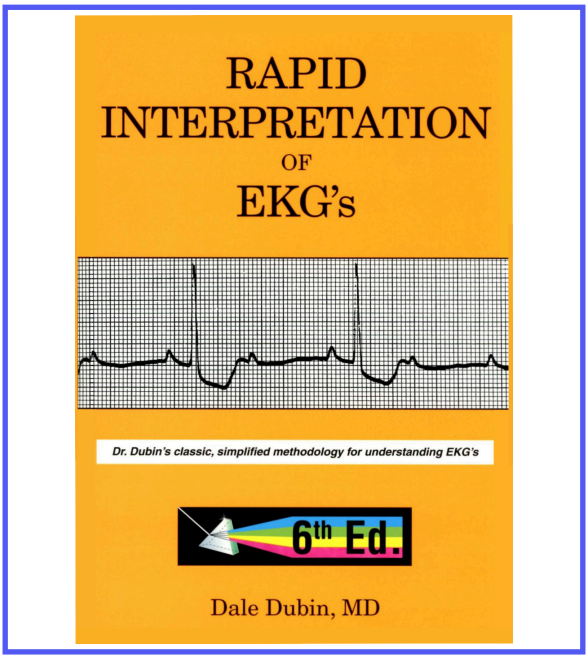


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or scan the QR code to access the digital study portal.

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Congratulations!

You are joining a coterie of knowledgeable medical professionals. *Rapid Interpretation of EKG's*, for over forty-five years the best seller in the US, has also educated millions of people around the world in 46 foreign languages.

Updated and refined with each of seventy printings, this classic text is now the most current and most referenced medical resource in the field.

But, for the understanding that is vital to your future, your personal success depends on certain subtle instructions in the book.

If advised to:

- "Review certain previous illustrations"... Do it! There's an important reason.
- "Place index tabs on certain pages"... This is necessary for your understanding.
- "Return to reread a specific page"... Respond willingly, without hesitation.
- "Study a chapter's summary *before* reading the chapter"... Preview it.

Your commitment to these details will reward you with **understanding** that ensures a lifetime of practical **knowledge**.

about sharing your knowledge...

My most sincere thanks to those persons, worldwide, who continue to send EKG tracings*. I am truly grateful. However, the number of people donating tracings has grown exponentially, making the publication of their names (as I've done previously) virtually impossible.

All of you will observe both classical and unusual tracings that should be preserved (use a copier, because EKG tracings tend to fade with time) for teaching purposes. Sharing this very special knowledge with others is a time-honored medical tradition.

This spirit of unselfish sharing of your knowledge continues to improve the level of care in this crucial medical discipline.

—DD

I enthusiastically collect and study 12 lead EKG's, strips of classical and unusual tracings, and even those rolls of "code" tracings that are usually discarded. They may be sent to me via the publisher, COVER, Inc., P.O. Box 07037, Fort Myers, FL 33919. I regret that I cannot acknowledge all tracings. This rescued trash is an invaluable treasured resource; please know that it is appreciated!

"To make a great dream come true, the first requirement is a great capacity to dream; the second is persistence – a faith in the dream."

Hans Selye, MD

Most teachers are knowledgable.
Good teachers are intelligent.
Great teachers are patient.
Exceptional teachers are students themselves.

D.D.

Before you begin…

First, read the caption and associate it with the simplified illustration.

Master the concept. Your comprehension is important.

Then, carefully read the interactive text, filling in each blank as you go.

- If you need to return to the illustration, that's even better… because each time you review an illustration, the visual image becomes more indelibly impressed in your memory.
- Interactive (programmed) instruction assures UNDERSTANDING by employing visual imagery to explain and link important concepts. Understanding is the key to lasting knowledge…

… and it's enjoyable because it is entertaining audience participation. You are the audience, and I'm right here with you, highlighting your progress with helpful "Notes."

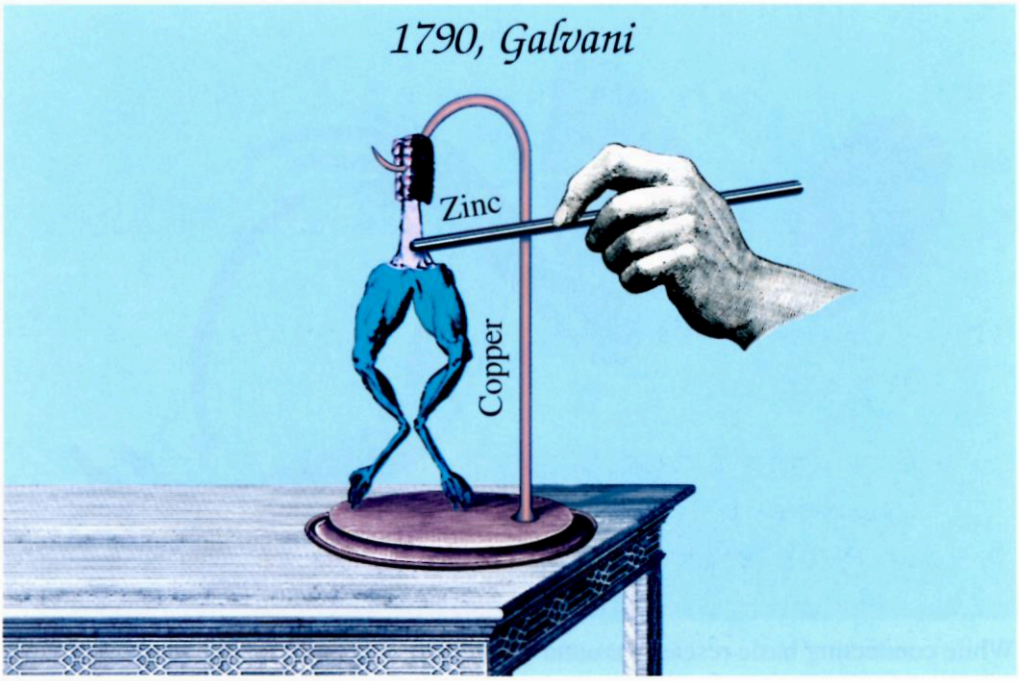
Let's have some fun!

"Lasting knowledge results from understanding."

Happy Learning,

Dale Dubin

Dale Dubin, MD



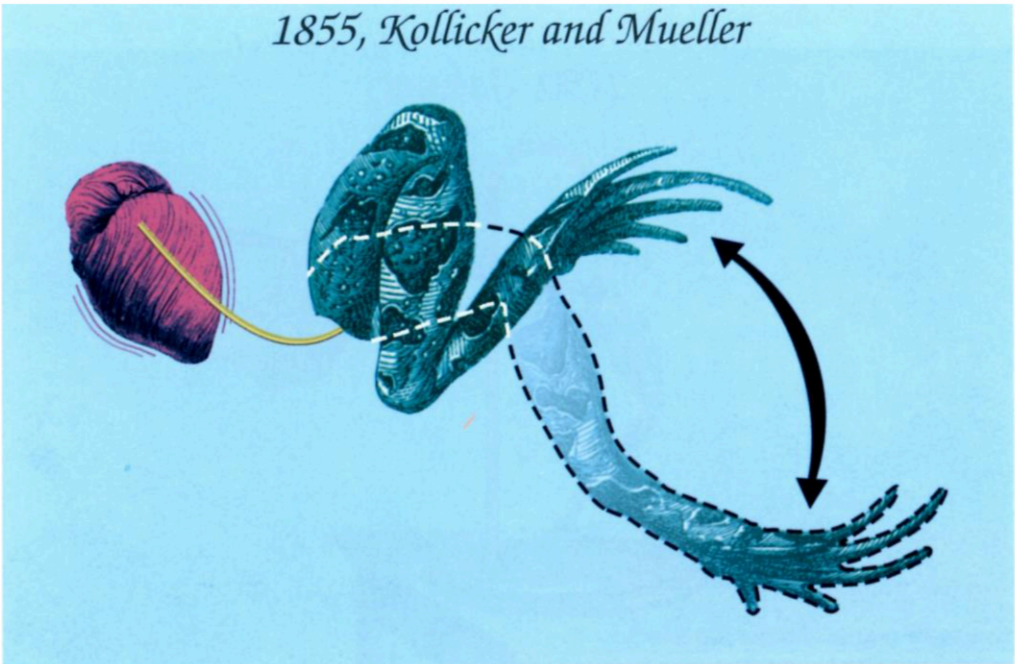
In 1790, an audience of usually sedate scientists gasped in disbelief as Luigi Galvani, with a flare of showmanship, made a dead frog's legs dance by electrical stimulation.

Galvani knew that completing a circuit connecting dissimilar metals to the legs of a recently deceased frog would create a stimulating _____ current. electrical

The resulting electrical current would stimulate the frog's legs to jump, and with repeated stimuli he could make them _____. dance

Note: But in those times, bringing a dead frog "back to life" was a shocking and ghastly "supernatural" feat. (And Galvani loved it!)*

* Get yourself a warm cup of coffee, relax and enjoy… the rest is just as easy and entertaining.

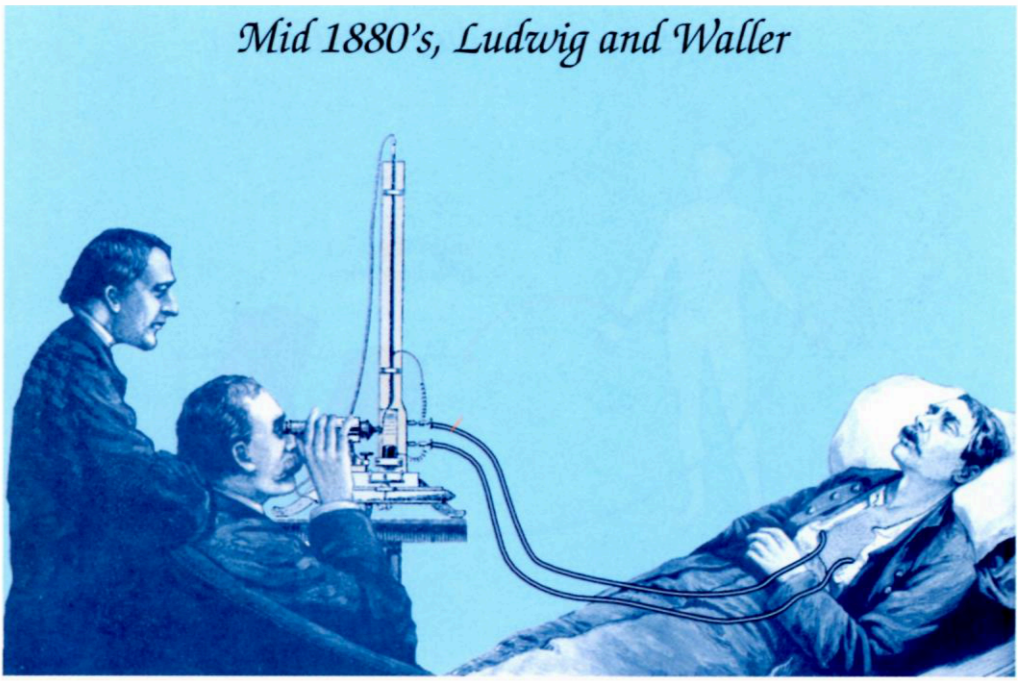


While conducting basic research around 1855, Kollicker and Mueller found that when a motor nerve to a frog's leg was laid over its isolated beating heart, the leg kicked with each heartbeat.

Eureka!" they thought, "the same electrical stimulus that
uses a frog's leg to kick must cause the heart to _____." beat

o it was logical for them to assume that the beating
f the heart must be due to a rhythmic discharge of
_____ stimuli. electrical

Note: And thus an association between the rhythmic pumping of the heart and electrical phenomena was scientifically established. Very basic and very important.



Capillary electrometer courtesy of Bakken Library

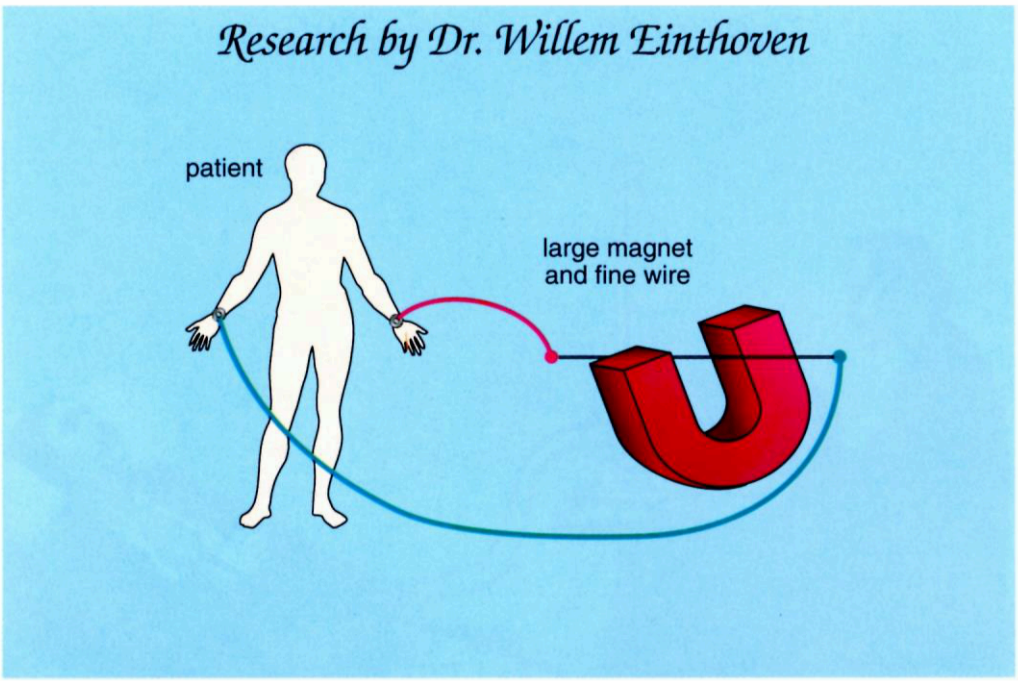
In the mid 1880's, while using a "capillary electrometer," Ludwig and Waller discovered that the heart's rhythmic electrical stimuli could be monitored from a person's skin.

This apparatus consisted of sensor electrodes that were placed on a man's _____ and connected to a Lippman capillary electrometer, which used a capillary tube in an electric field to detect faint electrical activity. skin

The fluid level in the capillary tube moved with the rhythm of the subject's _____-beat… very interesting. heart

This apparatus was a little too unsophisticated for clinical application, or even for economic exploitation, but it was _____ interesting. very

Note: This momentous achievement opened the door for recording the heart's electrical activity from skin surfaces.

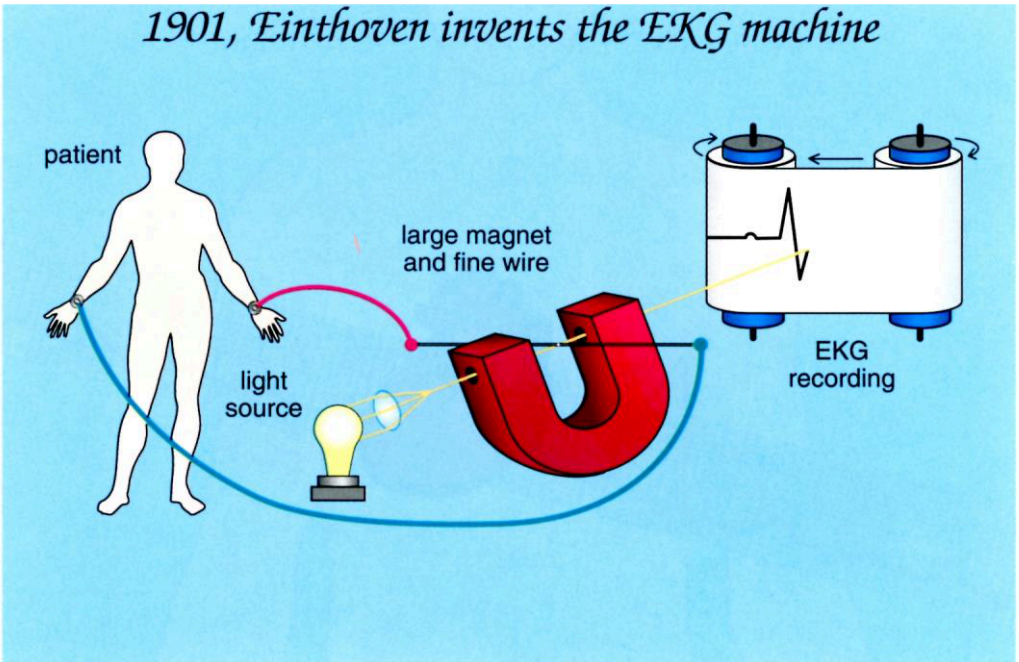


Enter Dr. Willem Einthoven, a brilliant scientist who suspended a silvered wire between the poles of a magnet.

wo skin sensors (electrodes) placed on a man were then
onnected to the ends of the silvered wire, which ran
etween the two poles of the _____. magnet

he silvered _____ (in the magnetic field) wire
vitched to the rhythm of the subject's heartbeat.

his was also very interesting, but _____ Einthoven
anted a timed record.



So Einthoven projected a tiny light beam through holes in the magnet's poles, across the twitching silvered wire. The wire's rhythmic movements were recorded as *waves* (that he named P, QRS, and T) on a moving scroll of photographic paper.

Very clever, that Einthoven! The _____ rhythmic
movements of the wire (representing the heartbeat)
created a bouncing shadow…

… that was recorded as a _____ series rhythmic
of distinct waves in repeating cycles.

He named the waves of each cycle (alphabetically)
P, QRS, and ____. T

Note: "Now," thought the clever Einthoven, "we can record a heart's *abnormal* electrical activity… and compare it to the normal." And thus a great diagnostic tool, his "electrokardiogram" (**E**lectro**K**ardio**G**ram), evolved around 1901. Let's see how it works…