WE START AT 19.30 CET!!!

Boosting the immune system in the fight against viruses and other pathogens:

stress hormones, phytotherapy and natural immunity

Dr. Begoña Ruiz Núñez

PhD in Medical Sciences (University of Groningen)

MSc in clinical PNI and Evolutionary Medicine

Degree in Physiotherapy and Osteopathy

Health Coach and Therapist according to cPNI

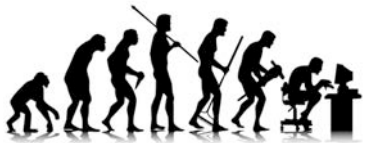
President of the AEPNIc

Co-CEO of Healthy Institute

Scientific advisor

@drbegoruiznunez

@healthyinstitute



AEPNIc

Asociación Española de Psico-Neuro-Inmunología Clínica

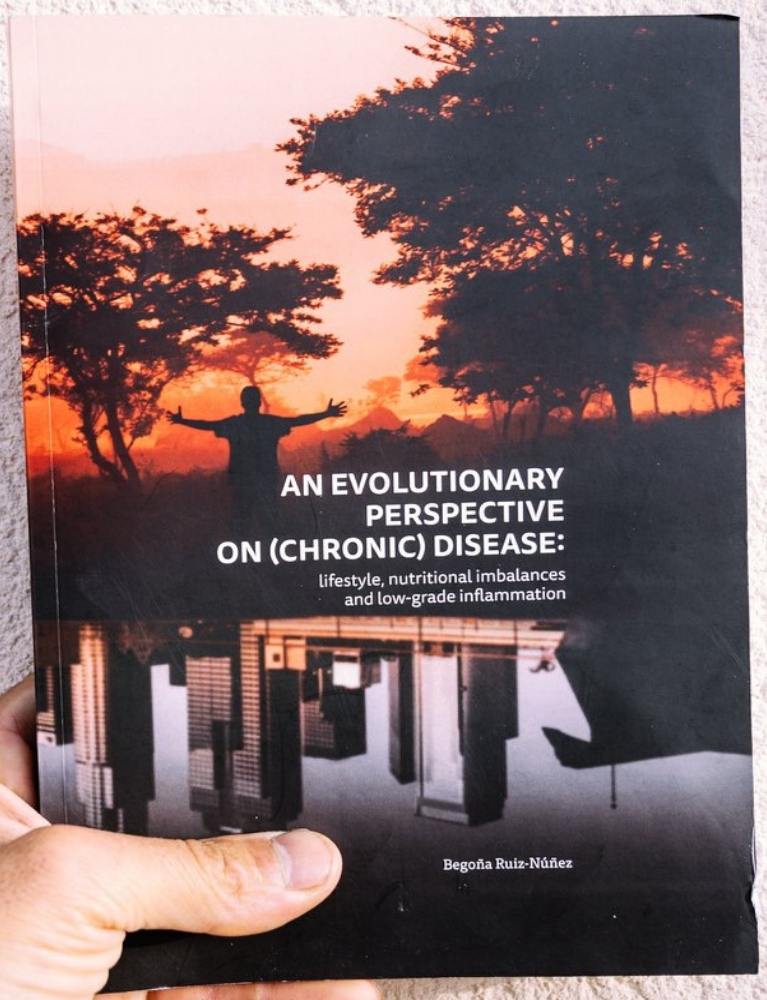
Healthy Institute

www.healthyinstitute.es

New Roots HERBAL

Healthy Institute

New Roots HERBAL


AN EVOLUTIONARY
PERSPECTIVE
ON (CHRONIC) DISEASE:
lifestyle, nutritional imbalances
and low-grade inflammation
Begoña Ruiz-Núñez

What is stress?

Any threat to our whole body homeostasis, real (physical) or imaginary (psychological), created by either exogenous or endogenous factors

McEwen BS. Allostasis and allostatic load: implications for neuropsychopharmacology. Neuropsychopharmacology, 2000;22 (2): 108-24.

Healthy Institute

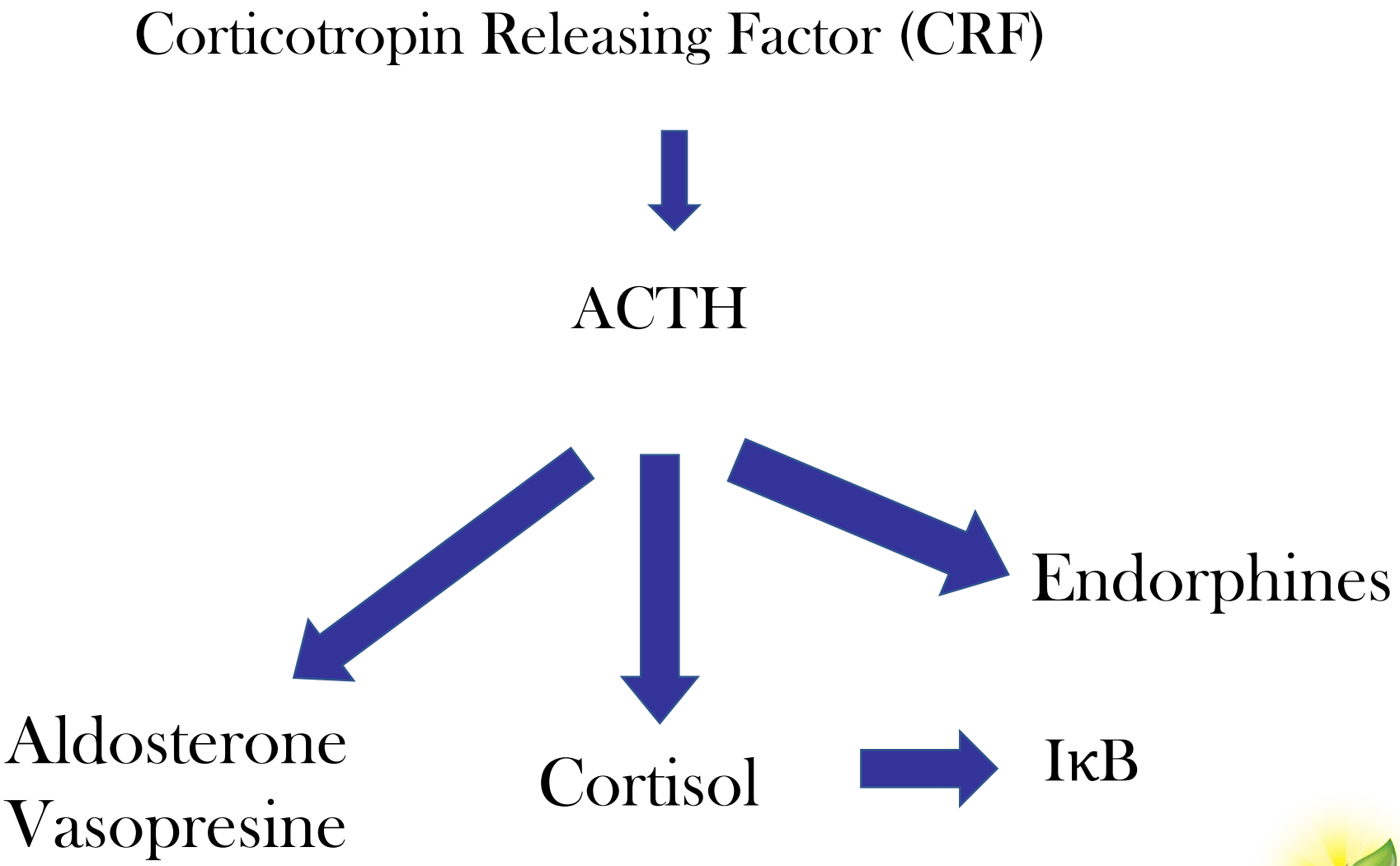
New Roots HERBAL

Stress

Healthy Institute

New Roots HERBAL

Stress: HPA axis



Baldwin AR. The NF-kappa B and I kappa B proteins: new discoveries and insights. Annu Rev Immunol. 1996;14:649-83.

Sympathetic Nervous System

Stress

HPA axis

Noradrenalin

Cortisol

NFκB

IκB

Inflammation

Healthy Institute

Baldwin AR. The NF-kappa B and I kappa B proteins: new discoveries and insights. Annu Rev Immunol. 1996;14:649-83.

New Roots HERBAL

Homo sapiens sapiens' immune challenges

- ✓**Intense**
- ✓**Short**
- ✓**Easily identifiable**

ACUTE INFLAMMATION

Healthy Institute

New Roots HERBAL

Immune challenges nowadays

- ✓Low intensity
- ✓Long duration
- ✓Sometimes we don´t even know

CHRONIC INFLAMMATION

Healthy Institute

New Roots HERBAL

Table 1 Lifestyle and environmentally related metaflammatory 'inducers'

Pro-inflammatory	Anti-inflammatory
Lifestyle	
Exercise	Exercise/physical activity/fitness
Too little (inactivity)	'Healthy' obesity
Too much	Intensive lifestyle change
Nutrition	Nutrition
Alcohol (excessive)	Alcohol
Excessive energy intake	Capsaicin
'Fast food'/western style diet	Cocoa/chocolate (dark)
Fat	Dairy calcium
Saturated	Eggs
Trans fatty acids	Energy intake (restricted)
High-fat diet	Fish/fish oils
High N6 : N3 ratio	Fibre (high intake)
Fibre (low intake)	Garlic
Fructose	Grapes/raisons
Glucose	Herbs and spices
High glucose/GI foods	Lean game meats
Glycaemic load	Low GI foods
Glycaemic status	Low N6 : N3 ratio
Meat (domesticated)	Mediterranean diet
Salt	Fruits/vegetables
Sugar-sweetened drinks	Mono-unsaturated fats
Starvation	Nuts
Obesity/weight gain	Olive oil
Smoking	Soy protein
Sleep deprivation	Tea/green tea
Stress/anxiety/depression/ 'burn out'	Vinegar
'Unhealthy' lifestyle	Smoking cessation
	Weight loss
Environment	
Age	
Air pollution	
Indoor/outdoor	
Atmospheric CO_2	
Perceived organizational justice (low)	
'Sick building syndrome'	
Second-hand smoke	
SE status (low)	

Pro-inflammatory and anti-inflammatory stimuli

Egger, G., & Dixon, J. (2011). Non-nutrient causes of low-grade, systemic inflammation: support for a 'canary in the mineshaft' view of obesity in chronic disease. Obesity reviews, 12(5), 339-345.

Before...

Healthy Institute

New Roots HERBAL

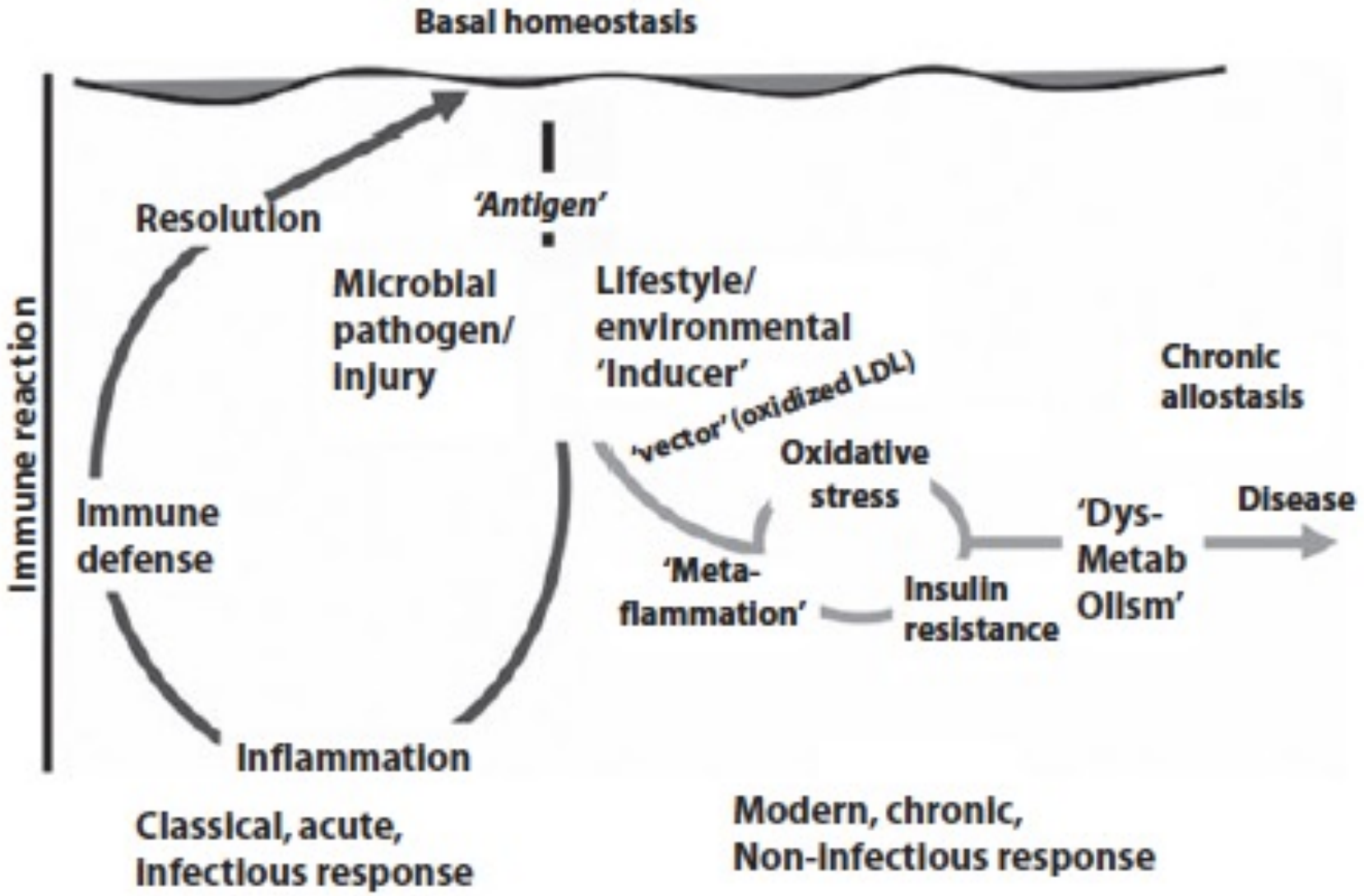
Now...

Healthy Institute

New Roots HERBAL


giferaft.tumblr.com

Acute vs chronic inflammation



Egger, G., & Dixon, J. (2010). Inflammatory effects of nutritional stimuli: further support for the need for a big picture approach to tackling obesity and chronic disease. Obesity reviews, 11(2), 137-149.

Pathological situation

Stress

Sympathetic Nervous System

HPA axis

Noradrenaline

Cortisol

NFκB

IκB

Inflammation +++

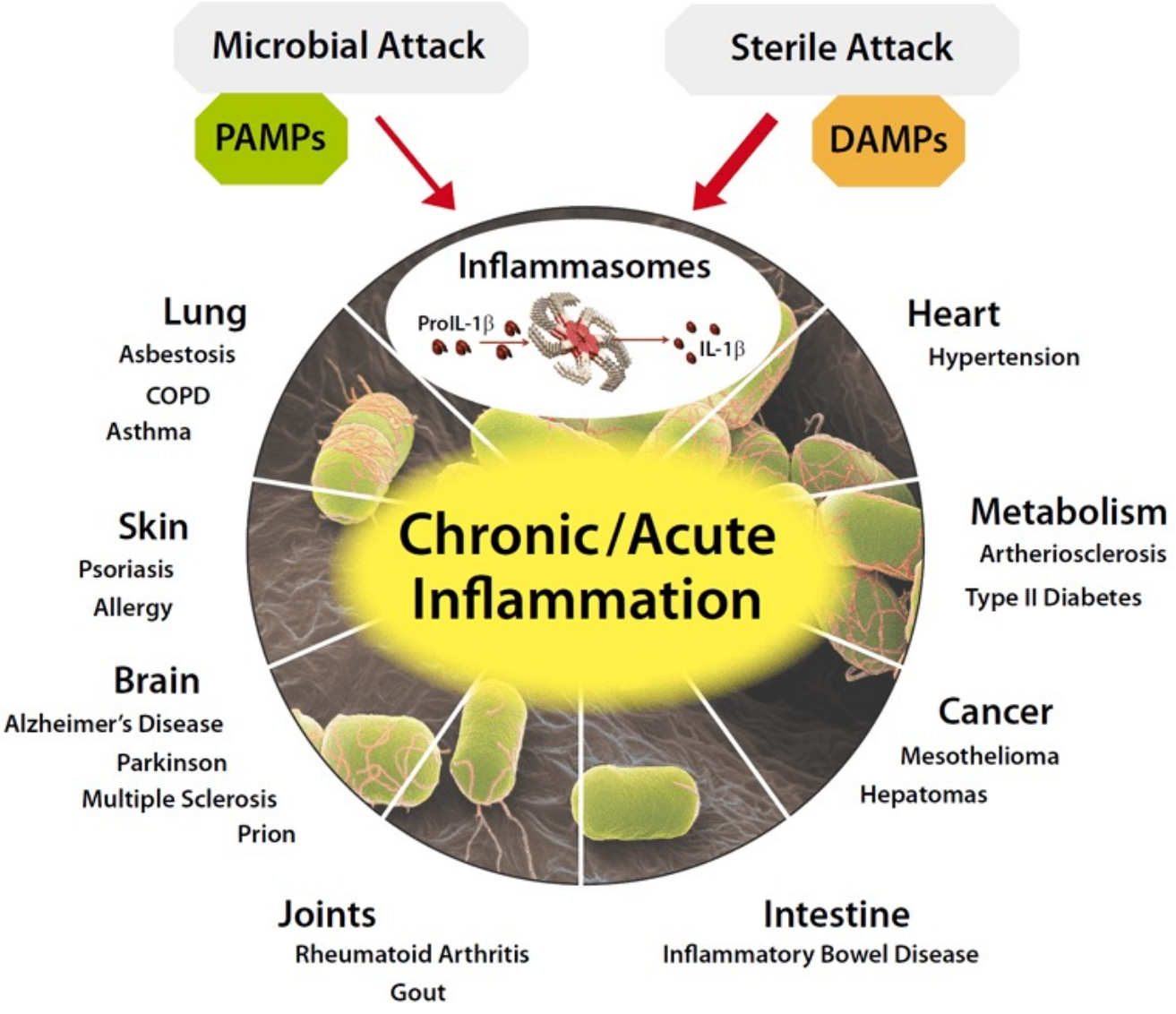
Skin/atopic symptoms
Immunesuppresion

- ***Baldwin AR. The NF-kappa B and I kappa B proteins: new discoveries and insights. Annu Rev Immunol. 1996;14:649-83.***
- ***Avitsur R, Kavelaars A, Heijnen C, Sheridan JF. Social stress and the regulation of TNF-alfa secretion. Brain Behav Immun. 2005;19(4):311-7.***

Healthy Institute

New Roots HERBAL

Our inflammasome today

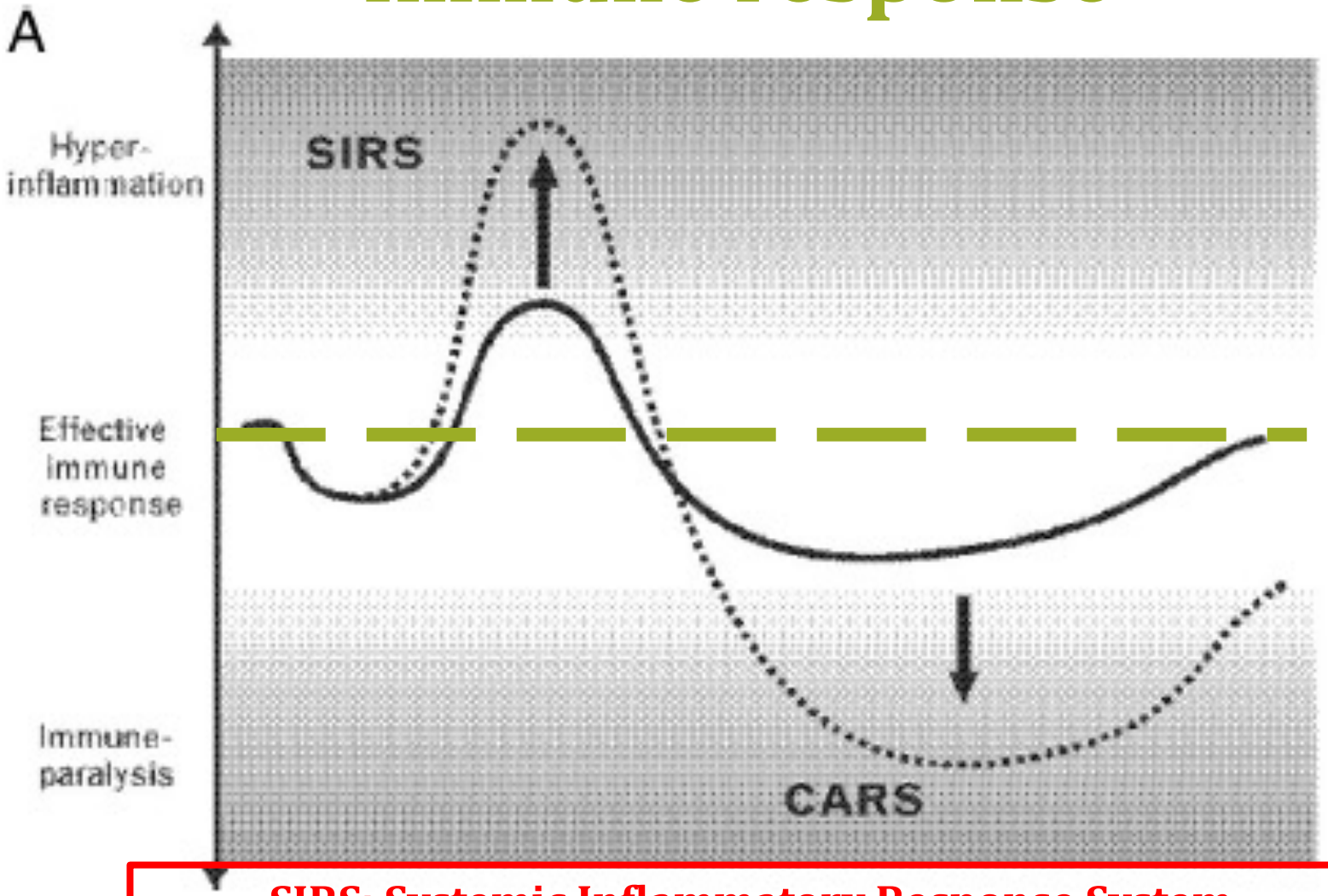


Healthy Institute

https://www.labclinics.com/rol-fisiologico-inflamasomas/

New Roots HERBAL

Immune response



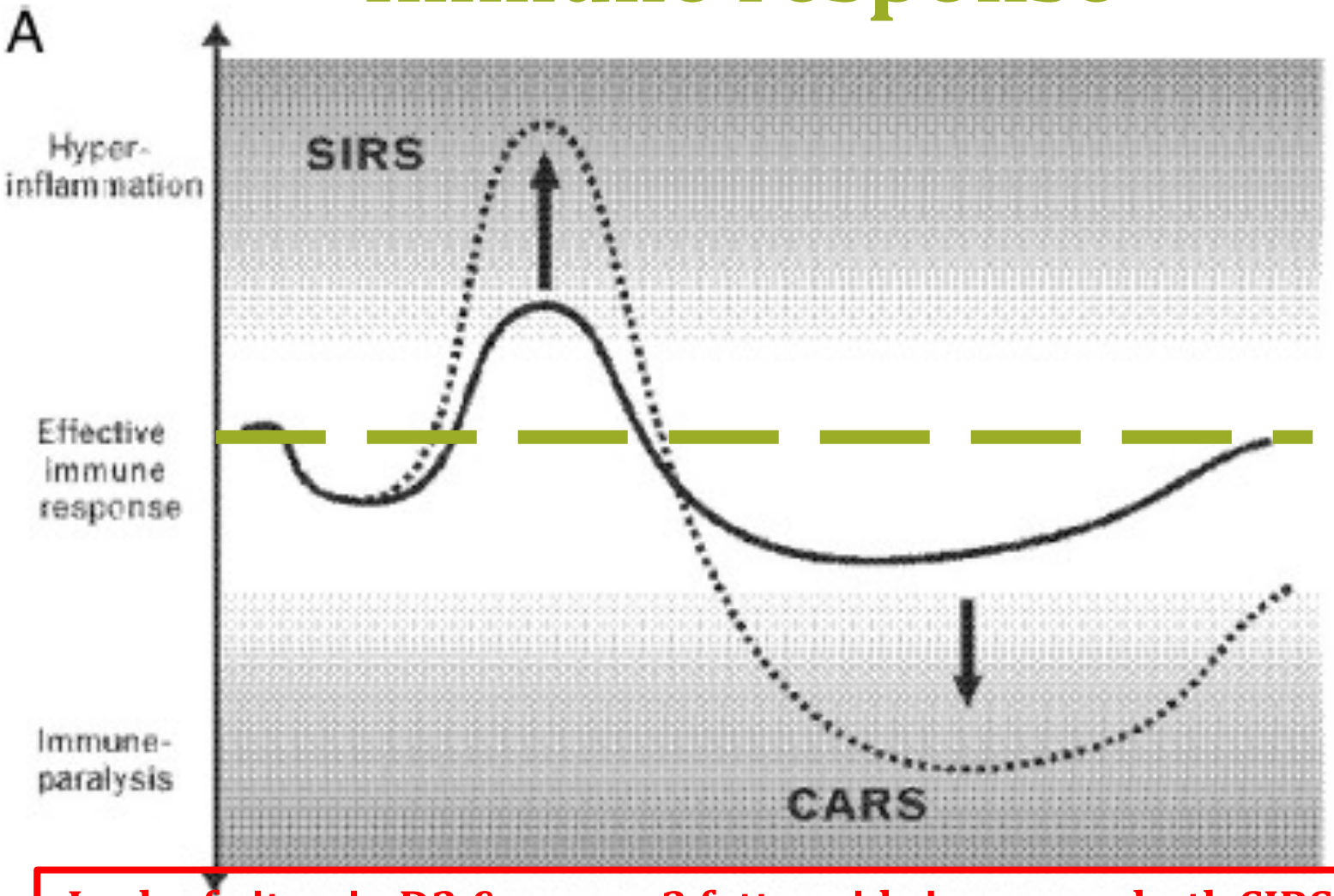
SIRS: Systemic Inflammatory Response System
CARS: Counter-Anti-inflammatory Response System

RUIZ-NÚÑEZ, Begoña, et al. Lifestyle and nutritional imbalances associated with Western diseases: causes and consequences of chronic systemic low-grade inflammation in an evolutionary context. The Journal of nutritional biochemistry, 2013, vol. 24, no 7, p. 1183-1201.

Healthy Institute

New Roots HERBAL

Immune response



Lack of vitamin D3 & omega 3 fatty acids increases both SIRS and CARS intensity and duration

RUIZ-NÚÑEZ, Begoña, et al. Lifestyle and nutritional imbalances associated with Western diseases: causes and consequences of chronic systemic low-grade inflammation in an evolutionary context. The Journal of nutritional biochemistry, 2013, vol. 24, no 7, p. 1183-1201.

Healthy Institute

New Roots HERBAL

What is the duration of an effective immune response?

Table 6 Total consumption time in human evolution

Species	Date range (Ma, ka)	Body mass (kg)	Sickness-related metabolic rate[a] (kJ/day)	Stored energy (kJ)	Total consumption time (day)
H. ergaster	1.9–1.7 Ma	66	11,956	485,500	40.6
H. erectus	1.8 Ma–200 ka	66	11,956	485,500	40.6
H. neanderthalensis	250 ka–30 ka	70	12,313	509,846	41.4
H. sapiens	100 ka–1900	65	11,865	377,130	31.8
H. sapiens	Today (USA)	86	13,648	558,908	41.0

3-4 days of innate response
3-4 weeks of adaptive response
Normal=4-5 weeks

From day 42: Low grade inflammation=chronic disease=immunesuppresion

Healthy Institute

Straub, R. H. (2012). Evolutionary medicine and chronic inflammatory state—known and new concepts in pathophysiology. Journal of molecular medicine, 90(5), 523-534.

New Roots HERBAL

What do we find in severe COVID-19?

Temperature	
<38·4°C	0
38·4–39·4°C	33
>39·4°C	49
Organomegaly	
None	0
Hepatomegaly or splenomegaly	23
Hepatomegaly and splenomegaly	38
Number of cytopenias*	
One lineage	0
Two lineages	24
Three lineages	34

Triglycerides (mmol/L)	
<1·5 mmol/L	0
1·5–4·0 mmol/L	44
>4·0 mmol/L	64
Fibrinogen (g/L)	
>2·5 g/L	0
≤2·5 g/L	30
Ferritin ng/ml	
<2000 ng/ml	0
2000–6000 ng/ml	35
>6000 ng/ml	50
Serum aspartate aminotransferase	
<30 IU/L	0
≥30 IU/L	19

Known immunosuppression†	
No	0
Yes	18

FEVER,
HEPATO & ESPLENOMEGALIA
CITOPENIAS
HIGH TRIGLYCERIDES
HIGH FERRITIN
INCREASED COAGULATION

HIPERINFLAMMATION WITHOUT **MODULATION**

Healthy Institute

Mehta, P., McAuley, D. F., Brown, M., Sanchez, E., Tattersall, R. S., & Manson, J. J. (2020). COVID-19: consider cytokine storm syndromes and immunosuppression. The Lancet.

New Roots HERBAL

Healthy lifespan
Lifestyle

ORIGINAL RESEARCH & CONTRIBUTIONS
Special Report

Lifestyle Medicine: A Brief Review of Its Dramatic Impact on Health and Survival

Balazs I Bodai, MD, FACS; Therese E Nakata, STAR Provider, CWFPBN; William T Wong, MD; Dawn R Clark, MD, FACOG; Steven Lawenda, MD, ABFM; Christine Tsou, MD; Raymond Liu, MD; Linda Shi
Neil Cooper, MD;
Michael Rehbein, MD, FACP; Benjamin P Ha, MD, ABFM; Anne McKeiman, MD, FACOG; Rajiv Misquitta, MD;
Pankaj Vij, MD, FACP; Andrew Klonecke, MD; Carmelo S Mejia, MD; Emil Dionysian, MD, FACOS; Sean Hashmi, MD, FACM; Michael Greger, MD, FACLM; Scott Stoll, MD, FABPMR; Thomas M Campbell, MD
E-pub: 09/20/2017
Perm J 2018;22:17-025 https://doi.org/10.7812/TPP/17-025

- Developed countries are going through a severe health crisis
- Disease= wrong lifestyle choices
- Scientific studies, WITHOUT EXCEPTION, point towards chronic diseases (CVD, cancer and type 2 diabetes included) as the result of wrong lifestyle choices
- The basis of a wrong lifestyle is bad nutrition and physical inactivity

Healthy Institute

New Roots HERBAL

What is the solution?

RELATIONSHIPS

BIOLOGY

FOOD & NUTRITION

GENETICS

ENVIRONMENT

IKIGAI

MOVEMENT

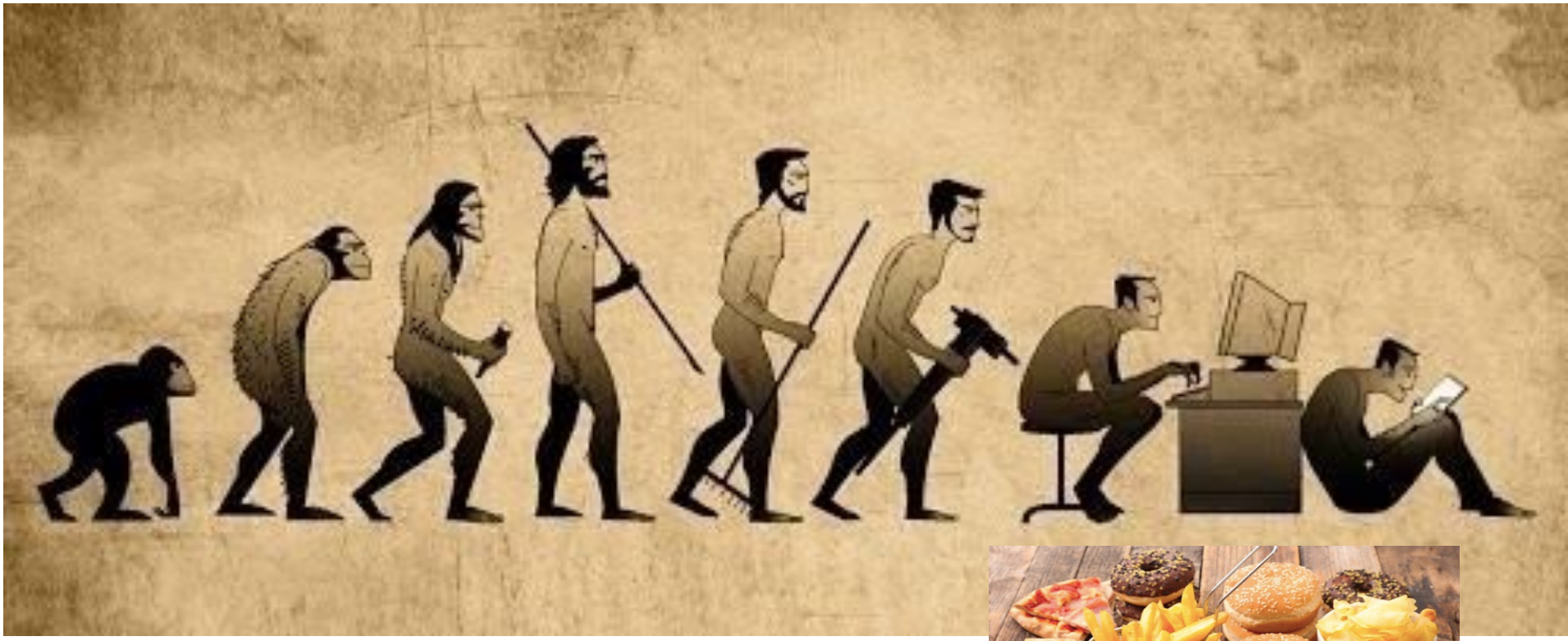
EVOLUTIONARY COHERENCE!

Ruiz-Núñez, B et al. (2013). Lifestyle and nutritional imbalances associated with Western diseases: causes and consequences of chronic systemic low-grade inflammation in an evolutionary context. The Journal of nutritional biochemistry, 24(7), 1183-1201.

Healthy Institute

New Roots HERBAL

Evolution?



Healthy Institute

New Roots HERBAL

Morbidity with COVID-19
Risk factors

- ✓ The Lancet
- ✓ 191 patients from Wuhan:

  - ➢ **Elderly people**
  - ➢ **Coagulation problems**
  - ➢ **Symptoms of septicemia (blood poisoning)**

Morbidity increases with low-grade inflammation

Healthy Institute

Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., ... & Guan, L. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. The Lancet.

New Roots HERBAL

Morbidity with COVID-19
Risk factors

50% of all patients suffered from:

- Hypertension (30%)
- Diabetes (19%)
- Coronary artery disease(8%).
- 10% death increase risk for each year of age
- Medium age of the deceased was 69
- Medium age of the **survivors** was 52

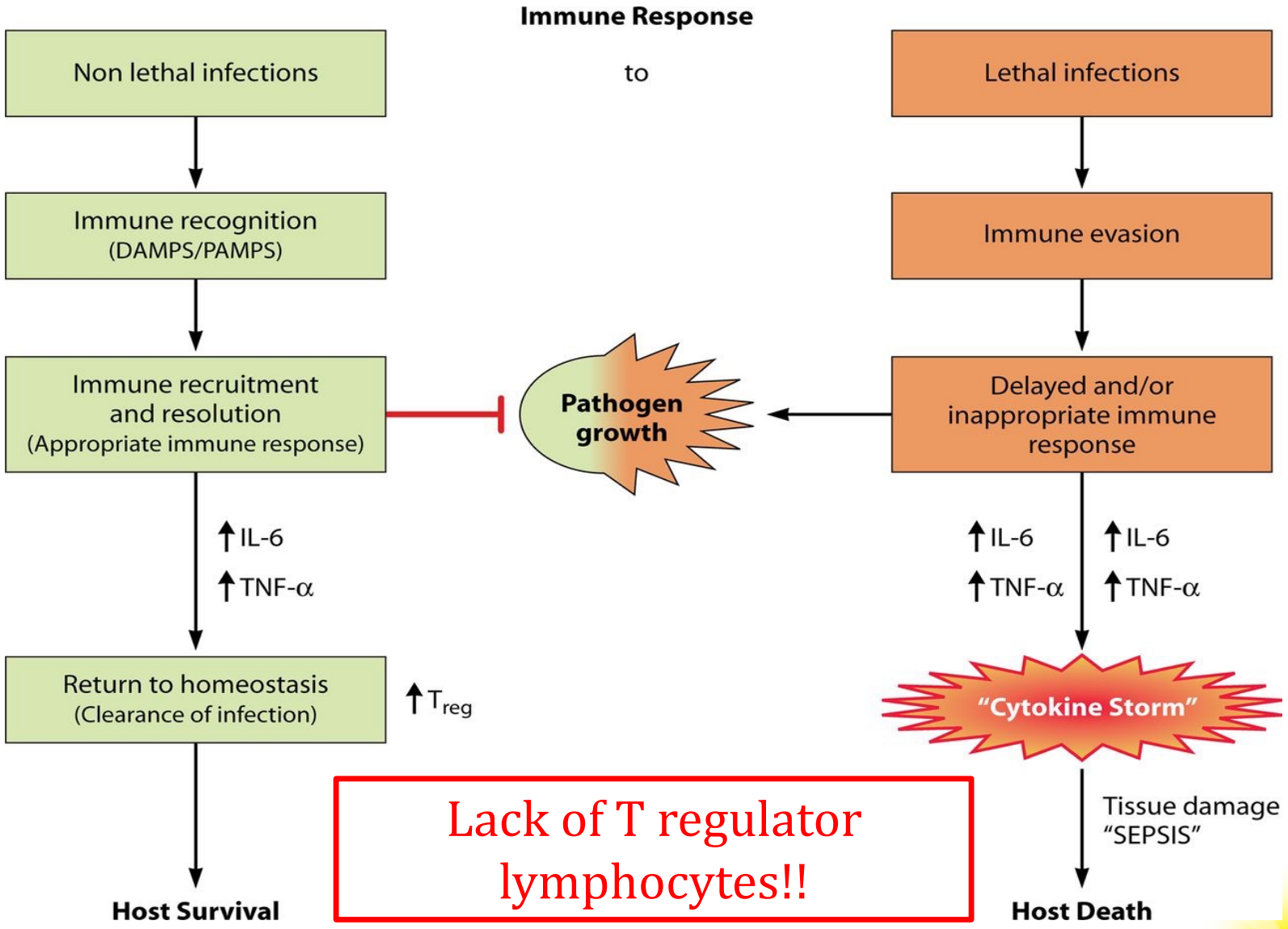
Morbidity increases with low-grade inflammation

Healthy Institute

Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., ... & Guan, L. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. The Lancet.

New Roots HERBAL

Cytokine storm



Lack of T regulator lymphocytes!!

D'Elia, R. V., Harrison, K., Oyston, P. C., Lukaszewski, R. A., & Clark, G. C. (2013). Targeting the "cytokine storm" for therapeutic benefit. Clin. Vaccine Immunol., 20(3), 319-327.

Healthy Institute

New Roots HERBAL

Our immune system has the capability to STOP the entrance of microbes

nature COMMUNICATIONS

ARTICLE

https://doi.org/10.1038/s41467-021-22036-z OPEN

Exposure to SARS-CoV-2 generates T-cell memory in the absence of a detectable viral infection

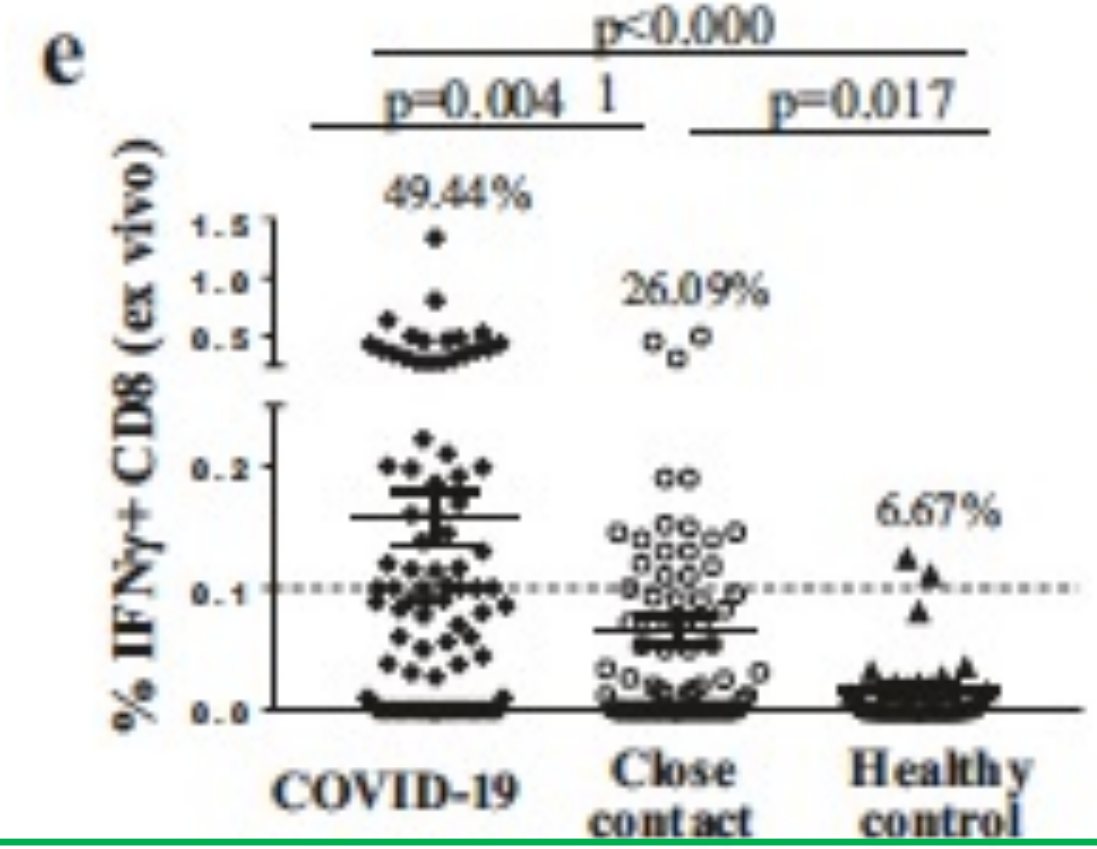
Zhongfang Wang[1,6], Xiaoyun Yang[1,6], Jiaying Zhong[1,6], Yumin Zhou[1,6], Zhiqiang Tang[2,6], Haibo Zhou[3], Jun He[4], Xinyue Mei[1], Yonghong Tang[4], Bijia Lin[1], Zhenjun Chen[5], James McCluskey[5], Ji Yang[1], Alexandra J. Corbett[5] & Pixin Ran[1]✉

Healthy Institute

Wang, Z., Yang, X., Zhong, J., Zhou, Y., Tang, Z., Zhou, H., ... & Ran, P. (2021). Exposure to SARS-CoV-2 generates T-cell memory in the absence of a detectable viral infection. Nature communications, 12(1), 1-8.

New Roots HERBAL

Our immune system has the capability to STOP the entrance of microbes



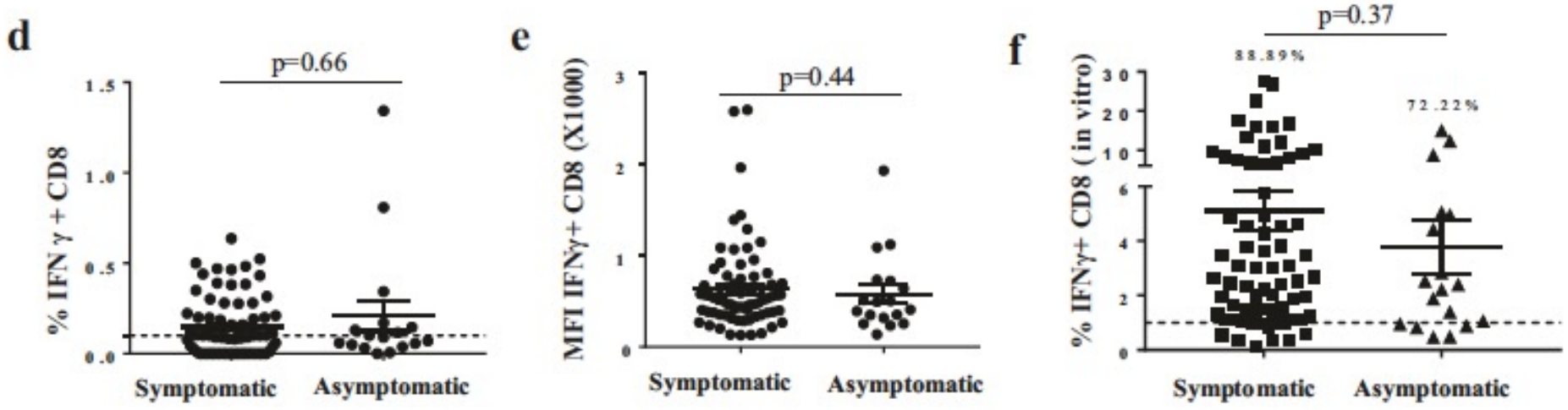
T cell activity after exposure to SARS-CoV-2 in COVID-19 positive patients (COVID-19), in people in close contact with COVID-19 patients but tested negative (close contact) and people not in contact with SARS-CoV-2 before (healthy controls)

Healthy Institute

Wang, Z., Yang, X., Zhong, J., Zhou, Y., Tang, Z., Zhou, H., ... & Ran, P. (2021). Exposure to SARS-CoV-2 generates T-cell memory in the absence of a detectable viral infection. Nature communications, 12(1), 1-8.

New Roots HERBAL

Our immune system has the capability to STOP the entrance of microbes



T cell activity after exposure to SARS-CoV-2 in COVID-19-positive people, both symptomatic and asymptomatic

They both exhibit a robust immune response

Healthy Institute

Wang, Z., Yang, X., Zhong, J., Zhou, Y., Tang, Z., Zhou, H., ... & Ran, P. (2021). Exposure to SARS-CoV-2 generates T-cell memory in the absence of a detectable viral infection. Nature communications, 12(1), 1-8.

New Roots HERBAL

The crucial role of sleep

30 *Recent Patents on Endocrine, Metabolic & Immune Drug Discovery* 2012, *6*, 30-39

Melatonin in Bacterial and Viral Infections with Focus on Sepsis: A Review

Venkataramanujam Srinivasan[1,*], Mahaneem Mohamed[2] and Hisanori Kato[3]

[1]*Sri Sathya Sai Medical Educational and Research Foundation Prasanthi Nilayam, 40-Kovai Thirunagar, Coimbatore-641014, Tamilnadu, India,* [2]*Department of Physiology, School of Medical Sciences University Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia,* [3]*Organization for Interdisciplinary Research Projects, The University of Tokyo, Bunkyo-Tokyo, 113-8657, Japan*

Received: November 22, 2011; Accepted: December 7, 2011; Revised: December 15, 2011

Sleeping less tan 8 hours:
INCREASES INFECTION RISK
DECREASES VACCINATION EFFECT
INCREASES TIME OF HEALING
INCREASES SEVERITY OF INFECTION

Healthy Institute

Srinivasan, V., Mohamed, M., & Kato, H. (2012). Melatonin in bacterial and viral infections with focus on sepsis: a review. Recent patents on endocrine, metabolic & immune drug discovery, 6(1), 30-39.

New Roots HERBAL

Healthy Institute

New Roots HERBAL

Melatonin and COVID-19

Melatonin Research (Melatonin Res.) *http://www.melatonin-research.net*

Research Article

Melatonin as adjuvant treatment for coronavirus disease 2019 pneumonia patients requiring hospitalization (MAC-19 PRO): a case series

Rafael R. Castillo*[1,2,4], Gino Rei A. Quizon^[1], Mario Joselito M. Juco[1], Arthur Dessi E. Roman[1], Donnah G. de Leon[1], Felix Eduardo R. Punzalan[1,3], Rafael Bien L. Guingon[1], Dante D. Morales[1,5], Dun-Xian Tan[6], Russel J. Reiter[7]; on behalf of the MAC-19 PRO Study Group

Melatonin group: discharge within 7-8 days

Without melatonin, medium length of stay: 13 days

No deceased in the melatonin group

Castillo, R. R., Quizon, G. R. A., Juco, M. J. M., Roman, A. D. E., de Leon, D. G., Punzalan, F. E. R., ... & Reiter, R. J. (2020). Melatonin as adjuvant treatment for coronavirus disease 2019 pneumonia patients requiring hospitalization (MAC-19 PRO): a case series. Melatonin Research, 3(3), 297-310.

Vitamin D_3 Protects from infections

Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data

Adrian R Martineau,[1,2] David A Jolliffe,[1] Richard L Hooper,[1] Lauren Greenberg,[1] John F Aloia,[3] Peter Bergman,[4] Gal Dubnov-Raz,[5] Susanna Esposito,[6] Davaasambuu Ganmaa,[7] Adit A Ginde,[8] Emma C Goodall,[9] Cameron C Grant,[10] Christopher J Griffiths,[1,2,11] Wim Janssens,[12] Ilkka Laaksi,[13] Semira Manaseki-Holland,[14] David Mauger,[15] David R Murdoch,[16] Rachel Neale,[17] Judy R Rees,[18] Steve Simpson,Jr[19] Iwona Stelmach,[20] Geeta Trilok Kumar,[21] Mitsuyoshi Urashima,[22] Carlos A Camargo Jr[23]

CONCLUSIONS

Vitamin D supplementation was safe and it protected against acute respiratory tract infection overall. Patients who were very vitamin D deficient and those not receiving bolus doses experienced the most benefit.

Serum levels: At least 50 ng/mL or 80 nmol/L

Martineau, A. R., Jolliffe, D. A., Hooper, R. L., Greenberg, L., Aloia, J. F., Bergman, P., ... & Goodall, E. C. (2017). Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data. bmj, 356, i6583.

Healthy Institute

New Roots HERBAL

Healthy Institute

New Roots HERBAL

COVID-19 (and other infections) and vitamin C

Low vitamin C levels in serum favour infections

SEVERAL STUDIES WITH THE FLU AND HERPES ZOSTER WHEREAS IT EVEN SHOWS EFFECT AS AN EFFECTIVE TREATMENT

Healthy Institute

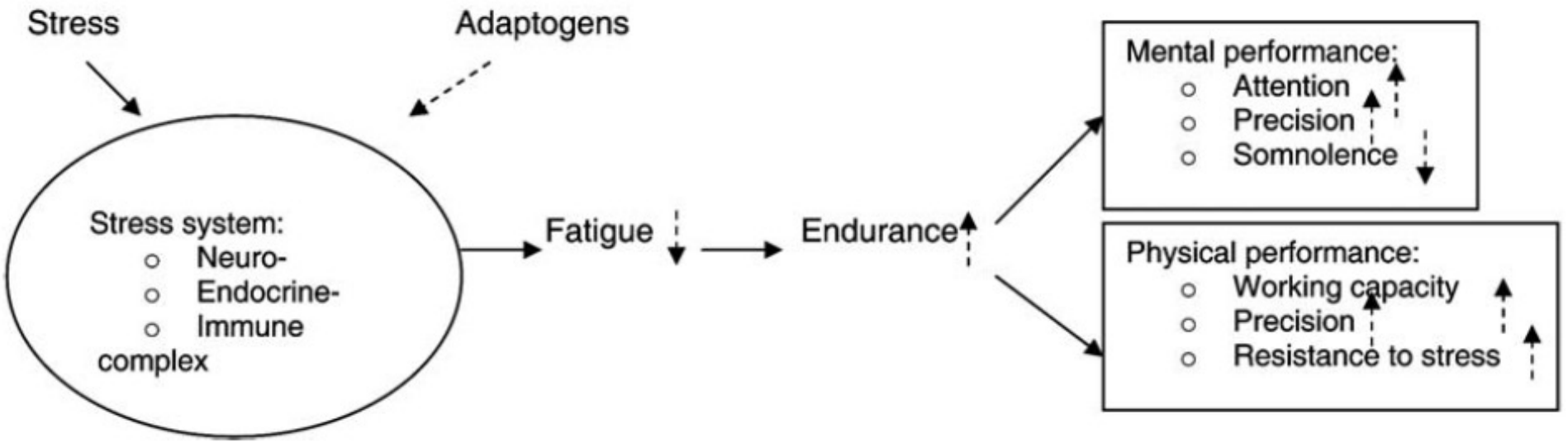
Patterson, T., Isales, C. M., & Fulzele, S. (2021). Low level of Vitamin C and dysregulation of Vitamin C transporter might be involved in the severity of COVID-19 Infection. Aging and disease, 12(1), 14.

New Roots HERBAL

Healthy Institute

New Roots HERBAL

Adaptogenes

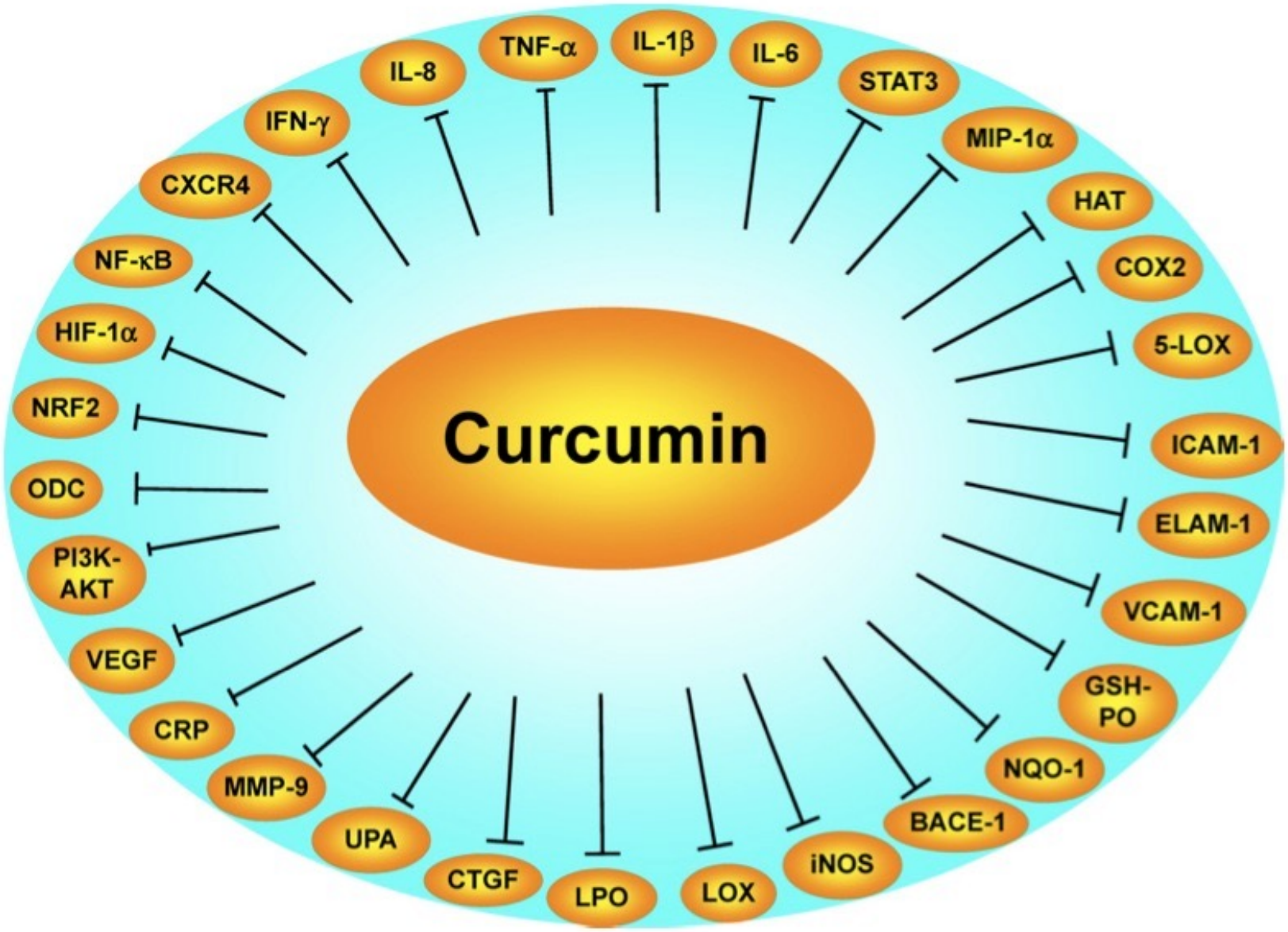


Panax ginseng, eleuterococcus, ginger root, turmeric, rhodiola…

Panossian A and Wikman G. Evidence-based efficacy of adaptogens in fatigue, and molecular mechanisms related to their stress-protective activity Curr Clinl Phar 2009; 4: 198-219

Healthy Institute

New Roots HERBAL



Healthy Institute

Aggarwal BB and Harikumar KB. Potential therapeutic effects of curcumin, the anti-inflammatory agent, against neurodegenerative, cardiovascular, pulmonary, metabolic, autoimmune and neoplastic diseases. Int J Biochem Cell Biol, 2009;41:40-59.

New Roots HERBAL

Healthy Institute

New Roots HERBAL

Andrographis paniculata

Sample	Zone of inhibition diameter (mm)				
	Bacillus subtilis	*Staphylococcus aureus*	*Escherichia coli*	*Pseudomonas aeruginosa*	*Candida albicans*
AE	16.3±0.58	–[b]	18.3±0.335	19.3±0.335	18.3±0.335
AGPs[a]	14.0±1.00	–[b]	16.0±1.00	17.6±0.34	15.6±0.34
AND[a] (extracted)	13.0±1.00	–[b]	–[b]	–[b]	14.6±0.34
Ref	Streptomycin 20.0±1.00	Streptomycin 20.0±1.00	Gentamycin 22.0±1.00	Gentamycin 24.0±1.00	Nystatin 19.0±1.00

Potent anti-bacterial and anti-fungal activity compared to common drugs

Healthy Institute

Singha, P. K., Roy, S., & Dey, S. (2003). Antimicrobial activity of Andrographis paniculata. Fitoterapia, 74(7), 692-694.

New Roots HERBAL

Andrographis paniculata *vs* COVID-19

Table 2 The study outcomes in the groups of patients who received *Andrographis paniculata* extract (AP extract) or placebo.

Outcomes	AP extract (n=29)	Placebo (n=28)	*p-value*
Pneumonia, n (%)	0 (0.0)	3 (10.7)	0.112
Positive SARS-CoV-2 on Day 5**, n (%)	10 (34.5)	16 (57.1)	0.086
CRP >10mg/L on Day 5**, n (%)	0 (0.0)	5* (17.9)	0.023

CRP = C-reactive protein

*3 patients developed pneumonia

**Day 5 of clinical trial

Promising effect against COVID-19
Faster resolution and less complications

Wanaratna, K., Leethong, P., Inchai, N., Chueawiang, W., Sriraksa, P., Tabmee, A., & Sirinavin, S. (2021). Efficacy and safety of Andrographis paniculata extract in patients with mild COVID-19: A randomized controlled trial. medRxiv.

Healthy Institute

New Roots HERBAL

Andrographis paniculata & Curcumin against COVID-19

RESEARCH Open Access

Activity of phytochemical constituents of *Curcuma longa* (turmeric) and *Andrographis paniculata* against coronavirus (COVID-19): an in silico approach

Kalirajan Rajagopal*, Potlapati Varakumar, Aparma Baliwada and Gowramma Byran

Conclusion: Based on in silico investigations, the chemical constituents from turmeric like cyclocurcumin and curcumin and from *Andrographis paniculata* like andrographolide and dihydroxy dimethoxy flavone, significantly binding with the active site of SARS CoV-2 main protease, may produce significant activity and be useful for further development.

Rajagopal, K., Varakumar, P., Baliwada, A., & Byran, G. (2020). Activity of phytochemical constituents of Curcuma longa (turmeric) and Andrographis paniculata against coronavirus (COVID-19): an in silico approach. Future Journal of Pharmaceutical Sciences, 6(1), 1-10.

Healthy Institute

New Roots HERBAL

Panax ginseng as an antimicrobial agent

- Potent immunemodulating agent
- Use against bacteria, viruses and fungus
- Anticancer effect
- Use as and adjuvant (medication and vaccination)

Ratan, Z. A., Youn, S. H., Kwak, Y. S., Han, C. K., Haidere, M. F., Kim, J. K., ... & Cho, J. Y. (2021). Adaptogenic effects of Panax ginseng on modulation of immune functions. Journal of ginseng research, 45(1), 32-40.

Healthy Institute

New Roots HERBAL

Healthy Institute

New Roots HERBAL

Echinacea and the immune system

The effect of *Echinacea* spp. on the prevention or treatment of COVID-19 and other respiratory tract infections in humans: A rapid review

Monique Aucoin[a,*], Kieran Cooley[a,b,c,d], Paul Richard Saunders[a], Jenny Carè[b], Dennis Anheyer[d,e], Daen N. Medina[b,f], Valentina Cardozo[a], Daniella Remy[a], Nicole Hannan[g], Anna Garber[a]

When assessing all human trials which reported changes in cytokine levels in response to *Echinacea* supplementation, the results were largely consistent with a decrease in the pro-inflammatory cytokines that play a role in the progression of cytokine storm and Acute Respiratory Distress Syndrome (ARDS), factors that play a significant role in the death of COVID-19 patients. While there is currently no research on the therapeutic effects of *Echinacea* in the management of cytokine storm, this evidence suggests that further research is warranted.

Prevention: 2–4 months

Treatment: Mean dose: 7.3 g/day

Aucoin, M., Cooley, K., Saunders, P. R., Carè, J., Anheyer, D., Medina, D. N., ... & Garber, A. (2020). The effect of Echinacea spp. on the prevention or treatment of COVID-19 and other respiratory tract infections in humans: A rapid review. Advances in integrative medicine, 7(4), 203-217.

Healthy Institute

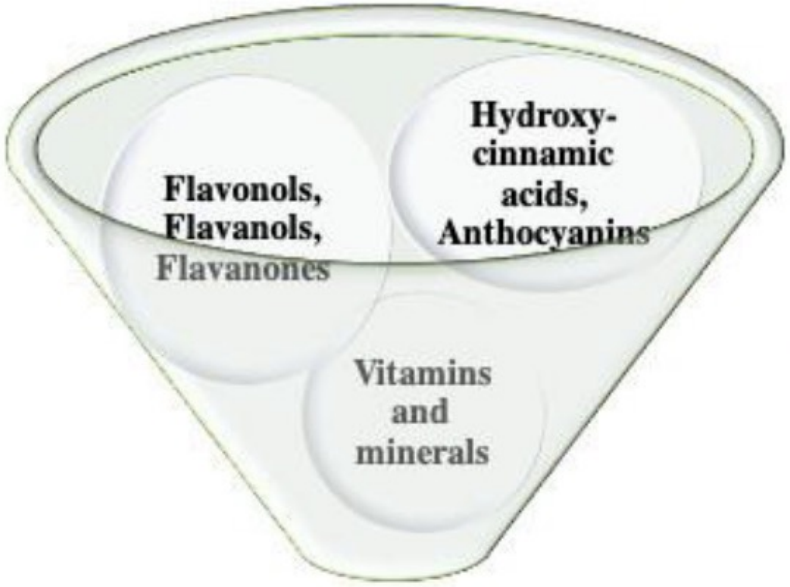
New Roots HERBAL

Sambucus nigra and the immune system

- Contains quercitin, vitamin A, C and D & kaempferol, among others
- Anti-inflammatory, anti-oxidant and immune-modulating effects
- Effective against cold
- Effective against influenza A and B, herpes simplex 1, dengue virus, HIV and coronaviruses
- Faster resolution
- Decreases fever, aches and associated symptoms

Bartak, M., Lange, A., Słońska, A., & Cymerys, J. (2020). Antiviral and healing potential of Sambucus nigra extracts. Revista Bionatura, 5(3).

Sambucus nigra
Effects



Bioactive compounds

- ✓ Antitumor potential
- ✓ Antioxidant potential
- ✓ Antibacterial activity
- ✓ Antidepressant potential
- ✓ Impact on obesity and metabolic dysfunctions
- ✓ Antidiabetic properties
- ✓ Antiviral activity

Bartak, M., Lange, A., Słońska, A., & Cymerys, J. (2020). Antiviral and healing potential of Sambucus nigra extracts. Revista Bionatura, 5(3).

Healthy Institute

New Roots HERBAL

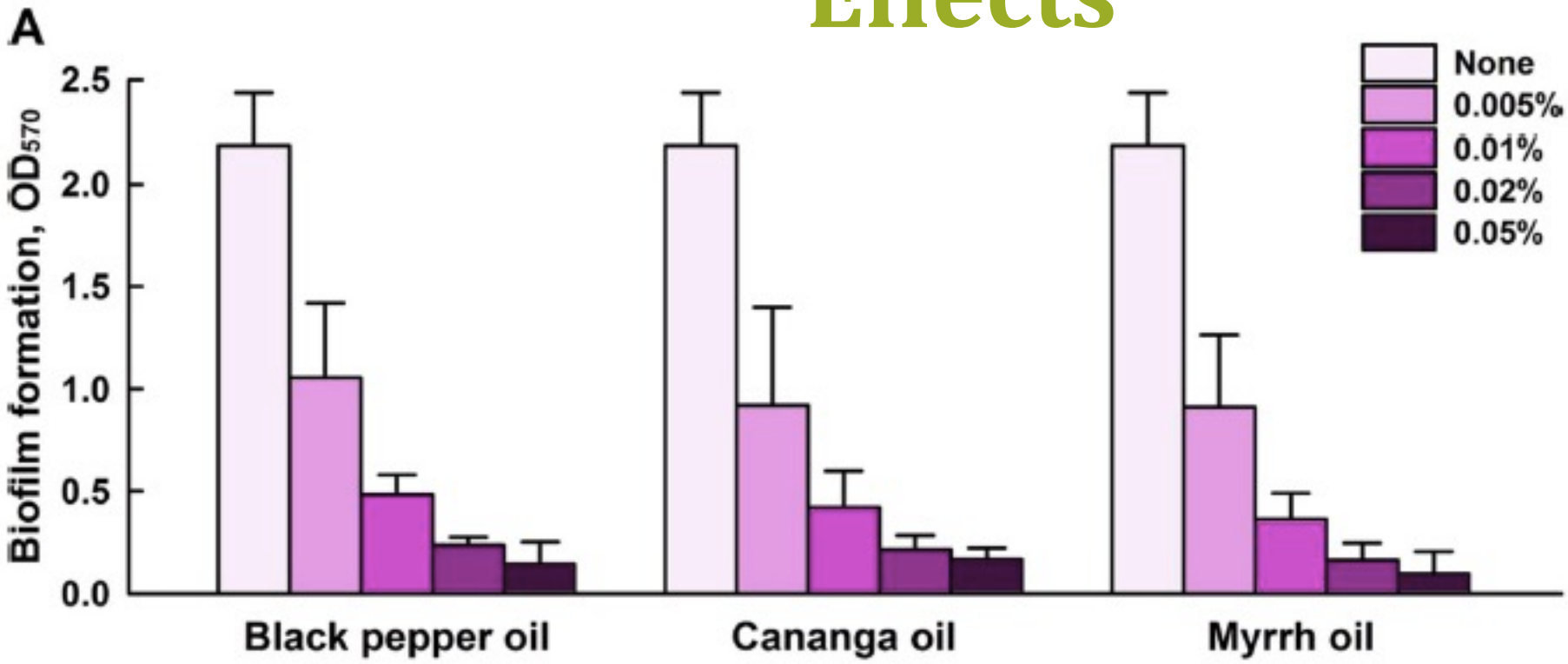
Healthy Institute

New Roots HERBAL

Anti-biofilm, anti-hemolysis, and anti-virulence activities of black pepper, cananga, myrrh oils, and nerolidol against *Staphylococcus aureus*

Myrrh, black pepper & more Effects

Kayeon Lee · Jin-Hyung Lee · Soon-Il Kim · Moo Hwan Cho · Jintae Lee

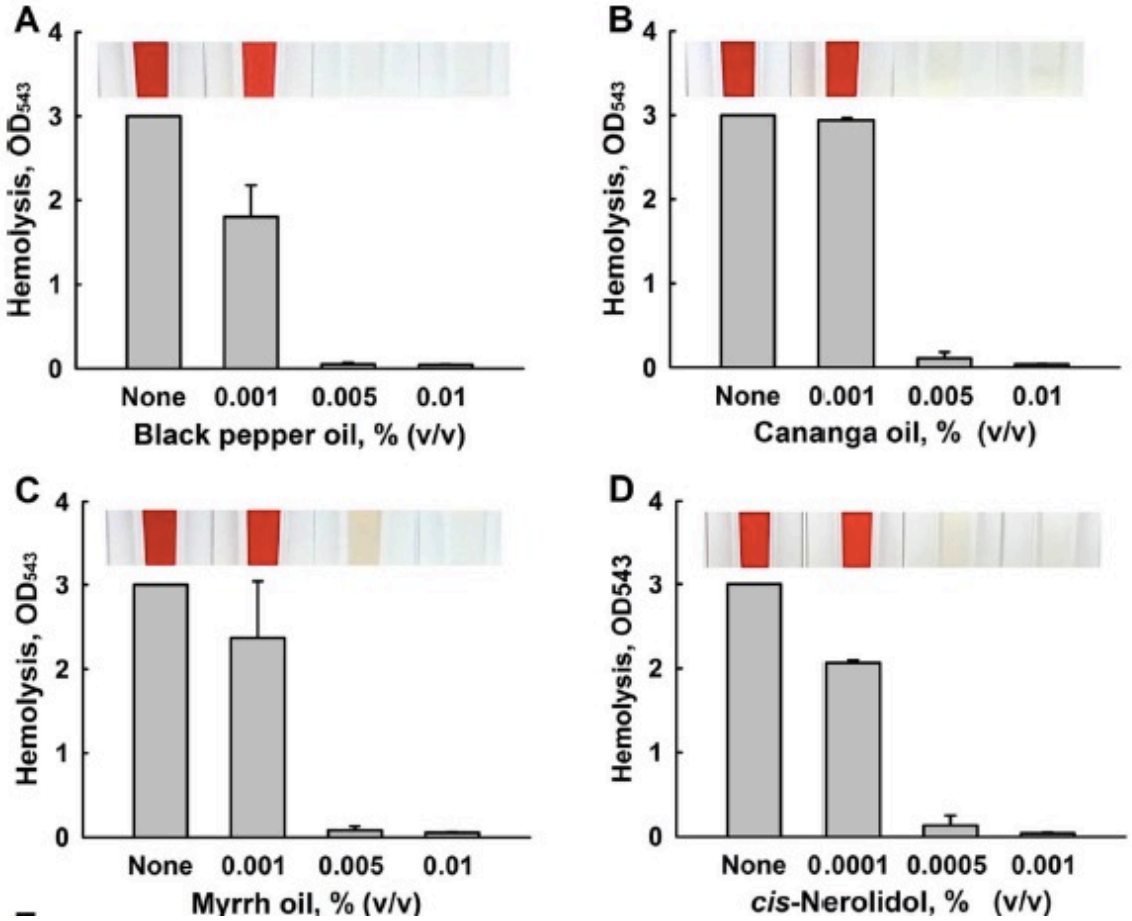


Lee, K., Lee, J. H., Kim, S. I., Cho, M. H., & Lee, J. (2014). Anti-biofilm, anti-hemolysis, and anti-virulence activities of black pepper, cananga, myrrh oils, and nerolidol against Staphylococcus aureus. Applied microbiology and biotechnology, 98(22), 9447-9457.

Healthy Institute

New Roots HERBAL

Myrrh, black pepper & more Effects

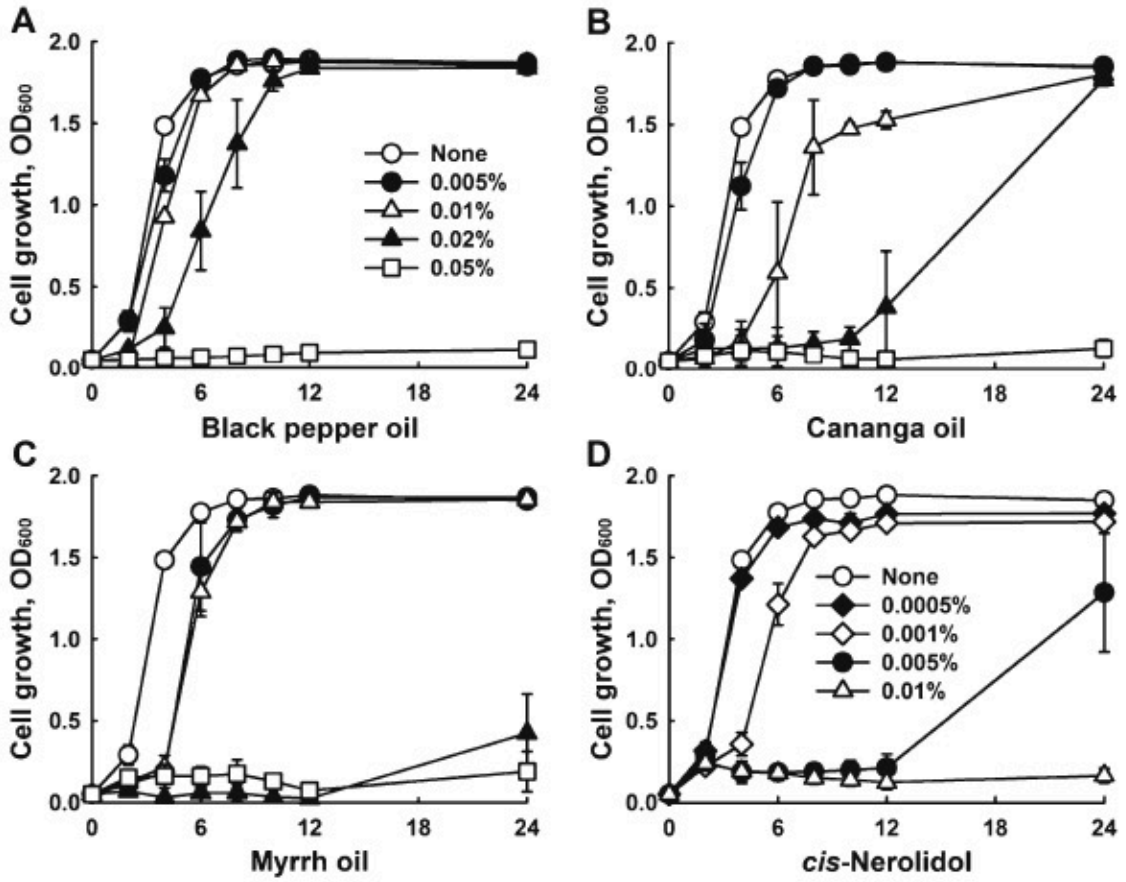


Lee, K., Lee, J. H., Kim, S. I., Cho, M. H., & Lee, J. (2014). Anti-biofilm, anti-hemolysis, and anti-virulence activities of black pepper, cananga, myrrh oils, and nerolidol against Staphylococcus aureus. Applied microbiology and biotechnology, 98(22), 9447-9457.

Healthy Institute

New Roots HERBAL

Myrrh, black pepper & more Effects



Lee, K., Lee, J. H., Kim, S. I., Cho, M. H., & Lee, J. (2014). Anti-biofilm, anti-hemolysis, and anti-virulence activities of black pepper, cananga, myrrh oils, and nerolidol against Staphylococcus aureus. Applied microbiology and biotechnology, 98(22), 9447-9457.

Healthy Institute

New Roots HERBAL

Healthy Institute

New Roots HERBAL

Mycotherapy

- Shiitake, maitake, lion´s mane, *cordyceps*
- Contain potent betaglucans
- Potent synergy when used in combination
- Act on the Peyer´s patch
- Immune-modulatory effect: cellular and humoral branch
- Antioxidant effect
- Important anti-microbial effect (virus, bacteria, fungus)
- Multiple intervention studies on cancer and autoimmune and infectious deseases

- ***Oliviero, F. (2017, September). Antioxidant and anti-inflammatory properties of a shiitake-maitake-reishi-Cordyceps-based preparation for the prevention of oxidative stress and autoimmune diseases. In The 9th International Medicinal Mushrooms Conference (IMMC9) (pp. 109-110).***
- ***Vetvicka, V., & Vetvickova, J. (2014). Immune-enhancing effects of Maitake (Grifola frondosa) and Shiitake (Lentinula edodes) extracts. Annals of translational medicine, 2(2).***

Healthy Institute

New Roots HERBAL

Healthy Institute

New Roots HERBAL

Meditation and mindfulness

Healthy Institute

Pagnoni G. Dynamical Properties of BOLD Activity from the Ventral Posteromedial Cortex Associated with Meditation and Attentional Skills. J Neurosci. 2012 Apr 11;32(15):5242-9

New Roots HERBAL

Healthy Institute

New Roots HERBAL

How do we fight against infections?

Review Article

Integrative considerations during the COVID-19 pandemic

Lise Alschuler[a,b,*], Andrew Weil[b,c], Randy Horwitz[a,b], Paul Stamets[d], Ann Marie Chiasson[a,b], Robert Crocker[a,b], Victoria Maizes[a,b]

[a] University of Arizona College of Medicine, United States
[b] Andrew Weil Center for Integrative Medicine, United States
[c] University of Arizona, United States
[d] Fungi Perfecti, LLC, United States

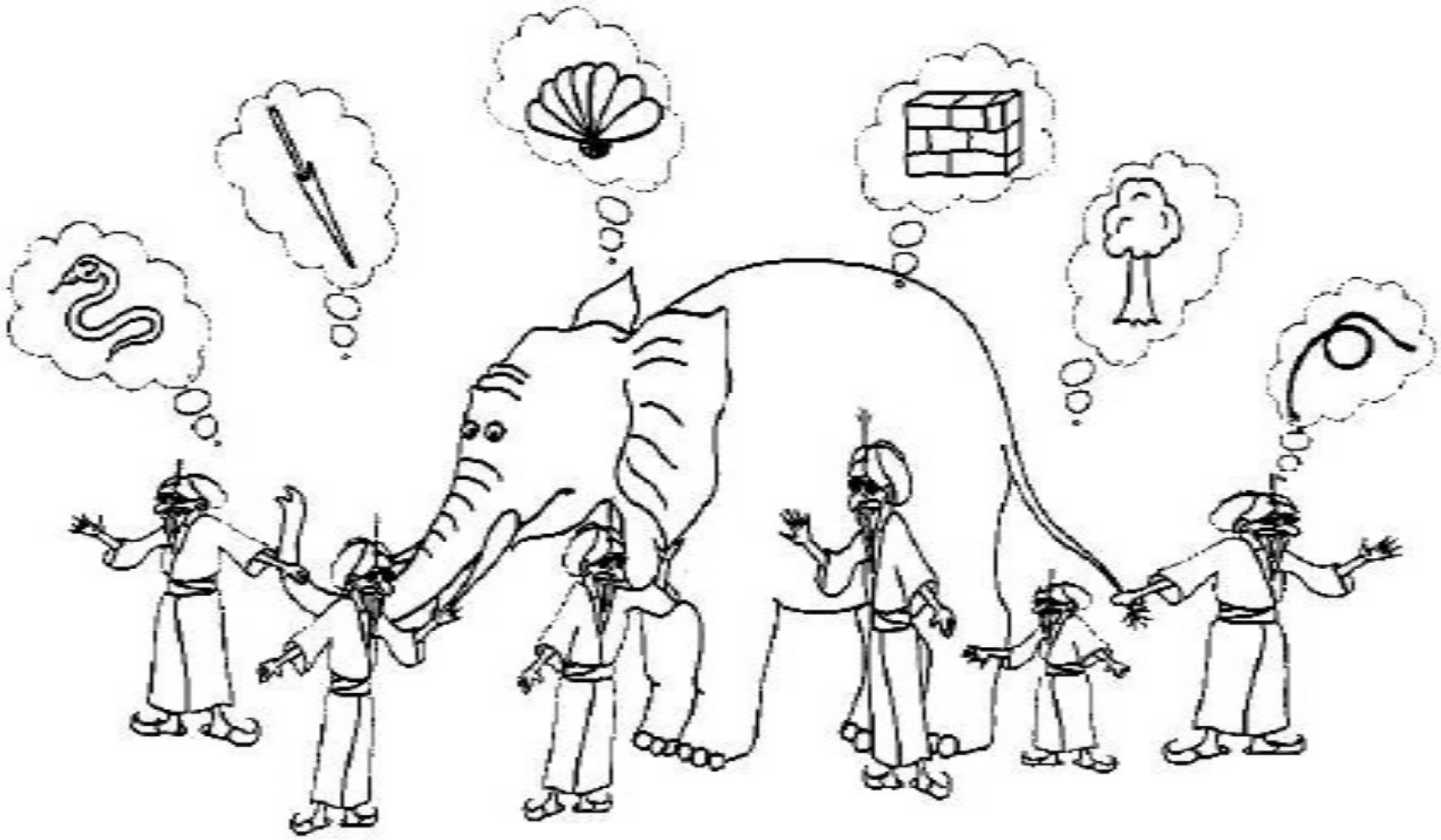
- Chronic stress reduction
- Mindfulness
- Ketones
- Omega 3 (EPA+DHA)
- Vitamin D3: 4000-5000 IU/day
- Vitamin C: 2-6 g/day
- 8-hour-sleep
- Phytotherapeuticals
- Healthy microbiome (Lactobacilus)

Alschuler, L., Weil, A., Horwitz, R., Stamets, P., Chiasson, A. M., Crocker, R., & Maizes, V. (2020). Integrative considerations during the COVID-19 pandemic. Explore (New York, NY).

Healthy Institute

New Roots HERBAL

The Blind man and the Elephant



Healthy Institute

The Blind Men and the Elephant, John Godfrey Saxe, 1816-1887

New Roots HERBAL

What is the solution?

RELATIONSHIPS

BIOLOGY

FOOD & NUTRITION

GENETICS

ENVIRONMENT

IKIGAI

MOVEMENT

EVOLUTIONARY COHERENCE!

Ruiz-Núñez, B et al. (2013). Lifestyle and nutritional imbalances associated with Western diseases: causes and consequences of chronic systemic low-grade inflammation in an evolutionary context. The Journal of nutritional biochemistry, 24(7), 1183-1201.

Healthy Institute

New Roots HERBAL

Healthy Institute

New Roots HERBAL

VITAMIN C

- UNIQUE FORMULA
- GRADED EFFECT
- C8 = ASCORBATES
- WITH BIOFLAVONOIDS
- ENHANCED BIOAVAILABILITY

- **DOSE:**
  - **1-10 C/DAY**

Healthy Institute

New Roots HERBAL

IMMX IMMUNE

- UNIQUE FORMULA
- POWERFUL COMBINATION
- 13 VEGETABLE COMPOUNDS
- GINGER ROOT
- *ECHINACEA P. AND ANGUSTIFOLIA*
- *ASTRAGALUS, PANAX GINSENG & ELEUTHEROCOCCUS*
- *VITIS VINIFERA, LIQUORICE, UNCARIA TORMENTOSA, ILEX PARAGUARIENSIS*
- *PAU D´ARCO*
- **DOSE:**
  - **4-8 C/DAY**

Healthy Institute

New Roots HERBAL

COLD&FLU

- 11 VEGETABLE INGREDIENTS
- POWERFUL SYNERGY
- MAITAKE, SHI-ITAKE & REISHI
- *ECHINACEA P., SAMBUCUS, ASTRAGALUS, HYDRASTIS & ANDROGRAPHIS*
- ROSEMARY, MYRRH & BERBERINE

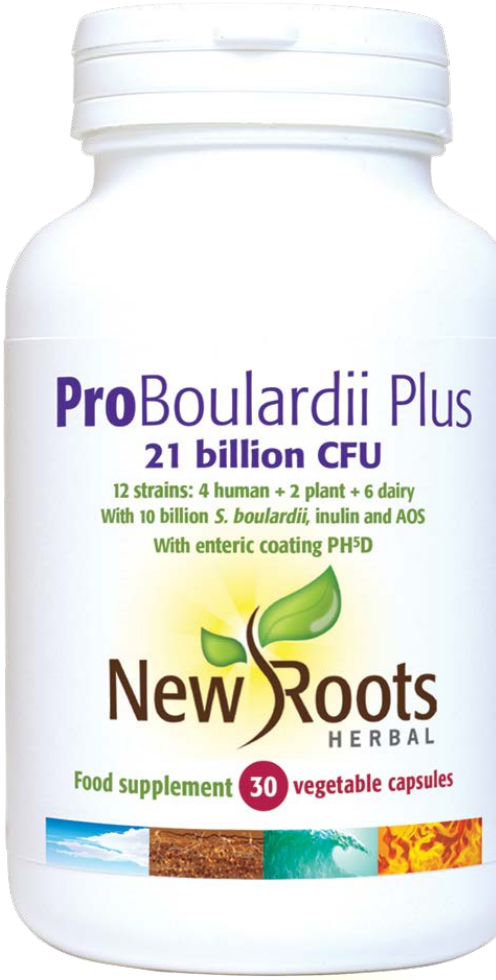
- **DOSE:**
  - **1-2 DAY**

Healthy Institute

New Roots HERBAL

PROBIOTICS

- 12 SELECTED BACTERIAL STRAINS
- AT LEAST 10.000 BACTERIAS PER SCOOP/CAPSULE
- *LACTOBACILUS & BIFIDOBACTERIUM*
- *S. BOULARDII* PREVENTS/STOPS ANTIBIOTIC-INDUCED DIARRHEA
- **DOSE:**
  - **2 SCOOPS/CAPSULES PER DAY**



Healthy Institute

New Roots HERBAL

MUSHROOMS

- REISHI
- CORDYCEPS
- SHI-ITAKE
- MAITAKE
- LION´S MANE
- RESILIENCE MUSHROOM BLEND
- 8:1 CONCENTRATION
- FREE OF HEAVY METALS, HERBICIDES AND PESTICIDES

- **DOSE:**
  - **1/3 C/DAY**

Healthy Institute

New Roots HERBAL

Healthy Institute

New Roots HERBAL

What is the solution?

RELATIONSHIPS

BIOLOGY

FOOD & NUTRITION

GENETICS

ENVIRONMENT

IKIGAI

MOVEMENT

EVOLUTIONARY COHERENCE!

Ruiz-Núñez, B et al. (2013). Lifestyle and nutritional imbalances associated with Western diseases: causes and consequences of chronic systemic low-grade inflammation in an evolutionary context. The Journal of nutritional biochemistry, 24(7), 1183-1201.

Healthy Institute

New Roots HERBAL

MASTER IN CLINICAL PNI (cPNI) with HEALTHY INSTITUTE
WWW.HEALTHYINSTITUTE.ES

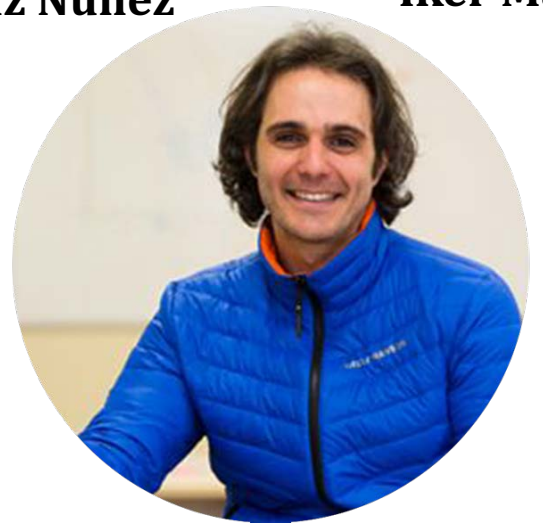
Healthy Institute

New Roots HERBAL

Dr Begoña Ruiz Núñez

Iker Martínez Pérez

Verónica Martínez Vázquez



Javier Morán Tiesta

Beatriz Amusategui Moya

MASTER IN CLINICAL PNI (cPNI)
WWW.HEALTHYINSTITUTE.ES

Healthy Institute

New Roots HERBAL

www.healthyinstitute.es

@healthyinstitute

@drbegoruiznunez

Healthy Institute

New Roots HERBAL

New Roots Herbal Practitioner Support:

Helen Edwards
hedwards@newroots.info
info@newrootsherbal.eu

www.healthyinstitute.es

@healthyinstitute

@drbegoruiznunez

@drbegoruiznunez
@healthyinstitute

bego@healthyinstitute.es
info@healthyinstitute.es

www.healthyinstitute.es

Healthy Institute

New Roots HERBAL