



Claudio Cuccia



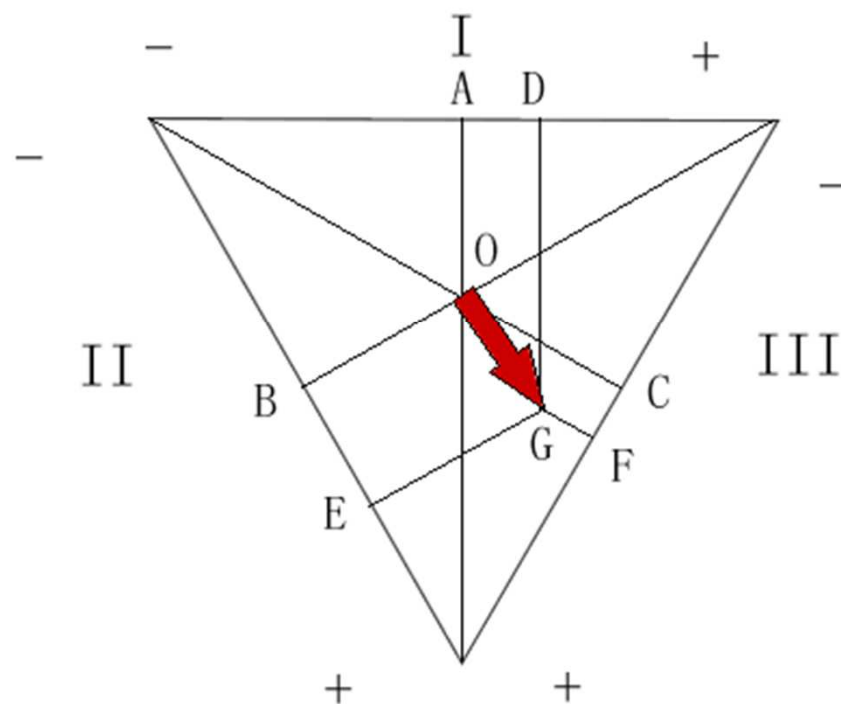
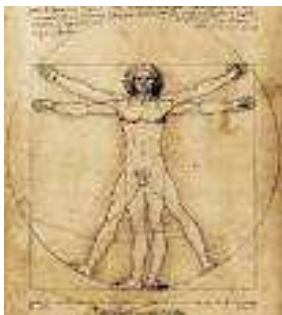
L'ECG e il dolore toracico: utilità nello studio del mmg

22 maggio Ordine dei medici

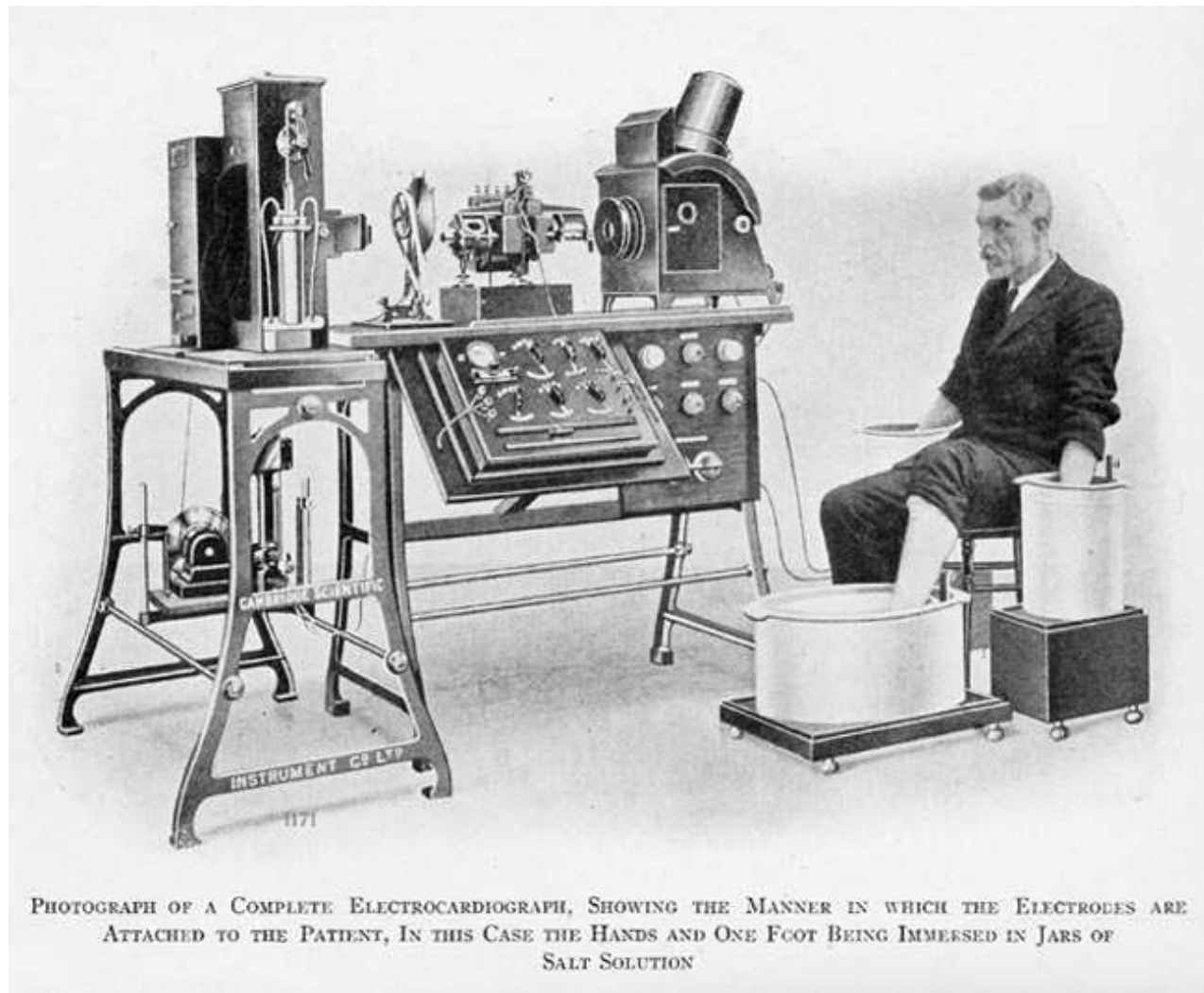
Willem Einthoven



109 anni fa



il principio fisiologico dell'elettrocardiogramma



Lo strumento

FIRST HUMAN ECG



il risultato

L'ECG NELLO STUDIO DEL MMG.
SUA UTILITÀ IN CASO DI:

ore 19.55

Dolore toracico

C. Cuccia

ore 20.35

Discussant

M. Brianza

ore 20.55

Cardiopulmo aritmico

E. Renaldini

ore 21.35

Discussant

M. Romano

ore 21.55

Pausa caffè

Oggi

Ecg nello studio del mmg: *utile*?

útile = lat. ÚTILEM contratto da UTÍBÍ-
LEM [in Plauto, Terenzio], da ÚTI *usare*,
servirsi, e suffisso -BÍLEM (v. -bile): vale
dire: *ciò di cui può farsi uso* (v. q. voce).

Agg. Che serve a *una* cosa; Che reca
vantaggio, che comporta dei vantaggi: p.
es. in tempo utile

Sì!

Sost. Il frutto che si ricava dal capitale
impiegato.

Deriv. *Utilità*, onde *Utilitario*; *Utilizzare*; *Util-
nente*; *Disútile*.

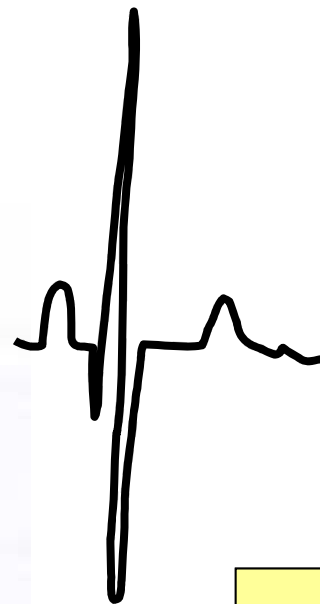
fútile corrisp. al *lat.* FÚTILEM, di cui il senso proprio è *che lascia versare*, e viene da FUTIRE *lasciar versare*, che tiene a FÚNDERE *spandere, versare*, ond'anche fútis *vaso per acqua*, fòns *fonte* (v. *Fondere*). — Così furono detti presso i Latini certi vasi (FUTÍLIA vasa) con ampia bocca e col fondo a punta, usati primieramente per il culto di Vesta, affinché i ministri di quella Dea non potessero poggiarlo a terra, quando era pieno di acqua, essendo contrario agli scrupoli religiosi, che nelle cerimonie di quella Dea si spandesse acqua per terra. Dal vaso *che facilmente versa*

La variante *f*

g lettera palatina, la settimana dell'al-

- quale studio?
- quale medico?
- quale paziente?
- quale percorso?
- ...

Dall'utilità alla futilità



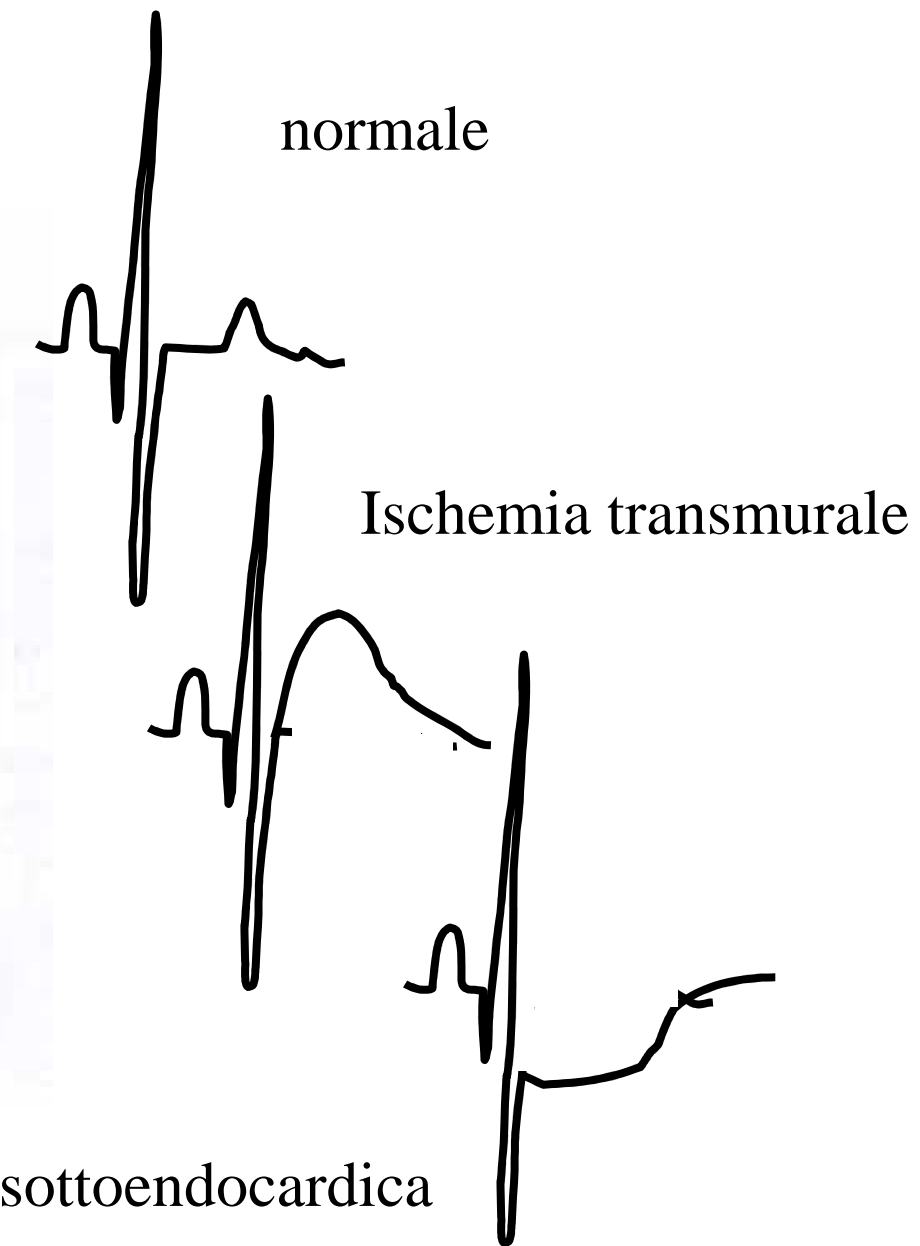
L'ecg

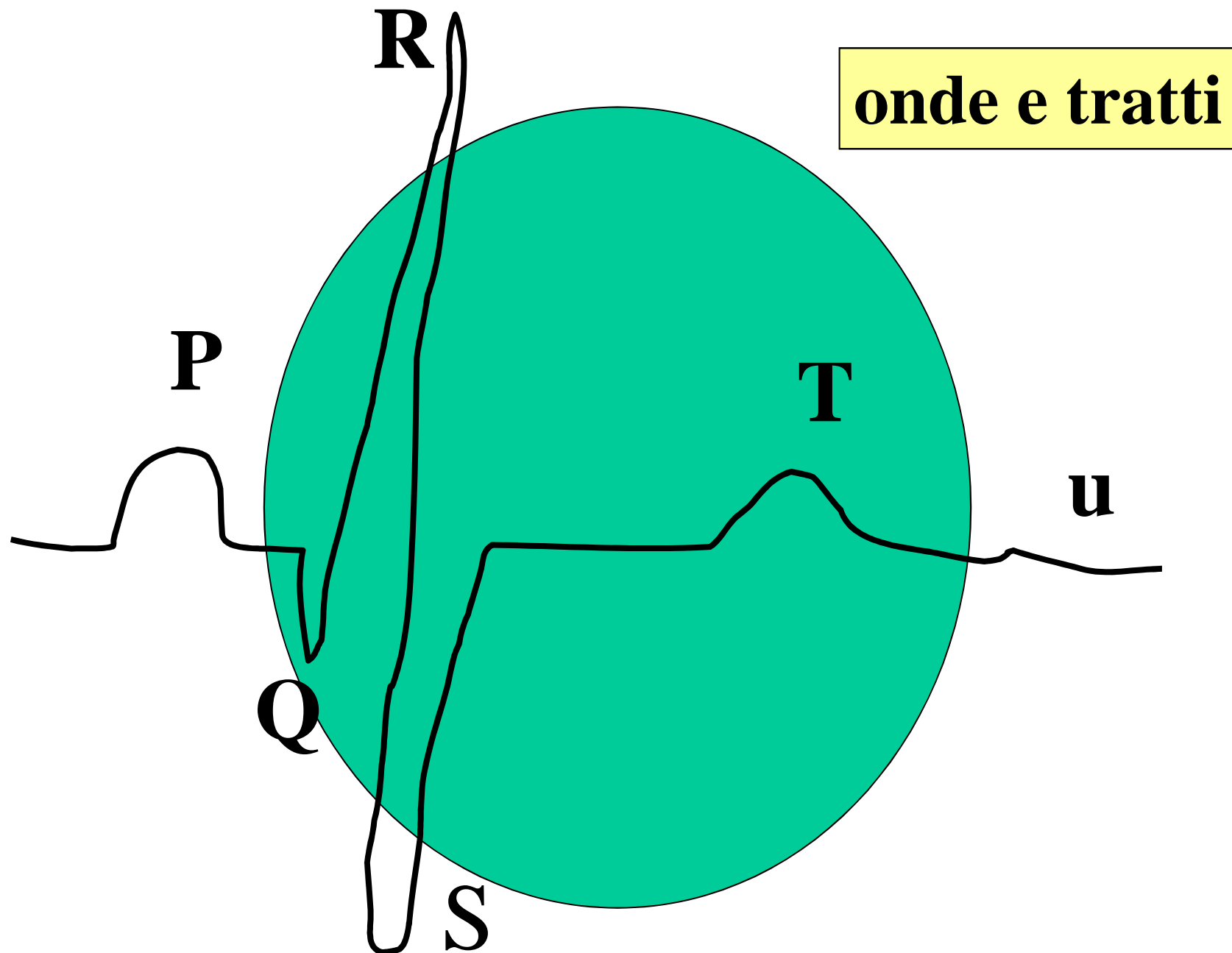
utilità futilità... *facilità*

DOVE VAI?

A PORTARE
A SPASSO
IL BAMBINO
CHE È IN ME.





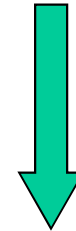




Tratti: PQ, QRS, ST



Tratti: PQ, QRS, ST

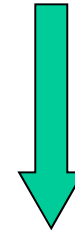


Conduzione AV





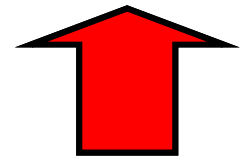
Tratti: PQ, QRS, ST



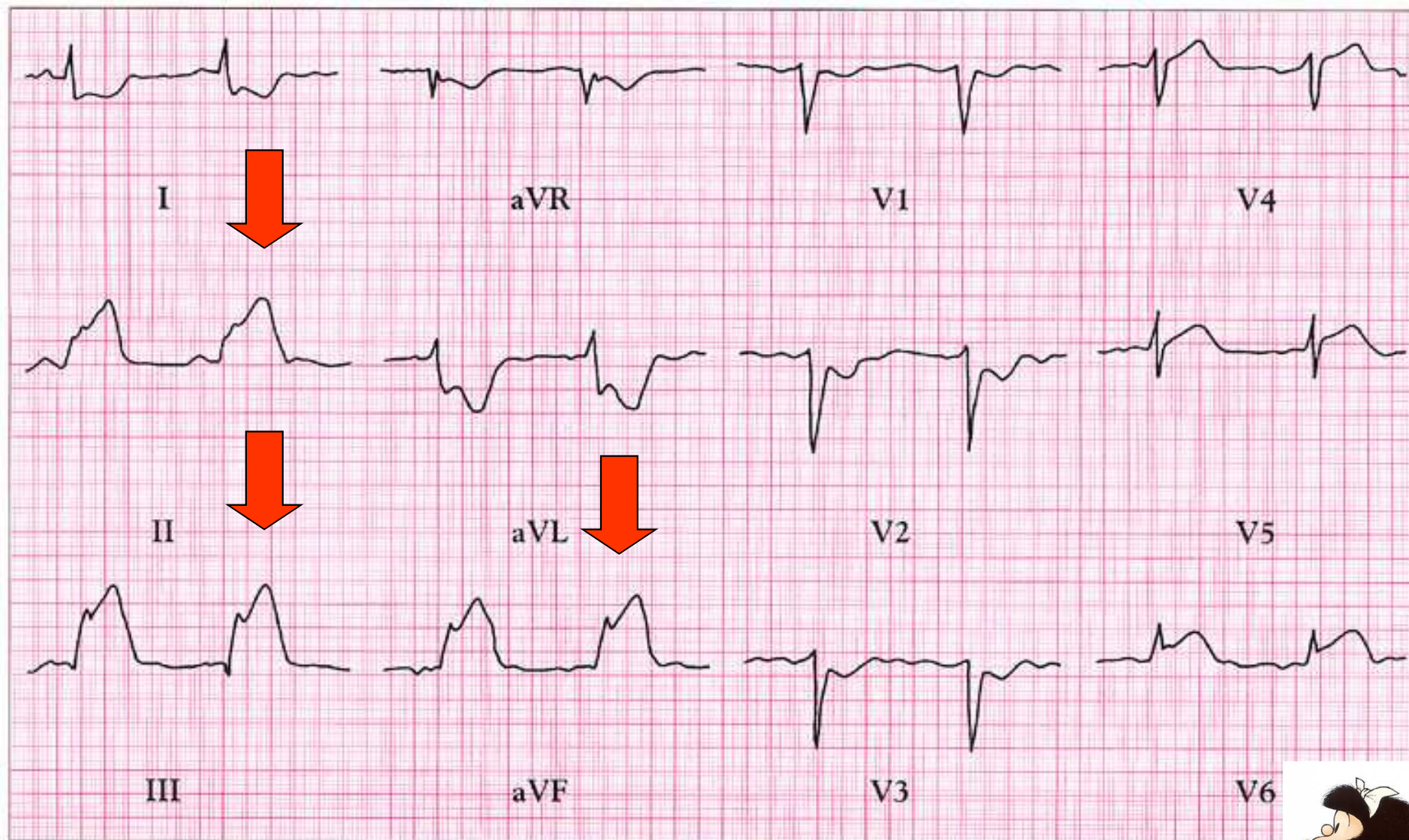
Conduzione IV

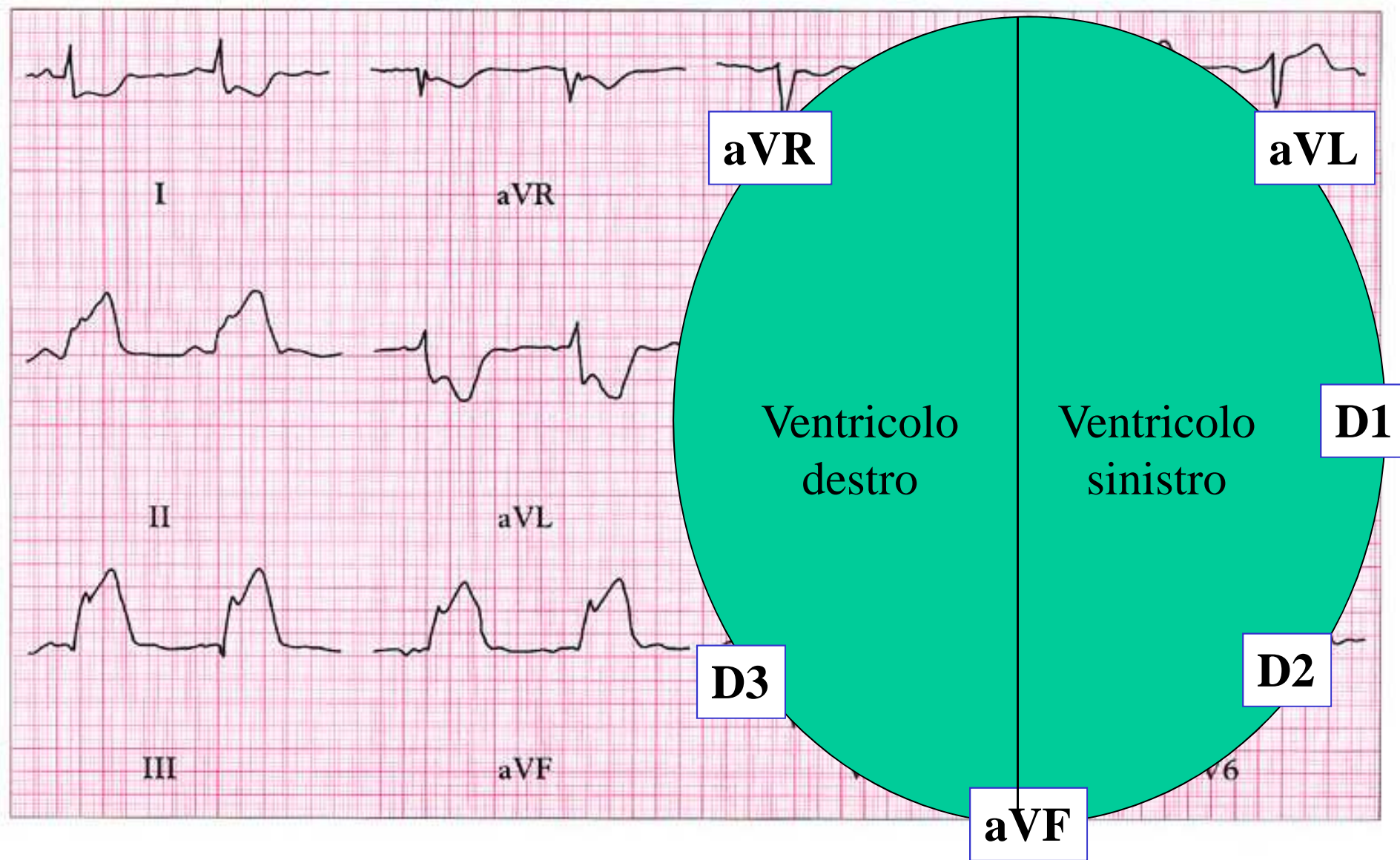


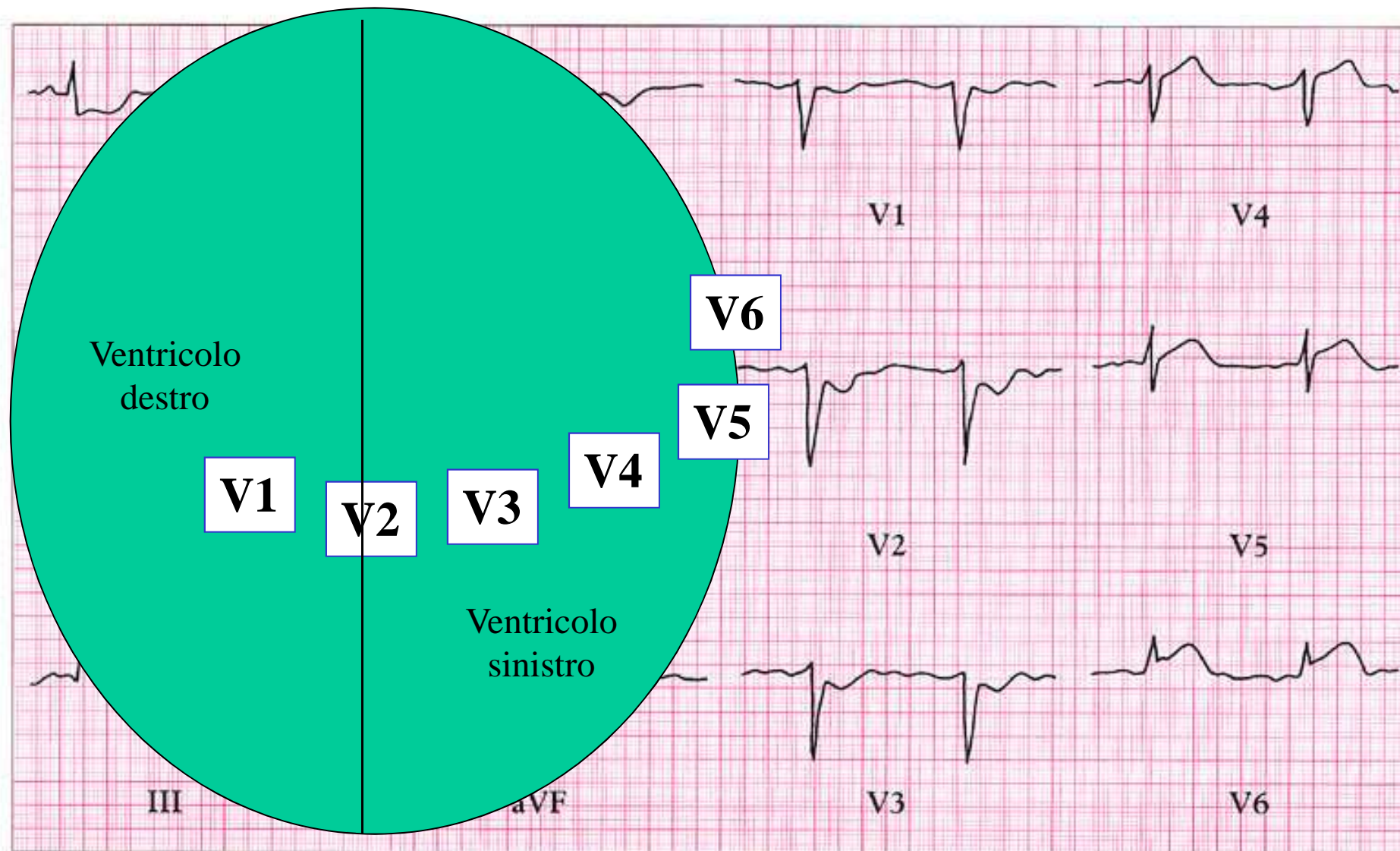
ripolarizzazione

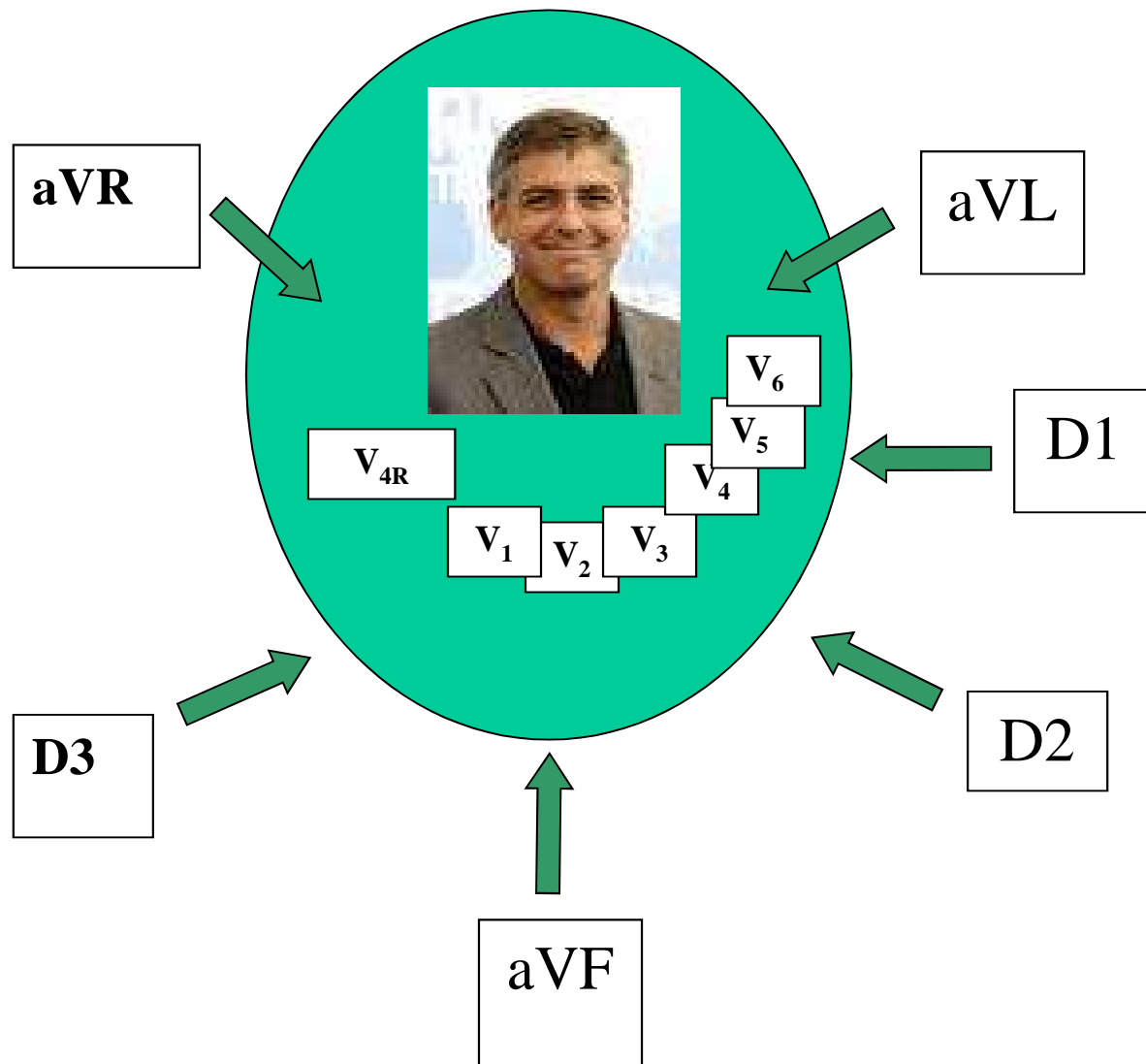


Tratti: PQ, QRS, ST









L'ecg è facile da imparare



*Il suo uso fuori dal contesto
crea solo confusione!*

L'ecg ha diversi livelli di utilizzo



**Systematic, formal training in ECG interpretation
in this country has been, and remains,
virtually non-existent.**

General Practitioners have often in the past relied on their hospital colleagues to provide and to interpret electrocardiograms. This is no longer a realistic option. The primary care situation has evolved considerably in recent years. The majority of GP practices now have their own ECG machines and both patients and primary care trusts expect practices to provide a diagnostic ECG service. Currently this service is often ~~dependant on one member of the group practice. Since he or she is inevitably considered~~ by colleagues to be challenged, with the result that the interpretation of the ECG is often done by an automatic computer and an automatic analysis which is in grasp of basic electrocardiography. Many General Practitioners are not aware of the fact that once a record has been taken or obtained, the general practitioner has acquired a responsibility in relation to the handling of the ECG data and he/she is far less likely than doctors in hospital to have access to help from colleagues competent in the field. Any doctor acting as a result of an incorrect ECG interpretation obtained by automatic computer-based analysis may well still be considered to have at least a partial responsibility for any consequences of the error.

- C'han provato
- oggi le cose sono cambiate
- macchine, organizzazione ambulatoriale, esperti
- progetti finanziati, etc
- **responsabilità**, nonostante tutto.

© D J Rowlands and P R Moore October 05.



- ‘a pedali’
- ‘elettriche’
- ‘a reazione’

ECGclette

03/10/1919

Età: 92 Sesso: Female Razza: Unknown
Altezza: cm Peso: Kg
Pressione: 120/70 mmHg Pacemaker: NO
Motivo ECG: CONTROLLO
Terapia: TRIATEC CORAL NITRO
Note: NO

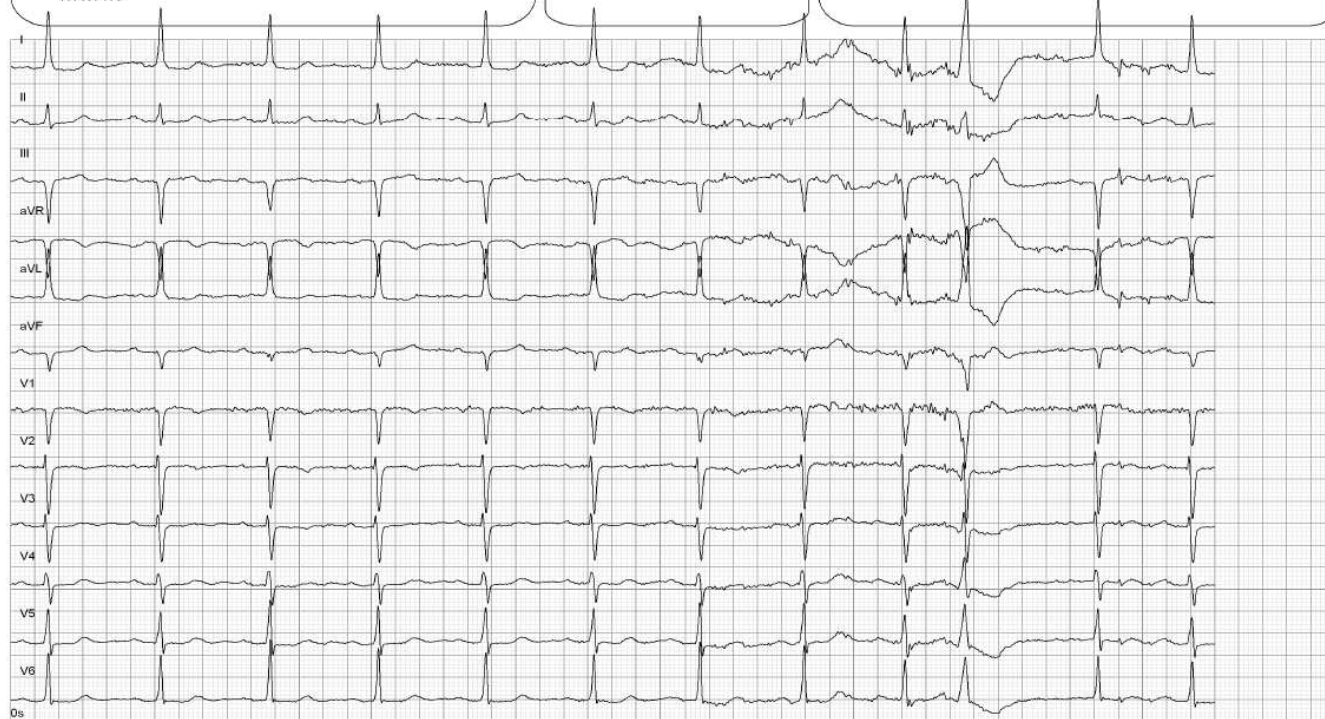
Misure

RR: 871 ms
QT/QTc: 416/432 ms
QRS: 92 ms
PR: 198 ms
Assi P/QRS/T: -51/-10/51

Interpretazione

Ritmo sinusale con occasionali extrasistoli ventricolari.
Alterazioni aspecifiche del tratto ST, possibile ipertrofia
ventricolare sinistra

Refertato da: Dr. MARCO CAMPANA, 21/05/2012 15:16:34



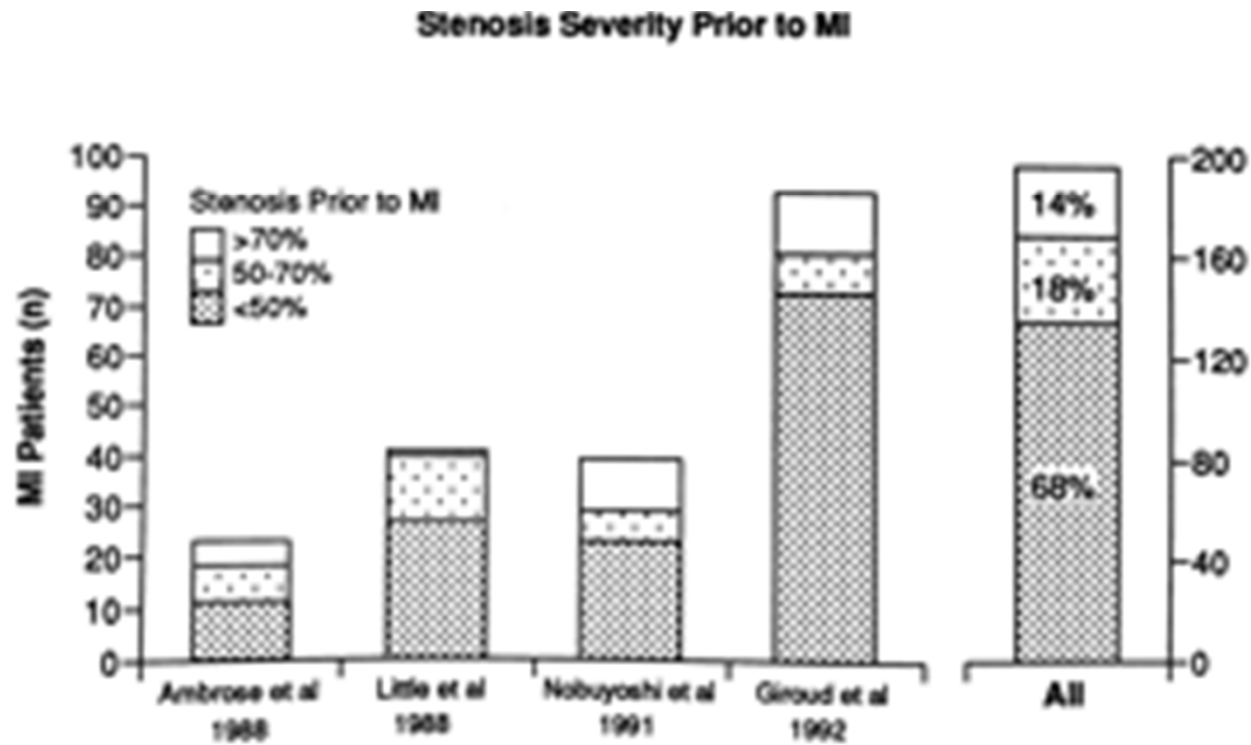


ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

The standard ECG at rest does not adequately reflect the dynamic nature of coronary thrombosis and myocardial ischaemia. Almost two-thirds of all ischaemic episodes in the phase of instability are clinically silent, and hence are unlikely to be detected by a conventional ECG. Accordingly, online continuous computer-assisted 12-lead ST-segment monitoring is also a valuable diagnostic tool.

Eur Heart J 2011

Falk E. Circulation 1992;92:657





il dolore toracico...





...non sempre è *dolore*

Angor!

- 5% di tutte le visite
- 2%-4% mortalità
se diagnosi sbagliata ⁽¹⁾

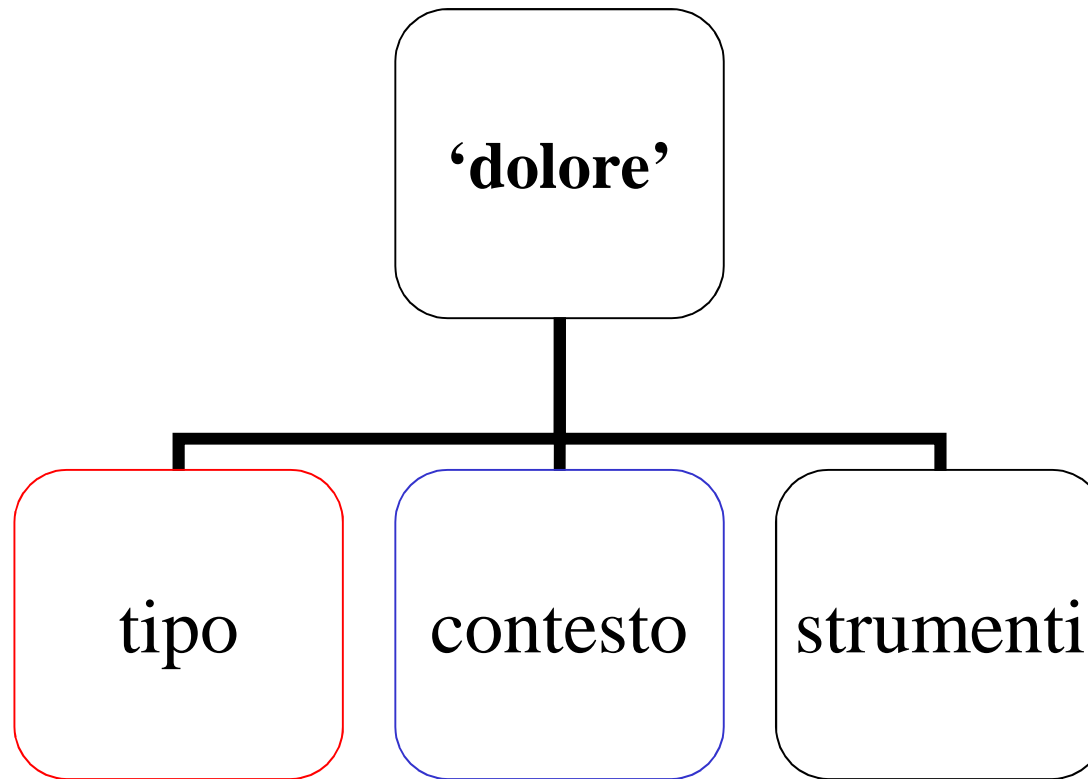
13.000 paz. in Chest Pain Unit ⁽²⁾

- 45% SCA
- 4% EP
- 3% pnx
- 1% dissezione o pericardite

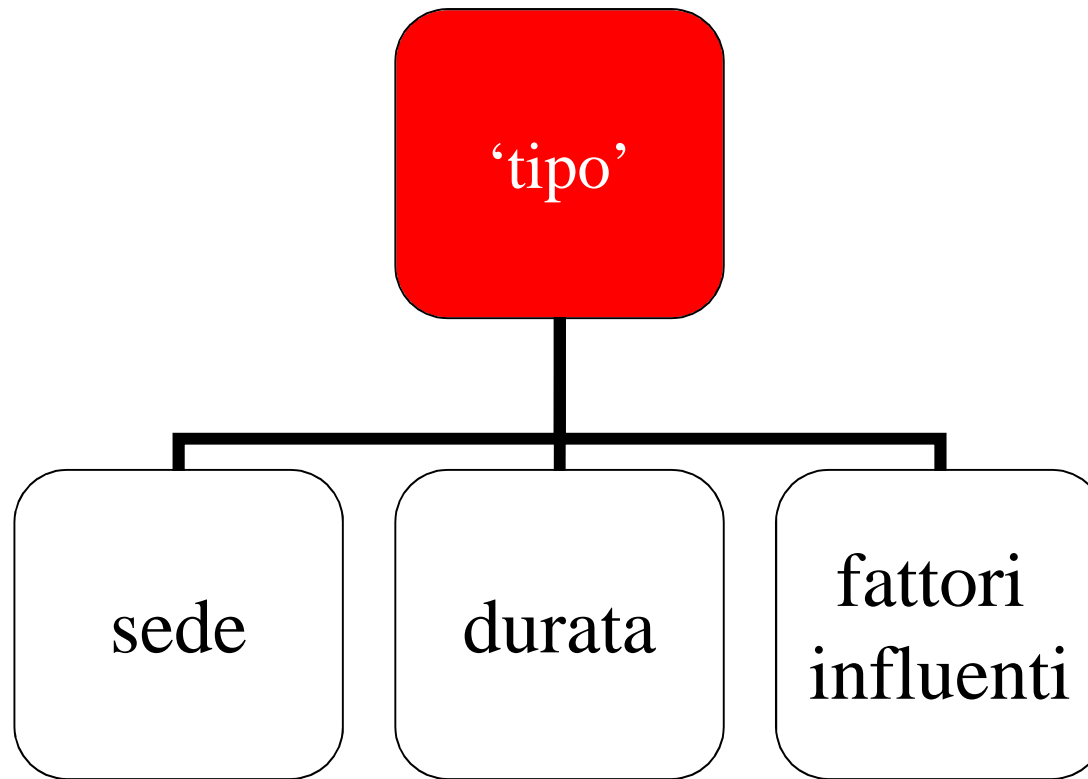
Dolore toracico in Pronto Soccorso

1) Lee TH N Engl J Med 2000;342:1187

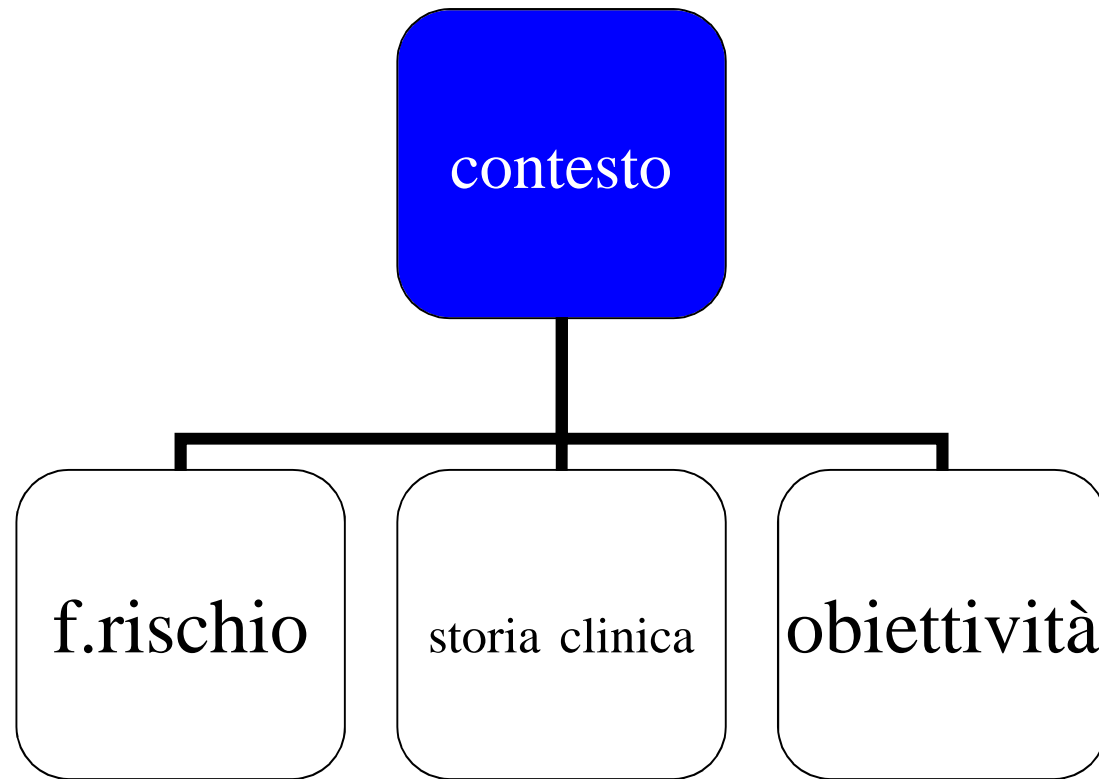
2)Conti et al., Am Heart J 2002;144:630-5



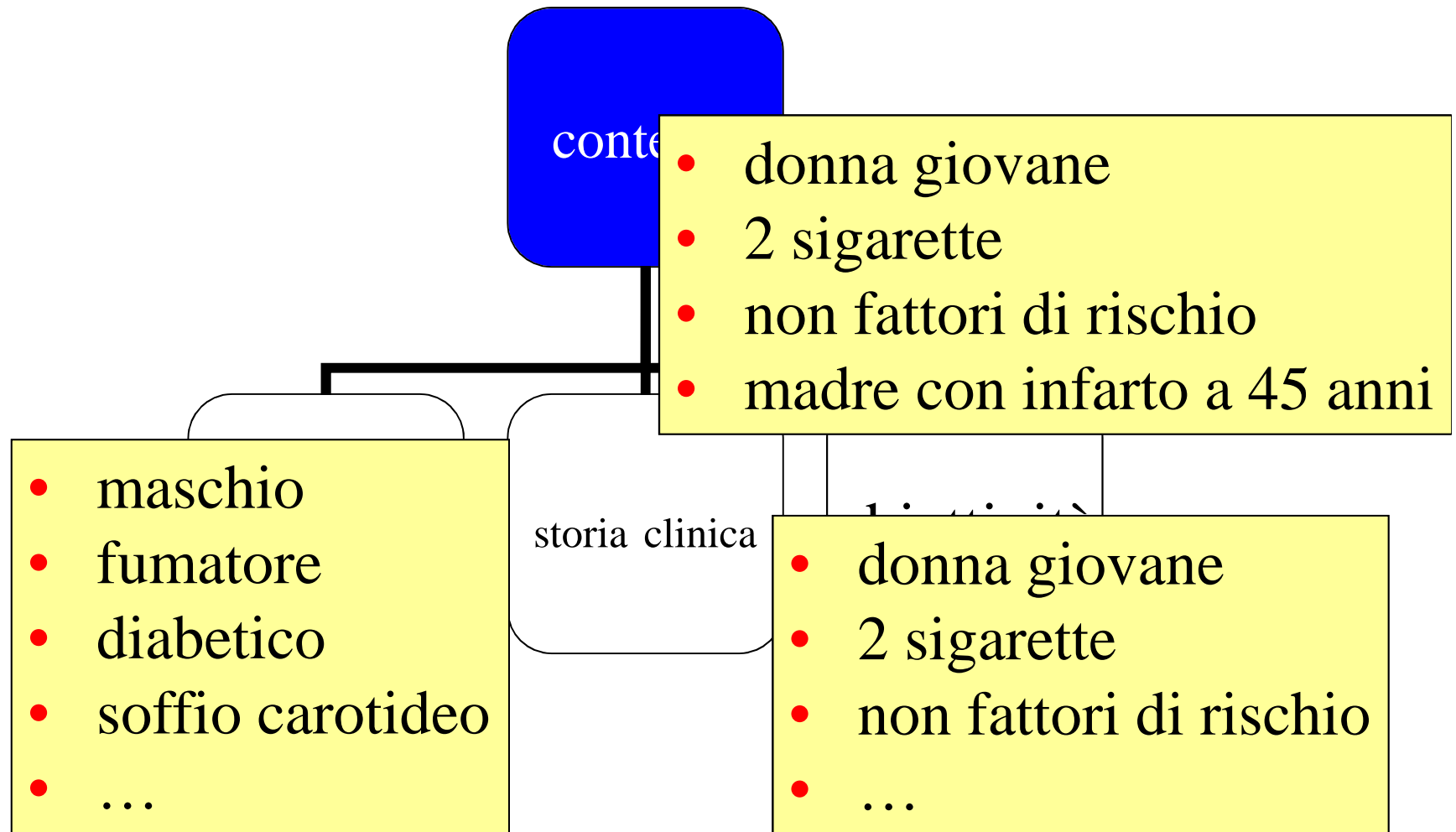
algoritmo



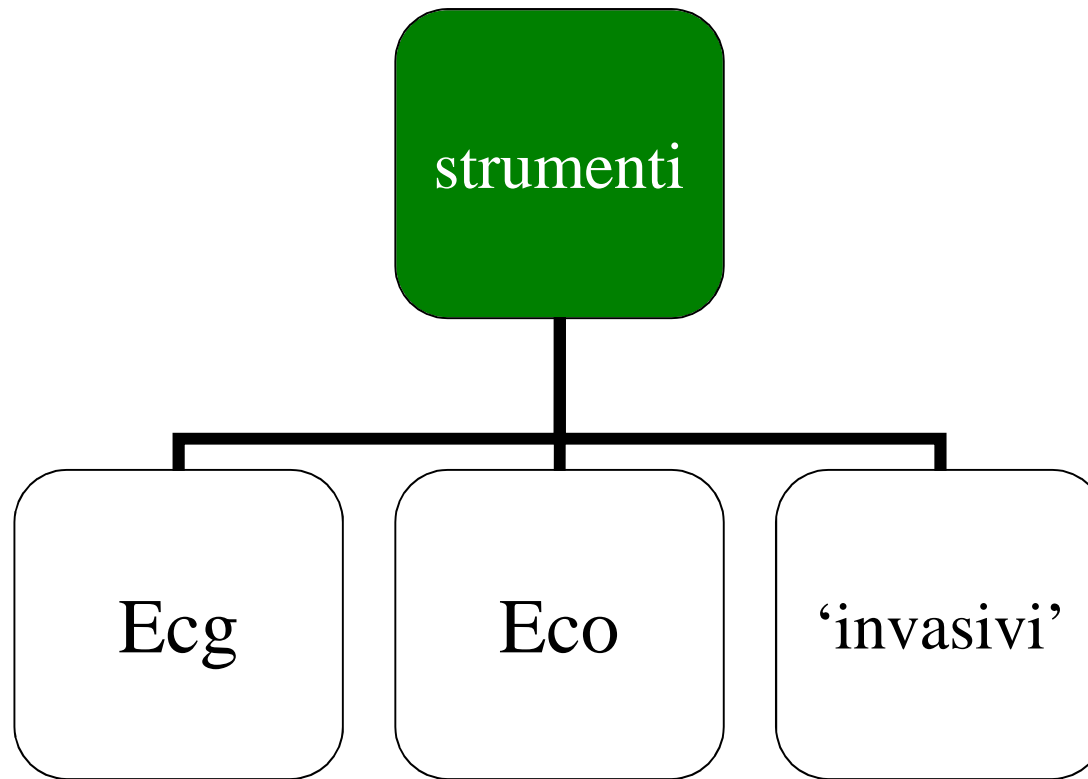
descrizione del dolore



Prevalenza di malattia

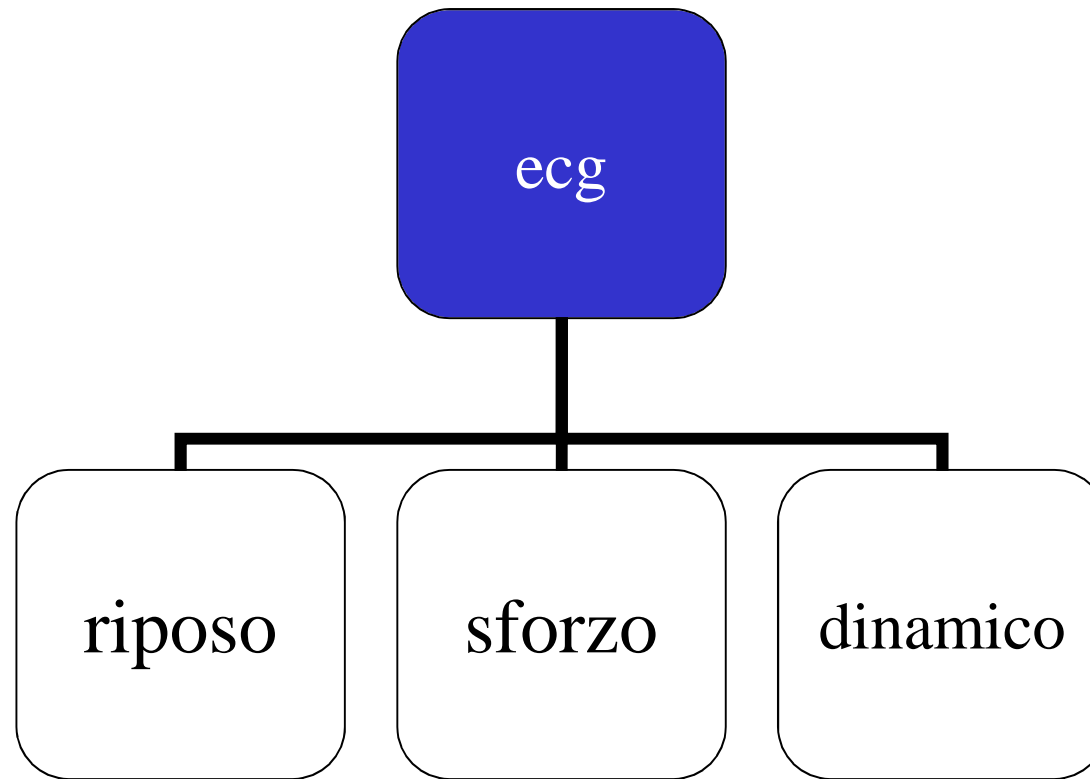


Stesso sintomo



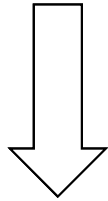
(cui aggiungere, se necessario, i marcatori di danno miocardico)

diagnosi



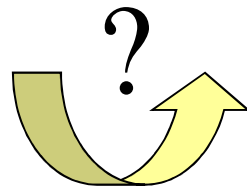
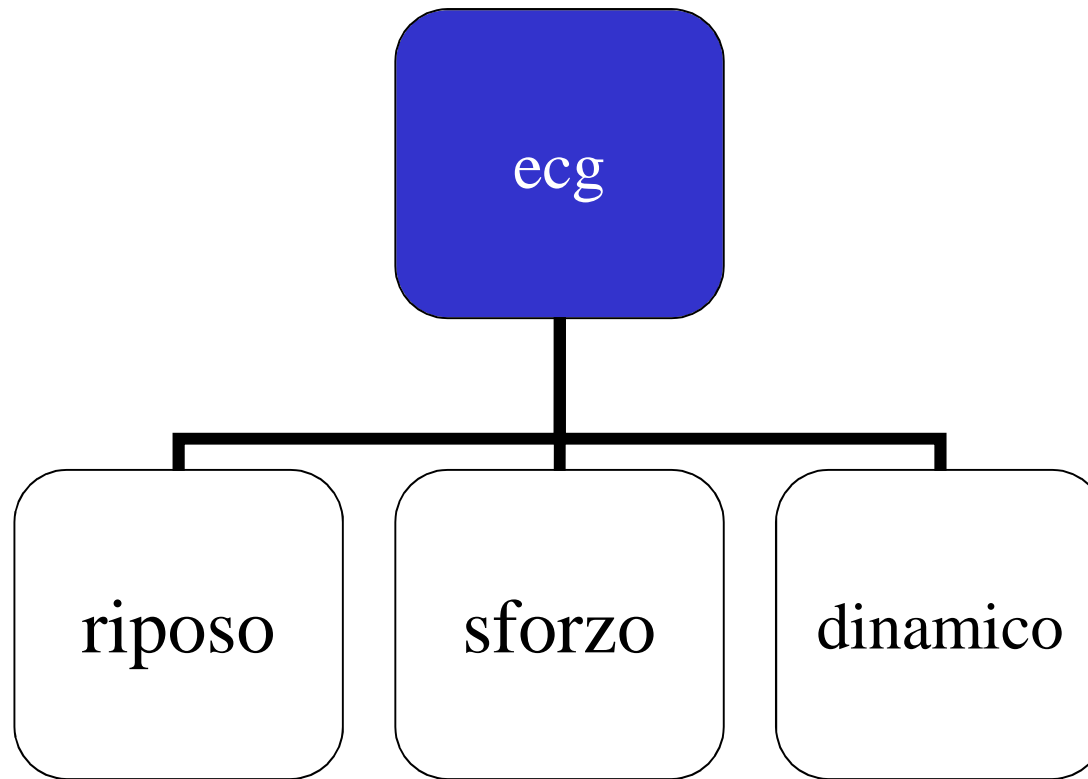
diagnosi

- diagnostico (sintomo *sì*)



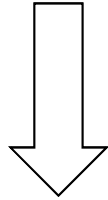
- ECG
 - assolutamente normale?
 - assolutamente invariato rispetto al precedente?



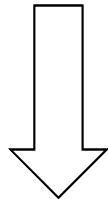


diagnosi

Situazione 1



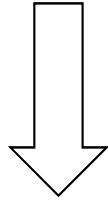
- prevalenza di malattia alta?
- sintomo a riposo?



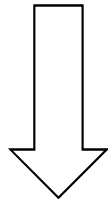
PS



Situazione 1

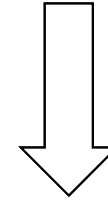


- prevalenza di malattia alta?
- sintomo a riposo?

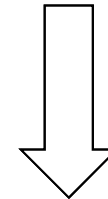


PS

Situazione 2

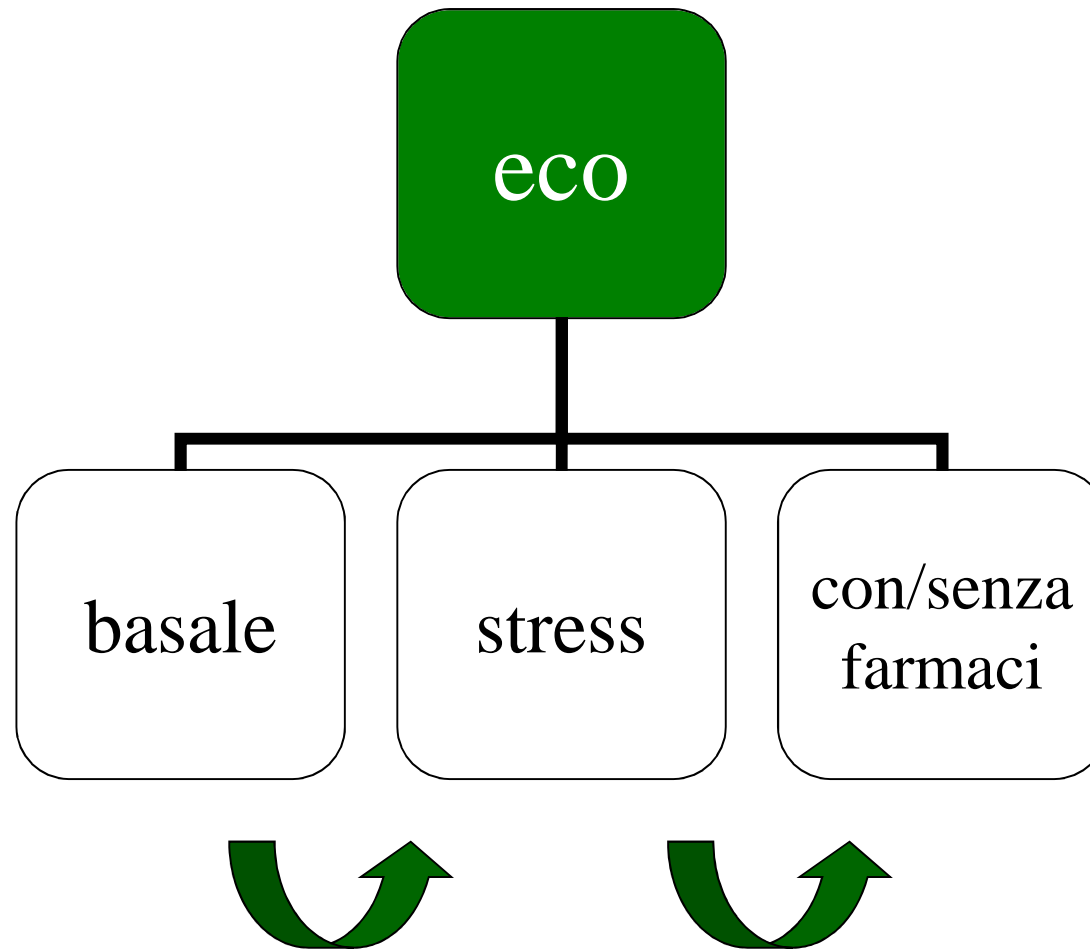


- prevalenza di malattia bassa?
- sintomo dubbio, sintomo 'da sforzo'?

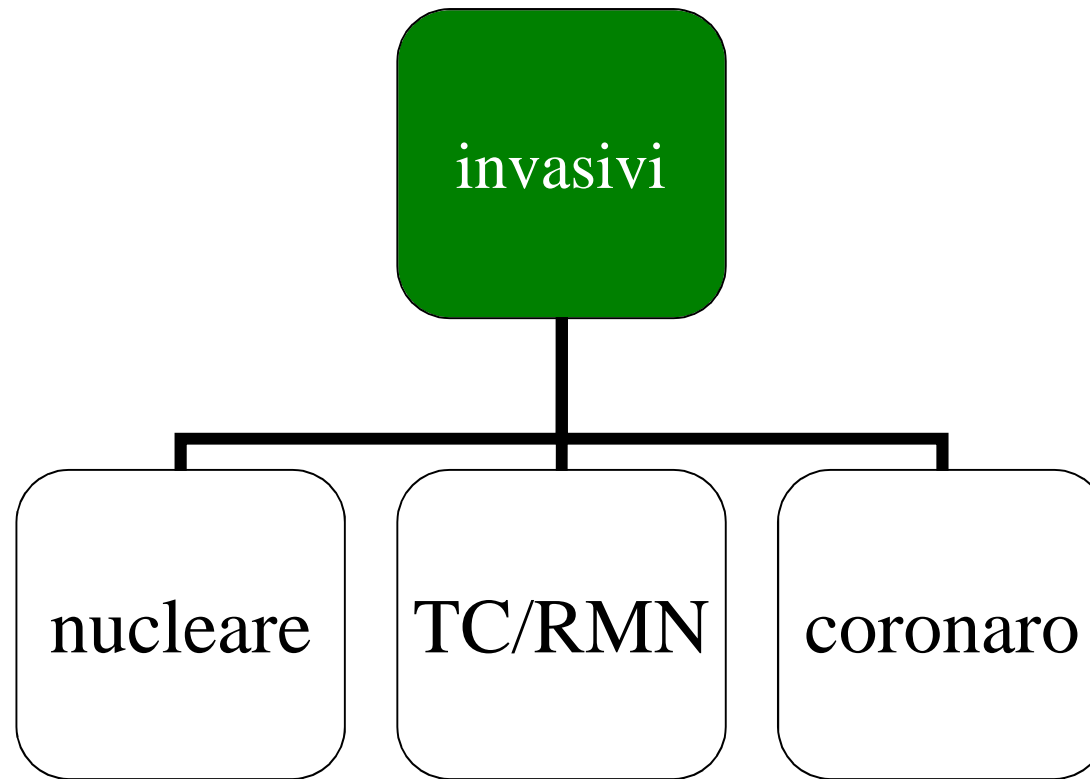


stress





diagnosi

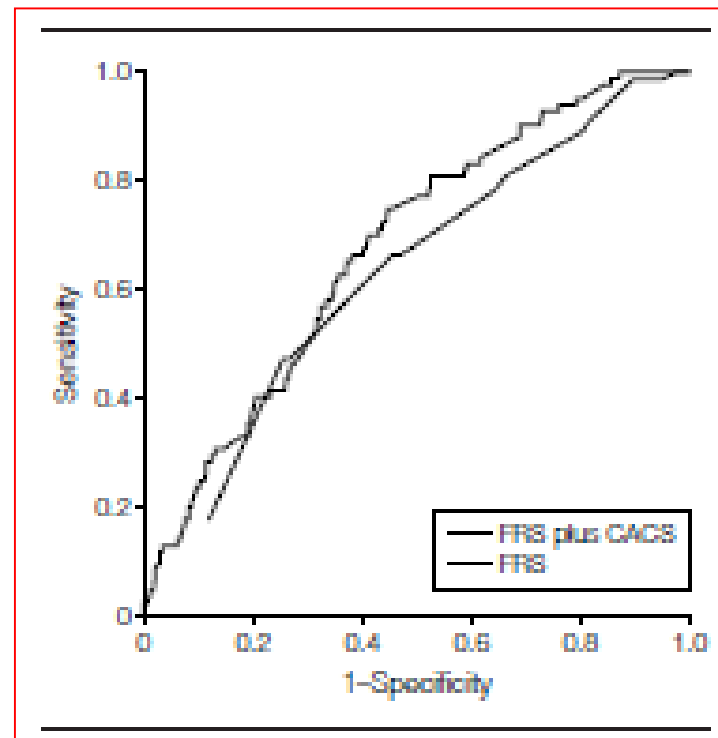


diagnosi

Editorial

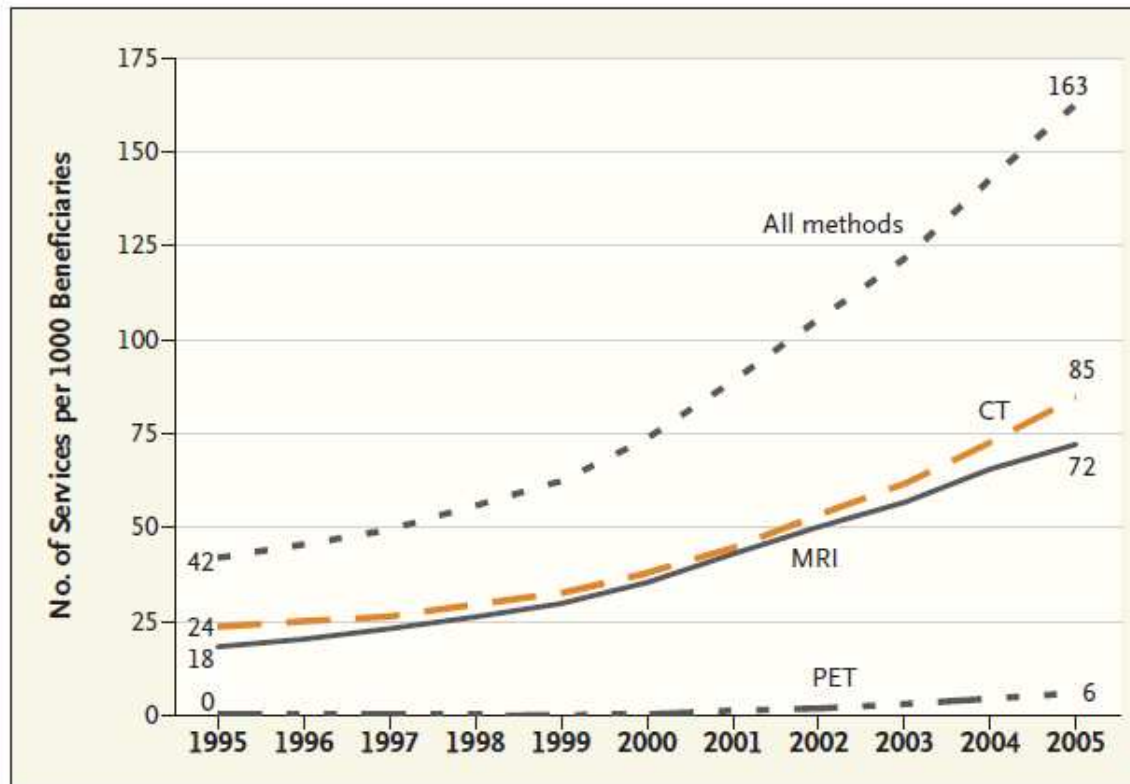
Coronary Artery Calcium Should We Rely on This Surrogate Marker?

Rita F. Redberg, MD, MSc



Elements of Danger — The Case of Medical Imaging

Michael S. Lauer, M.D.



Growth in Use of Advanced Imaging under Medicare, 1995–2005.



EU Imaging Guidelines 2001

“For instance, because MRI does not use ionizing radiation, MRI should be preferred when both CT and MRI would provide similar information and when both are available”



EU EURATOM Directive 1997/43

Principle of justification

“If an exposure cannot be justified, it should be prohibited (Art. 3)



W I L L E M E I N T H O V E N

The string galvanometer and the measurement
of the action currents of the heart

Nobel Lecture, December 11, 1925



87 anni fa

But in addition, innumerable other workers in the field of electrocardiography have gained great merit. We cannot now name them all but we conclude with a reference to the happy circumstance that investigators of the whole world have worked together. A new chapter has been opened in the study of heart diseases, not by the work of a single investigator, but by that of many talented men, who have not been influenced in their work by political boundaries and, distributed over the whole surface of the earth, have devoted their powers to an ideal purpose, the advance of knowledge by which, finally, suffering mankind is helped.



87 anni fa