

GERIAUSIOS MITYBOS

#STRATEGIJOS PASAULYJE



Dr. Artūras Sujeta

GYVENSENOS IR MITYBOS STRATEGIJA PASIRENKAMA?

Psychological Science OnlineFirst, published on May 31, 2016 as doi:10.1177/0956797616645673

Research Article

The Power of the *Like* in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media



aps
ASSOCIATION FOR
PSYCHOLOGICAL SCIENCE

Psychological Science
1-9

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DOI: 10.1177/0956797616645673

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SAGE

Dapretto M, Greenfield P, Hernandez L, Payton A, Sherman L. The Power of the Like in Adolescence Effects of Peer Influence on Neural and Behavioral Responses to Social Media. *Psychological Science* . 2016.



♥ 30 likes

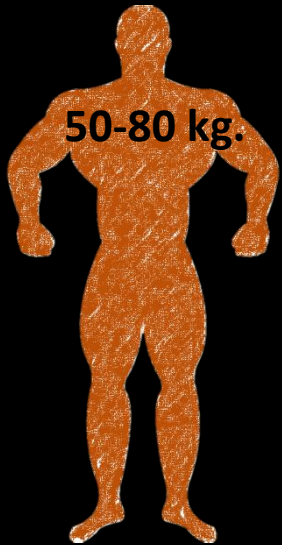


♥ 10 likes

Viewing photos with many (compared with few) likes was associated with greater activity in neural regions implicated in reward processing, social cognition, imitation, and attention. Furthermore, when adolescents **viewed risky photos** (as opposed to neutral photos), activation in the **cognitive-control network decreased**. These findings highlight possible **mechanisms underlying peer influence during adolescence**.

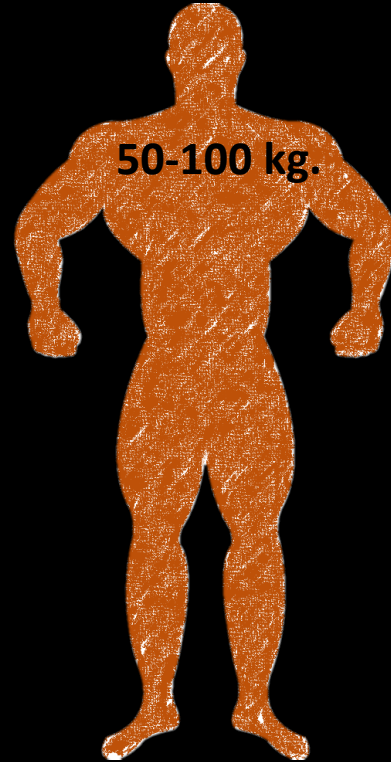
KALORIJŲ POREIKIS

1800-2400 kcal/d
30-40 min/3 k. sav.



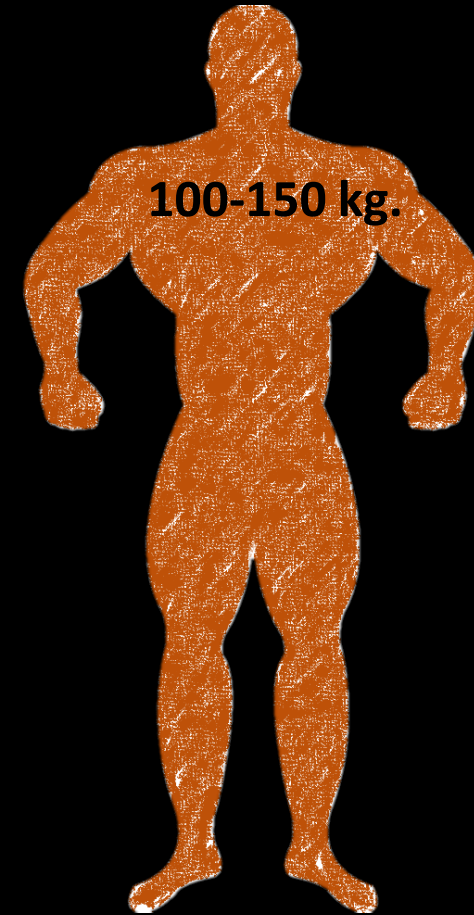
50-80 kg.

2000-7000 kcal/d
2-3 val./5-6 k. sav.



50-100 kg.

6000-12000 kcal/d
2-3 val./5-6 k. sav.



100-150 kg.



300-500 kcal!
50-80 kg





Strongman training

100-150 kg

12000 kcal !

Tour de France

65-70 kg





Kalorijų poreikis per dieną krepšininkėms yra apie 3,500kcal/d., vyrams 4,600 kcal/d.



Detoksikuojančios dietos?

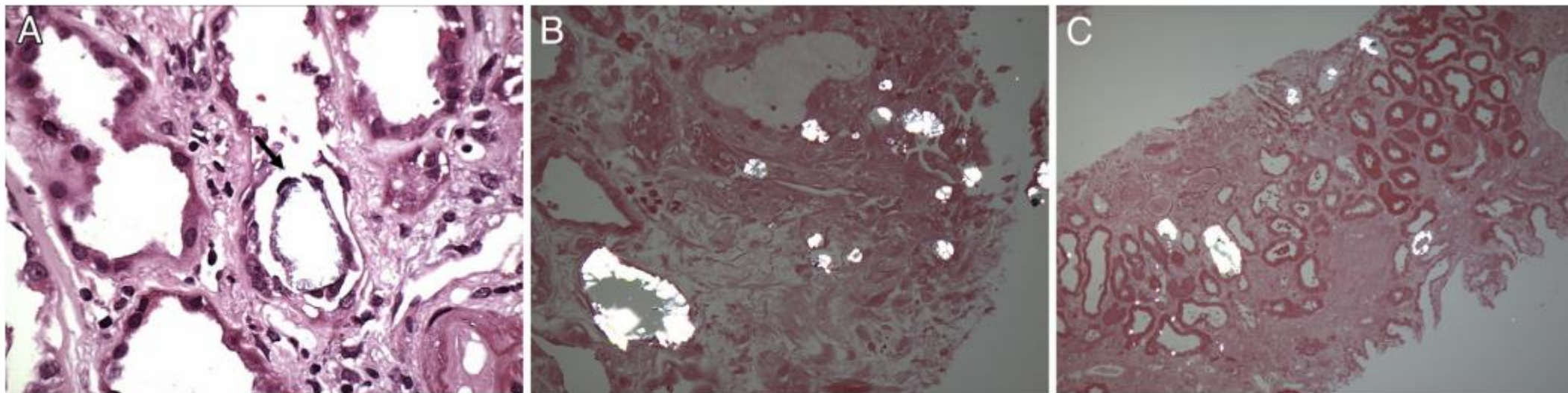


Figure 1. Kidney biopsy specimen. (A) A tubule containing an intraluminal crystal and shedding of the adjacent tubular epithelial cells (hematoxylin and eosin [H&E]; original magnification, ×400). (B) The multiple polarizing oxalate crystals exhibit a spoke or sheaf-like arrangement within the interstitium (H&E; original magnification, ×400). (C) Polarization of the histologic casts within tubular lumina. There is focal interstitial fibrosis and tubular atrophy.

Galimos okslatų
absorbcijos padidėjimo
pasekmės

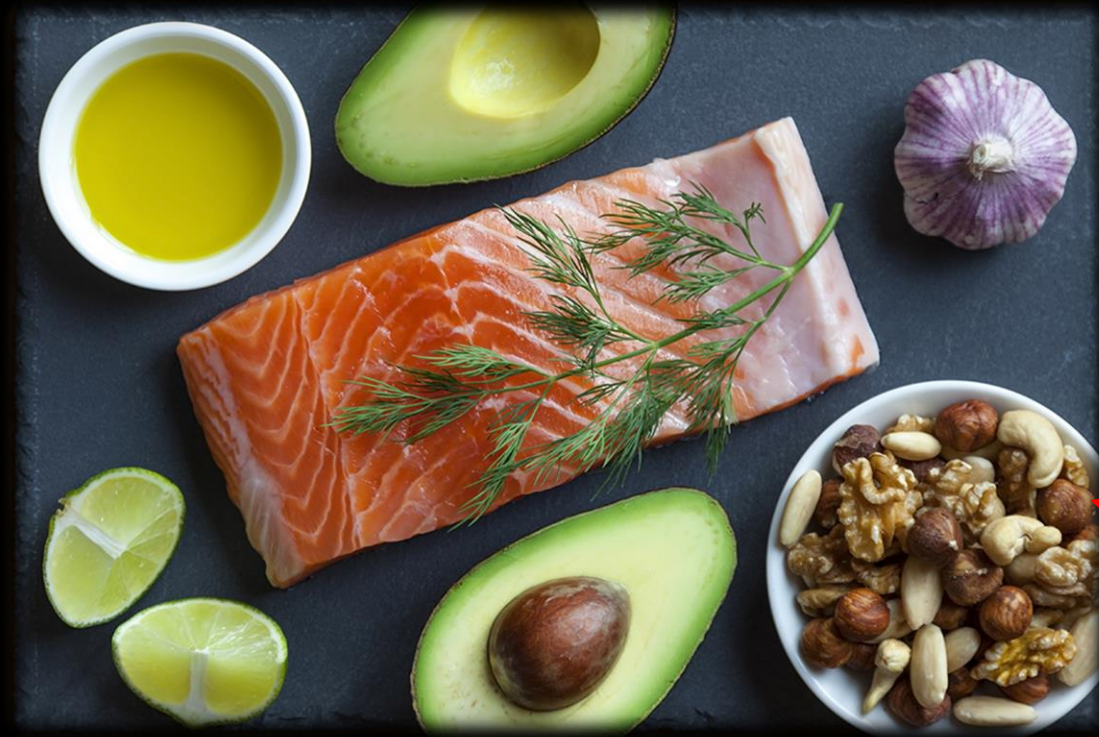
Makkapati S, D'Agati VD, Balsam L. "Green Smoothie Cleanse" Causing Acute Oxalate Nephropathy . Am J Kidney Dis. (2017)

Kesavarapu K, et al. Yogi Detox Tea: A Potential Cause of Acute Liver Failure . Case Rep Gastrointest Med. (2017)

KETOGENINĖ DIETA

70-80% paros energijos normos sudaro riebalai

20-25% baltymai (2-2,5g/kg/d.)



Angliavandeniai
10-40 g

Cox PJ, et al. 2016 Nutritional ketosis alters fuel preference and thereby endurance performance in athletes. Cell Metab. 24(2):256–68.

Ketogeninės mitybos strategijos taikymas praktikoje:

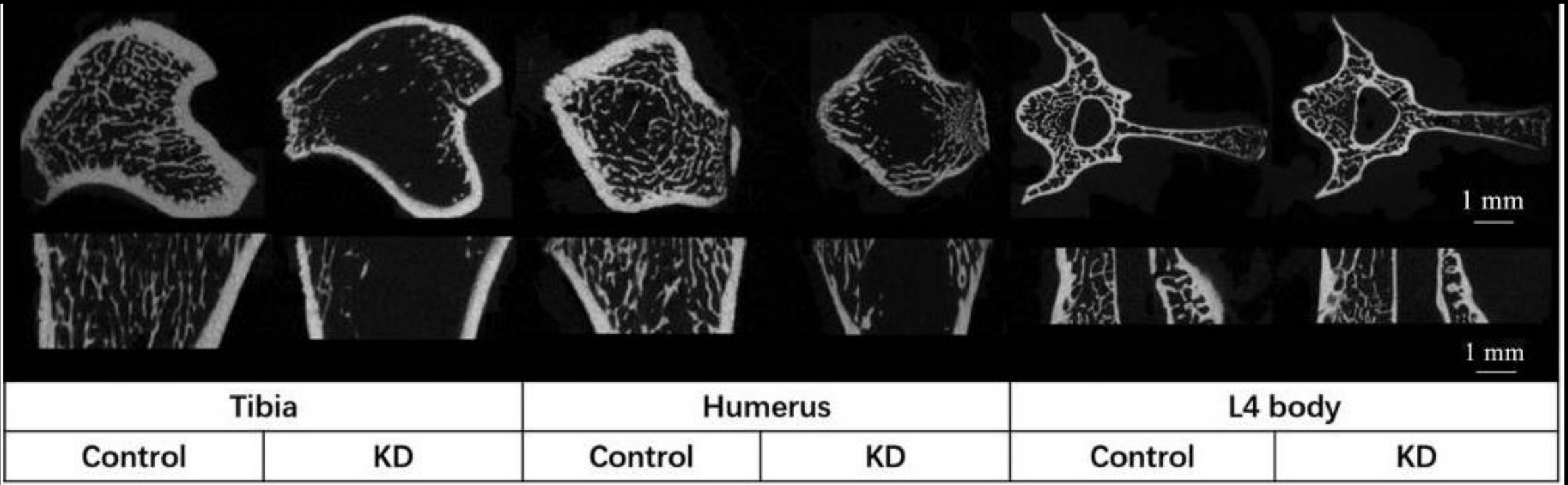
Neurodegeneracinių ligų gydymas:

- Parkinsono liga,
- amyotrofinę lateralinę sklerozę,
- Alzheimerio liga,
- skirtingos lokalizacijos galvos smegenų traumos.

Atliktų tyrimų modeliai su gyvūnais (Van der Auwera et al. 2005; Prins et al. 2005; Tai et al. 2007,2008; Puchowicz et al. 2008).

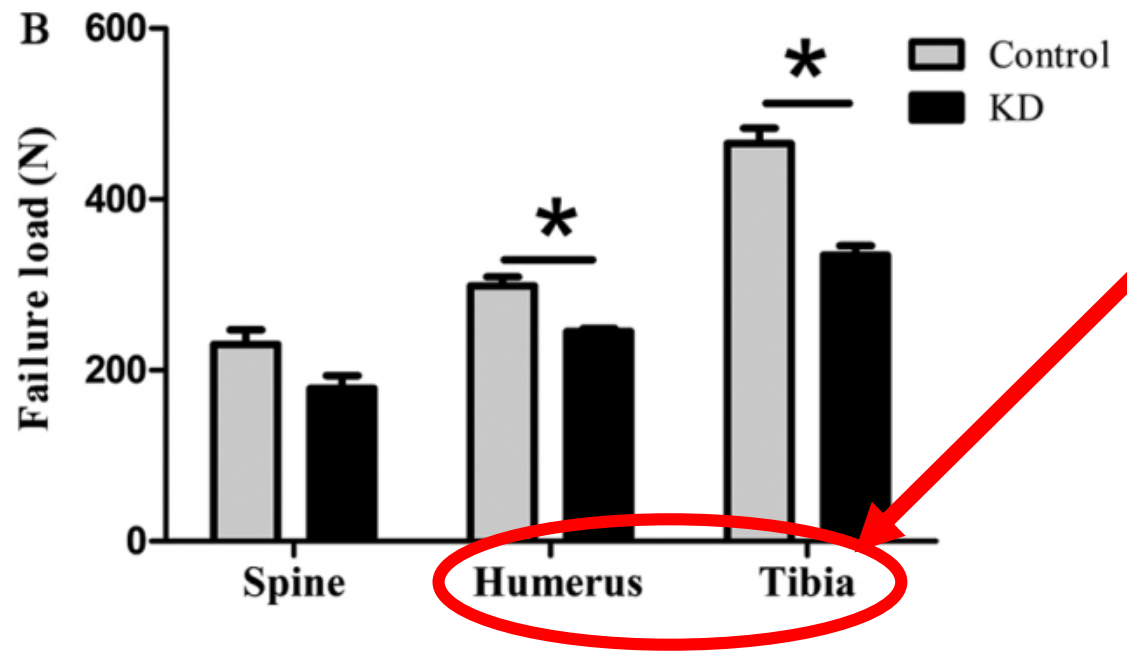
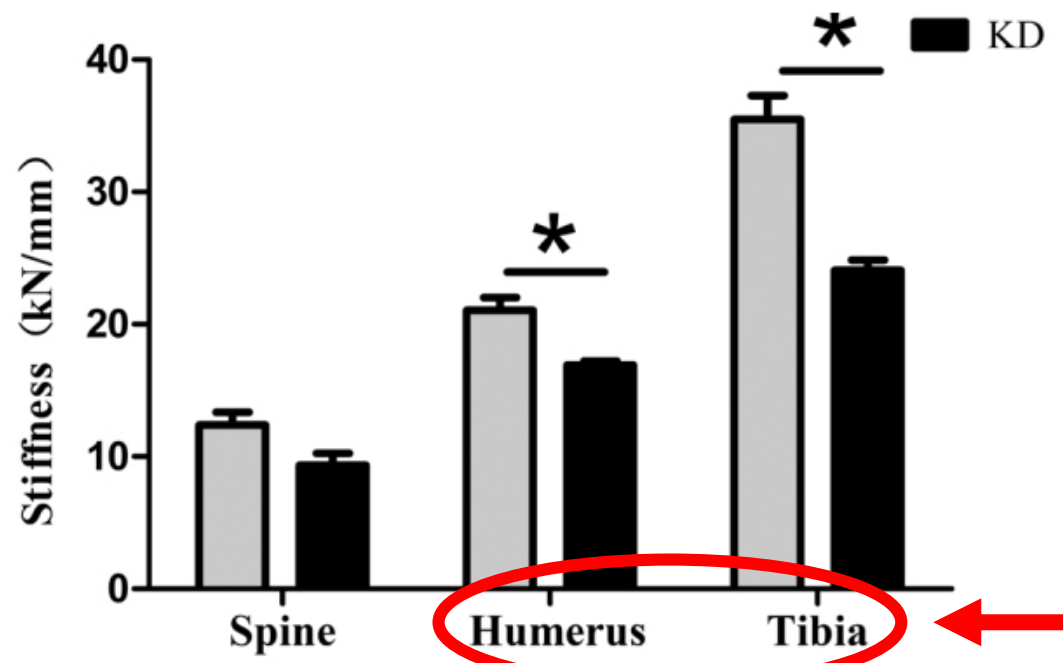
Pakankamas kalorijų kiekis kasdienei veiklai sparti kepenų ląstelėse (mitochondrijuose) vykstanti ketogeneze (Fukao et al. 2004).

GALIMOS GRĒSMĒS



Sectional view contrast of skeletal. Cross-sectional (upper panel) and sagittal (lower panel) plane micro-computed tomography images displaying changes in cancellous and cortical bone of the region of interest from three skeletal sites. KD, ketogenic diet.

Kaulų tankio pokyčiai taikant keto geninę mitybos strategiją laboratoriniams gyvūnams



Žastikaulio ir
blauzdikaulio sritis

Ding, J., Xu, X., Wu, X., Huang, Z., Kong, G., Liu, J., ... Zhu, Q. (2019). Bone loss and biomechanical reduction of appendicular and axial bones under ketogenic diet in rats. *Experimental and Therapeutic Medicine*. doi:10.3892/etm.2019.7241

Table I.

Comparison of basic nutrient content between the standard and the ketogenic diet (per 100 g).

Component/item	Standard diet	Ketogenic diet ^a
Energy (kJ)	1,338	2,804
Protein (g)	14.5	18.2
Fat (g)	4	65.1
Carbohydrates (g)	55.5	2.7
Dietary fibers (g)	4.5	7.4
Calcium (mg)	720	500
Phosphorus (mg)	600	300
Vitamin D (µg)	2.5	2.5

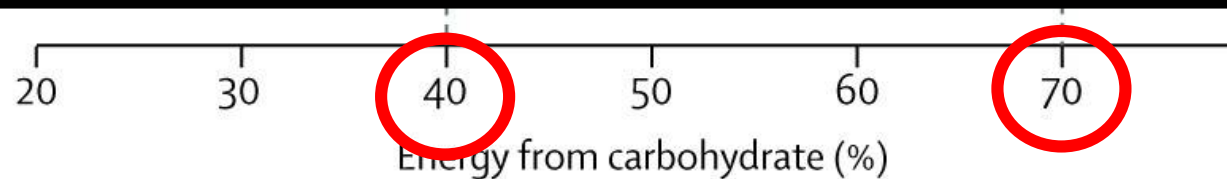
^aRatio of fat to carbohydrate and protein: $65.1/(2.7+18.2)=3.1:1$.

A Mortality in low vs moderate carbohydrate groups

- I Mean % carbohydrate for the cohort
- Mean % carbohydrate in the lowest quantile
- ◆ Mean % carbohydrate in the highest quantile

Adjusted HR (95% CI)

Study has found that diets **both low and high** in carbohydrates were linked with an increase in mortality, while moderate consumers of carbohydrates had the lowest risk of mortality. The study also found that low-carb diets that replace carbohydrates with proteins and fats from plant sources were associated with lower risk of mortality compared to those that replace carbohydrates with proteins and fat from animal sources.



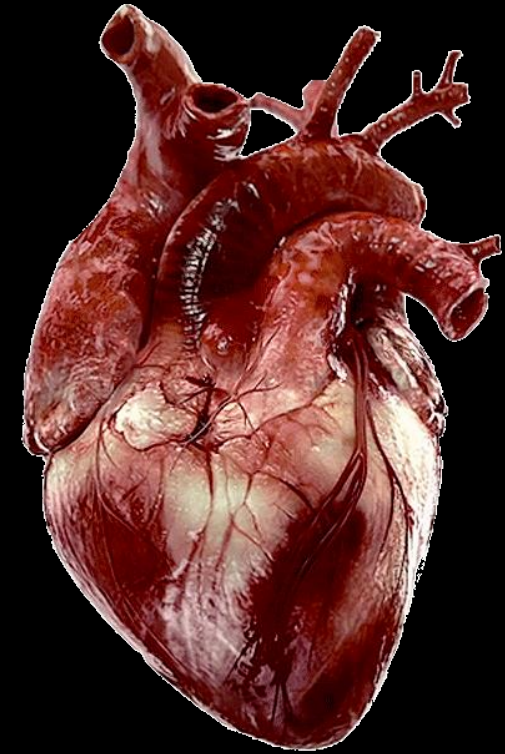
B Mortality in high vs moderate carbohydrate groups

Adjusted HR (95% CI), highest vs lowest quantile

**GLIKEMIJA IR INSULINO KIEKIS KRAUJYJE – faktoriai nurodantis
kaip efektyviai jus veiks Jūsų pasirinkta dieta!**

*Jeigu II tipo cukrinis diabetas dar nėra jūsų diagnozė –
apribokite tik aukšto GI angliavandenius.*

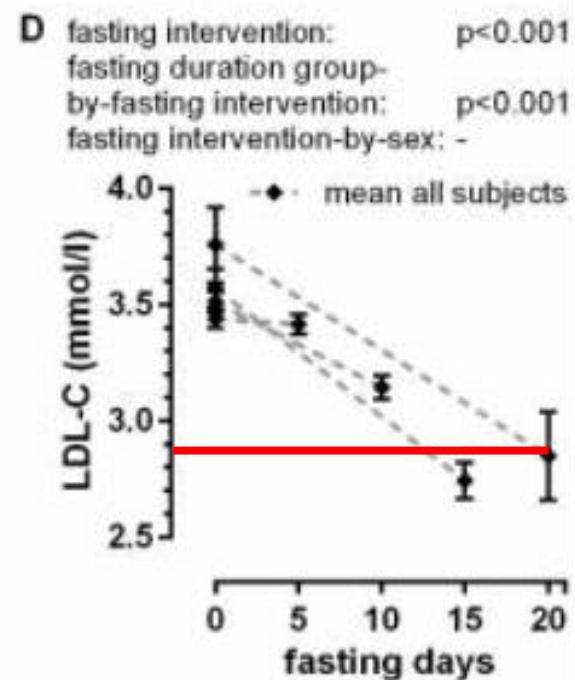
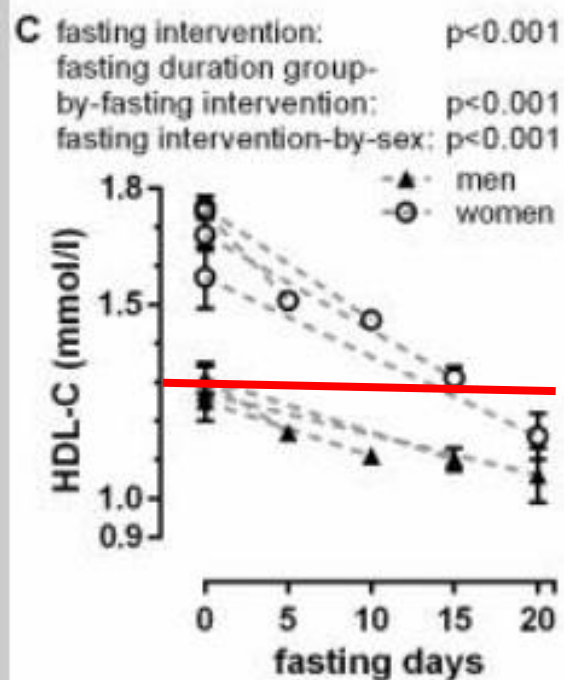
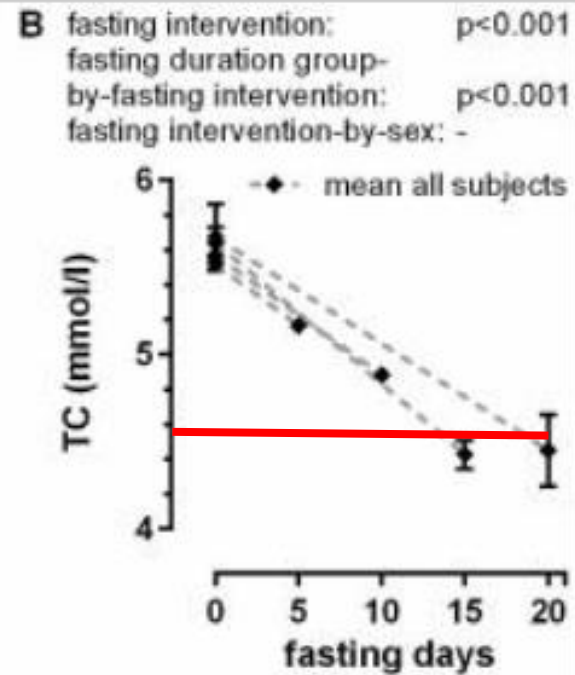
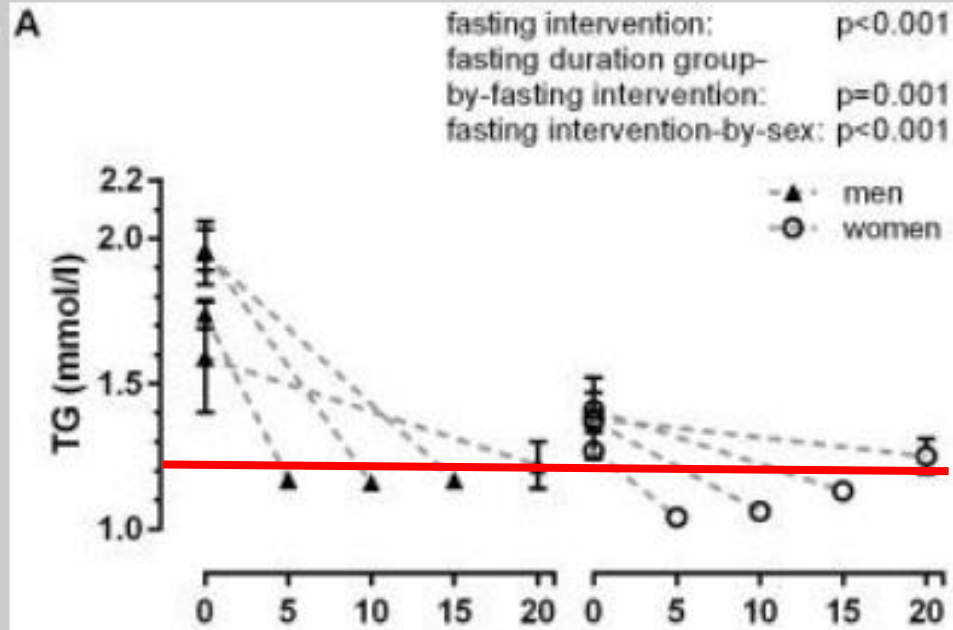
*Jeigu tai jūsų diagnozė – ribokite bendrą angliavandenių kiekį
savo dietoje!*



Hjorth, M. F., Zohar, Y., Hill, J. O., & Astrup, A. (2018). Personalized Dietary Management of Overweight and Obesity Based on Measures of Insulin and Glucose. *Annual Review of Nutrition*, 38(1)

Ar saugi yra M.Buchinger badavimo strategija?

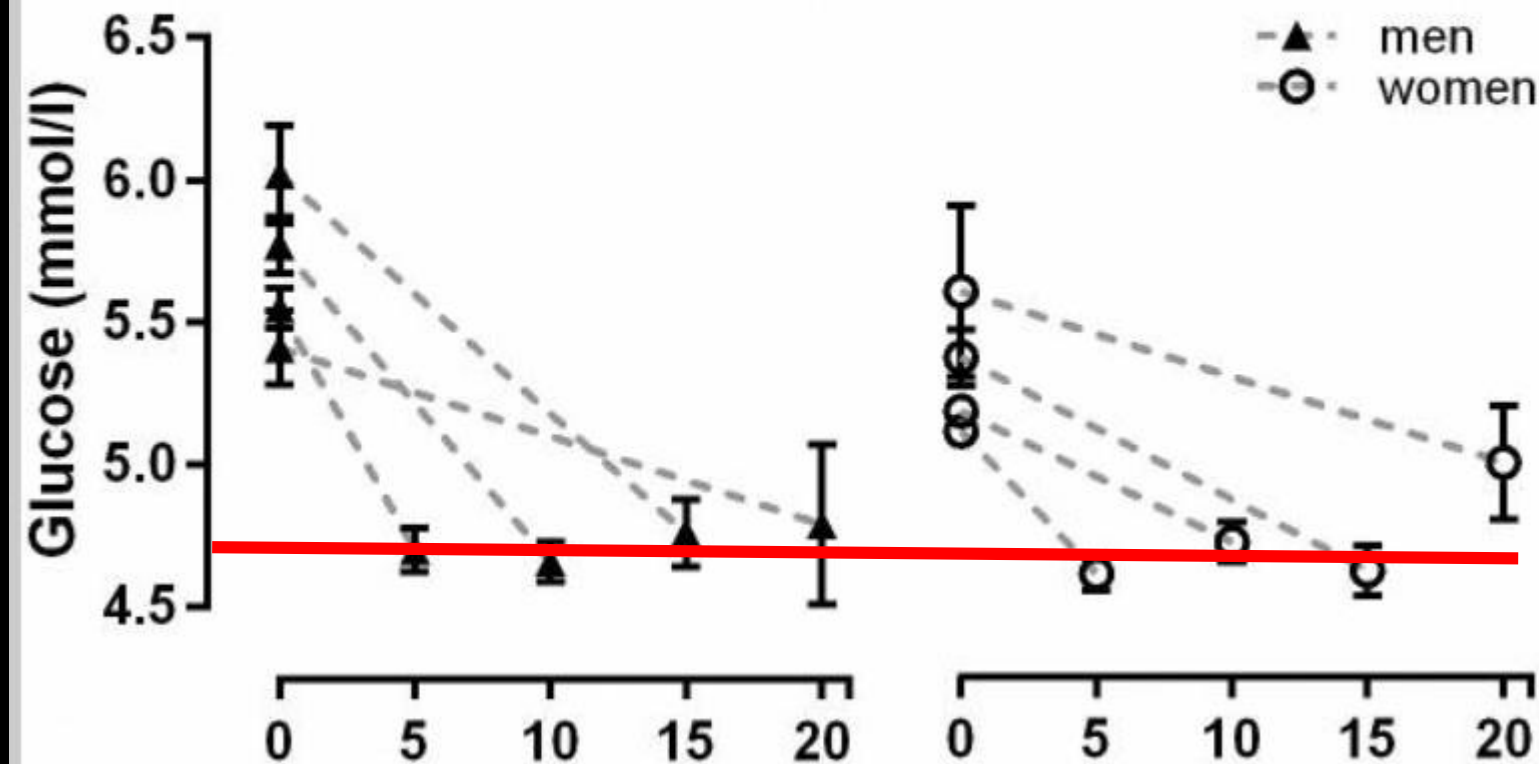
Wilhelmi de Toledo, F., Grundler, F., Bergouignan, A., Drinda, S., & Michalsen, A. (2019). Safety, health improvement and well-being during a 4 to 21-day fasting period in an observational study including 1422 subjects. *PLOS ONE*, 14(1), e0209353. doi:10.1371/journal.pone.0209353



A

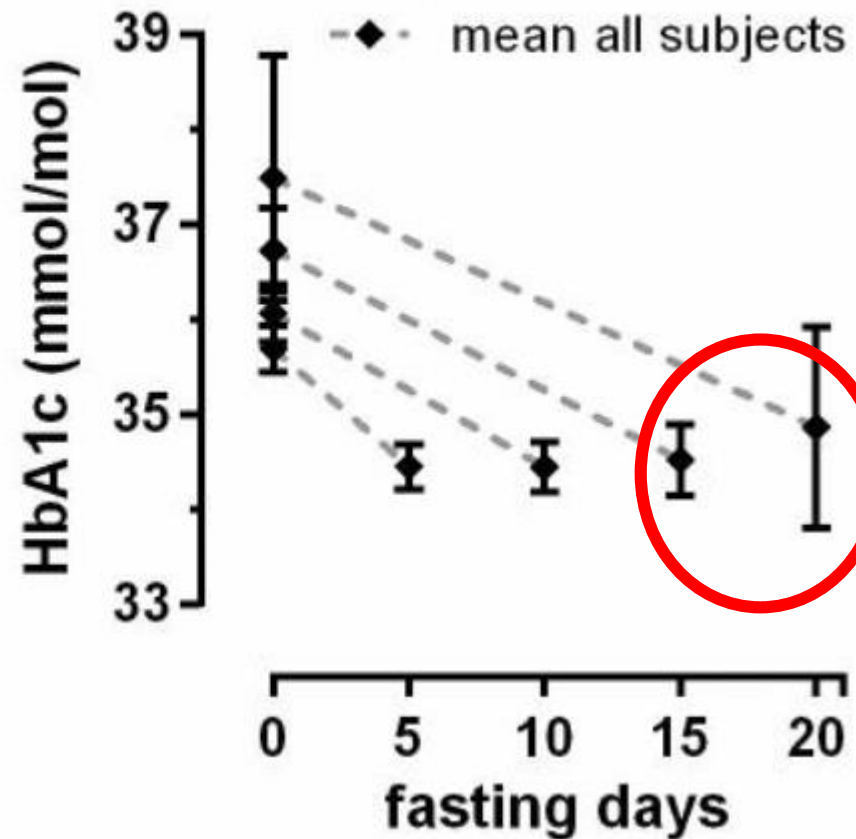
fasting intervention: $p < 0.001$
 fasting duration group-
 by-fasting intervention: $p = 0.03$
 fasting intervention-by-sex: $p < 0.001$

-▲- men
 -○- women

**B**

fasting intervention: $p < 0.001$
 fasting duration group-
 by-fasting intervention: $p < 0.001$
 fasting intervention-by-sex: $p = 0.03$

-◆- mean all subjects



The Diet that Delivers Big, Permanent Results from the #1 Bestselling Author of THE FAT SMASH DIET

SHRED

REVOLUTIONARY DIET



6 WEEKS
4 INCHES
2 SIZES

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A simple plan that targets both belly fat and visceral fat and produces fast results that last!

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...G PLAN THAT LETS YOU

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...CORD, M.A., R.D.
...tor, Prevention Magazine

...ROBERT C. ...

LOSE up to a POUND a DAY, Reclaim ENERGY and FOCUS, Upgrade Your LIFE

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THE Bulletproof Diet

DAVE ASPREY

FOREWORD BY NEW YORK TIMES BESTSELLING AUTHOR JJ VIRGIN

Dr. Phil McGraw

TURN YOUR WEIGHT LOSS VISION INTO REALITY

THE 20/20 DIET

20 KEY FOODS TO HELP YOU SUCCEED WHERE OTHER DIETS FAIL

Mistakes You Need To Know

The Juice Lady's

ANTI-INFLAMMATION DIET

28 DAYS to Restore Your Body and Feel Great

Cherie Calbom, MS, CN
Best-selling author of *The Juice Lady's Turbo Diet*

With CHEF ABBY FAMMARTINO

OVER 75 DELICIOUS RECIPES

July Diet

Make five decisions and break the fat habit for good

"Learn the secret that helped me lose 200 pounds."

Chantel Hobbs

Women's Health

PERFECT BODY DIET

THE ULTIMATE WEIGHT LOSS AND WORKOUT PLAN TO DROP STUBBORN POUNDS AND GET FIT FOR LIFE!

CASSANDRA FORSYTHE, MS

THE NO CRAVE DIET

Why tackling food cravings is the key to losing weight

Dr Penny Kendall-Reed and Dr Stephen Reed

Make-Ahead Recipes!

The Skinny Carbs Diet

Eat Pasta, Potatoes, and More! Use the power of resistant starch to make your favorite foods light fat and boost cravings!

David Feder, RD, and the Editors of Prevention. Recipes by David Bonom

ET

Ranked #1 Best Diet Overall by U.S. News & World Report

Weight Loss Solution

2 WEEKS TO DROP POUNDS, BOOST METABOLISM, AND GET HEALTHY

Marla Heller, MS, RD

Author of *The DASH Diet Action Plan*

	Low-carbohydrate	Low-fat/ vegetarian/vegan	Low-glycemic	Mediterranean	Mixed/balanced	Paleolithic
Health benefits relate to:	Emphasis on restriction of refined starches and added sugars in particular.	Emphasis on plant foods direct from nature; avoidance of harmful fats.	Restriction of starches, added sugars; high fiber intake.	Foods direct from nature; mostly plants; emphasis on healthful oils, notably monounsaturates.	Minimization of highly processed, energy-dense foods; emphasis on wholesome foods in moderate quantities.	Minimization of processed foods. Emphasis on natural plant foods and lean meats.
Compatible elements:	Limited refined starches, added sugars, processed foods; limited intake of certain fats; emphasis on whole plant foods, with or without lean meats, fish, poultry, seafood.					
And all potentially consistent with:	<u>Food, not too much, mostly plants^{a,b,c}.</u>					

^aFrom Reference 135.

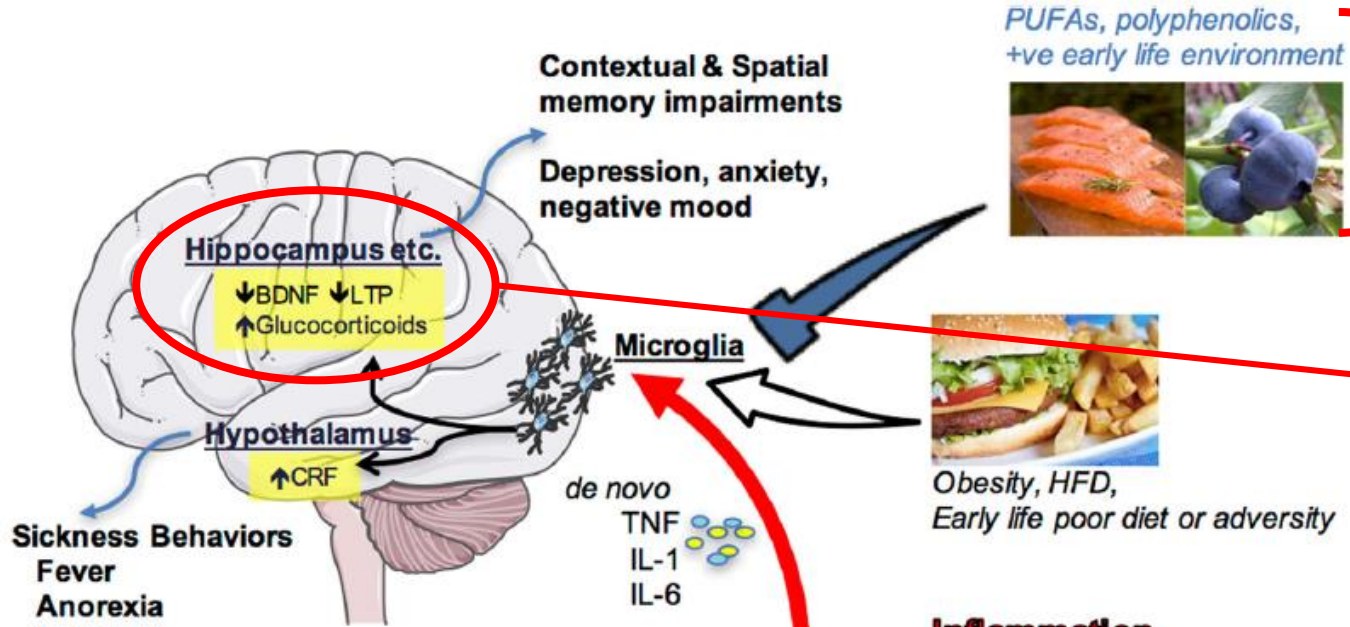
^bPortion control may be facilitated by choosing better-quality foods which have the tendency to promote satiety with fewer calories.

^cWhile neither the low-carbohydrate nor Paleolithic diet need be “mostly plants,” both can be.

AR Katz DL, Meller S. 2014.
Annu. Rev. Public Health. 35:83–103

Table 1 Basic varieties of dietary patterns^a

Dietary pattern
Low carbohydrate , including high protein, of either animal or plant origin
Low fat , including vegetarian and traditional Asian
Low glycemic
Mediterranean
Mixed, balanced
Paleolithic
Vegan
Other



Uždegimą slopinančios medžiagos



Gliukokortikoidai: kortizolis, hidroksizonas, kortikosteronas.

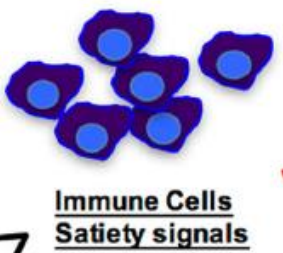
- Inflammation**
- ↑ Pro-inflammatory cytokines
 - ↑ Chemokines
 - ↑ Danger signals
 - ↑ Saturated Fatty Acids

Uždegimą sukeliančios medžiagos



Blood
 Humoral
 Lymphatic routes

Humoralinis organizmo kelias
 *limfa



Badavimas praktikuojamas tūkstantmečius įvairiuose žmonijos raidos epochose, natūraliais ar religiniais tikslais. Neseniai atlikti tyrimai suteikia daugiau „aiškumo“ apie badavimo teigiamą įtaką žmogaus sveikatai. Yra žinoma, kad lėtinis ir ūmus badavimas, mažina oksidacinius pažeidimus, slopina uždegiminius procesus, optimizuoja energijos apykaitą ir lėtina ląstelių senėjimą.

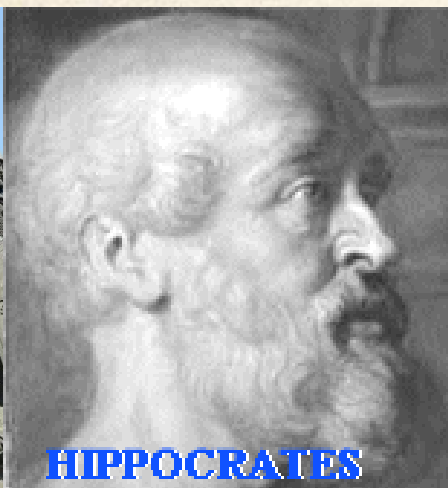
Atlikti laboratoriniai bandymai su **gyvūnais** rodo periodinio - pastovaus arba ne pastovaus badavimo teigiamą įtaką mažinant arba apsaugant nuo diabeto, vėžio, širdies ir neurodegeneracinių lygų. **Žmonėms** trumpalaikis badavimas padeda sumažinti, kontroliuoti nutukimą, hipertenziją, astmą ir reumatoidinį artritą.

Dažniausiai badavimas trunka nuo 1 dienos iki 3 savaičių.

fasting.



Miling Trichen

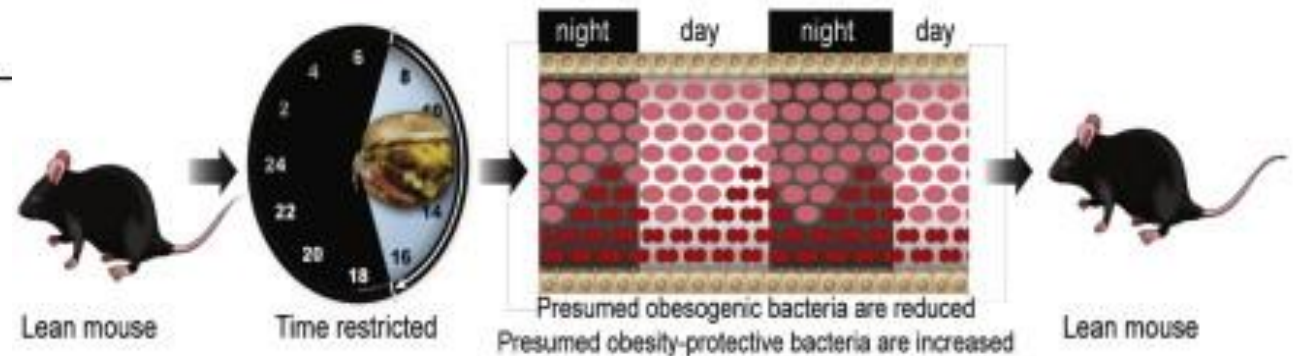
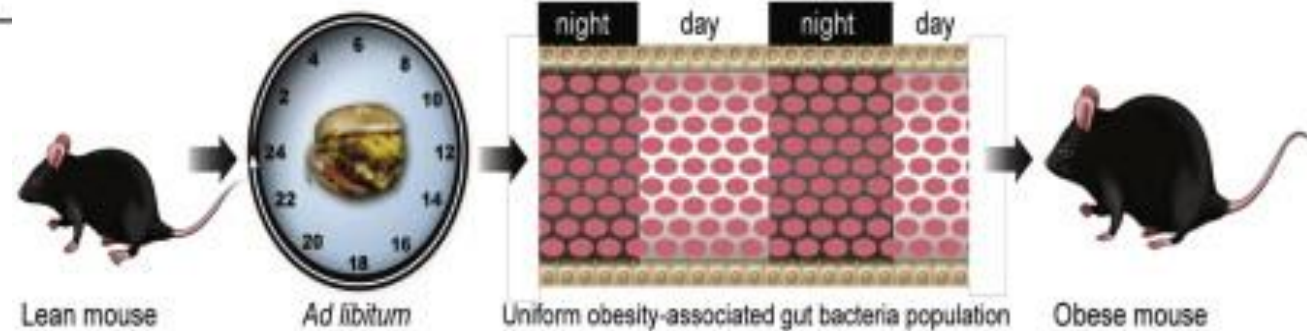
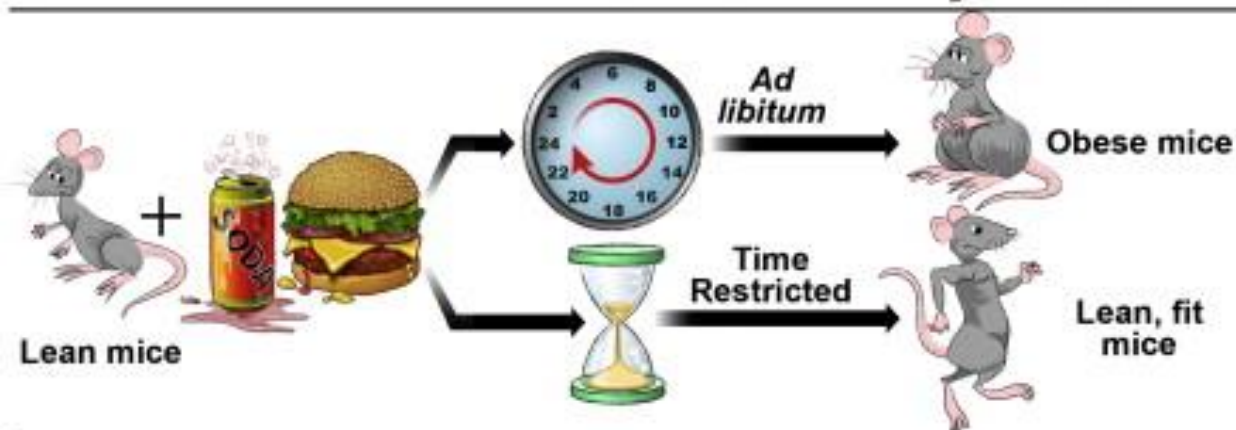
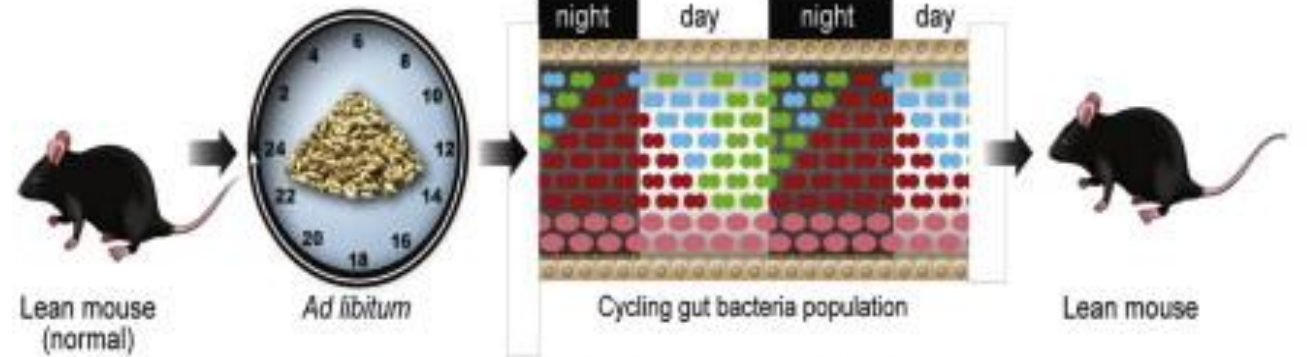
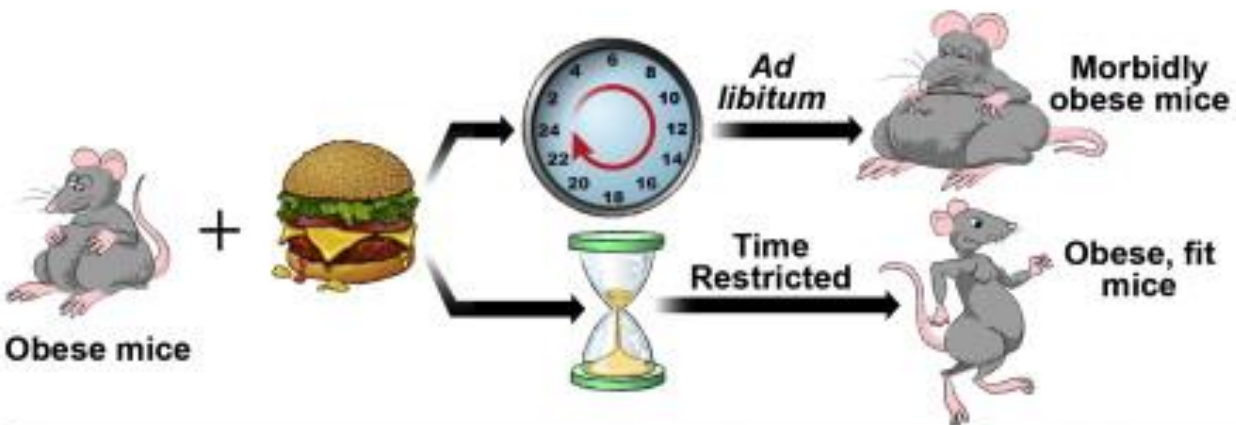


HIPPOCRATES



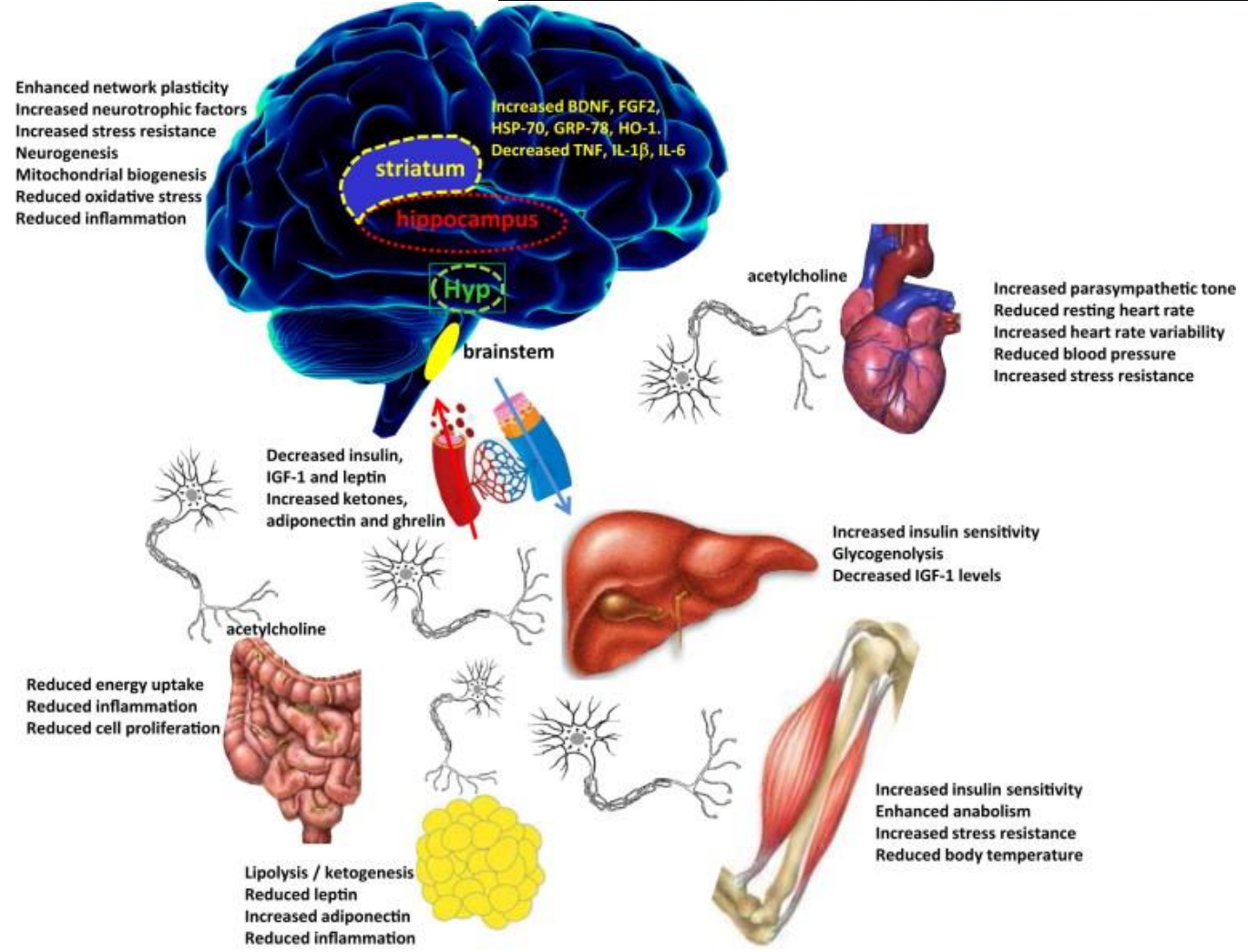
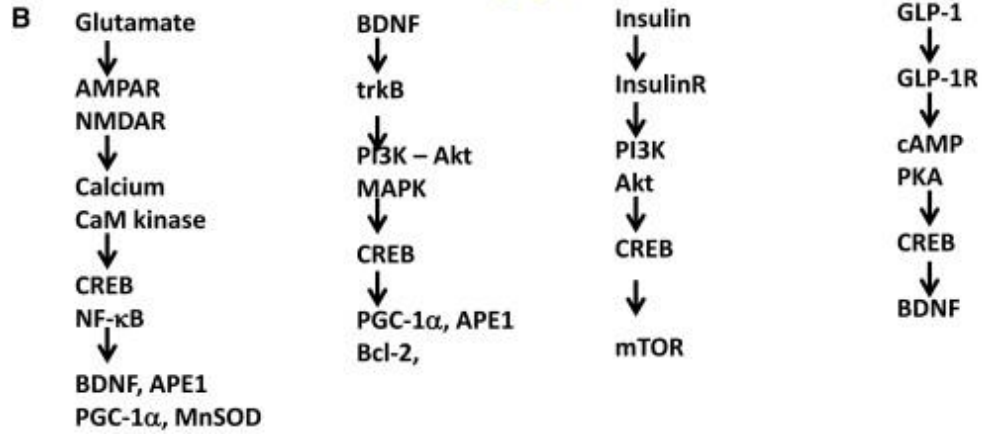
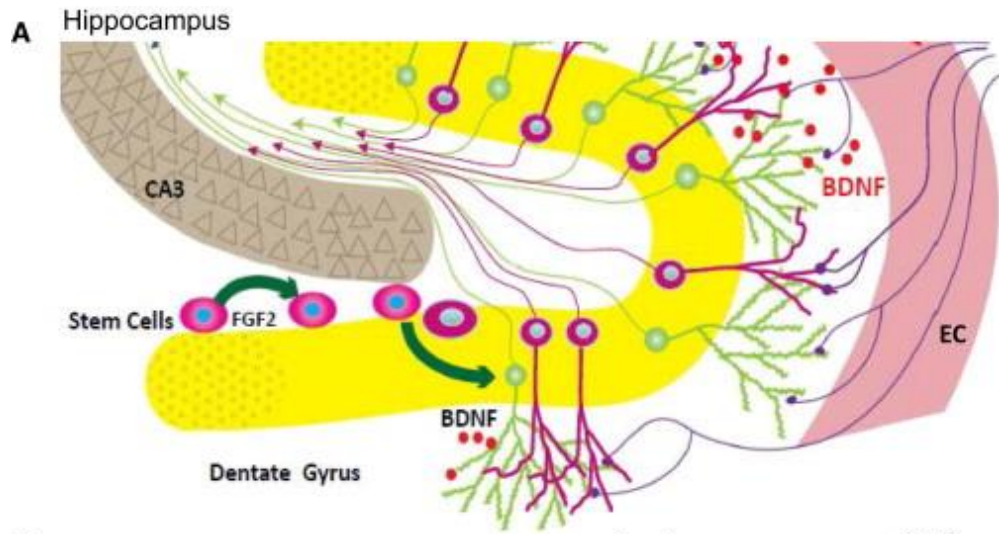
PYTHAGORAS





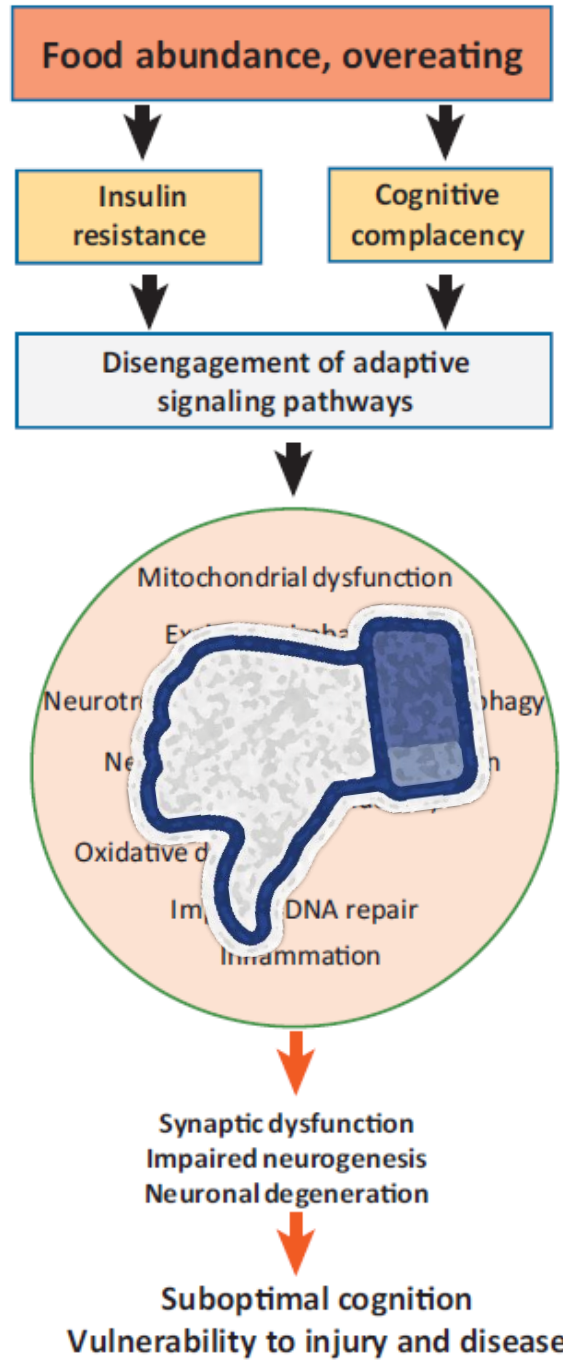
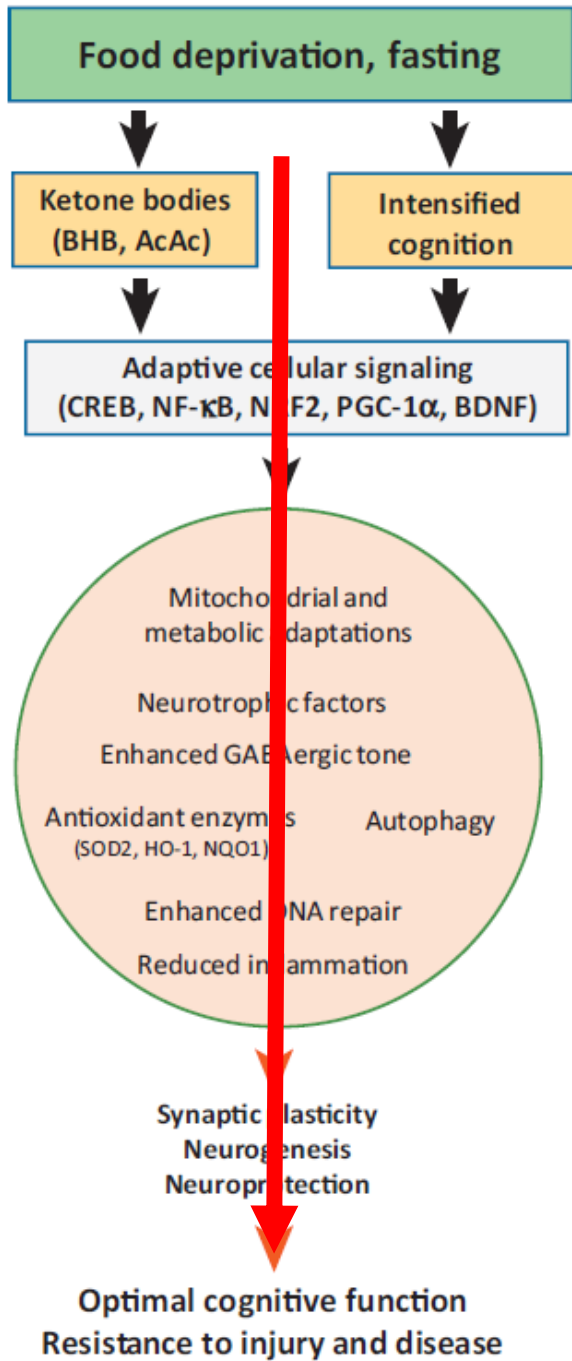
Chaix A, Zarrinpar A, Miu P, Panda S. Time restricted feeding is a preventative and therapeutic intervention against diverse nutritional challenges. Cell Metab. (2014).

Zarrinpar A, Chaix A, Yooseph S, Panda S. Diet and feeding pattern affect the diurnal dynamics of the gut microbiome. Cell Metab. (2014).



Neural Circuits and Cellular Signaling Pathways that Mediate Adaptive Responses of the Brain to Fasting

Pivotal Roles of the Nervous and Endocrine Systems as Mediators of Adaptive Responses of Major Organ Systems to Intermittent Fasting



Mattson, M. P. (2019). *An Evolutionary Perspective on Why Food Overconsumption Impairs Cognition*. *Trends in Cognitive Sciences*. doi:10.1016/j.tics.2019.01.003

Alzheimerio liga, fizinis krūvis ir atmintis – sinapsių plastiškumas!

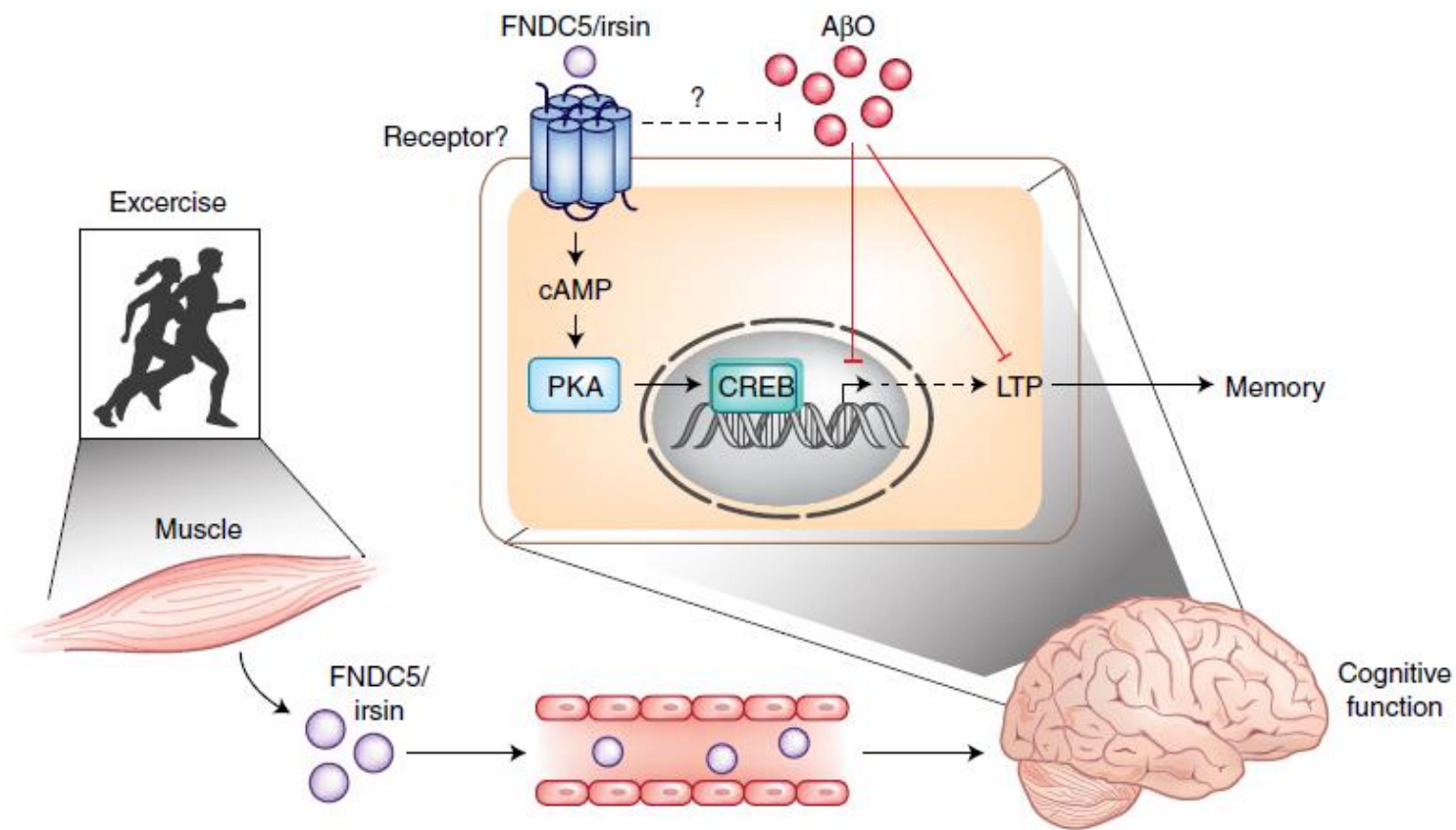


Fig. 1 | Exercise-induced FNDC5/irisin prevents decline in cognitive function. Lourenco et al.⁴ show that exercise induces FNDC5/irisin release from muscle. This messenger is transported to the brain through the circulation and prevents memory loss and improves synaptic plasticity. The mechanism by which it does so is not fully resolved, but FNDC5/irisin in the brain was shown to stimulate cAMP-PKA-CREB signaling and to prevent dendritic spine loss caused by AβO exposure.

Chen, X., & Gan, L. (2019). *An exercise-induced messenger boosts memory in Alzheimer's disease.* *Nature Medicine*, 25(1), 20–21. doi:10.1038/s41591-018-0311-4

Mindfulness streso valdymo programa ir kognityvinio elgesio terapija leidžia geriau kontroliuoti (pagumburio-hipofizės-antinksčių) HPA ašį!



Manigault, A. W., Shorey, R. C., Hamilton, K., Scanlin, M. C., Woody, A., Figueroa, W. S., ... Zoccola, P. M. (2019). Cognitive Behavioral Therapy, Mindfulness, and Cortisol Habituation: A Randomized Controlled Trial. *Psychoneuroendocrinology*. doi:10.1016/j.psyneuen.2019.03.009



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journal homepage: www.elsevier.com/locate/bbr



Behavioural
Brain
Research

Research report

Two-day fasting evokes stress, but does not affect mood, brain activity, cognitive, psychomotor, and motor performance in overweight women

Rima Solianik*, Artūras Sujeta

Institute of Sports Science and Innovations, Lithuanian Sports University, Sporto str. 6, Kaunas, Lithuania



ATLIKTI MATAVIMAI

Antropometrinis vertinimas

- TBF-300 body composition scale, Tanita, UK
- Leicester Height Meter, Invicta Plastics, UK



Aerobinio darbingumo vertinimas

- Ergometrics-800s, Ergoline Medical Measurement Systems, Germany
- S-625X, Polar Electro, Finland
- Jaeger/VIASYS Healthcare, Germany



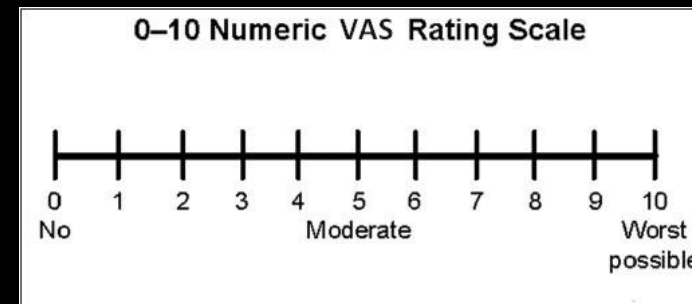
Gliukozės vertinimas

- CardioCheck PA analyzer
- finger-prick test



Apetito ir streso vertinimo skalės

Visual analog scale (*Krishnan, Hendriks, Hartvigsen, & de Graaf, 2016; Lesage, Berjot, & Deschamps, 2012*)



Nuotaikos vertinimo skalės

Brunel Mood Scale (*Terry, Lane, & Fogarty, 2003*)

Autonominio ŠKS atsako vertinimas

- (STUDY I) 12-lead ECG (Kaunas-load; Institute of Cardiology, Lithuania)
- (STUDY II-III) H2 HR sensor (Polar, Finland)



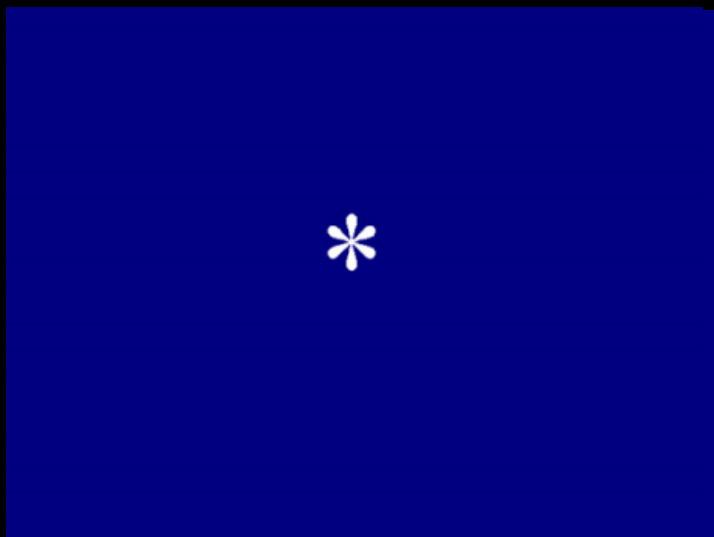
Galvos smegenų aktyvumo vertinimas

- fNIR Imager 1100; fNIR Devices LLC, USA



Kognityvinio ir psichomotorinio darbingumo vertinimas evaluation

ANAM-4; Vista Life Sciences, USA

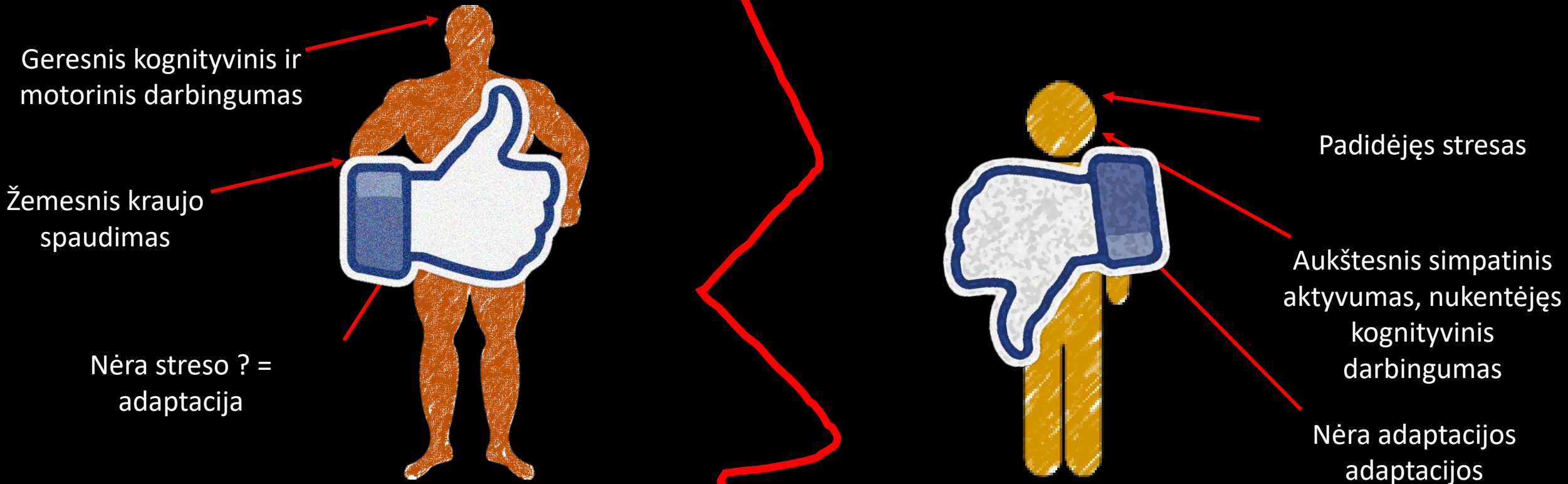


Maksimalios jėgos vertinimas

Jamar; Lafayette Instrument Company, USA



48 VALANDŲ BADAVIMO POVEIKIS SPORTININKUI VS NE SPORTININKUI



500-600 KCAL/d POVEIKIS NE SPORTININKUI

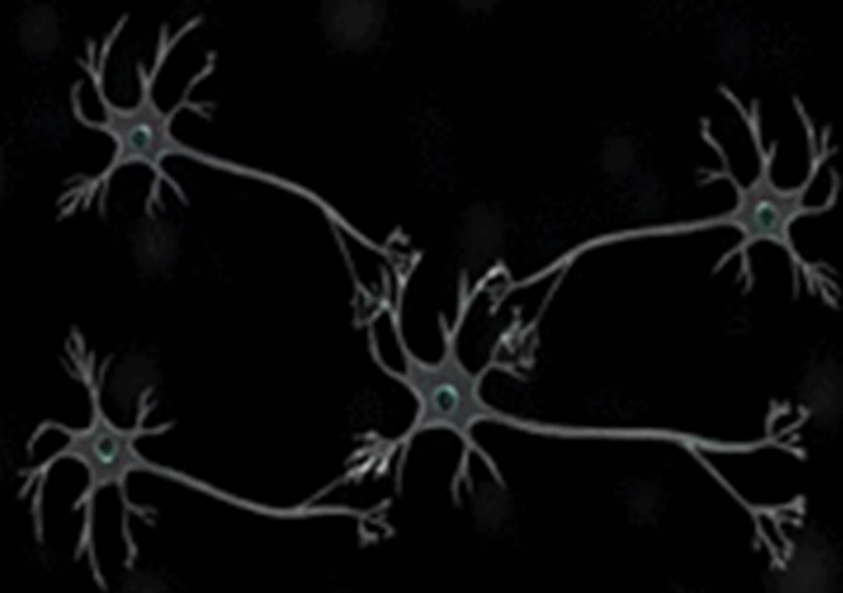
A hand is shown pouring a green liquid from a small, clear plastic container into a larger, clear glass. The background is a plain, light-colored surface.

MAŽAI KALORINGAS SUPER MAISTAS?

GERIAUSIA TAVO MITYBOS STRATEGIJA:

- FIZINIS KRŪVIS KASDIEN
- APRIBOK KALORIJAS
- ĮVAIRUS MAISTAS
- MIKRO, MAKRO MAISTO MEDŽIAGOS





Ačiū už dėmesį...

Dr. A. Sujeta



El. paštas – info@sujeta.lt