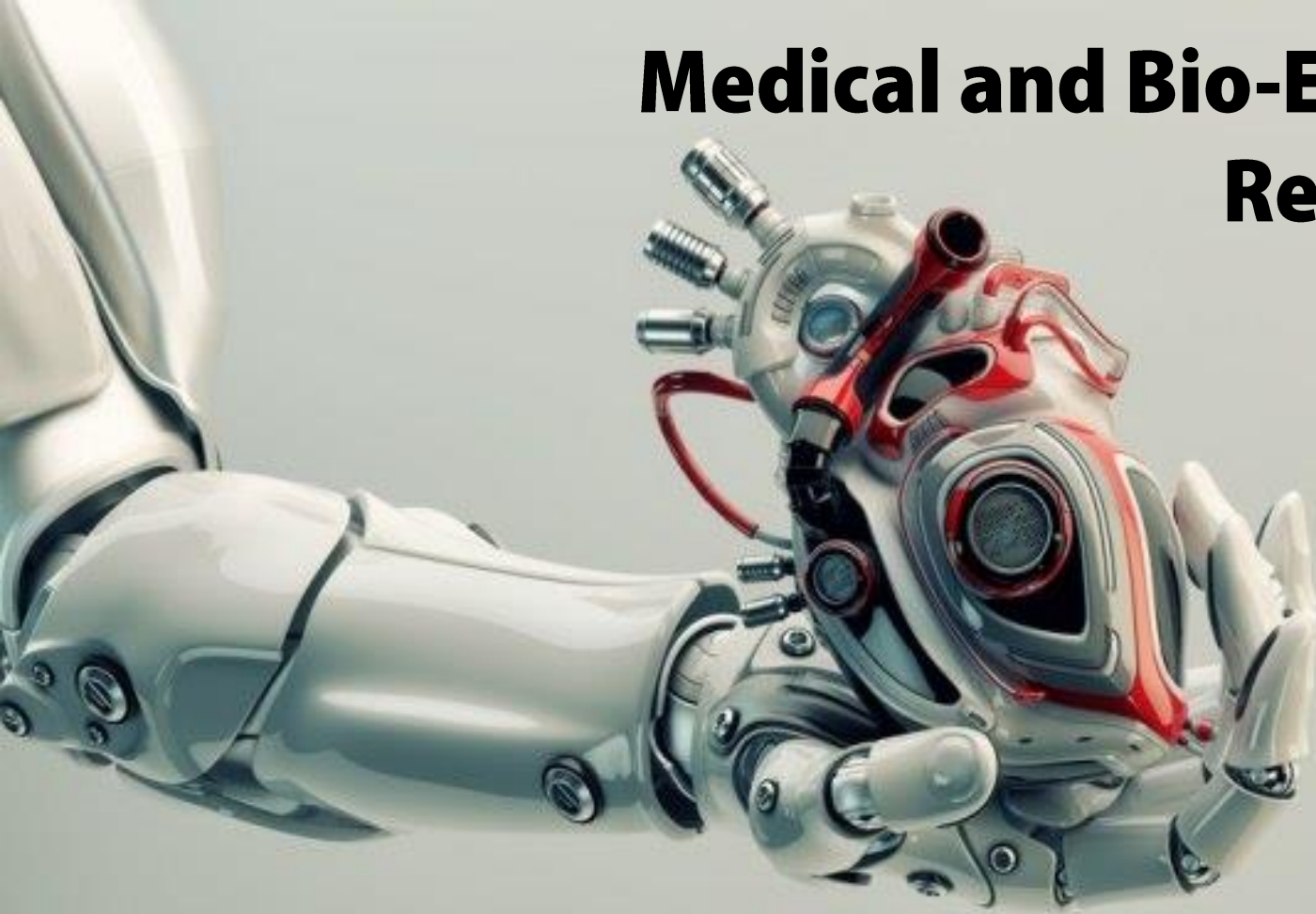


Medical and Bio-Engineering Research Unit



Alvin Sahroni
Yusuf Aziz Amrulloh



**UNIVERSITAS
ISLAM
INDONESIA**

VALUES | INNOVATION | PERFECTION

Berkenalan yuk dengan Bidang *Medical* dan *Bio-Engineering*



Apa sih itu *medical* dan *bio-engineering* / (*bio*) *medical engineering*

Medical dan *bio-engineering* / (*bio*) *medical engineering* di UII

Apa saja yang dipelajari

Contoh – contoh implementasi keilmuannya



Permasalahan



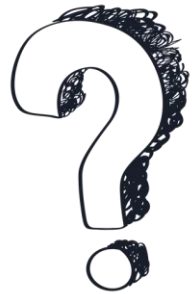
Teknologi

Engineer



Medical
BioEngineering
Research Unit

Matematika
+
Fisika



Apa sih itu *medical*
dan *bio-engineering*
/ (*bio*) *medical*
engineering

Membantu peningkatan **sistem kesehatan / medis** dan kualitas hidup manusia yang lebih baik

Ahli
Biologi

Ahli
Kimia

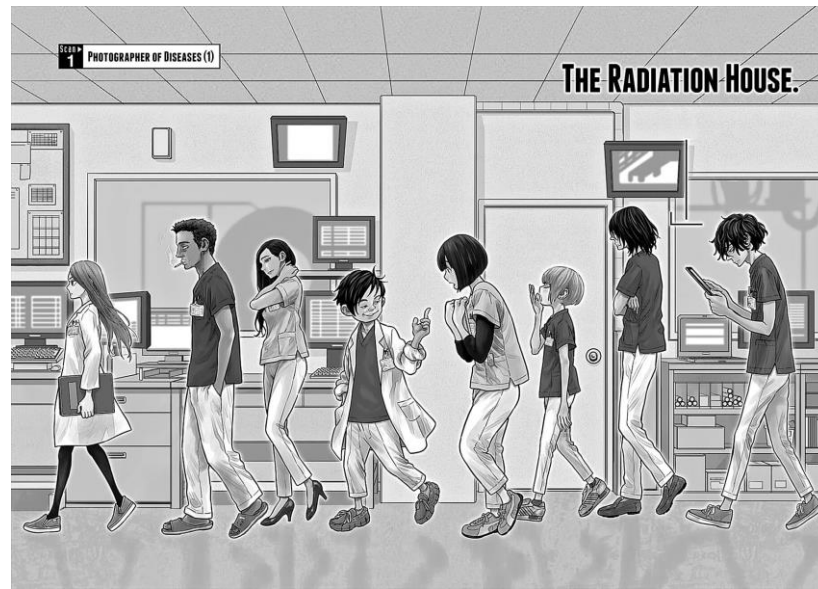
Ahli
Fisika

Dokter

Perawat

Multidisiplin dan saling bekerja sama

Peran / Tugas



Teknisi / *Engineer*

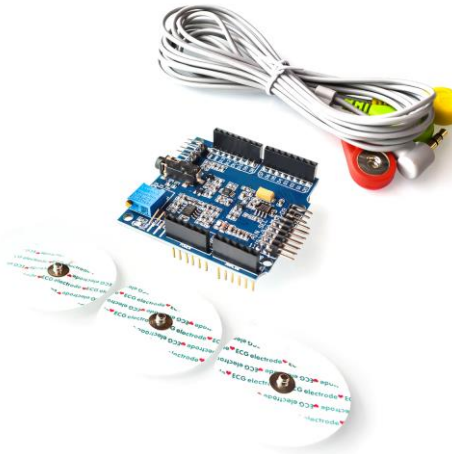
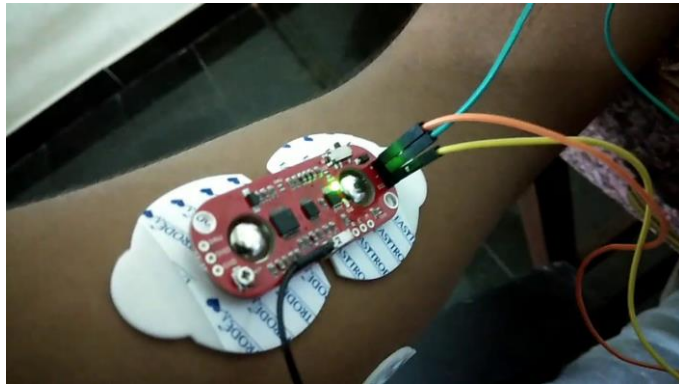
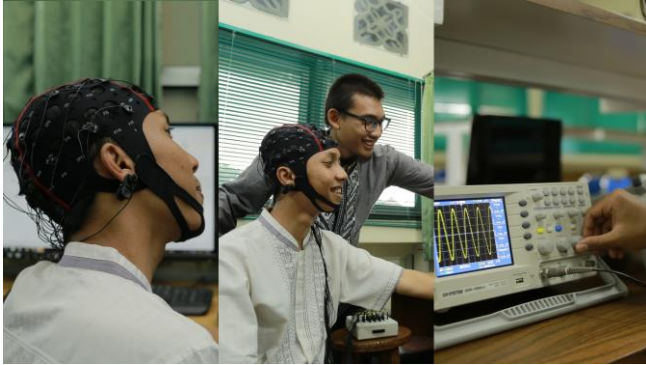
Setting / konfigurasi

Diagnosis oleh Dokter



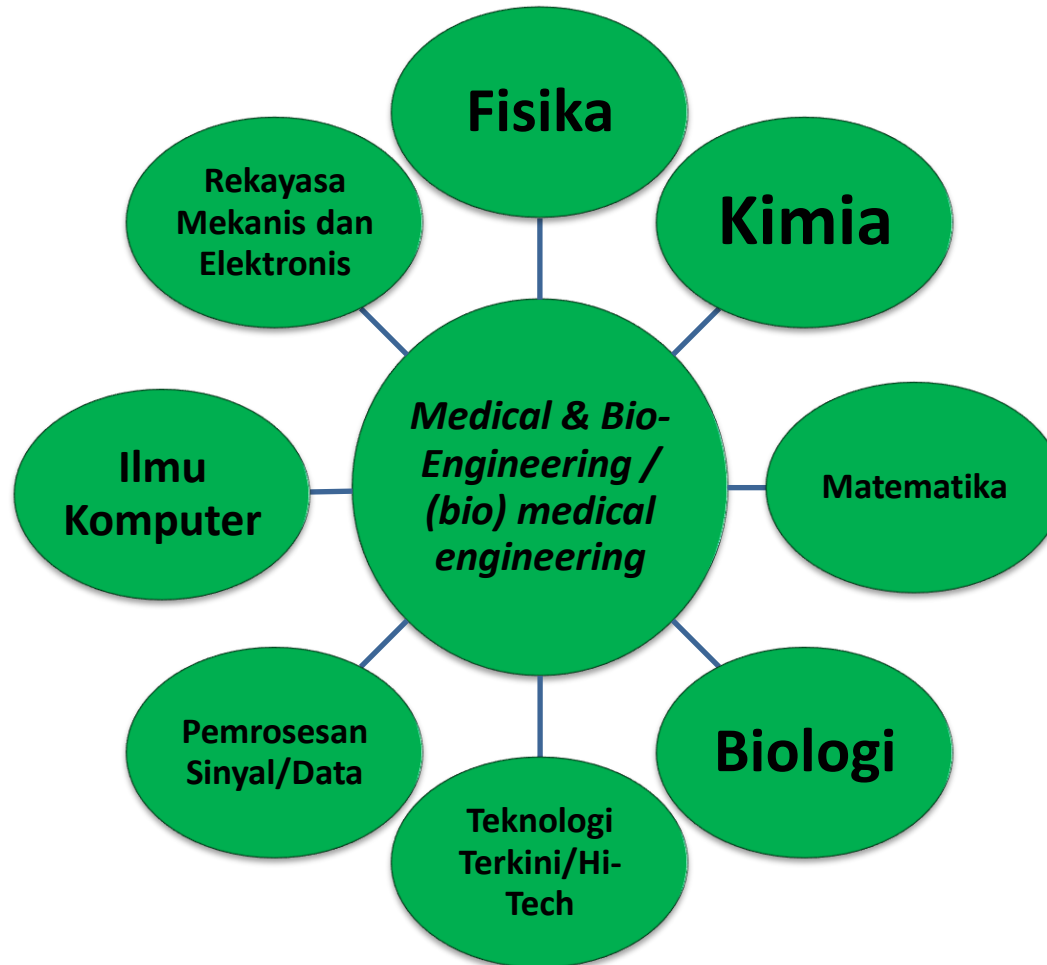


Belajar di UII





Apa saja yang dipelajari



Cell isolation

Cell culture



Implan

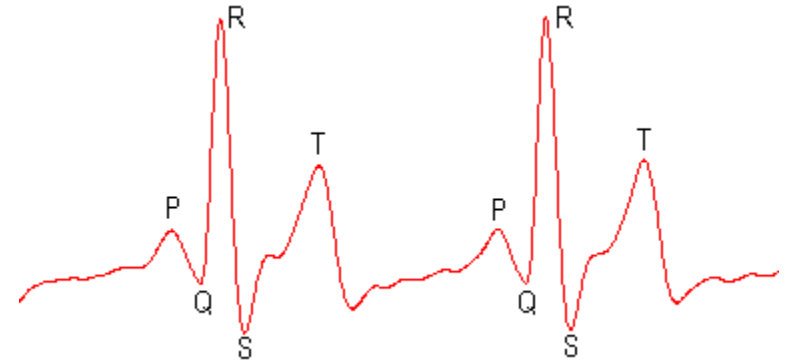
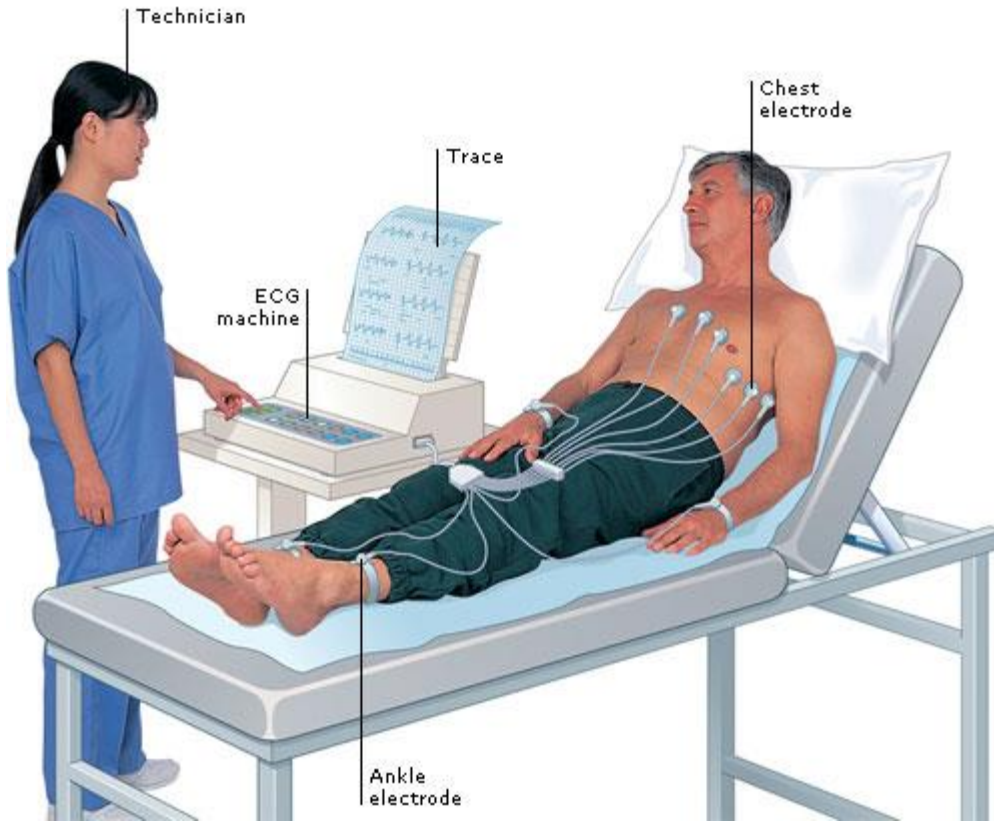


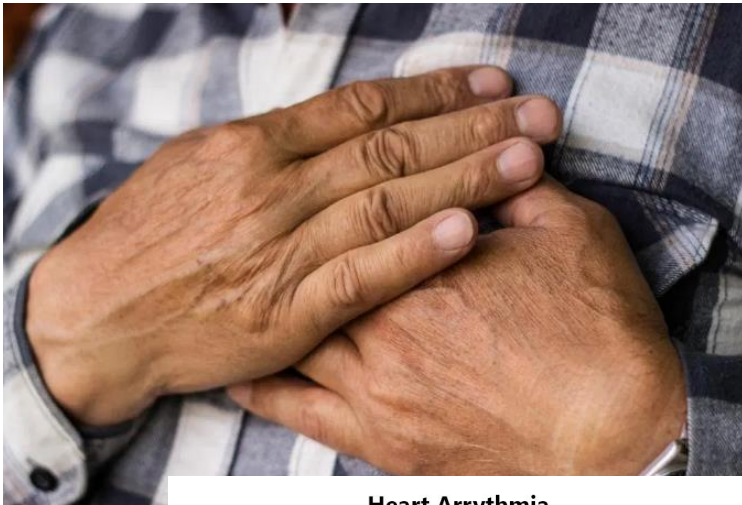
Britain's only woman to carry her heart in a backpack: Amazing £86,000 device that keeps this mother alive

- Mother-of-two Selwa Hussain, 39, has become the second ever person in Britain to be given an artificial heart
- The radical surgery means she must in effect carry her heart in a backpack
- The backpack contains an electric motor which pushes blood around her body
- Her husband or carer must be with her constantly and have just 90 seconds to connect her to the backup machine if disaster strikes

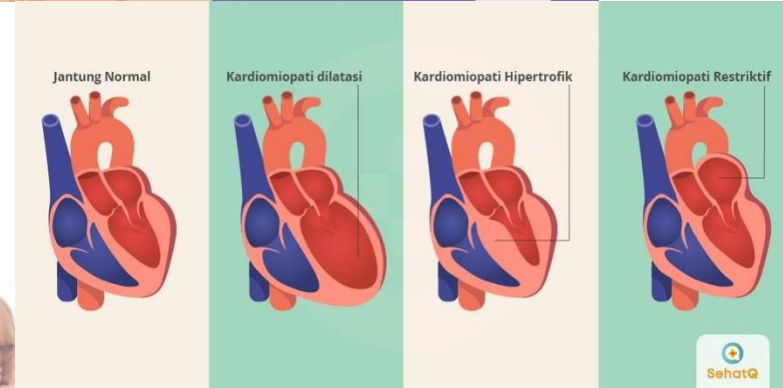
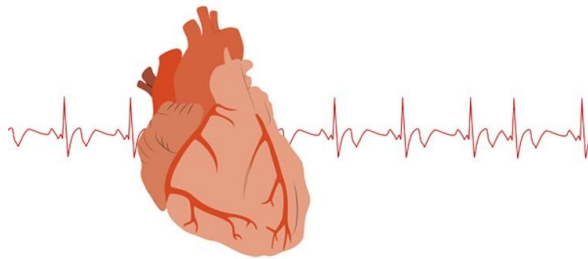


Contoh – contoh implementasi keilmuannya

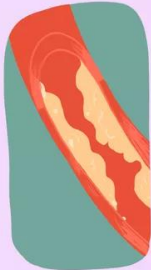




Heart Arrhythmia



Understanding Coronary Artery Disease



It's commonly caused by atherosclerosis, smoking, and hypertension



symptoms include fatigue, chest discomfort, and shortness of breath



treated with lifestyle changes, medications, or surgery

Blood clot lodges in cerebral artery, causing a stroke

Blood clot breaks off and travels

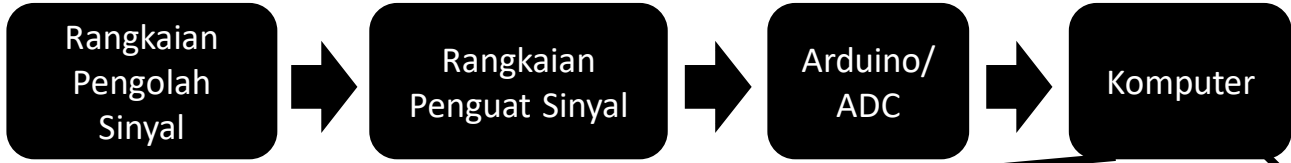
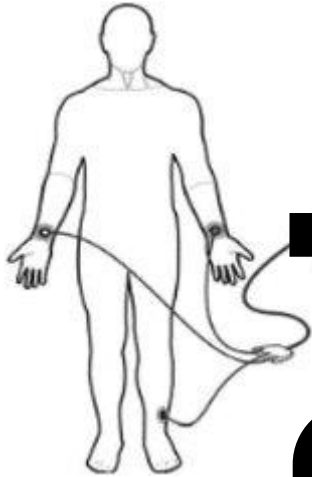
Diseased carotid artery

Normal carotid artery

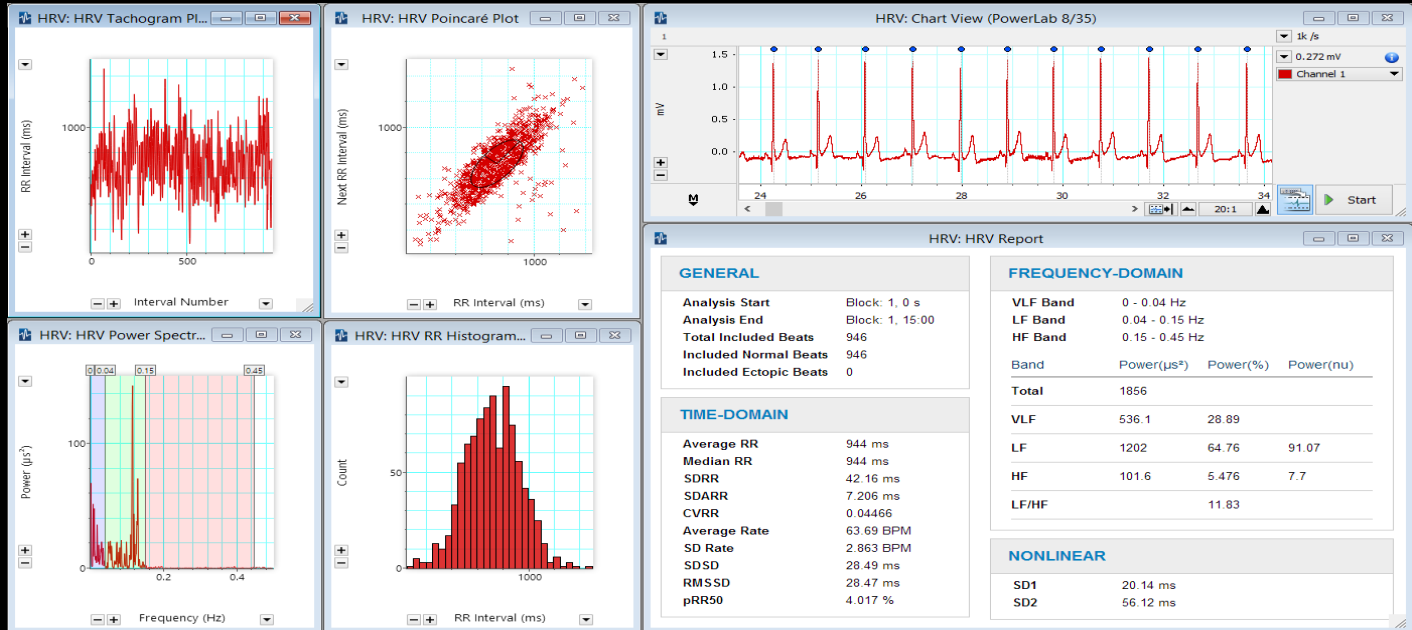
© MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.

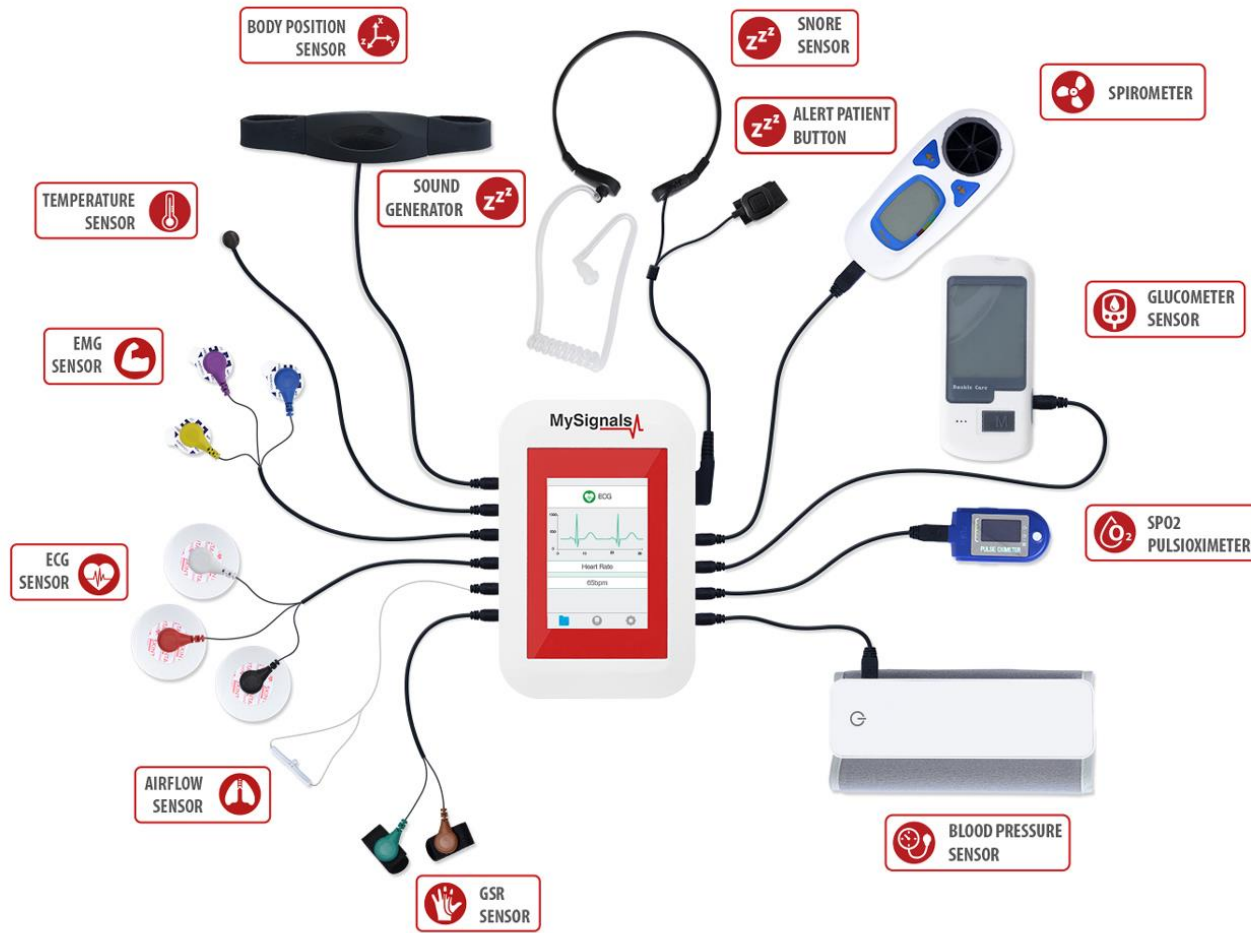
Dan masih banyak penyakit yang lain . . .

Mengukur dan monitoring kerja jantung

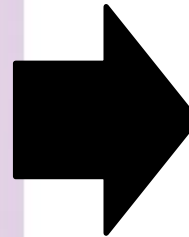


Program untuk mengukur / mendiagnosa kerja jantung





Konvensional/Teknologi Terdahulu



Teknologi Terkini



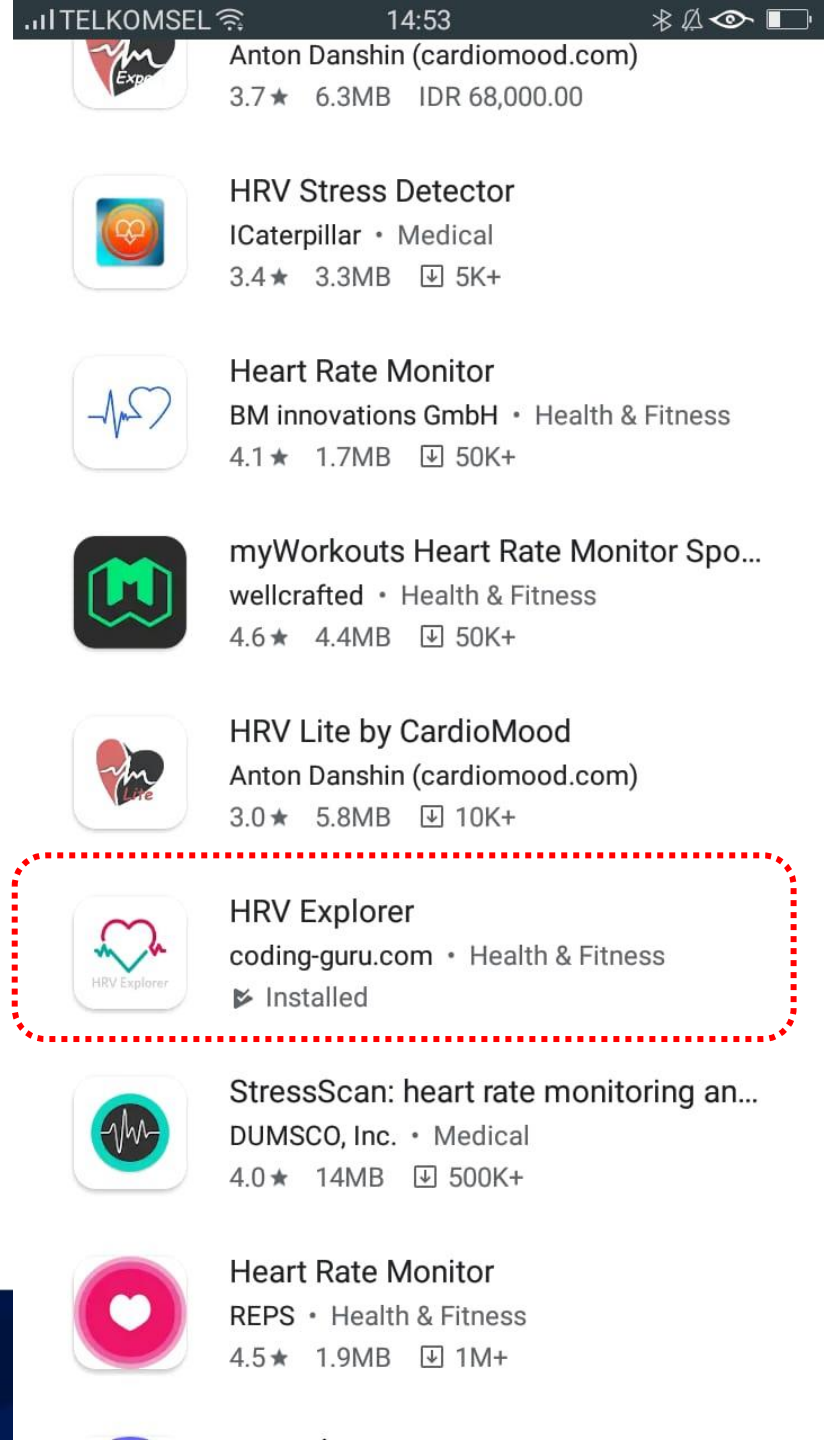
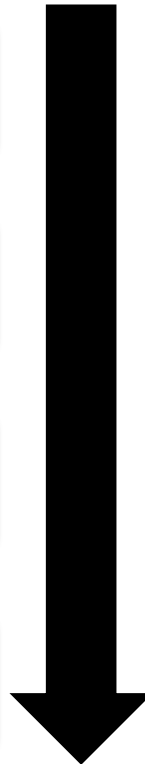


Buka Aplikasi Google Play


Silahkan lakukan pencarian aplikasi


Kata kunci pencarian :
"HRV Explorer"

Setelah itu install aplikasi hingga selesai



Sign up | Sign in

 Continue with facebook

 Continue with google

or

Continue with Email



Setelah aplikasi berhasil diinstall, silahkan jalankan aplikasinya

Silahkan login menggunakan akun yang anda inginkan

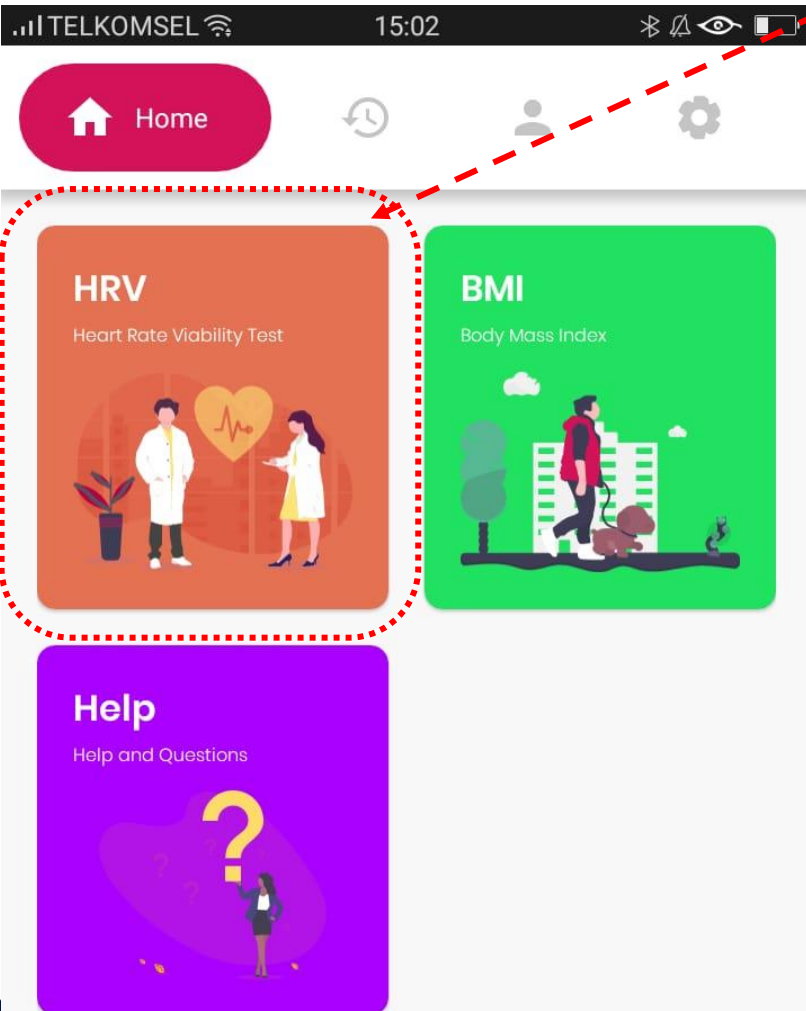
Untuk lebih mudahnya, silahkan gunakan akun google anda yang menjadi akun tanggal di smartphone anda

By continuing, you will be accepting the [HRV](#) terms and conditions

Setelah berhasil akan muncul tampilan sebagai berikut

Silahkan pilih menu "HRV"

Setelah itu anda akan mendapatkan tampilan sebagai berikut



Heart Rate

Gently cover rear camera and flash with your finger to measure your heart rate.

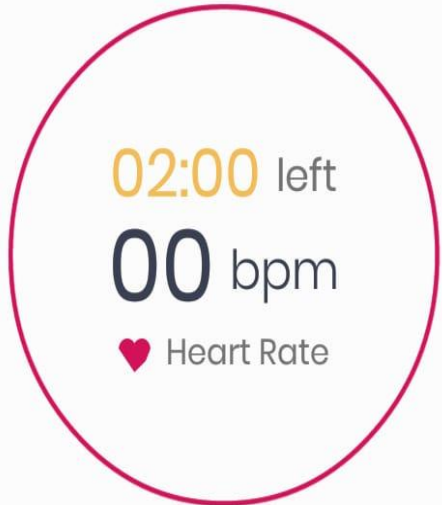
02:00 left

00 bpm

♥ Heart Rate

Heart Rate

Gently cover rear camera and flash with your finger to measure your heart rate.



Silahkan tempelkan jari telunjuk anda pada kamera smartphone anda sesuai dengan petunjuk berikut

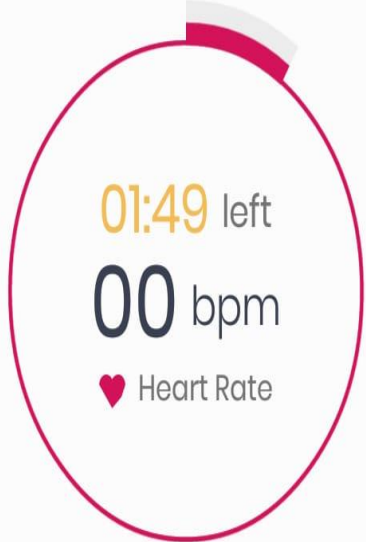
Jari telunjuk harus sejajar dan menutup lensa kamera HP dan lampu flashnya



Jika terdeteksi maka aplikasi perhitungan HRV akan dimulai dan tunggu hingga selesai dan muncul hasil perhitungan (**slide selanjutnya**). Pengambilan data lebih kurang 2 menit dan pastikan jari anda tidak dilepas dari kamera sebelum muncul hasil pengukuran HRV

Heart Rate

Gently cover rear camera and flash with your finger to measure your heart rate.



Assessment



General Time Domain

Stress level High stress

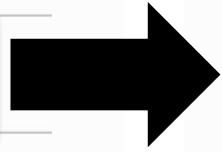
Analysis Start 07:00:00

Analysis End 07:00:00

Total Included Beats 80

Included Normal Beats 80

Geser kekanan



Assessment



General Time Domain

Linear Measure

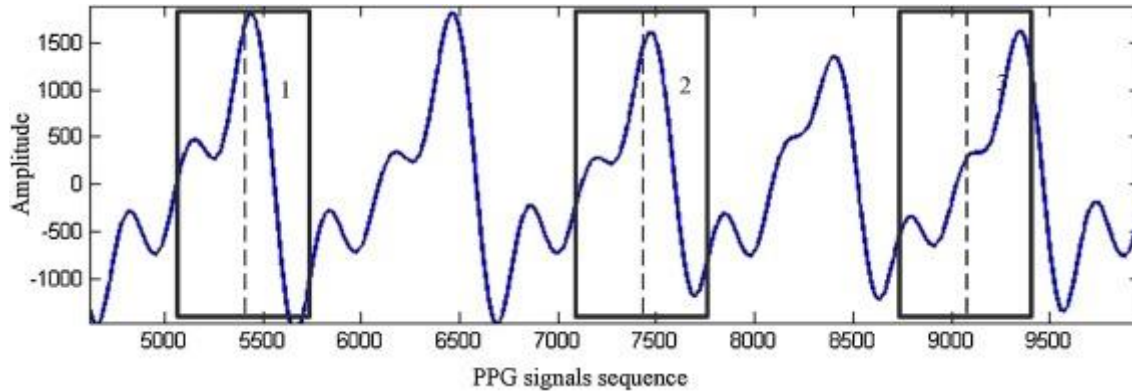
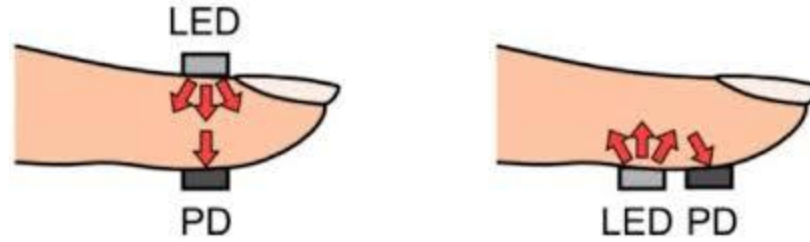
Heart Rate 60.0 ms MEAN RR: 1.0 ms

SDNN: 240.0 ms SDANN: 77.0 ms

NN50: 54.0 ms PNN: 68.0 ms

www.menti.com
647392

Photo-plethysmograph



Silahkan bertanya. . .



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