

Sveikatingumo technologijų tendencijos ir klasterizacijos nauda

Dr. Aurimas Mačiukas

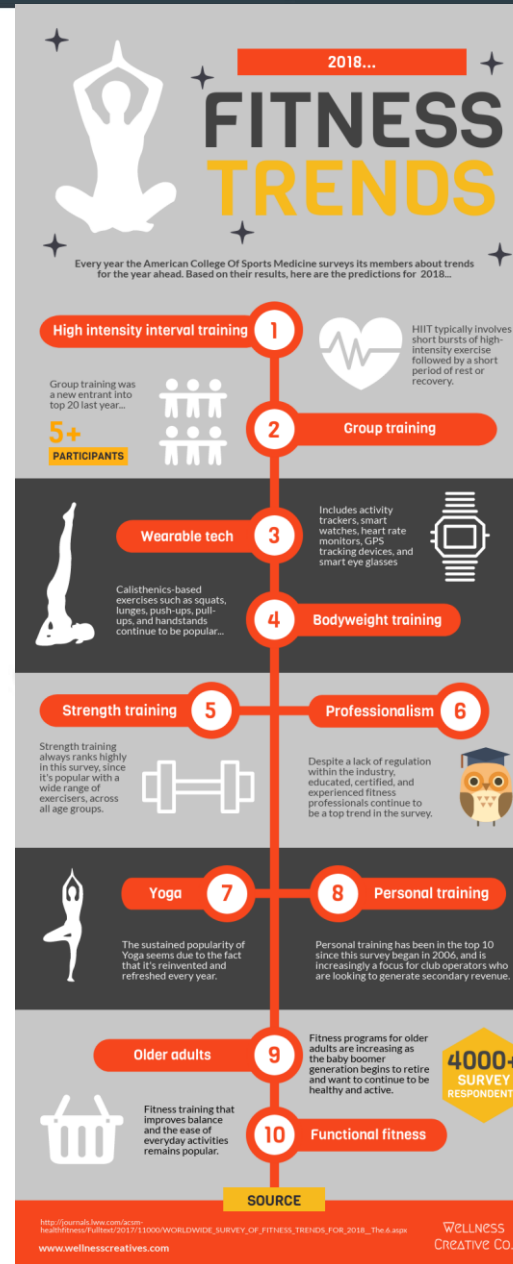
Active Training



ACSM 2017 trendai



ACSM 2018 trendai



ACSM 2019 trendai

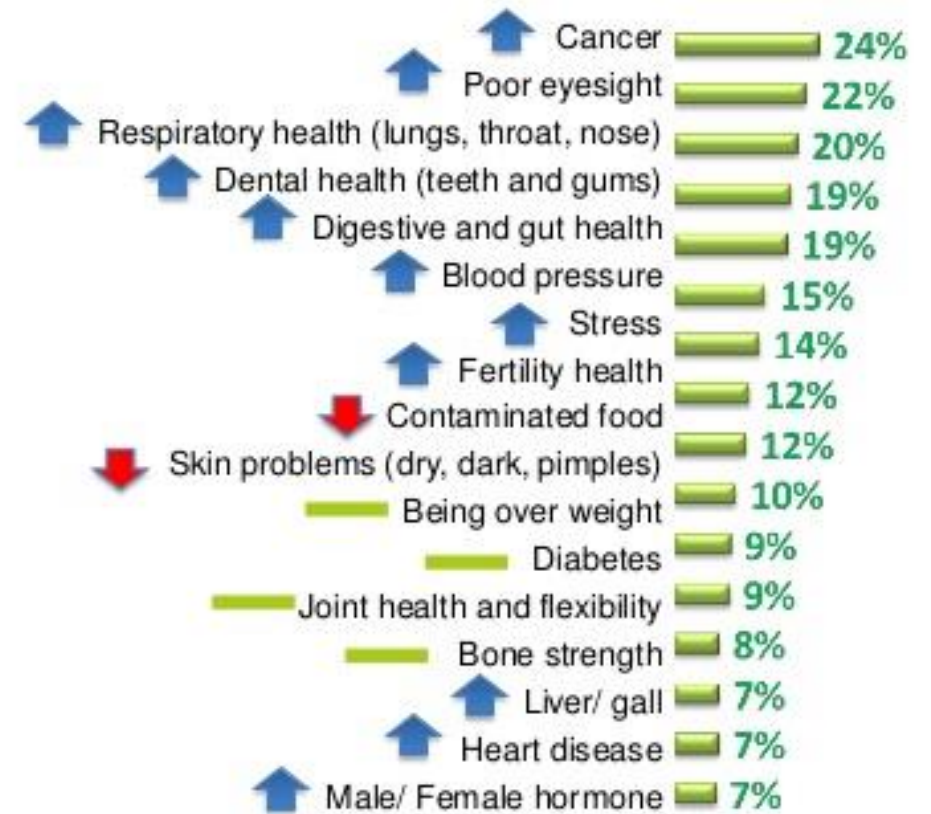
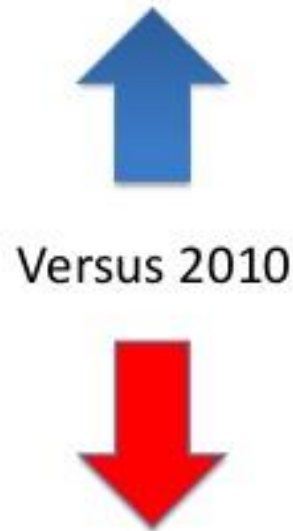


ACSM's Top 10 Fitness Trends for 2019



Sveikatos rodiklių pokyčiai 2010-2015

Top health concerns in 2015

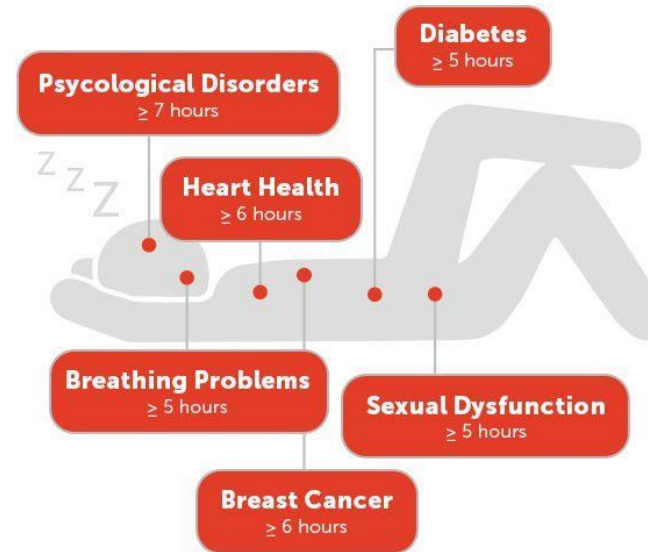


Miego reikšmė 6 ligų prevencijai

AN EVERYDAY HEALTH INFOGRAM

SLEEP IT OFF

Getting 7 to 9 hours of sleep per night can help adults avoid these six conditions.



How much sleep you should get each night



Source: American Physiological Society; The National Sleep Foundation; CDC

Kaip gydytojai naudoja mobilus įtaisus

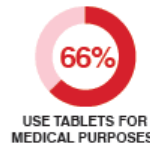
booz&co.

M-HEALTH

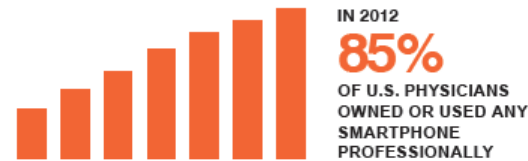
PHYSICIAN USE OF MOBILE TECHNOLOGY

DOCTORS ♥ TABLETS

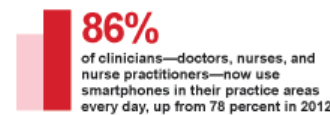
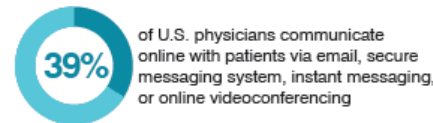
250% MORE LIKELY TO OWN A TABLET THAN ANY OTHER CONSUMERS



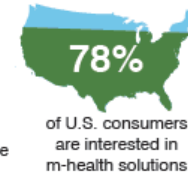
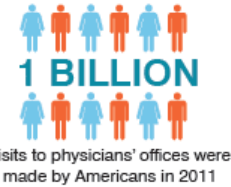
U.S. PHYSICIAN SMARTPHONE ADOPTION



ONLINE PATIENT-PHYSICIAN COMMUNICATION



The emerging field of mobile health (m-health) has enabled consumers to use smartphone technology to answer their own health-related questions with the quick tap of a touch screen. Here's a look at m-health and the impact it's making on our culture and our well-being:



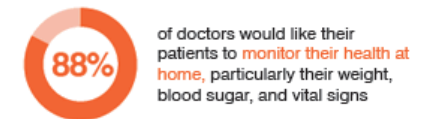
There are more than **10,000** medical/healthcare apps available in Apple's iTunes App Store

56% of doctors who use mobile devices say they expedite decision making

40% say they decrease time spent on administration



It's the third-fastest growing app category for both iPhone and Android phones



PATIENT USE OF MOBILE TECHNOLOGY



13% have accessed, stored, or transmitted personal health information or records in the past year
48% are interested in doing so



52% say they would like access to tools or websites that enable them to review quality rankings, satisfaction rankings, and patient reviews for specific doctors and hospitals

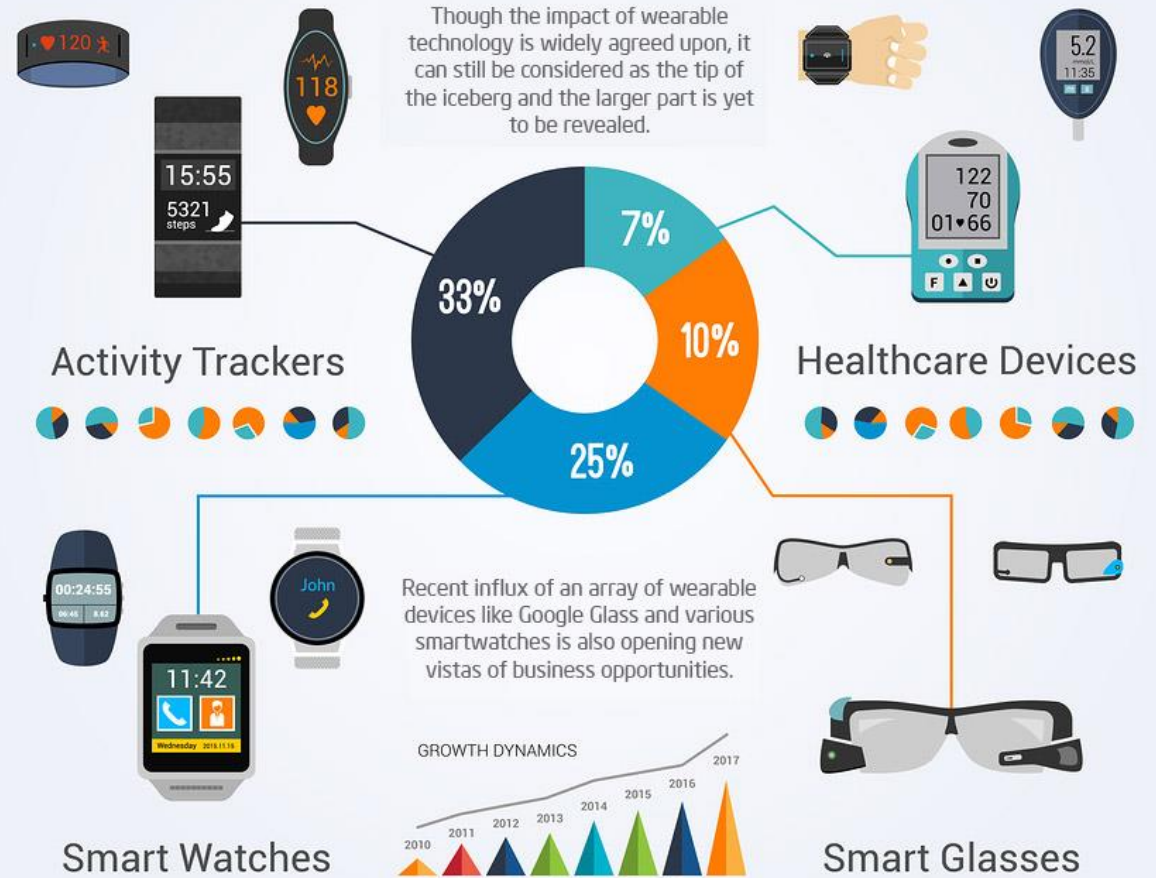


52% are comfortable in consulting with their physician through a video connection

Source: IDC, Gartner, Forrester, Frost & Sullivan, YouGov, comScore, CISCO Global Cloud Index 2013, CISCO Visual Networking Index Study 2013, Intel, AMD, IMS Research, Manhattan Research 2012, Rock Health Digital Funding Mid Year 2013, Paw Internet and American Life Project, Health Online 2013, Epocrates 2013 report, and American EHR Partners 2013 survey

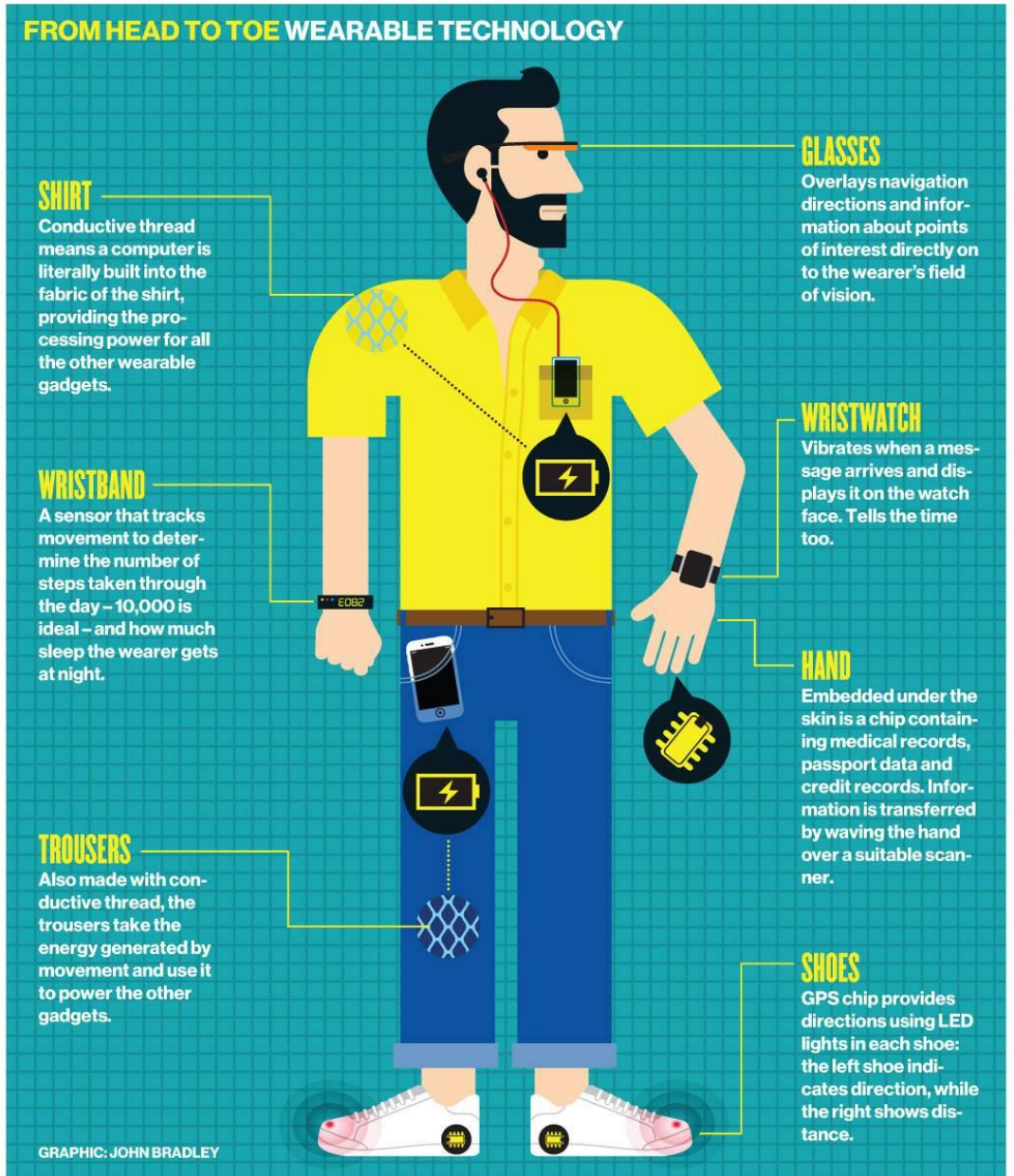
Išmaniųjų nešiojamų įrenginių pasiskirstymas

WEARABLE TECHNOLOGY INFOGRAPHICS

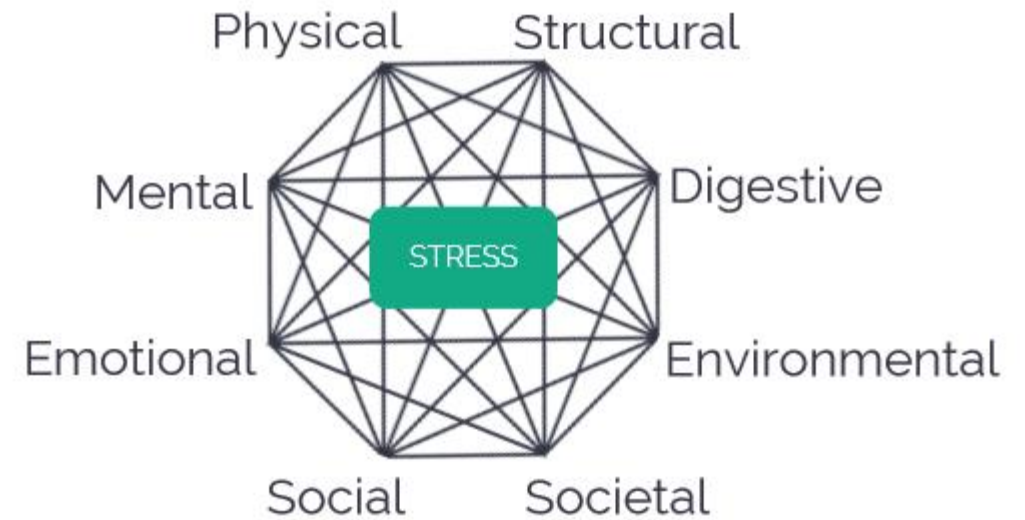


Wearable Technology Is The New Businesses

Kur dėvimi išmanieji sensoriai



Stresas ir Homeostazė



**Stresas išreguliuoja
homeostazę**

...tai kūno tendencija si
...siausvyrą arba
...savo vidinėje aplink

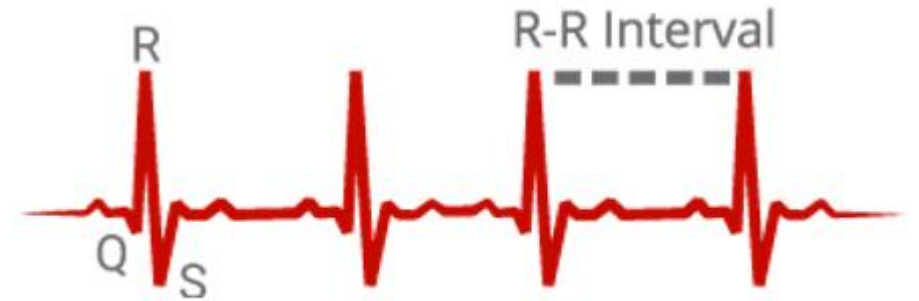
Stresas ir resursai



Chroninių ligų
Didesnės traumų rizikos
Didesnio jautrumo negalavimams

Stresas didina kortizolio
sekreciją ir simpatinę
aktyvaciją

Kodėl širdies variabilumas



Active Training

**Variabilumas yra gerai
biologinėse sistemose.**

omeostazė –tai kūno t
išlaikyti pusiausvyrą
pusiausvyrą savo vid

ŠRV - esminis sveikatos biožymuo

THE IMPORTANCE of a HEALTHY HRV

-  Low adaptability to external conditions
-  Imbalance of heart and mind
-  Low spirits / depression
-  Easily exhausted
-  Health issues

LOW
ADAPTABILITY
(HRV)



-  Greater sense of well-being
-  Better physical performance
-  Relaxation, good sleep & recovery
-  Enhanced cognitive performance
-  Lower risk of high blood pressure

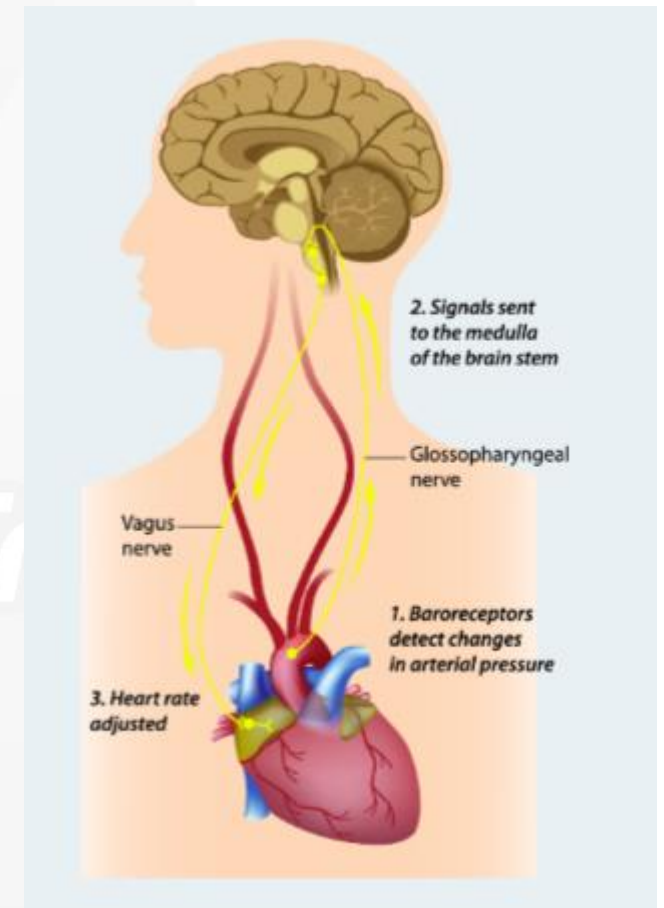
HIGH
ADAPTABILITY
(HRV)



Širdies reguliaciniai mechanizmai

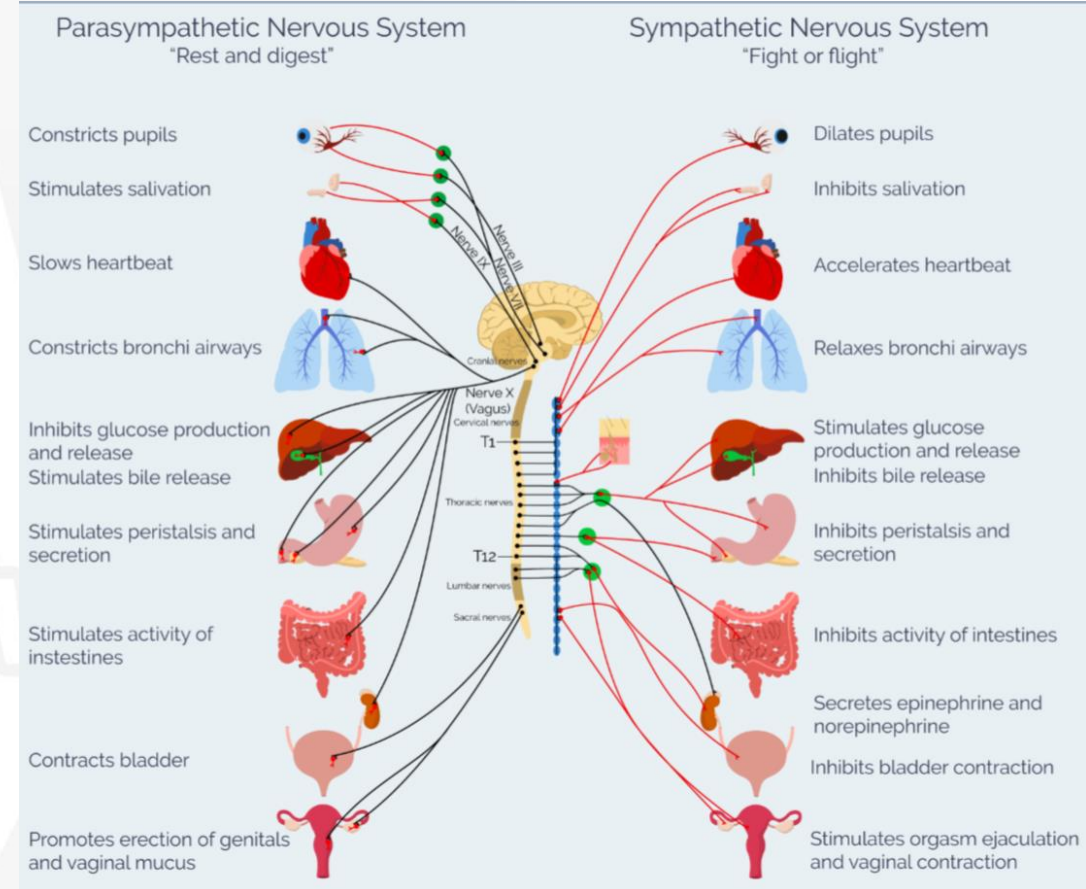
Variabilumas –

yra adaptacinių procesų pasekmė kūne, kuris pasireiškia širdies ritmo kitimu į išorės stimulus ar kitus reguliacinius mechanizmus.



Variabilumas yra GERAI biologinėse sistemose.

ŠRV (Širdies ritmo
variabilumas) atspindi ANS
(Autonominės nervų
sistemas)
balansą



ŠRV yra tikslus, neinvazinis
metodas ANS ir Autonominiam
Balansui nustatyti

ŠRV matavimas

Trumpalaikiai matavimai

1-5 min.

Lengva

Pakartojama

Atitinkantis tendencijas

Veiksminga

Ilgalaikiai matavimai

>5 min. – iki 2 val.

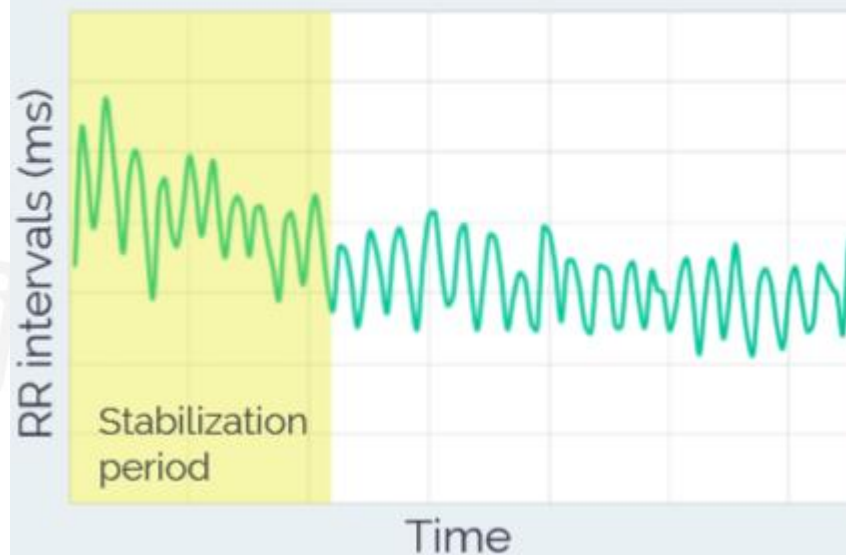
Leidžia nustatyti kokios kūno dalys gauna daugiausiai streso

Naudojama gyvo grįžtamojo ryšio metu

Leidžia nuspėti gresiančius įvykius kūne

Pre-reading “stabilization”

Let heart rate level out before recording HRV







5 min. yra “auksinis standartas”

Kaip dažnai matuoti

Idealu – kiekvieną dieną
Minimaliai – 4 kartai/savaitę
(3 top atletams)
Geriau – 5+

Kada matuoti

Idealu – 30 min. bėgyje rytais nuo pabudimo

<p>Supine / Laying</p> <p>Most repeatable Consistent for longer readings Most Parasympathetic activation</p> <p>✓ Recommended when resting HR is above 50 bpm</p> 	<p>Sitting</p> <p>Repeatable with care More accessible throughout the day More difficult for longer readings</p> <p>Back supported vs. unsupported</p> <p>✓ Recommended when resting HR is below 50 bpm while lying</p> 
<p>Resting Squat</p> <p>Repeatable with care Accessible anywhere More stress on the system Less researched</p> <p>✓ Recommended only if you have a truly easy, resting squat</p> 	<p>Standing / Orthostatic</p> <p>Repeatable with extreme care Easiest to do anywhere Most stress on the system</p> <p>✓ Least recommended unless testing orthostatic intentionally ✓ Not recommended for longer duration</p> 

ŠRV ir amžius, lytis

Vyrai turi labiau išreikštą simpatinę tendenciją nei moterys.

Lyčių ŠRV skirtumai mažėja nuo 55 metų amžiaus.

Su amžiumi variabilumas prastėja.

Tad aukštesnis HRV koreliuoja su didesniu pajėgumu, jaunatviškumu, geresne sveikata.



ŠRV ir fizinis pajēgumas

Aerobinis pajēgumas visada bus lydimas didesnio ŠRV

Fiziškai aktyvūs asmenys turēs didesnį ŠRV nei pasyvūs.



Šios ligos, vedančios prie ankstyvos mirties, ženkliai mažins ŠRV

Širdies ligos

Vėžys

Lėtinės kvėpavimo ligos

Insultas

Alzheimeris

Diabetas

Gripas ir plaučių uždegimas

Inkstų ligos

Nusiteikimas savižudybei



Aktyvios atsigavimo technikos ŠRV didinimui

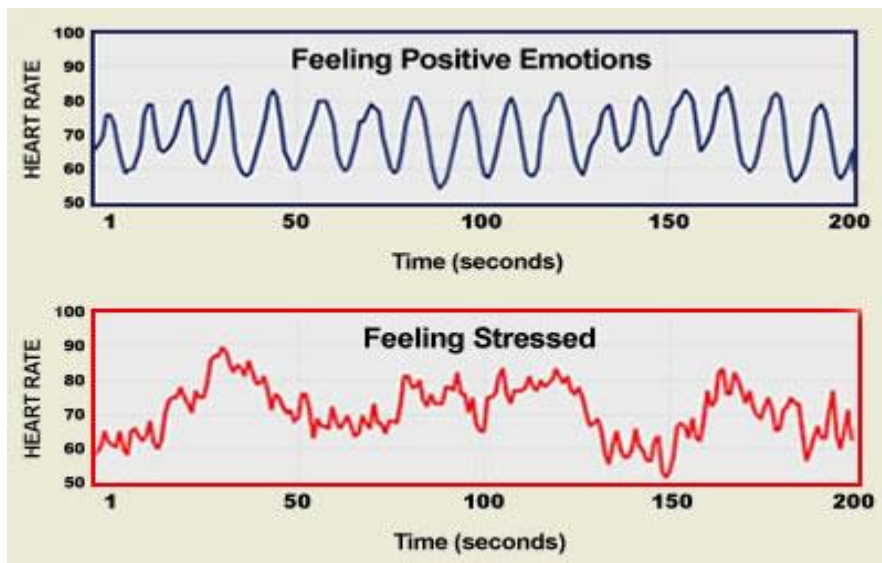
Žemo intensyvumo treniruotė
Korekciniai pratimai
Tempimo pratimai

Akupunktūra
Osteopatija

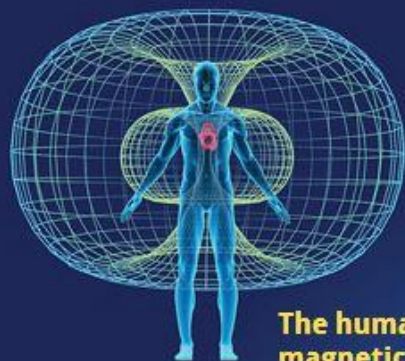
Šilto vandens terapija
Kvėpavimo technikos
Meditacija



ŠRV ir psichoemocinē būklē



Did you know?



The human heart's magnetic field can be measured several feet away from the body.

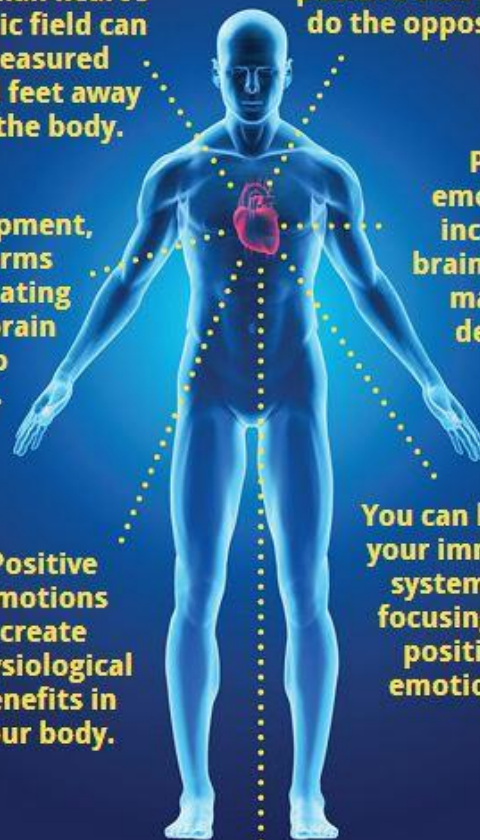


Negative emotions can create nervous system chaos, but positive emotions do the opposite.



In fetal development, the heart forms and starts beating before the brain begins to develop.

Positive emotions can increase the brain's ability to make good decisions.



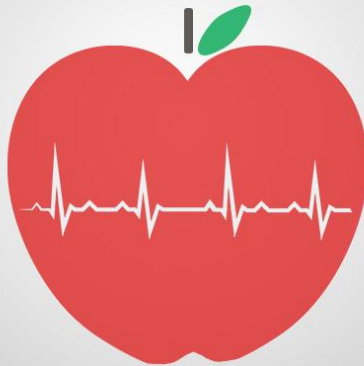
Positive emotions create physiological benefits in your body.

You can boost your immune system by focusing on positive emotions.



ŠRV gali atskleisti senzityvumą maistui

Case Studies:
The Effects of Diet on Heart Rate Variability



HRVcourse.com



Smegenų stimuliacija



Prakaito biocheminių rodiklių registravimas



