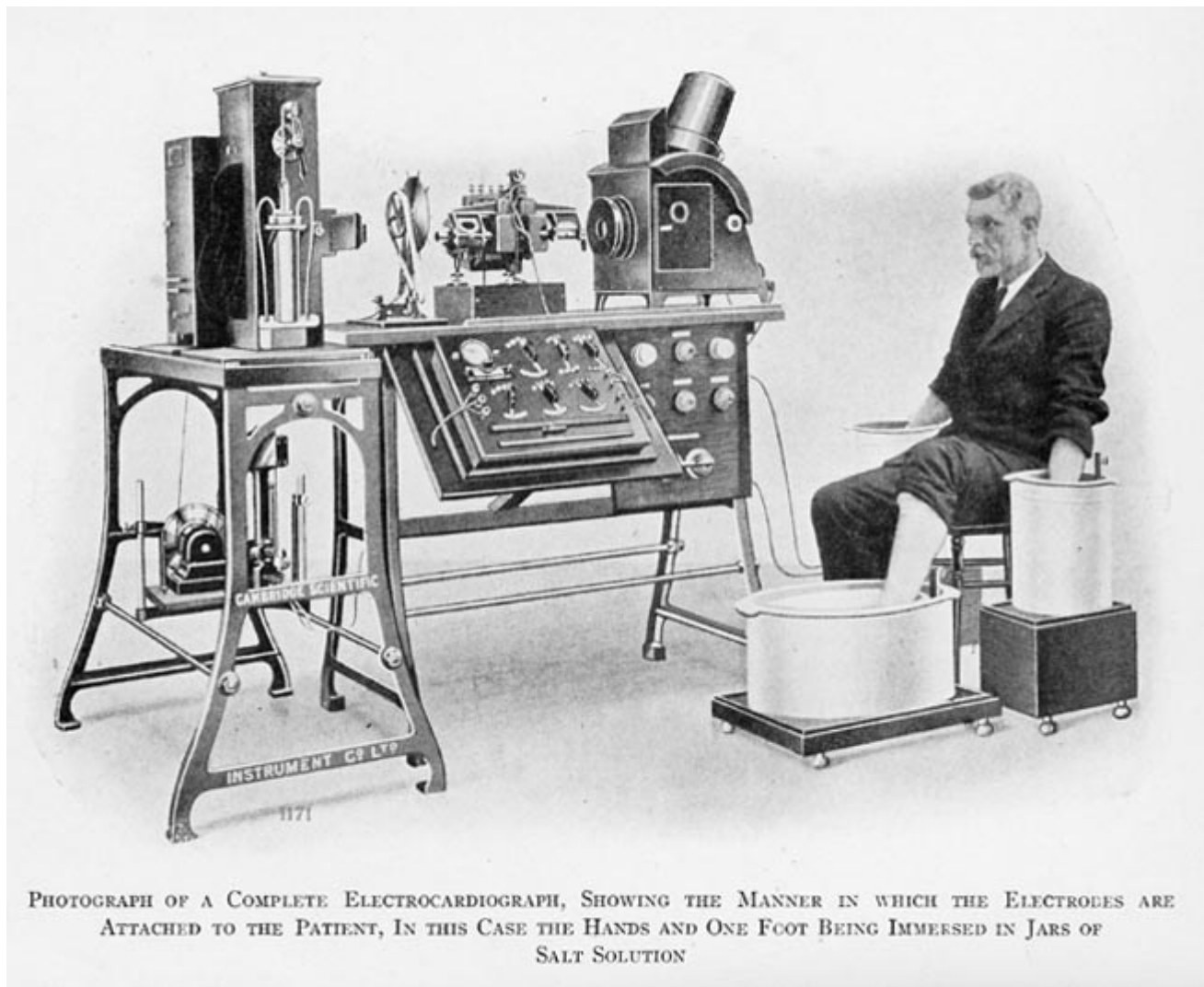
**Heart  
Watch** 24/7

**medequip**  
restore

**OregonMedicalTraining, Inc.**  
Private Career School

# Praktické úlohy a demonstrace z fyziologie živočichů

## Animace EKG



PHOTOGRAPH OF A COMPLETE ELECTROCARDIOGRAPH, SHOWING THE MANNER IN WHICH THE ELECTRODES ARE ATTACHED TO THE PATIENT, IN THIS CASE THE HANDS AND ONE FOOT BEING IMMERSSED IN JARS OF SALT SOLUTION

User	custo med GmbH	10.06.2013	14:52	? _	×
Patient	Doe John	15.04.1982 (31 Y.)			
Examination	Resting ECG	Evaluation of 10.06.2013 14:50			

HR 75 Channel 12 Channel mm/mV 10 mm/s 50 Mouse Analysis



mm/mV 30 mm/s 100



Comparison Measurement ECG Overview Options Print End

# Vznik napětí mezi podrážděnou a klidovou tkání

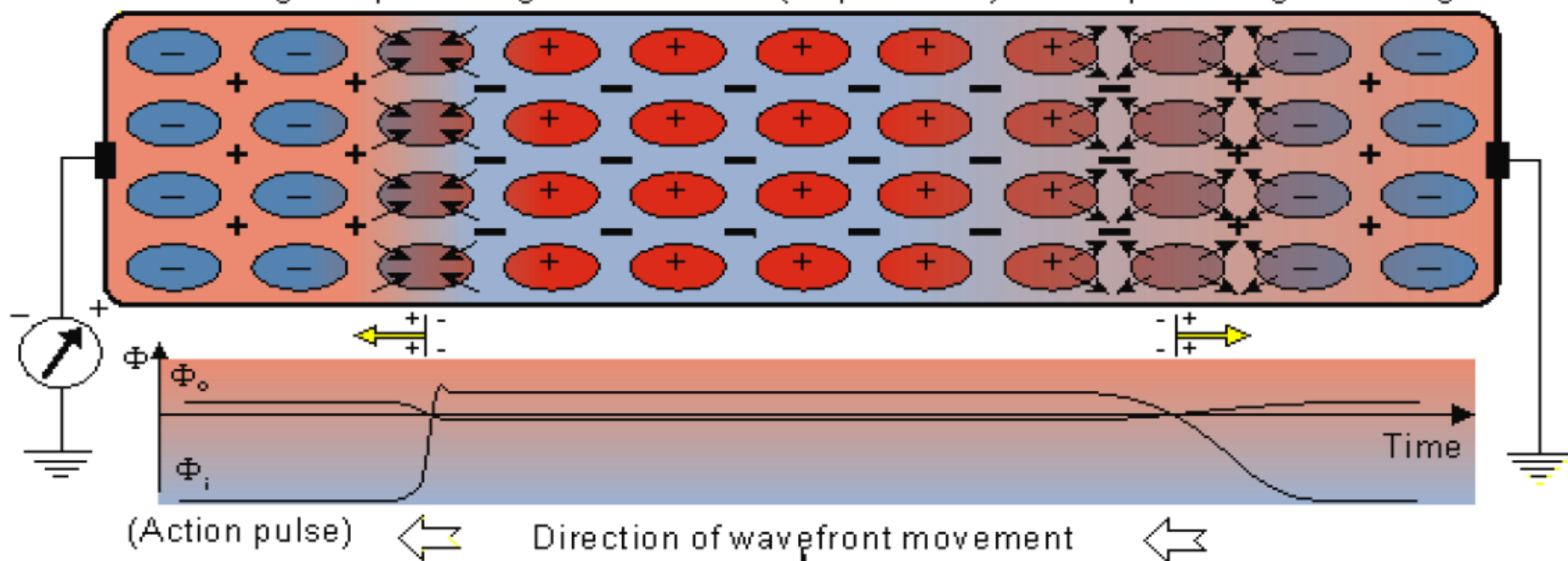
## DEPOLARIZATION

Positive ions ( $\text{Na}^+$ ) flowing into the depolarizing cells make  $\Phi_o$  (outside the cells) more negative.

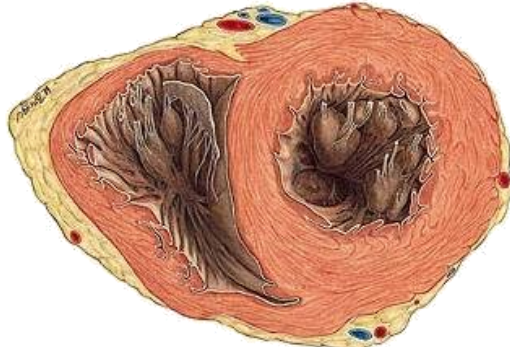
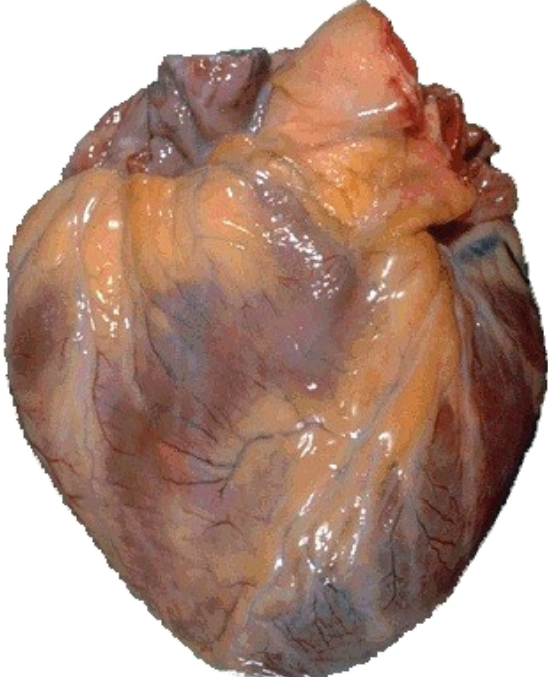
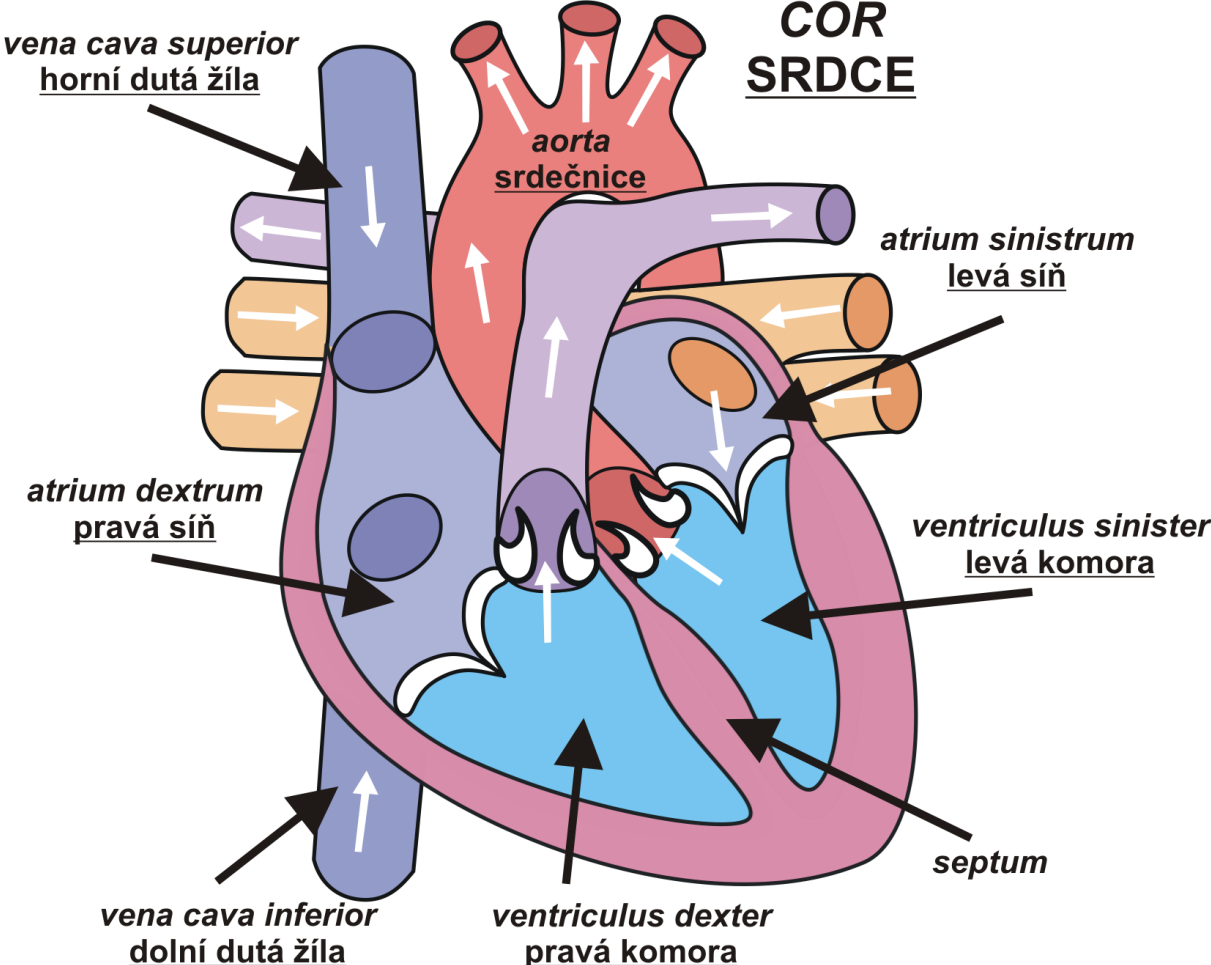
## REPOLARIZATION

Positive ions ( $\text{K}^+$ ) flowing out from the repolarizing cells make  $\Phi_o$  (outside the cells) more positive.

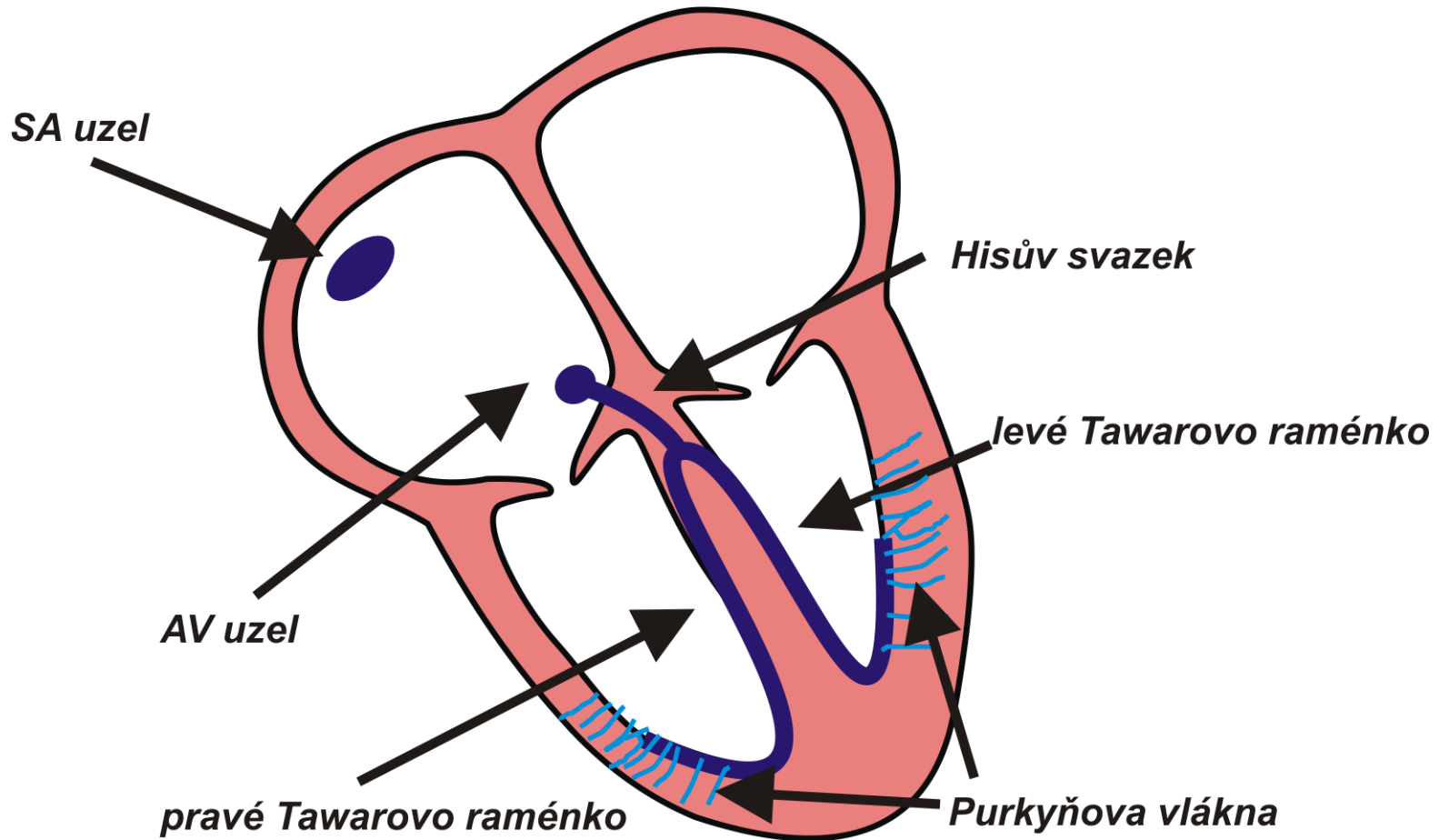
Resting Depolarizing Activated (Depolarized) Repolarizing Resting



# Stavba srdce



# Převodní systém

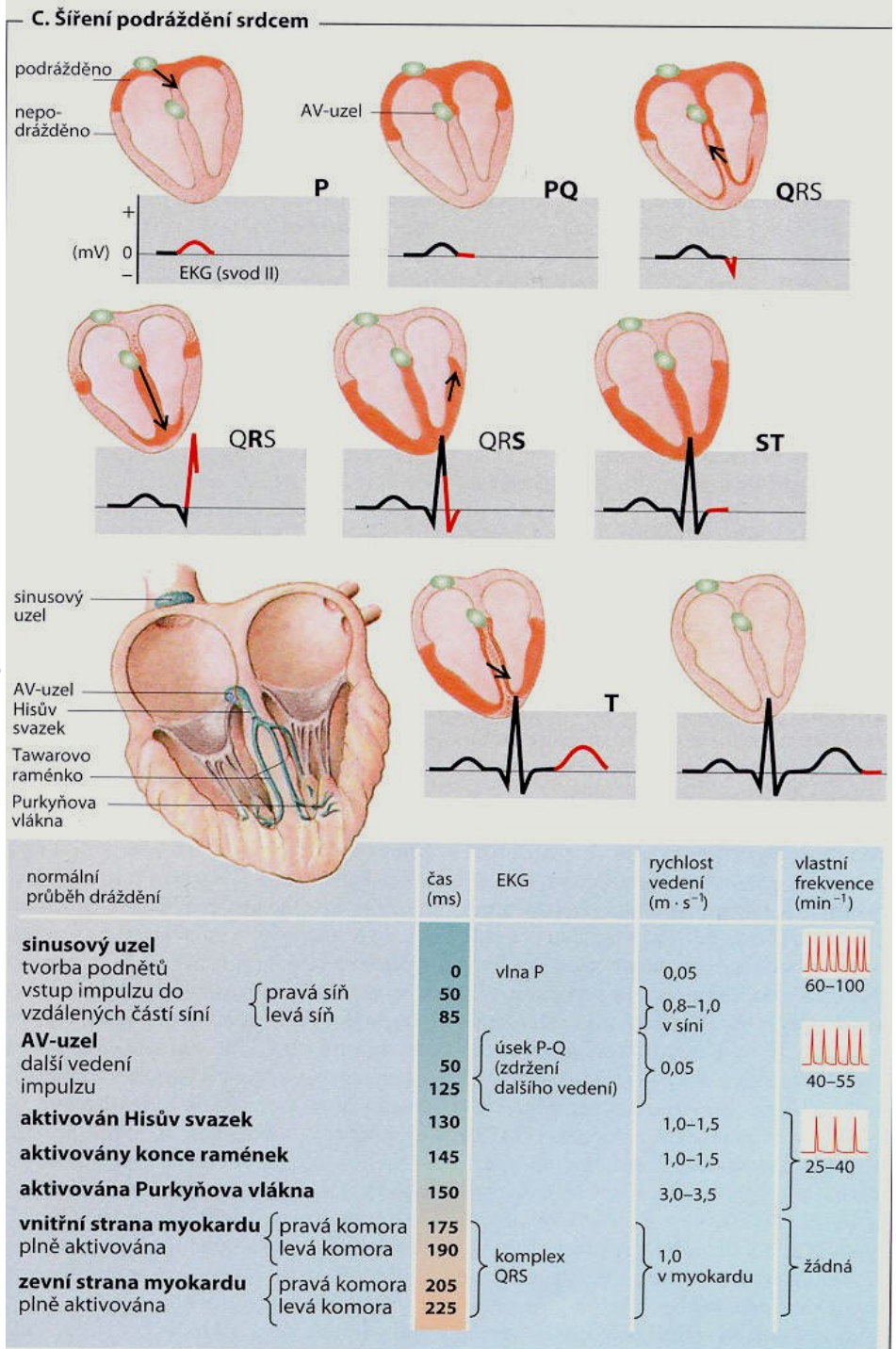


# Převodní soustava

Vlna P – depolarizace předsíní (síní)

Komplex QRS – depolarizace komor

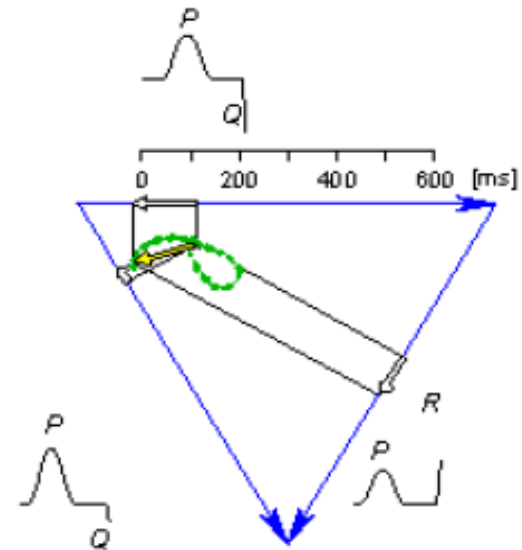
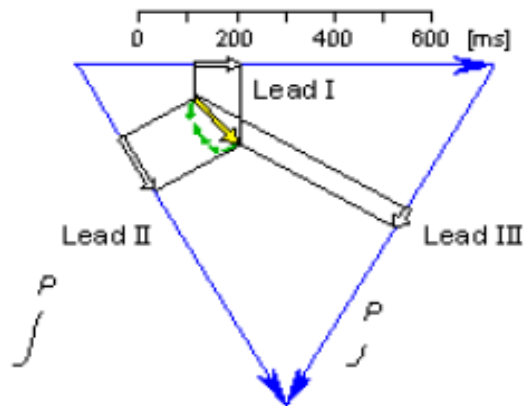
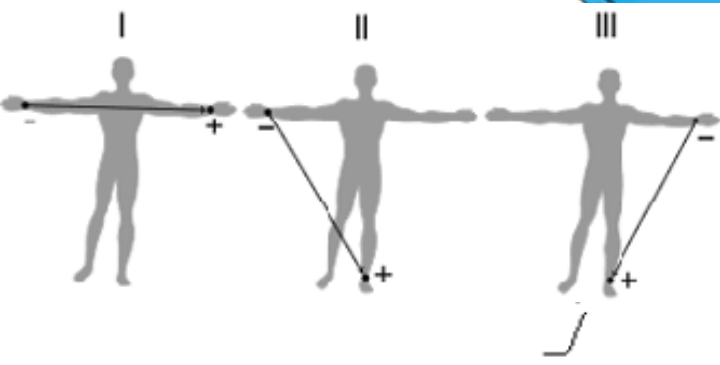
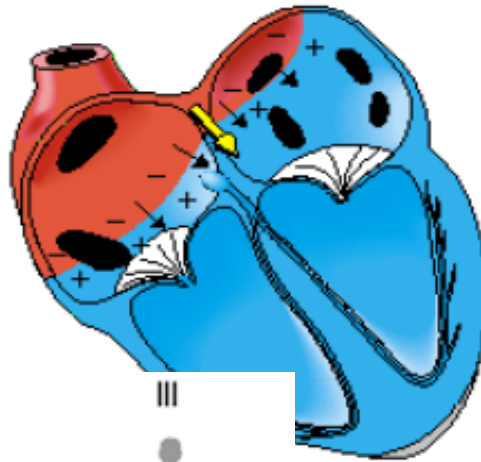
Vlna T – repolarizace komor





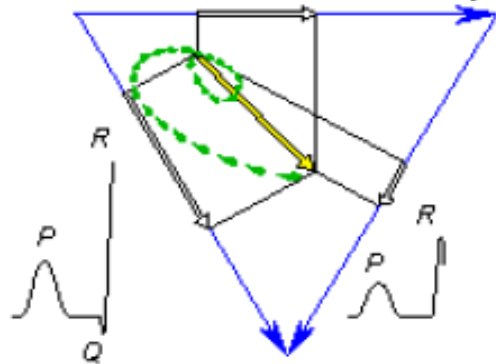
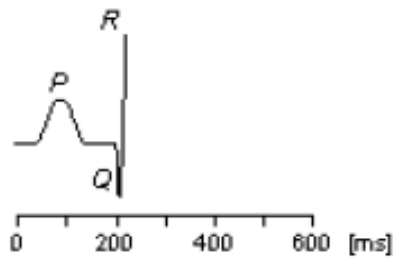
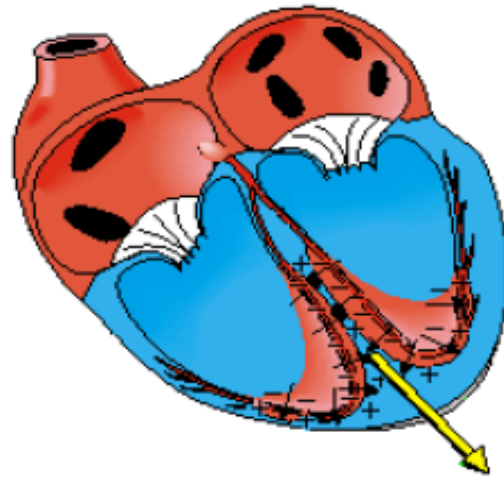
ATRIAL  
DEPOLARIZATION  
80 ms

SEPTAL  
DEPOLARIZATION  
220 ms

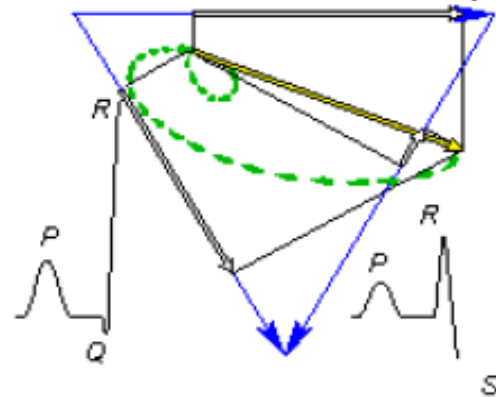
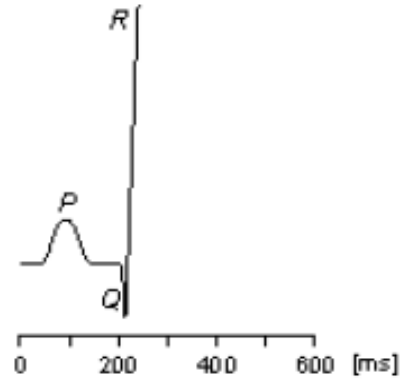
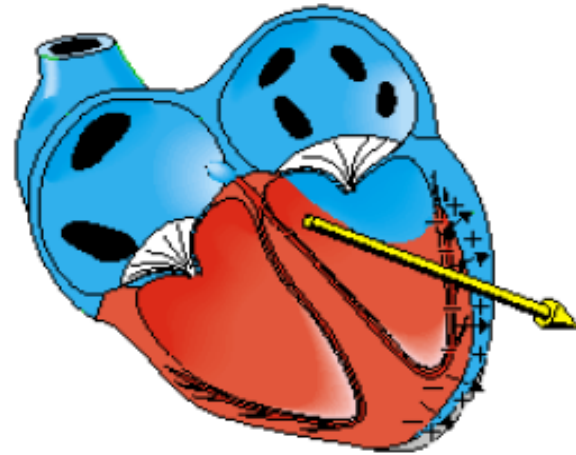


Einthovenův trojúhelník

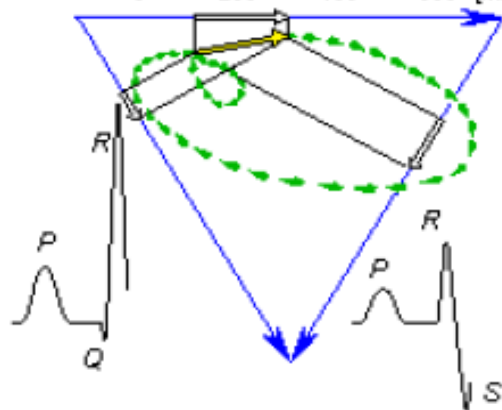
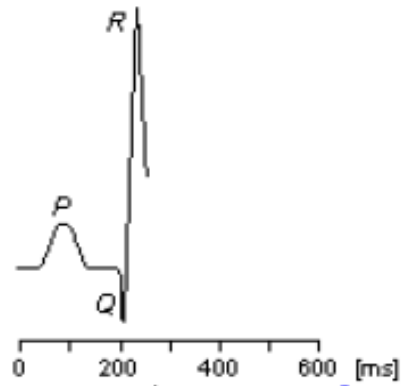
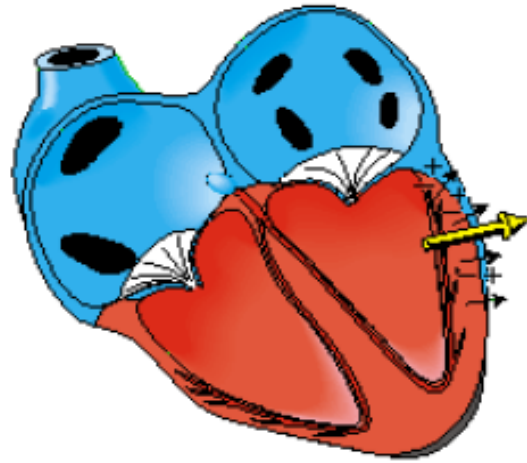
APICAL  
DEPOLARIZATION  
230 ms



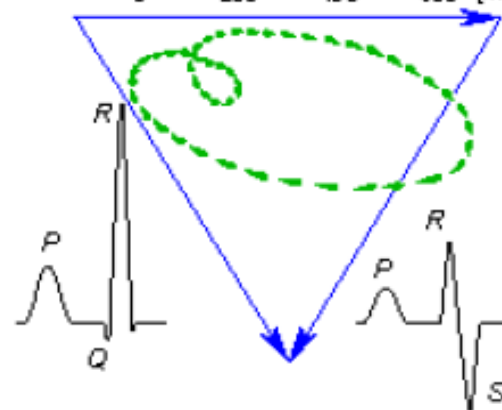
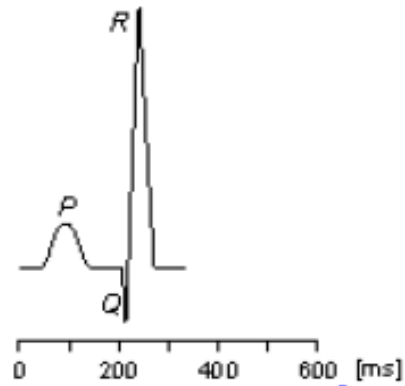
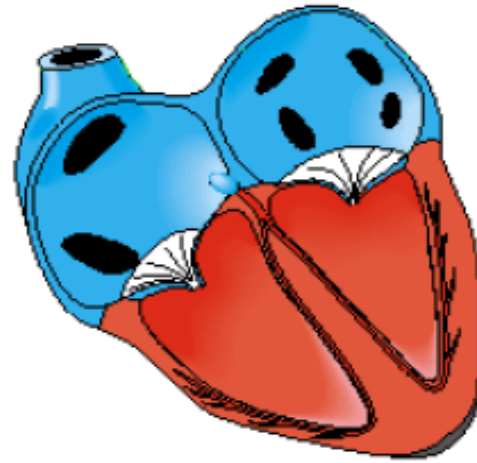
LEFT VENTRICULAR  
DEPOLARIZATION  
240 ms



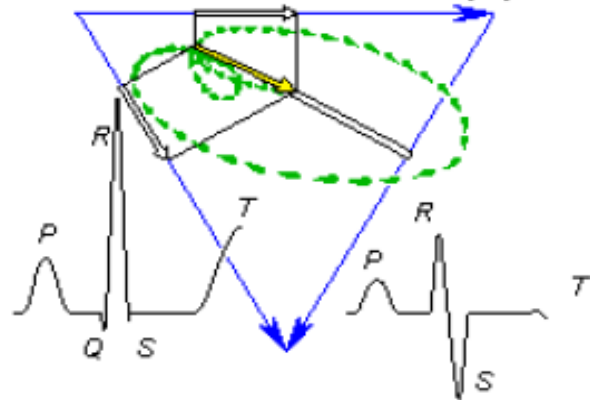
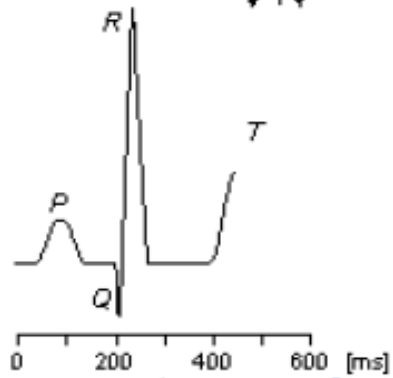
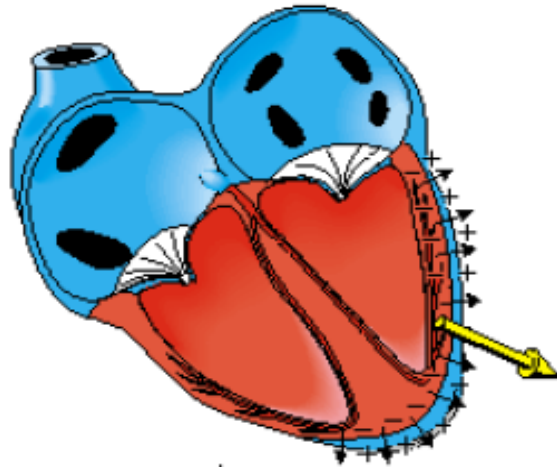
LATE LEFT VENTRICULAR  
DEPOLARIZATION  
250 ms



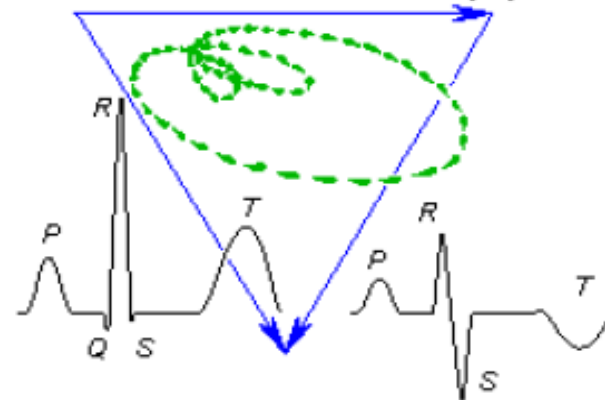
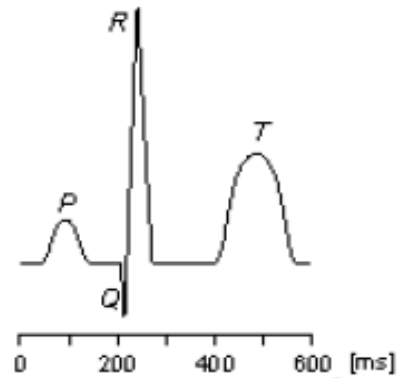
VENTRICLES  
DEPOLARIZED  
350 ms

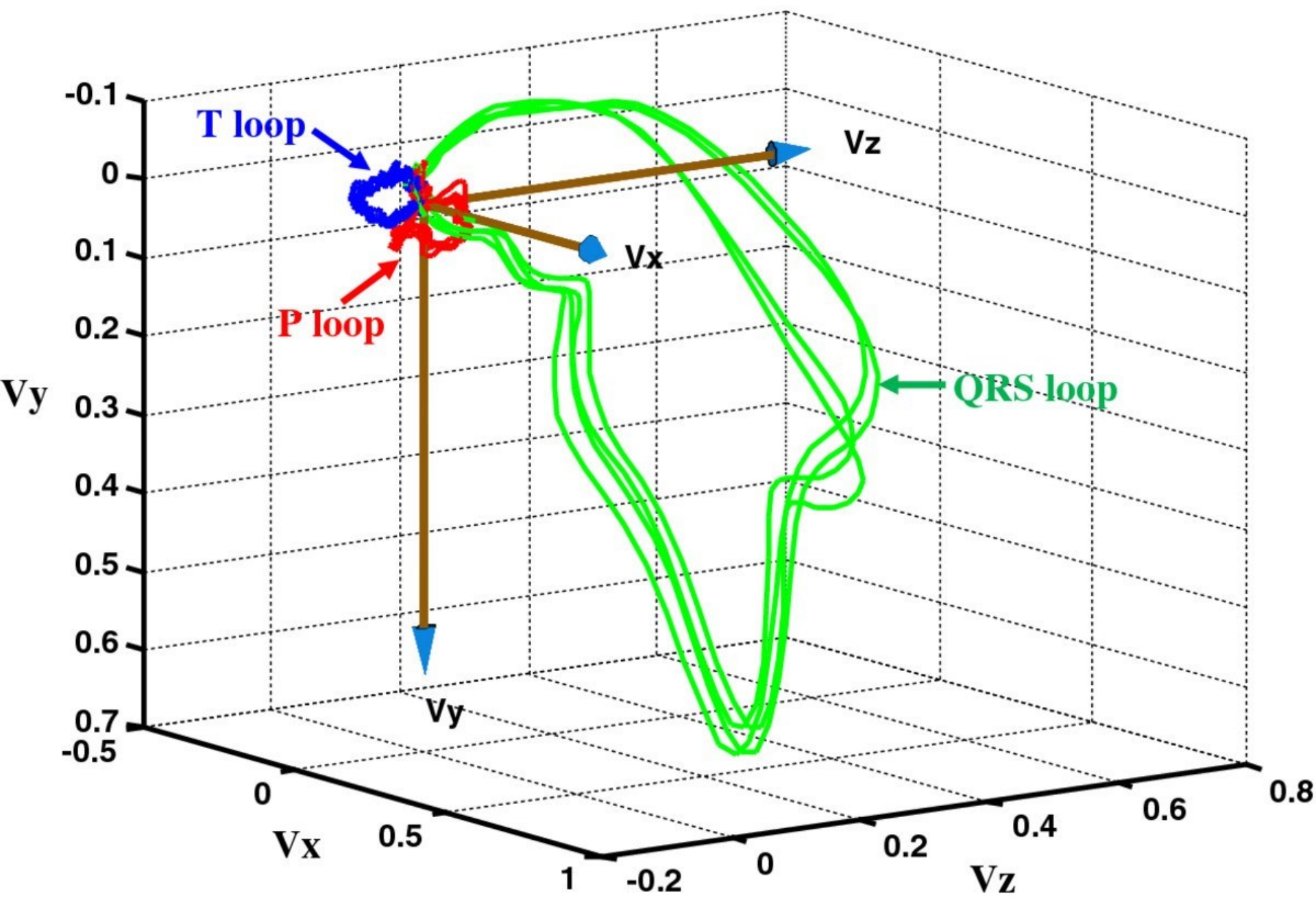


VENTRICULAR  
REPOLARIZATION  
450 ms



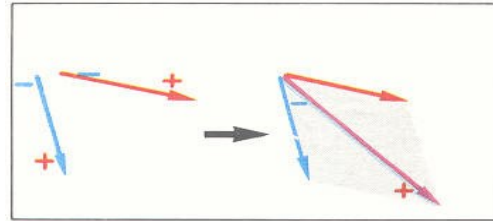
VENTRICLES  
REPOLARIZED  
600 ms



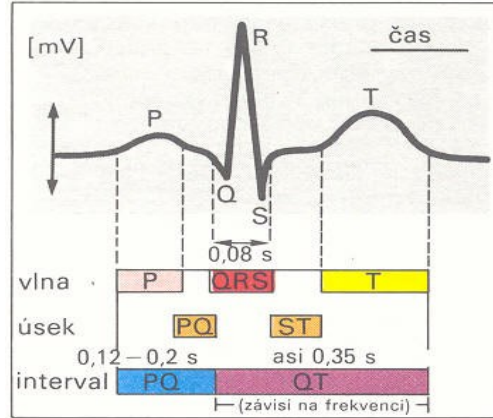


# Vektorová smyčka

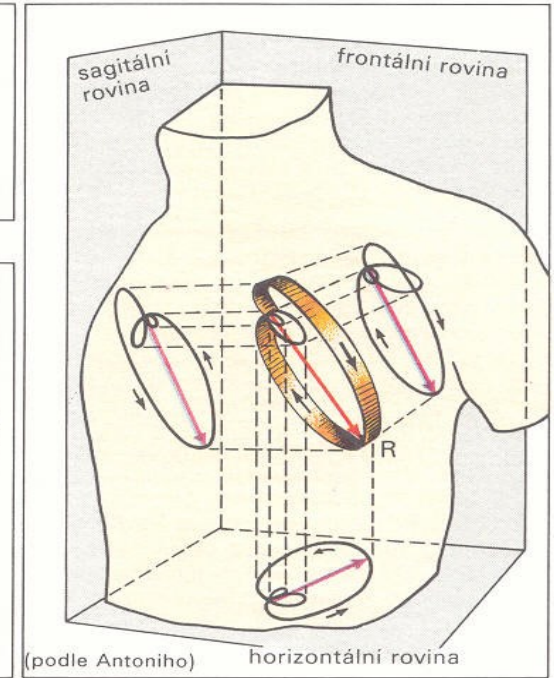
## video



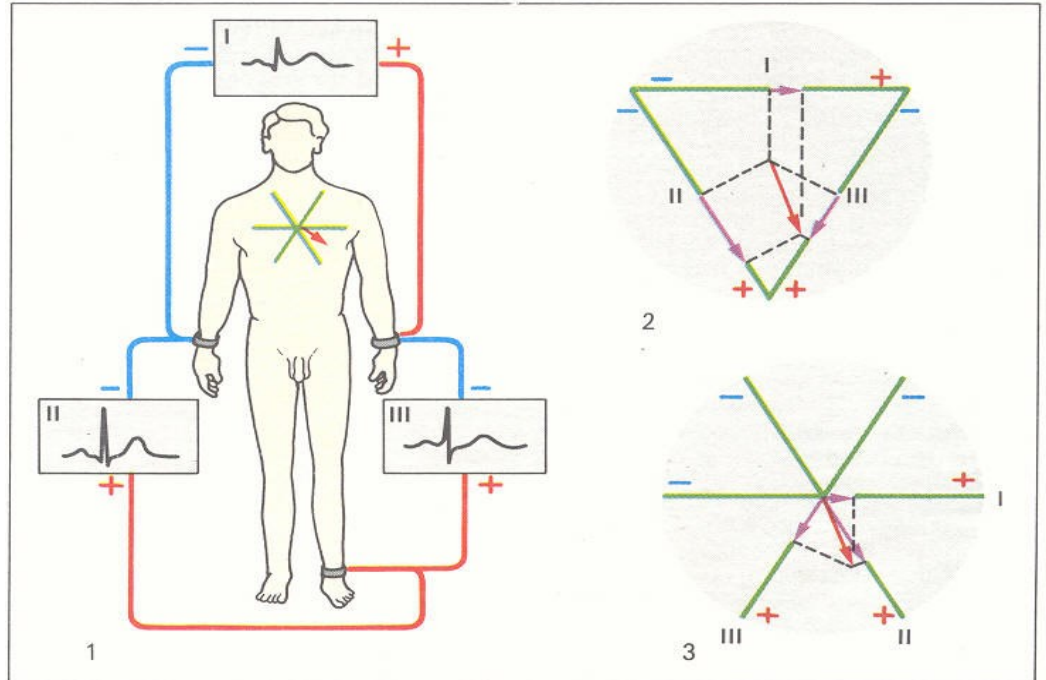
A. Vznik sumačního vektoru



B. EKG křivka

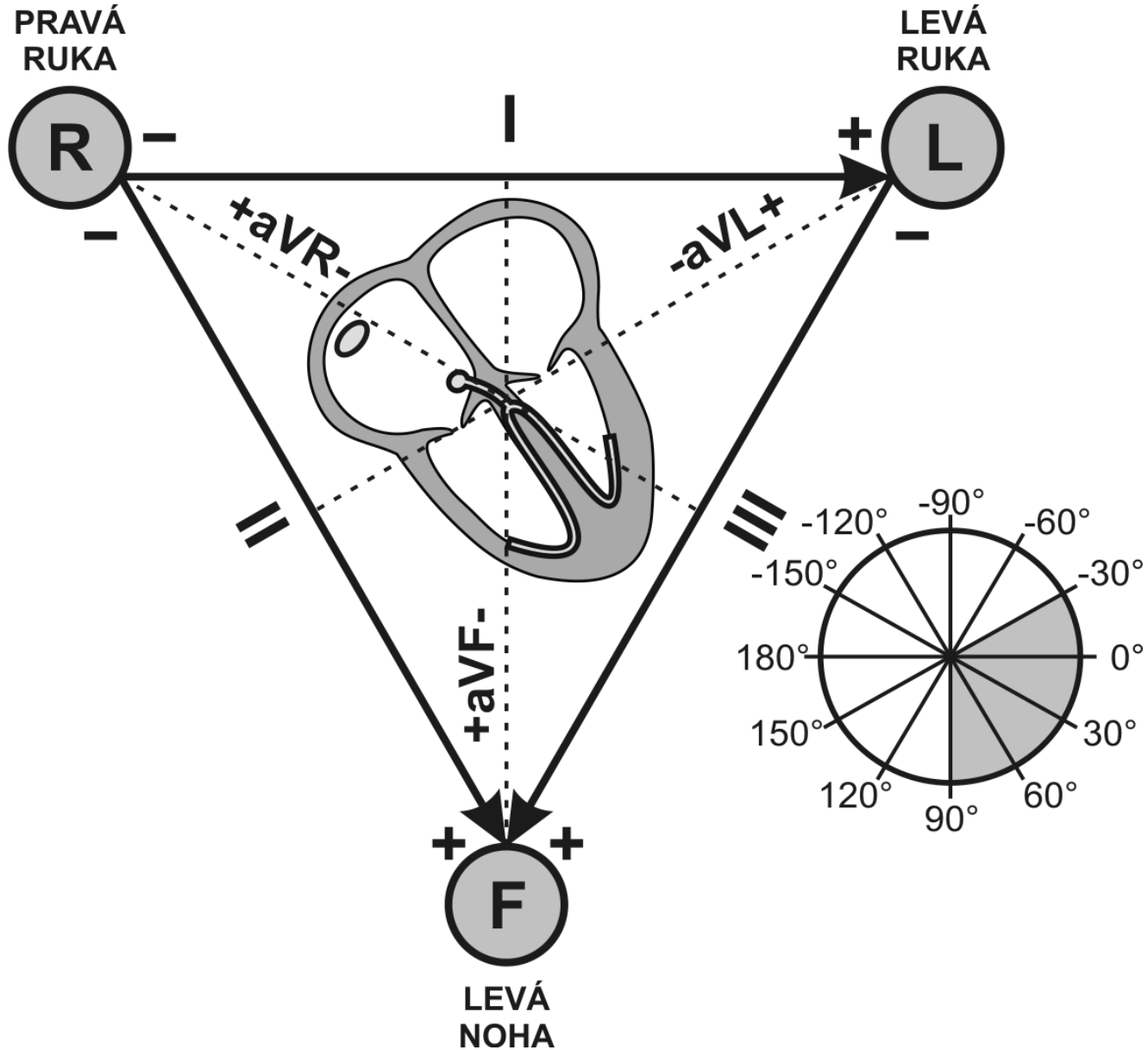


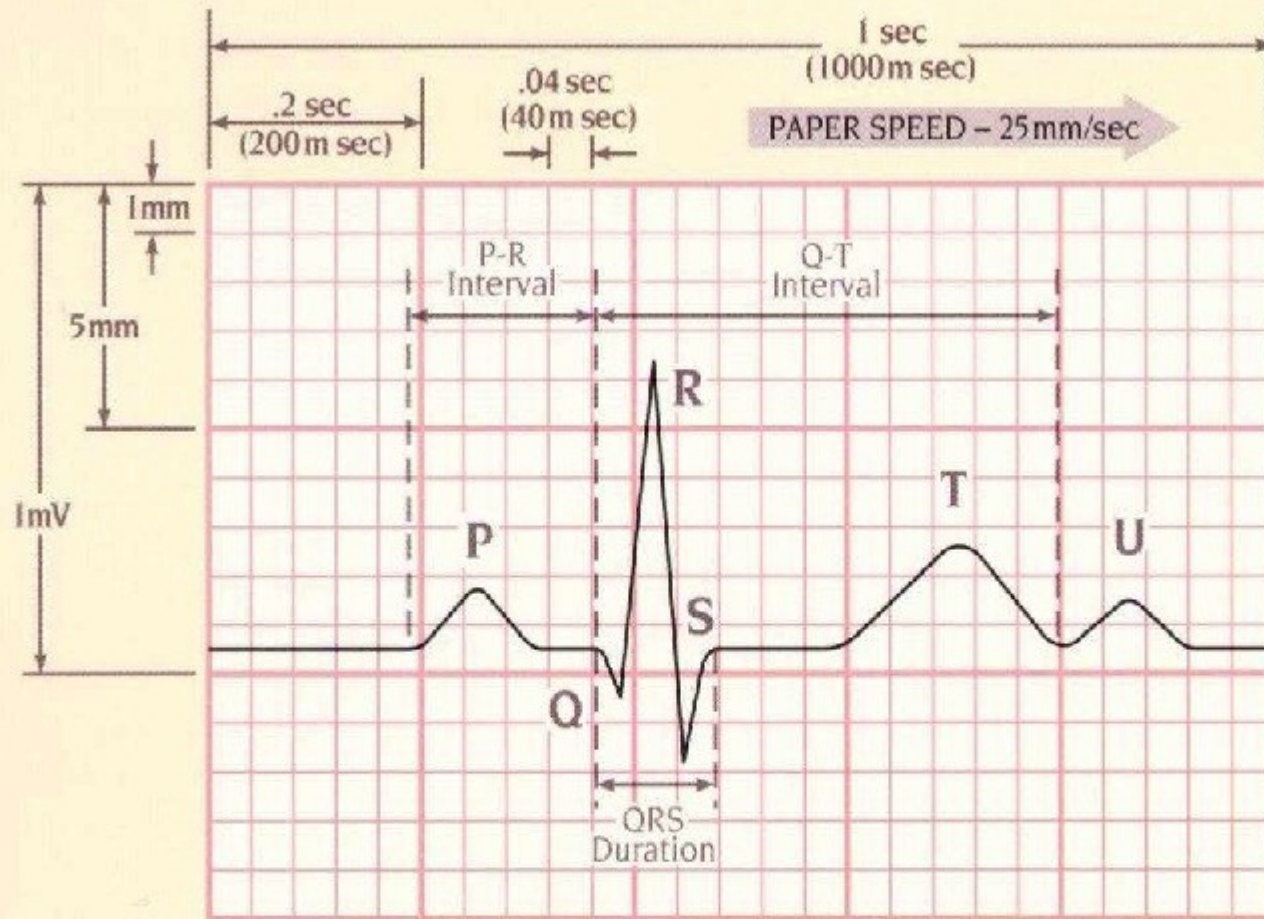
C. Vektorová smyčka (vektor. kardiografie)



D. Bipolární svody I, II a III podle Einthovena

# Einthovenův trojúhelník



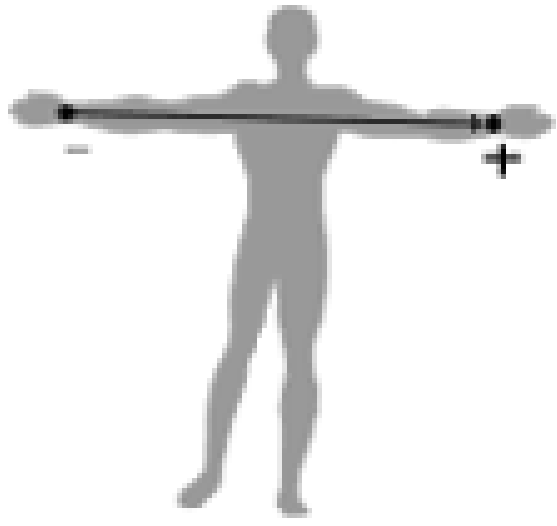


<b>VERTICAL AXIS</b>	1 Small Square = 1mm (0.1mV)
	1 Large Square = 5mm (0.5mV)
	2 Large Squares = 1mV

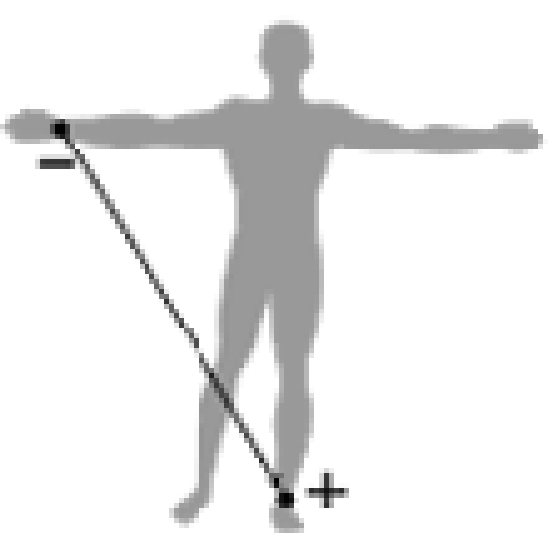
<b>HORIZONTAL AXIS</b>	1 Small Square = .04 sec (40 m sec)
	1 Large Square = .2 sec (200 m sec)
	5 Large Squares = 1 sec (1000 m sec)



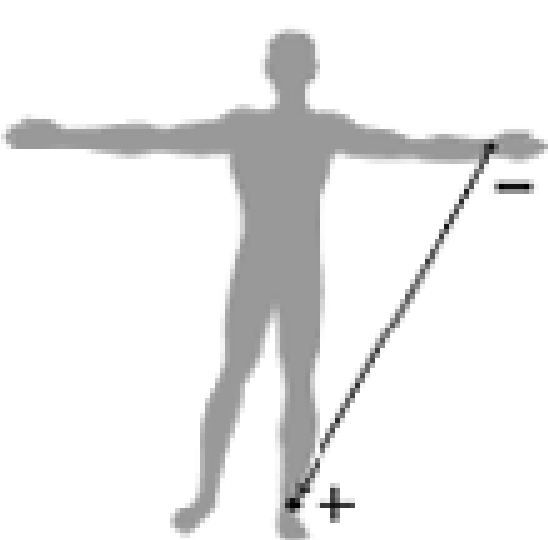
I



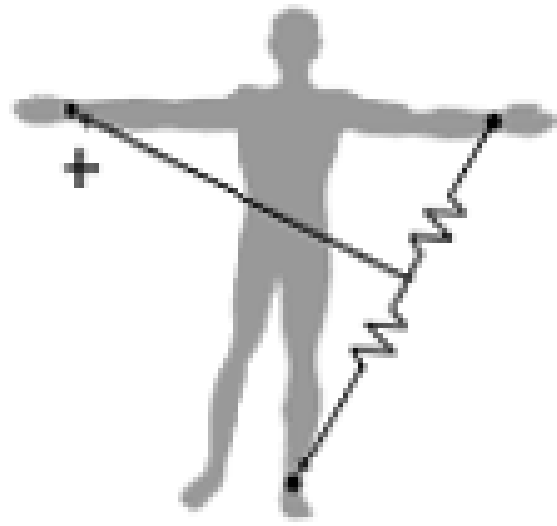
II



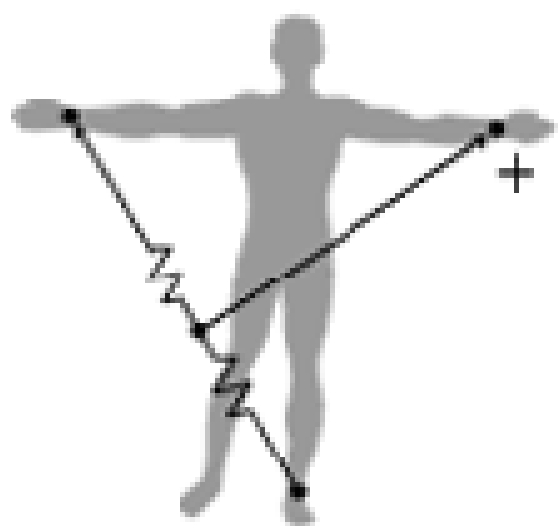
III



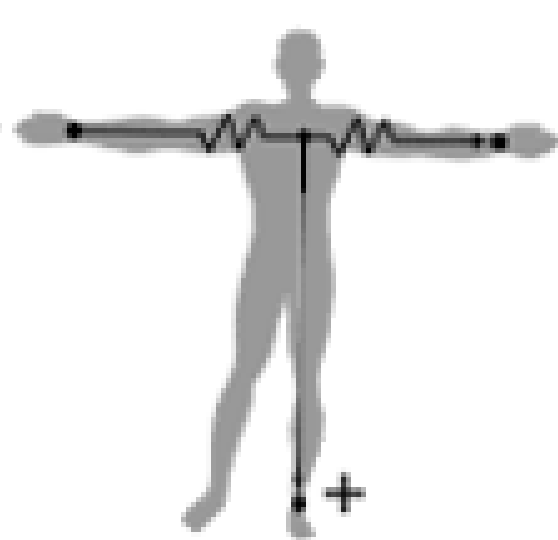
aVR



aVL

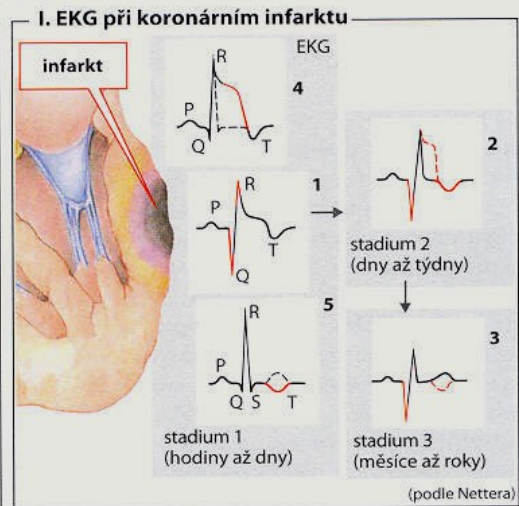
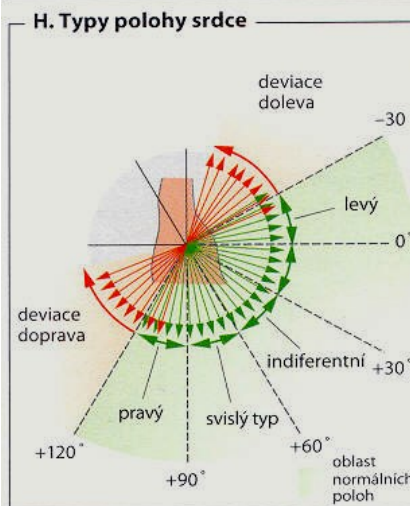
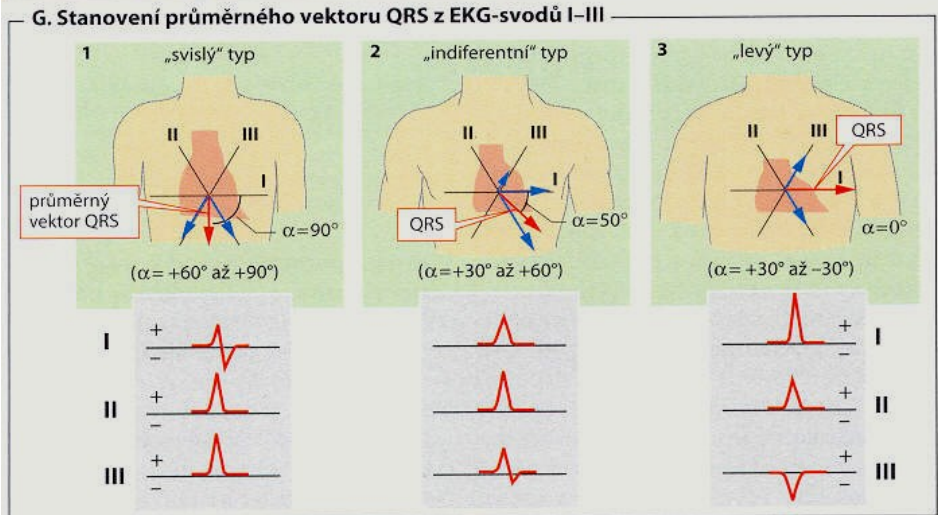
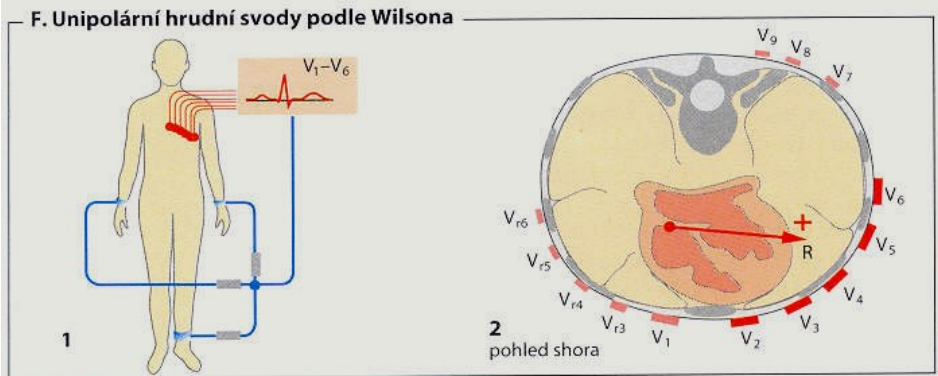


aVF

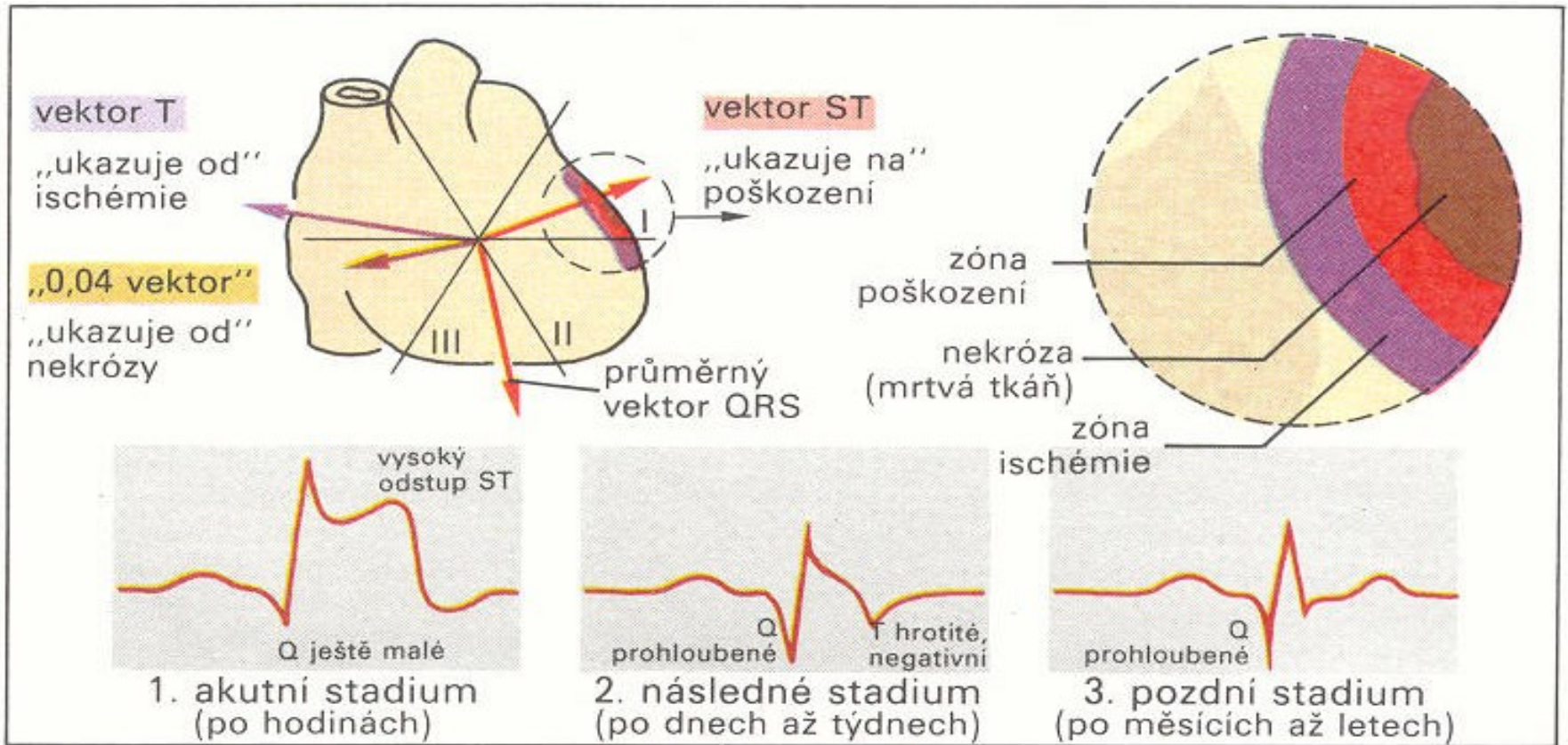




# Elektrická srdeční osa

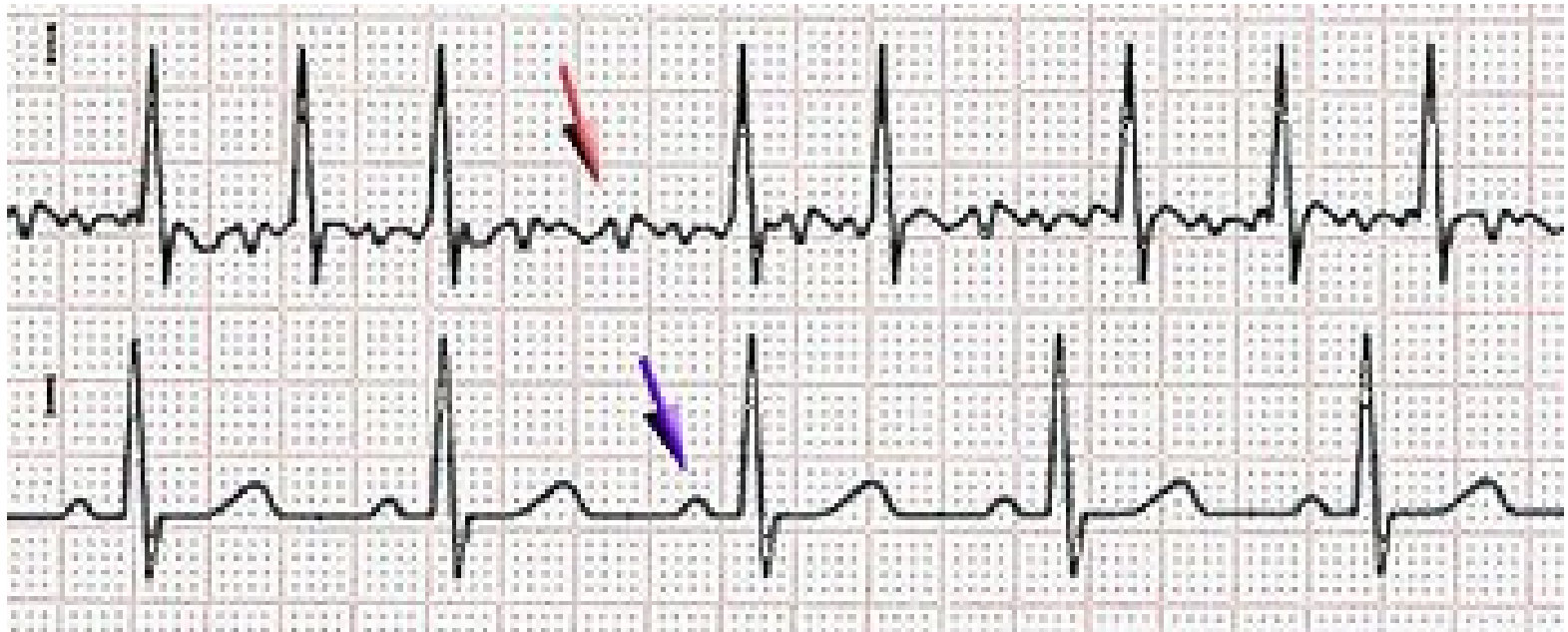


# Patologie - infarkt



K. Infarkt myokardu

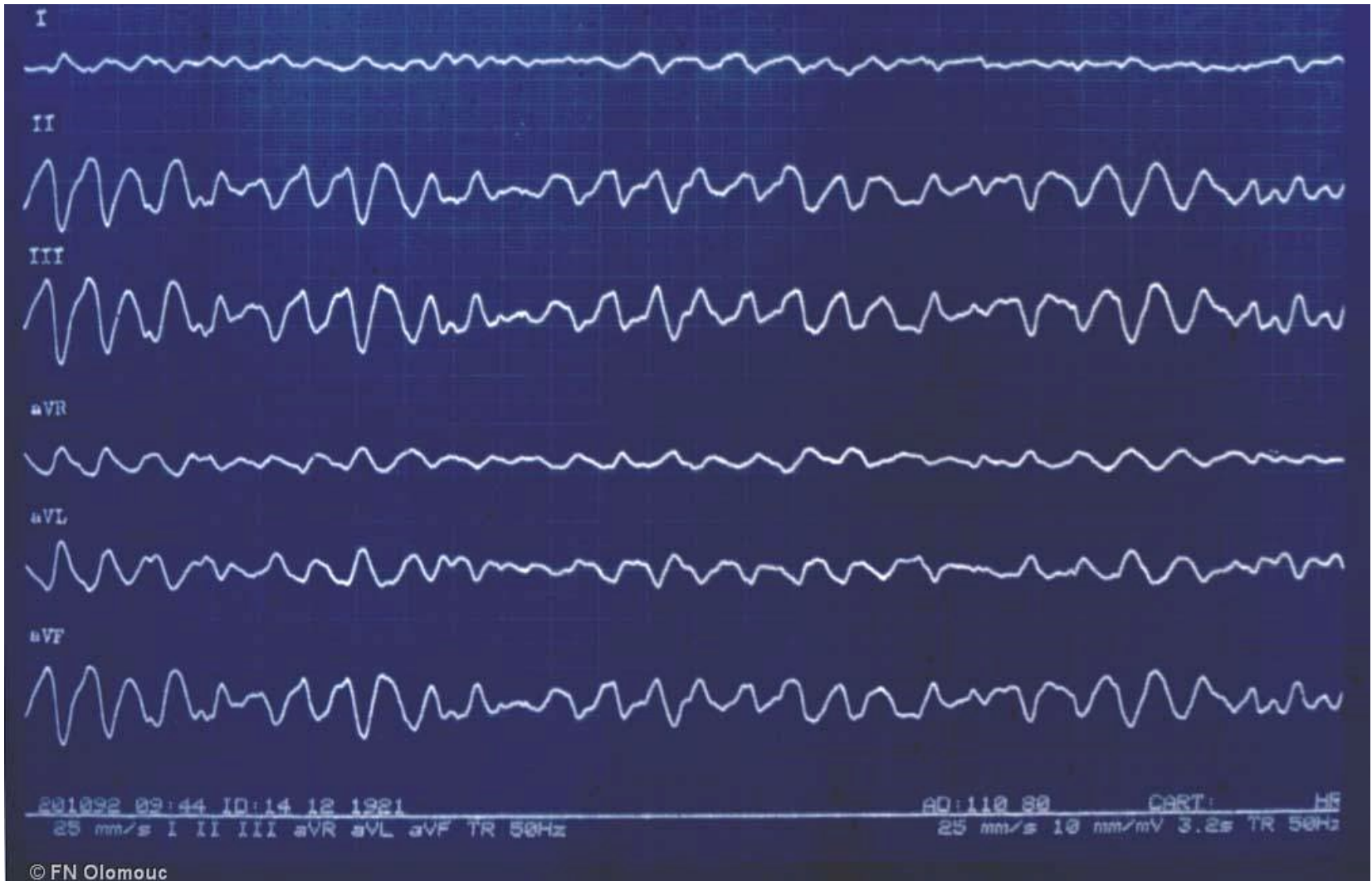
# Arytmie



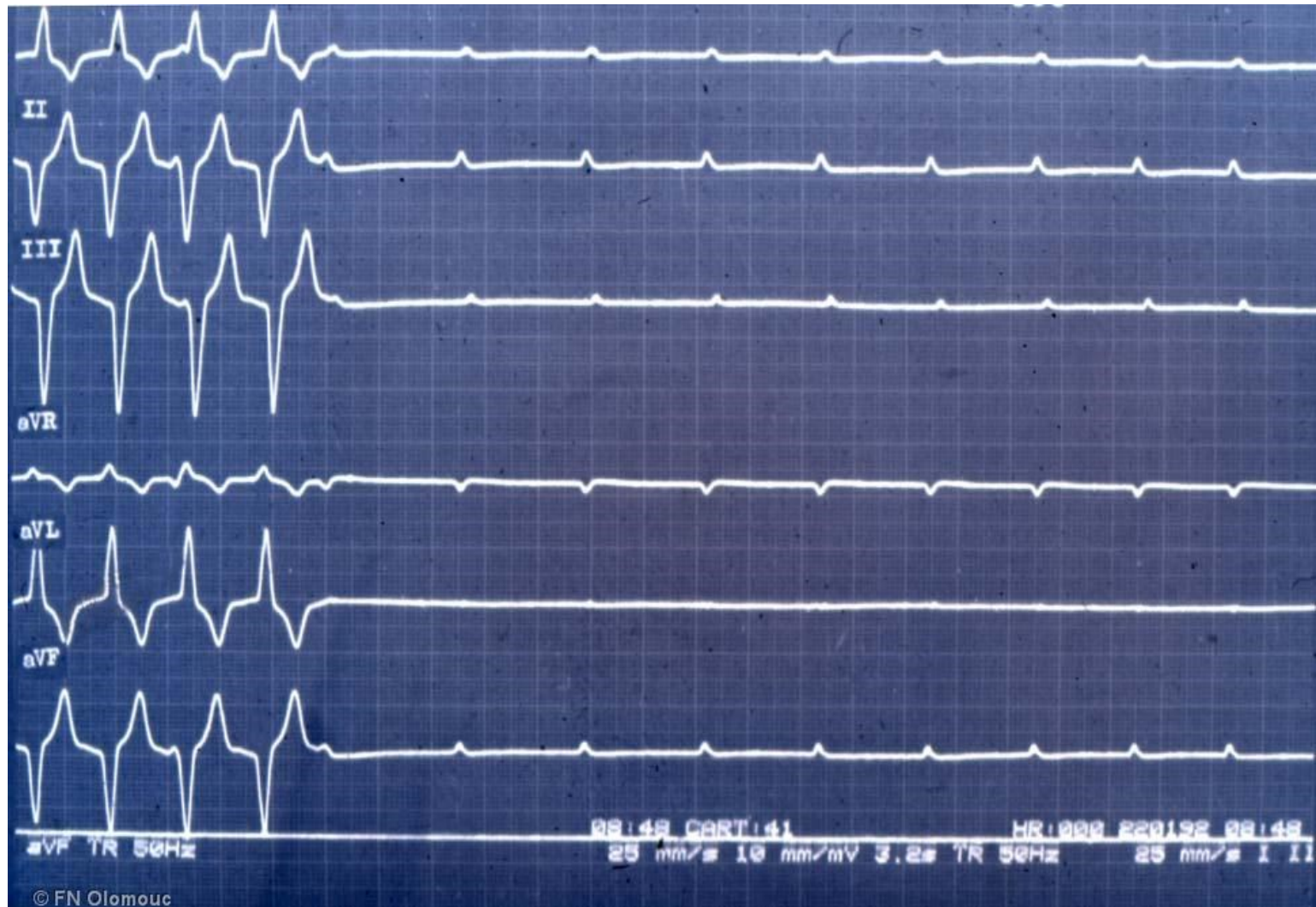
# Flutter síní



# Fibrilace komor



# Zástava komor





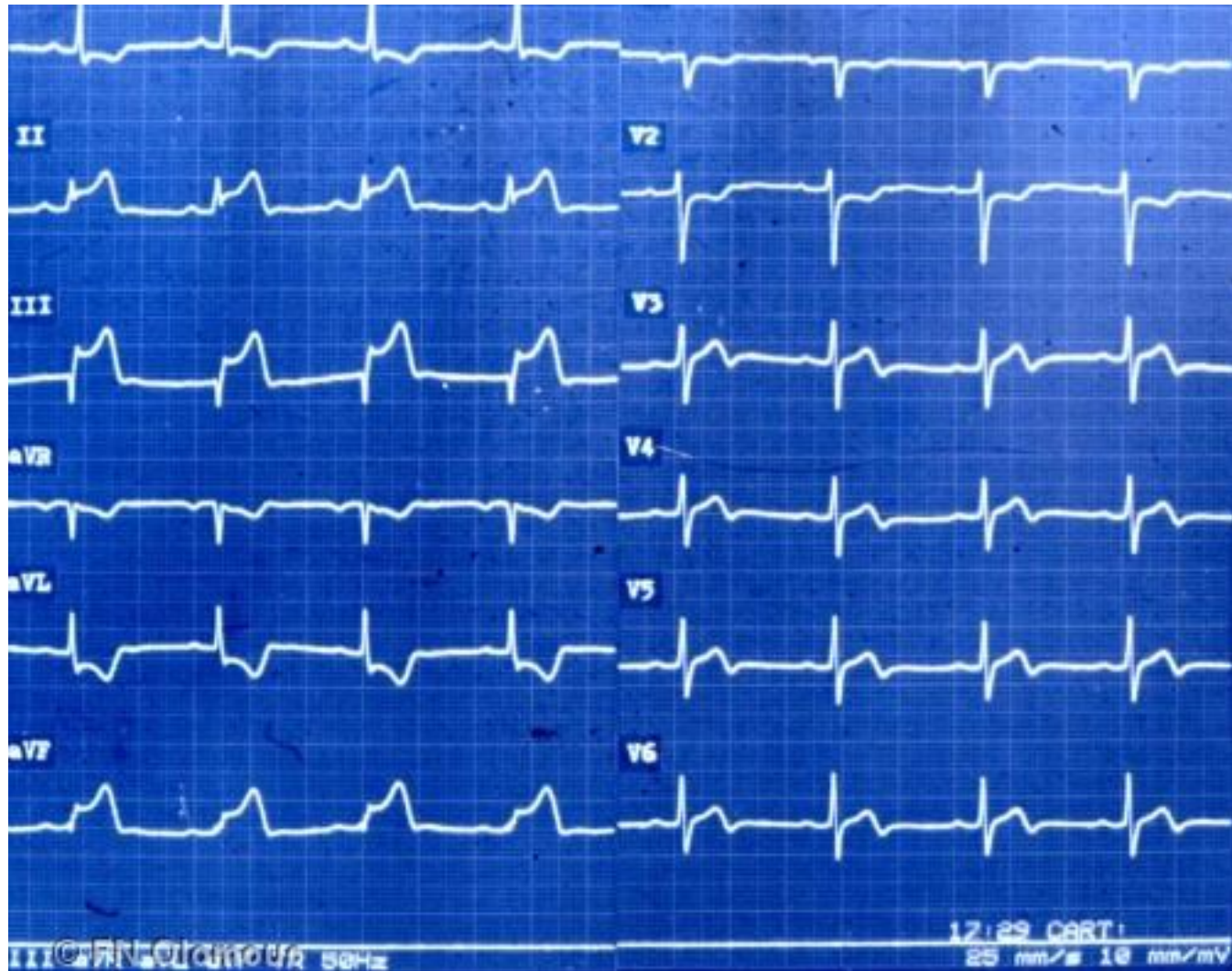
# Infarkt Myokardu

- onemocnění myokardu způsobené ucpáním věnčitých tepen
- myokard tak nemůže být zásobován kyslíkem
- po několika hodinách vznikají nekrózy – jedná se o ireverzibilní proces
- jestliže včas obnovíme prostupnost koronárních tepen a tím zásobování myokardu, nekrózy se nevyvinou

Na obrázku vidíme řez srdcem v transversální rovině (je vidět pravá a levá komora). Komorový myokard je postižen infarktem. Rozsáhlá nekróza tkáně se jeví jako světlejší místa ve svalovině. Jedná se o rozsáhlou přední jizvu; postižena je celá tloušťka stěny.



# IM akutní



# IM chronický

