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Zentrum für Sportwissenschaft u. Universitätssport

LEKÁRSKA FAKULTA
Univerzita Komenského
v Bratislave

Active ageing

Achievements of the NutriAging Study

September 21, 2022

Institut für Remobilisierung und funktionelle Gesundheit
Kaiser Franz Josef Spital

Häuser zum Leben
StadtWien

NutriAging

EUROPEAN UNION

Interreg
Slovakia-Austria
European Regional Development Fund

Young Scientists I

- PhD students finished/finishing with NutriAging:

Vienna:

Agnes Draxler, Laura Bragagna, Sandra Unterberger, Rudolf Aschauer, Patrick Zöhrer





Young Scientists I

Bratislava:

Internal PhD:

Mária Janubová, Lucia Cádrová, Lívia Gajdošová, Alena Szelle Černáčková




External PhD from Slovak Academy of Sciences:

- Lucia Balagová (Karailievová)
- Katarína Buzgoová (Hrivíková)
- Pavol Chomanič
- Peter Karailiev
- Zuzana Romanová
- Henrieta Oravcová

Young Scientists II

- Master/ Bachelor students finished/finishing with NutriAging:

Vienna – 53/17:

Spasova Monika, Abramov Nataly, Maier Alexander, Cortolezis Johannes, Delariach Carina, Raimert Charlotte, Burndorfer Marlene, Baron Riccarda, Kelecevic Sanja, Cellnigg Katharina, Mitova Dimana, Kilinc Deria, Gruber Daniela, Fichtinger Daniela, Schinnerl Christiane Theresa, Rube Samira, Staltner Raphaela, Wolf Bianca, Hofbauer Linda, Csizmazia Melanie, Pantic Jelena, Bartosch Romina, Huberty Claire, Gallyova-Baier Eva, Dorninger Julia, Setka, Nadine, Trettenhahn Sabine, Thomas Marsch, Mila Varcheva, Nina Eszterle, Simon Srienc, Scoris Mariann Solomon, Maria Weber, Sahar Noori, Monika Kolar, Tamara Stelzer, Tamara Lesitschnig, Lena Gruber, Lisa Wollein, Christoph Semmelmayer, Anna Moitzi, Benno Karger, Mirjam Aschauer, Kathrin Wychera, Maximilian Beck, Michel Guiborat, Benjamin Lorbeer, Thomas Greiderer, Florian Eder, Tobias Unterreiner, Florian Fiebinger, Theresa Ringhofer, Silvana Strieder,

Hannah Spahits, Carina Zötsch, Stephanie Schmutz, Laura Huber, Hannah Schmierer, Dennis Karpe, Lisa Feit, Moritz Aggeler, Mirjam Binner, Patrick Lachmair, Leonhard Frei, Hannah Matzka, Elisabeth Calek, Maria Söllinger, Christina Radlherr, Darinka Stock, Corin Zeitlhuber

Young Scientists II

- Master/ Bachelor students finished/finishing with NutriAging:

Bratislava:

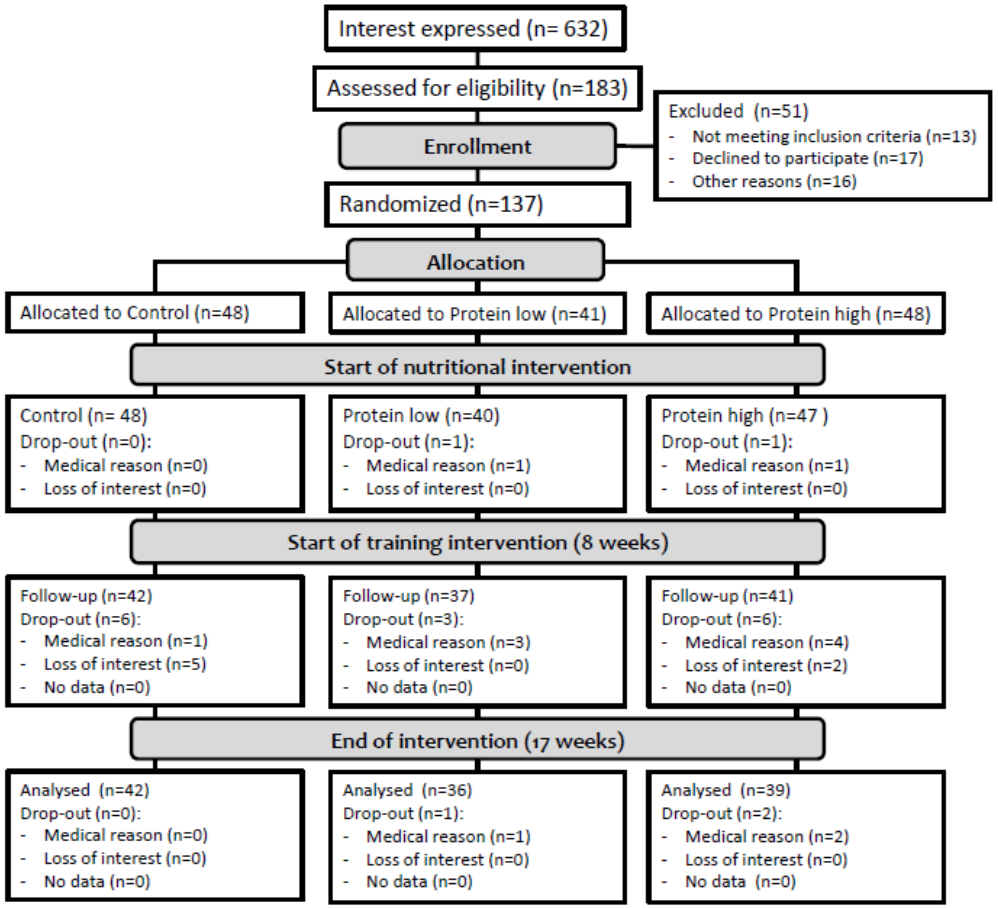
Master students: Martin Sedlák, Peter Leopold Buchta, Cynthia Sárkányová, Teresa Ridder, Krisztina Fekete, Erik Bati, Martin Soldán, Petra Žitňáková, Viktória Galbavá, Mária Capová

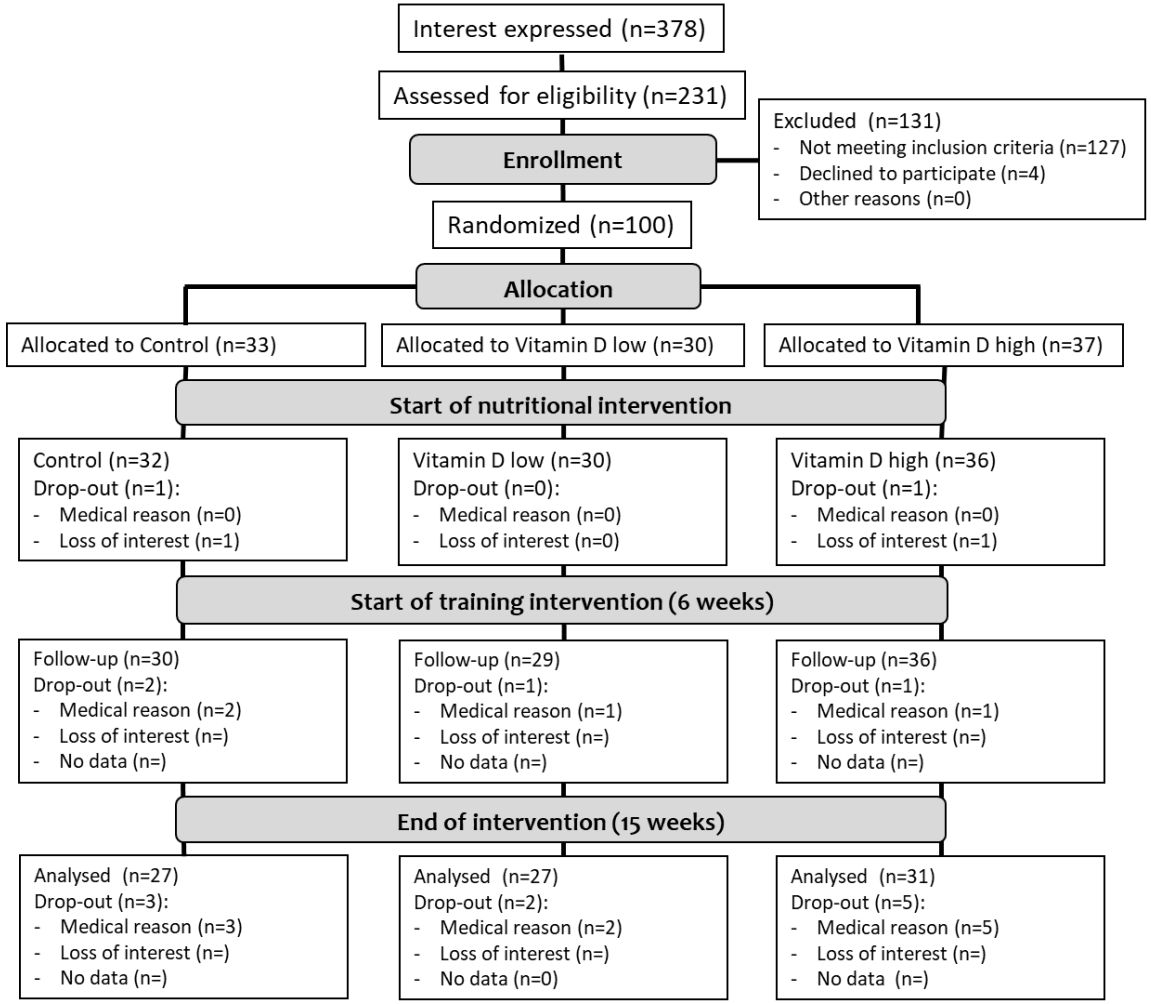
Bachelor students: Cynthia Sárkányová, Viktória Galbavá

Grants induced by Nutriaging project

- **VEGA 1/0665/19** – Muchová - The influence of selected nutrients (proteins and vitamin D) and exercise on the molecular mechanisms of sarcopenia
- **VEGA 1/0583/21** – Paduchová – Cognitive frailty of seniors and the possibilities to affect it by a combine intervention – pysical activity and nutritional intervention.
- **VEGA 1/0303/23** – Muchová - Effect of combined intervention (vitamin D supplementation and physical activity) on signaling pathways involved in the pathophysiology of sarcopenia
- **Grant UK/115/2020**-Cádrová - Effect of protein and exercise on the molecular mechanisms of sarcopenia in an experimental laboratory rat model
- **Grant UK/313/2021** – Gajdošová - Changes in mitochondrial function in the cortex and hippocampus of the brain of old rats and the possibility of its modulation by a combined intervention (physical activity and nutritional intervention)

Studies performed in Vienna: Protein, Vitamin D and strength training





NutriAging Study participants in Vienna, more than 1000 older adults expressed their interest

NutriAging Study participants in Vienna

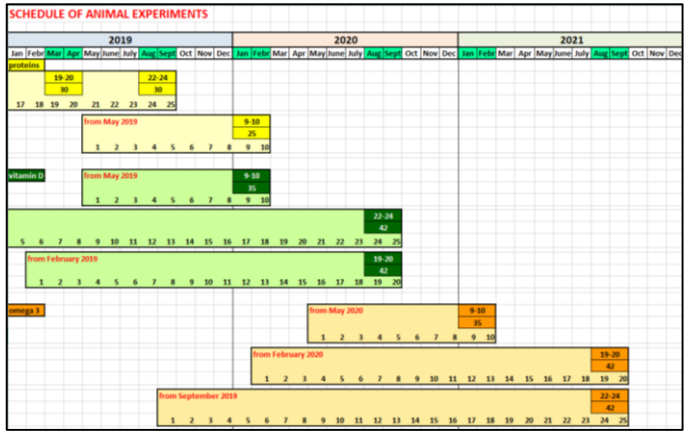
Studies performed in Bratislava:

male Wistar rats
(*Rattus norvegicus*)

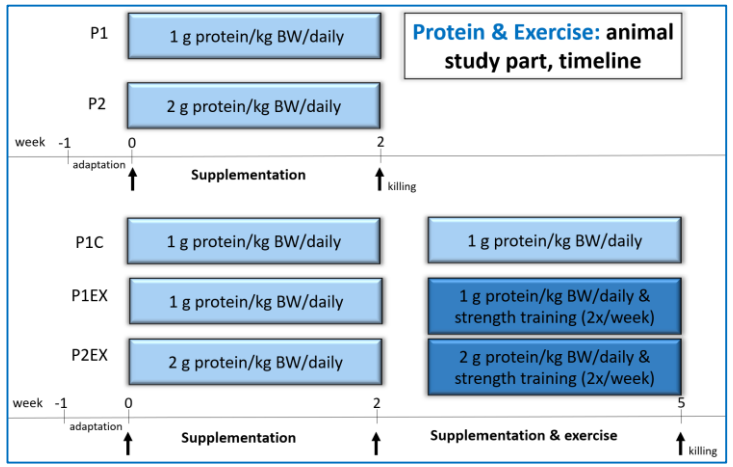
9-10 months

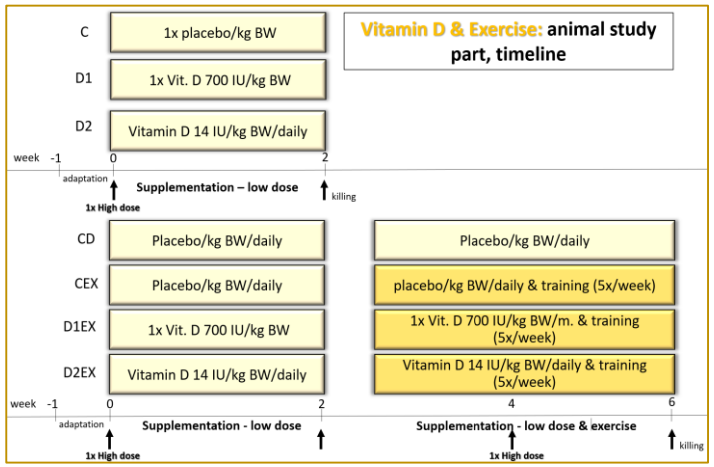
19-20 months

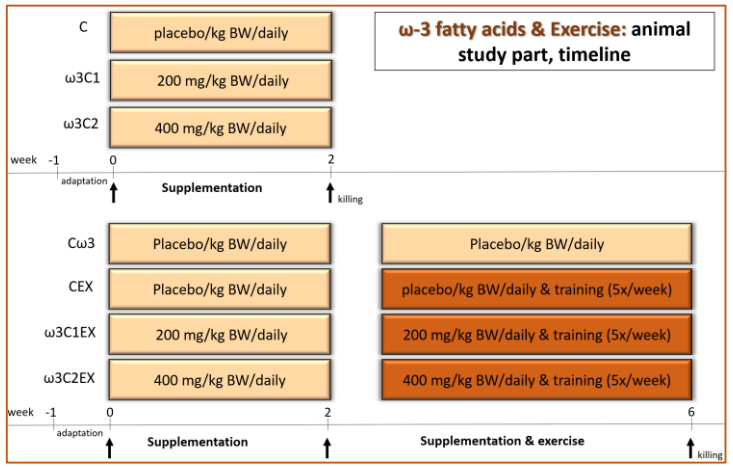
23-24 months



3 Animal experiments







Measurement of functional parameters of sarcopenia (muscle mass, step length, walking speed)

Behavioral tests: Open field **(OF) - exploration a anxiety evaluation**
Novel object recognition **(NOR) - learning and memory evaluation**

Markers – biochemical markers, inflammatory markers, markers OS, proteomic

blood (EDTA)

- Total blood – 200 µl (Comet assay)
- Centrifugation (1000 g/15 min, 4°C) → **Erytrocytes – SOD, GPx, CAT (activity, WB)**

plasma

- **biochemical markers** – glucose, albumine, kreatinin, lipid profile (TCh, TAG), uric acid,urea, testosterone, 25-hydroxycholecalciferol, α-Tocopherol, total Coenzyme Q_9
- **Inflammatory markers** – adiponectin, leptin, ADMA, MMP-2, homocystein
- **OS markers** – TBARS, AOPP, LPx, TEAC, FRAP, 8-iso
- **markers of sarcopenia** – P3NP, TGF-β1, IGF-1, myostatin, BDNF

gastrocnemius	TBARS, AOPP, TEAC, FRAP, GPx, myostatin, follistatin, activin A
EDL	Total Coenzyme Q_9 & Q_{10}, α-Tocopherol, myostatin, follistatin, activin A, mitochondrial respiration
liver	Lipid profile (TCh, TAG), α-Tocopherol, total Coenzyme Q_{10}, redox state of Coenzyme Q_9, mitochondrial respiration

Experimental model: cell cultures

- Experimental cell line: MRC-5 (human lung fetal fibroblasts)
- Creating a model for
  - stress-induced senescence (SISP)(etoposide, H_2O_2)
  - replicative senescence (RS) ($22^{nd}/9^{th}$ passage)
- Monitored cell senescence parameters:
  - increased activity of SA-β-galactosidase
  - reduced cell viability/proliferation
  - changes during the cell cycle
  - increased expression of inhibitors of the cell cycle
  - increased number of reactive oxygen species
- Effect of bioactive compounds on the cellular senescence:
  - 2 forms of vitamin E (γ and δ-tocotrienols)
  - Vitamin D
  - Omega-3 fatty acids (EPA and DHA)

NutriAging Study participants in Bratislava ☺

Publications - Scientific

Clinical Nutrition 41 (2022) 1034–1045

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Randomized Control Trials

Effects of an increased habitual dietary protein intake followed by resistance training on fitness, muscle quality and body composition of seniors: A randomised controlled trial

Sandra Unterberger [a, b], Rudolf Aschauer [a, b], Patrick A. Zöhrer [a, c], Agnes Draxler [c], Bernhard Franzke [a, c], Eva-Maria Strasser [d], Karl-Heinz Wagner [a, c], Barbara Wessner [a, b, *]

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[b] Centre for Sport Science and University Sports, University of Vienna, Auf der Schmelz 6, 1150 Vienna, Austria
[c] Faculty of Life Sciences, Department of Nutritional Sciences, University of Vienna, Althanstraße 14, 1090 Vienna, Austria
[d] Karl Landsteiner Institute for Remobilization and Functional Health/Institute for Physical Medicine and Rehabilitation, Kaiser Franz Joseph Hospital, Social Medical Center South, Vienna, Austria

Mutation Research 786 (2020) 108343

Contents lists available at ScienceDirect

Mutation Research/Reviews in Mutation Research

journal homepage: www.elsevier.com/locate/reviewsmr
Community address: www.elsevier.com/locate/mutres

Chromosomal damage measured by the cytokinesis block micronucleus cytome assay in diabetes and obesity - A systematic review and meta-analysis

Bernhard Franzke[a,*], Lukas Schwingshackl[b], Karl-Heinz Wagner[a]

[a] University of Vienna, Research Platform Active Ageing, Department of Nutritional Sciences, Althanstraße 14, 1090 Vienna, Austria
[b] University of Freiburg, Institute for Evidence in Medicine, Medical Center - University of Freiburg, Faculty of Medicine, Freiburg, Germany

nutrients

MDPI

Article

Effects of Vitamin D3 Supplementation and Resistance Training on 25-Hydroxyvitamin D Status and Functional Performance of Older Adults: A Randomized Placebo-Controlled Trial

Rudolf Aschauer [1,2], Sandra Unterberger [1,2], Patrick A. Zöhrer [1,3], Agnes Draxler [1,3], Bernhard Franzke [1,3], Eva-Maria Strasser [4], Karl-Heinz Wagner [1,3] and Barbara Wessner [1,2,*]

frontiers | Frontiers in Nutrition

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SPECIALTY SECTION
This article was submitted to

The plasma proteome is favorably modified by a high protein diet but not by additional resistance training in older adults: A 17-week randomized controlled trial

Bernhard Franzke[1,2*†], Andrea Bileck[3,4†], Sandra Unterberger[1,5], Rudolf Aschauer[1,5], Patrick A. Zöhrer[1,2], Agnes Draxler[2], Eva-Maria Strasser[6], Barbara Wessner[1,5], Christopher Gerner[3,4] and Karl-Heinz Wagner[1,2]

Mutation Research 787 (2021) 108367

Contents lists available at ScienceDirect

Mutation Research/Reviews in Mutation Research

journal homepage: www.elsevier.com/locate/reviewsmr
Community address: www.elsevier.com/locate/mutres

Impact of dietary and lifestyle interventions in elderly or people diagnosed with diabetes, metabolic disorders, cardiovascular disease, cancer and micronutrient deficiency on micronuclei frequency – A systematic review and meta-analysis

Karl-Heinz Wagner[a,*], Lukas Schwingshackl[b], Agnes Draxler[a], Bernhard Franzke[a]

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[b] Institute for Evidence in Medicine, Medical Center - University of Freiburg, Faculty of Medicine, University of Freiburg, Freiburg, Germany

nutrients

MDPI

Article

The Effect of Elevated Protein Intake on DNA Damage in Older People: Comparative Secondary Analysis of Two Randomized Controlled Trials

Agnes Draxler [1], Bernhard Franzke [1,2], Johannes T. Cortolezis [1], Nicola A. Gillies [3,4], Sandra Unterberger [2,5], Rudolf Aschauer [2,5], Patrick A. Zöhrer [1,2], Laura Bragagna [1], Julia Kodnar [1], Eva-Maria Strasser [6], Oliver Neubauer [2,7], Pankaja Sharma [3,4], Sarah M. Mitchell [3,4], Nina Zeng [3], Farha Ramzan [3,4], Randall F. D'Souza [3,8,9], Scott O. Knowles [10], Nicole C. Roy [3,4,11], Anders M. Sjödin [12], Cameron J. Mitchell [3,13], Amber M. Milan [3,10], Barbara Wessner [2,5], David Cameron-Smith [3,14] and Karl-Heinz Wagner [1,2,*]

Publications - Scientific

Austin Medical Sciences

Open Access

Austin Publishing Group

Research Article

DHA and EPA are Able to Affect the Development of Stress-Induced Senescence

Janubova M[1]*, Gbelcová H[2], Konarikova K[1], Szentesiova Z[1] and Zitnanova I[1]

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[2]Institute of Medical Biology, Genetics and Clinical Genetics, Faculty of Medicine, Comenius University, Bratislava, Slovakia

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Received: February 17, 2022; **Accepted:** March 12, 2022; **Published:** March 19, 2022

Abstract

Omega-3 fatty acids are an important part of biological membranes affecting their properties, cell signaling and gene expression. Senescence is an irreversible permanent cell cycle arrest accompanied by changes in cell morphology and physiology. We hypothesized that DHA as well as EPA could suppress the development of stress-induced premature senescence. To induce senescence, MRC-5 human lung fibroblasts were incubated with 100μM hydrogen peroxide/1hour. DHA (10 and 20 μM) or EPA (10, 20, 30 and 40 μM) were added to the cells for 24 hours either before (pretreatment) or after (postreatment) the induction of senescence. Only after postreatment with 10μM DHA or 20μM EPA, we detected slightly improved hallmarks of senescence - decreased percentage of SA-β-galactosidase positive cells, increased cell growth, reduced level of reactive oxygen species, cell cycle progression and decreased p21 protein expression. Based on our results we can conclude that DHA as well as EPA affect the development of peroxide induced senescence.

Keywords: Senescence; Docosahexaenoic acid eikosapentaenoic acid; Omega-3 fatty acids; MRC-5 human lung fibroblasts

Cellular and Molecular Neurobiology (2019) 39:11–29
https://doi.org/10.1007/s10571-018-0631-4

REVIEW PAPER

Hypothalamic Inflammation at a Crossroad of Somatic Diseases

Boris Mravec[1,2] · Lubica Horvathova[2] · Alena Cernackova[1,2]

Received: 15 May 2018 / Accepted: 24 October 2018 / Published online: 30 October 2018

Abstract

Various hypothalamic nuclei function as central parts of regulators that maintain homeostasis of the organism. Recently, findings have shown that inflammation in the hypothalamus may significantly affect activity of these homeostats and consequently participate in the development of various somatic diseases such as obesity, diabetes, hypertension, and cachexia. In addition, hypothalamic inflammation may also affect aging and lifespan. Identification of the causes and mechanisms involved in the development of hypothalamic inflammation creates not only a basis for better understanding of the etiopathogenesis of somatic diseases, but for the development of new therapeutic approaches for their treatment, as well.

Journal of Clinical Neuroscience 75 (2020) 5–10

Contents lists available at ScienceDirect

Journal of Clinical Neuroscience

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

Review article

Neuroinflammation and depressive disorder: The role of the hypothalamus

Alena Cernackova [a,b,*], Zdenka Durackova [c], Jana Trebaticka [d], Boris Mravec [a,b]

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[b] Institute of Experimental Endocrinology, Biomedical Research Center of the Slovak Academy of Sciences, Bratislava, Slovakia
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Clinical Biochemistry 79 (2020) 9–13

Contents lists available at ScienceDirect

Clinical Biochemistry

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

Gender differences in LDL and HDL subfractions in atherogenic and nonatherogenic phenotypes

Ingrid Zitnanova[a], Stanislav Oravec[b], Maria Janubova[a], Katarina Konarikova[a], Monika Dvorakova[a], Lucia Laubertova[a], Maria Kralova[c], Martin Simko[d], Jana Muchova[a,*]

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[d] 2nd Department of Gynaecology and Obstetrics, Faculty of Medicine, Comenius University, Bratislava, Slovakia

Publications - Scientific

γ- and δ-Tocotrienols interfere with senescence leading to decreased viability of cells

Maria Janubova, Jozef Hatok, Katarina Konarikova & Ingrid Zitnanova

Molecular and Cellular Biochemistry
An International Journal for Chemical Biology in Health and Disease

ISSN 0300-8177

ONLINE FIRST

VITAMÍN D A JEHO VPLYV NA METABOLIZMUS A METABOLICKÝ SYNDRÓM

[Effect of vitamin D on metabolism and metabolic syndrome]

Martin Sedlák a Ingrid Žitňanová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta UK, Sasinkova 2, 813 72 Bratislava, ingrid.zitnanova@fmed.uniba.sk

2018
UNIVERZITA KOMENSKÉHO BRATISLAVA

HORIZONTY ANATÓMIE

Laboratórna Diagnostika, XXVI, 1, 2021: 48–52

VITAMÍN D V ÚLOHE REPARÁCIE DNA SENESCENTNÝCH BUNIEK POŠKODENÝCH PEROXIDOM VODÍKA

Koňariková, K.[1], Janubová, M.[1], Muchová, J.[1], Ďuračková, Z.[1], Žitňanová, I.[1]
[1]Ústav Lekárskej chémie, biochémie a klinickej biochémie, LF UK, Bratislava

MOLEKULOVÉ ZÁKLADY KOGNITÍVNEJ KREHKOSTI SENIOROV, VPLYV INTERVENCIE (FYZICKÁ AKTIVITA A/ALEBO SUPLEMENTÁCIA OMEGA-3 MASTNÝMI KYSELINAMI)

(Molecular bases of cognitive frailty in seniors, effect of intervention (physical activity and/or suplementation by omega- 3 fatty acids))

Jana Muchová, Mária Janubová, Ingrid Žitňanová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta Univerzity Komenského v Bratislave; jana.muchova@fmed.uniba.sk

BIOMARKERY PROCESU STARNUTIA

(Biomarkers of aging process)

Zuzana Országhová, Peter Leopold Buchta

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta UK, Bratislava; zuzana.orszaghova@fmed.uniba.sk

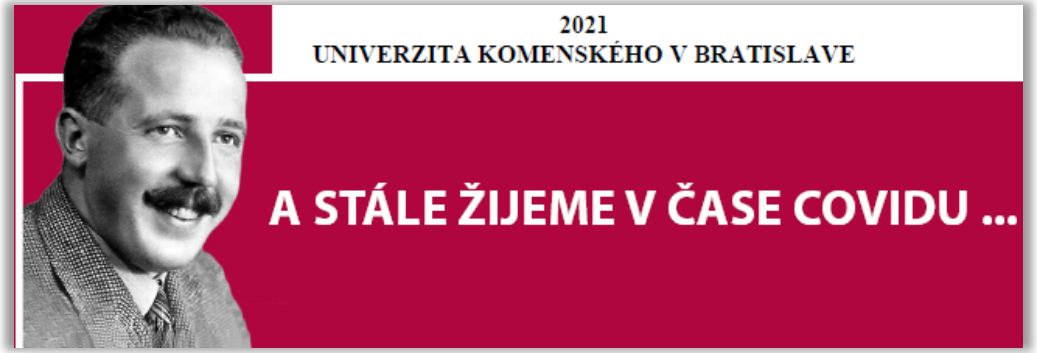
VPLYV ETANOLOVÝCH HUBOVÝCH EXTRAKTOV *G. LUCIDUM* A *H. ERINACEUM* NA RAST MLADÝCH A STARÝCH BUNIEK

(Effect of *G. lucidum* and *H. erinaceum* ethanol mushroom extract on the growth of young and aging cells)

Mária Janubová, Ingrid Žitňanová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta Univerzity Komenského v Bratislave maria.janubova@fmed.uniba.sk

Publications - Scientific



VPLYV VYBRANÝCH VITAMÍNOV NA BUNKOVÚ SENESCENCIU

(Effect of some vitamins on cell senescence)

Mária Janubová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta Univerzity Komenského v Bratislave, maria.janubova@fmed.uniba.sk

VPLYV ZVÝŠENÉHO PRÍJMU PROTEÍNOV A JEHO KOMBINÁCIE S FYZICKOU AKTIVITOU NA PARAMETRE OXIDAČNÉHO STRESU A ANTIOXIDAČNÚ OCHRANU U SARKOPENICKÝCH POTKANOV

(Impact of increased intake of proteins and its combination with physical activity on markers of oxidative stress and antioxidant defence in sarcopenic rats)

Zuzana Paduchová, Barbora Katrenčíková, Martina Horváthová, Zuzana Országhová, Lucia Andrezálová, Lívia Gajdošová, Lucia Cádrová, Zuzana Szentesiová, Jana Muchová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta UK, Sasinkova 2, 813 72 Bratislava, zuzana.paduchova@fmed.uniba.sk

EFEKT PRÍJMU OMEGA-3 MASTNÝCH KYSELÍN A NÚTENÉHO CVIČENIA NA FUNKČNÉ PARAMETRE SARKOPÉNIE U STARÝCH POTKANOV

(Effect of omega-3 fatty acids intake and forced exercise on functional parameters of sarcopenia in old rats)

Lívia Gajdošová, Zuzana Paduchová, Barbora Katrenčíková, Jana Muchová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta UK, Sasinkova 2, 811 08 Bratislava, jana.muchova@fmed.uniba.sk

VPLYV VITAMÍNU D NA STARNUTIE BUNIEK

(Effect of vitamin D on cell aging)

Mária Janubová, Ingrid Žitňanová

Ústav lekárskej chémie, biochémie a klinickej biochémie, Lekárska fakulta Univerzity Komenského v Bratislave, maria.janubova@fmed.uniba.sk

Publications – Target group

WELT | GESUNDHEIT

Das Geheimnis der 100 JÄHRIGEN

Forscher der Universität Wien arbeiten daran, das Geheimnis eines langen Lebens zu entschlüsseln. In einer groß angelegten Studie wollen sie herausfinden, was uns und unsere Nachfahren möglichst lange gesund ein hohes Alter erreichen lässt.

Unsere Generation ist auf dem Vormarsch: Nach Berechnungen der Welt-Gesundheits-Organisation (WHO) wird bis ins Jahr 2050 die Anzahl der über 65-jährigen um 188 Prozent ansteigen, die Untergruppe der über 85-jährigen um 351 Prozent und jene der über 100-jährigen um mehr als 1.000 Prozent!

Dr. Bernhard Franzke forscht seit einigen Jahren auf diesem Gebiet und hat dabei bereits erfolgreich gealterte Menschen untersuchen werden (im Alter von über 85 Jahren), ist es uns ein besonderes Anliegen das Geheimnis dieser hochaltrigen Gruppe zu ergründen - ob rein genetisch bestimmt und/oder welche Rolle der Lebensstil hat, soll erforscht werden.

Wie und wo sollen die daraus gewonnenen Ergebnisse zum Einsatz kommen?

Mit diesen Erkenntnissen werden Richt-

sanca

na kvalitné sociálne služby

osvetový sociálny občasník 1,80 EUR 4/2021

ŠŤASTNÉ NÁHODY POMÁHAJÚ

AKO VYSVETLIŤ „ODLÚČENÉ" VIANOCE?

KÚPELE NA POSTCOVIDOVÝ SYNDRÓM

PRÍLOHA ASOCIÁCIE POSKYTOVATEĽOV SOCIÁLNYCH SLUŽIEB V SR Strany 19 – 39

Až 60 000 Slovákov trpí Alzheimerom

LIEKU STÁLE NIET

Biomarker des Alterns

Bernhard Franzke 1,3, Sandra Unterberger 1,2, Rudolf Aschauer 1,2, Patrick A. Zöhrer 1,3, Agnes Draxler3, Eva-Maria Strasser 4, Barbara Wessner 1,2, Zdenka Durackova5, Ingrid Zitnanova5, Jana Muchová5, Karl-Heinz Wagner 1,3

1 Research Platform Active Ageing, University of Vienna

2 Centre for Sport Science and University Sports, University of Vienna

3 Faculty of Life Sciences, Department of Nutritional Sciences, University of Vienna

4 Karl Landsteiner Institute for Remobilization and Functional Health/Institute for Physical Medicine and Rehabilitation, Kaiser Franz Joseph Hospital, Social Medical Center South, Vienna

5 Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry, Faculty of Medicine, Comenius University in Bratislava, Slovakia

Im Rahmen des NutriAging Projekts (Interreg SK-AT) haben sich Wissenschafter:innen der Universität Wien und der Comenius Universität in Bratislava zusammengeschlossen, um den Einfluss von Lebensstilfaktoren auf gesundes Älterwerden zu erforschen. Um den Prozess des Alterns besser beurteilen zu können, suchen Medizin und Wissenschaft nach sogenannten Biomarkern des Alterns. Valide Marker sollen dabei den gesunden Alterungsprozess von einem kranken unterscheiden können. Dieser Artikel fasst aktuelle Erkenntnisse und Entwicklungen in der Alters-Biomarker-Forschung zusammen.

Einleitung

Das Älterwerden wird auch als degenerativer Prozess beschrieben und geht mit einem Abbau und Verlust von körperlicher Funktion und Widerstandsfähigkeit einher. Die Qualität unse-

https://www.senior.sk/bakterie-v-ludskom-tele-dobre-ci-zle/

Baktérie v ľudskom tele – dobré či zlé?

Pridal: senior.sk| 08. decembra 2020| : Služby a produkty pre seniorov 258

Tlačiť E-mail

ÚLOHA VITAMÍNU C PRI „ZDRAVOM STARNUTÍ"

S termínom „zdravé starnutie" sa stretávame v súvislosti s označením procesu starnutia bez závažných chorôb v priebehu života. Známe sú tri základné piliere „zdravého starnutia":

mínu C v strave by sa mali pohybovať v rozmedzí 60-90 mg/deň u dospelého človeka. Konkrétne sa odporúča prijať 90 mg/deň pre dospelého zdravého muža a 75 mg/deň pre dospelú zdravú ženu, čo možno dosiahnuť pravidelnou

obličiek, prípadne ľudia geneticky náchylní na tvorbu oxalátových kameňov, a tí, ktorí vedú výlučne sedavý spôsob života. Rozsiahla štúdia sledujúca 23 000 mužov po dobu viac ako 11 rokov zaznamenala tvorbu obličko-

MÔŽU NÁS ANTIOXIDANTY CHRÁNIŤ PRED OCHORENIAMI SPOJENÝMI SO STARNUTÍM?

STARNUTIE OBYVATEĽSTVA JE CELOSVETOVÝM FENOMÉNOM. NA CELOM SVETE ŽIJÚ ĽUDIA DLHŠIE, AKO TO BÝVALO V MINULOSTI. STARNUTIE JE ZLOŽITÝ PROCES A NA JEHO OBJASNENIE BOLO VYVINUTÝCH MNOHO TEÓRIÍ. JEDNA Z TÝCHTO TEÓRIÍ SA ZAKLADÁ NA ŠKODLIVÝCH ÚČINKOCH VOĽNÝCH RADIKÁLOV ALEBO ICH REAKTÍVNYCH METABOLITOV PRODUKOVANÝCH POČAS CELÉHO ŽIVOTA. PODĽA TEJTO TEÓRIE, VOĽNÉ RADIKÁLY V PRIEBEHU ŽIVOTA NAPÁDAJÚ RÔZNE MOLEKULY (PROTEÍNY, LIPIDY, NUKLEOVÉ KYSELINY), ČÍM DOCHÁDZA K STRATE ICH FUNKCIÍ A K ICH AKUMULÁCII V BUNKÁCH.

sanca

na kvalitné sociálne služby

osvetový sociálny občasník 1,80 EUR 2/2021

SKORO SME TO NEPREŽILI ALERGIÍ ČORAZ VIAC A LEKÁROV MENEJ

MRTVICA U MLADÝCH

PRÍLOHA ASOCIÁCIE POSKYTOVATEĽOV SOCIÁLNYCH SLUŽIEB V SR Strany 17 – 39

Publications – Target group, Teaching material

Education – Extension curricula – Aging and Quality of Life at University of Vienna – Open for all students

Altern und Lebensqualität (Erweiterungscurriculum)

Das Ziel des Erweiterungscurriculums ist es, Studierenden ein Basiswissen über altersrelevante Fragestellungen unter Berücksichtigung ernährungsphysiologischer, sozialwissenschaftlicher und pflegewissenschaftlicher Aspekte zu vermitteln. Die Studierenden setzen sich reflexiv mit ihrem eigenen wissenschaftlichen Feld in Bezug auf Altern und Lebensqualität auseinander und lernen in der Interaktion mit Studierenden anderer Disziplinen wichtige Grundfähigkeiten interdisziplinären Arbeitens.

AbsolventInnen sind in der Lage, altersrelevante Fragestellungen multidisziplinär einzuordnen und zu interpretieren und erhalten durch die multidisziplinäre Auseinandersetzung Einblick in mögliche Anwendungsfelder.

Erweiterungscurriculum

Kennzahl: 331

15 ECTS Credits

Sprache: Deutsch

KEINE Voraussetzung

Curriculum

Zum Erweiterungscurriculum

KEINE Voraussetzung

Fragen zum Erweiterungscurriculum:

Department für Ernährungswissenschaften

Erweiterungscurriculum - was ist das?

Studienangebot

- Studienwahl
- Bachelor- und Diplomstudien
- Masterstudien
- Doktoratsstudien
- Lehramtsstudien
- **Erweiterungscurricula und Alternative Erweiterungen**
- Postgraduale Weiterbildung

Kontakt

Department für Ernährungswissenschaften
Weblink

Studienvertretung Ernährungswissenschaften
info@stv-ernaehrung.at
Weblink

TIPP der Uni Wien

Education
Subject Information Sheet
„Healthy Aging“ at University of Bratislava

Open for all doctoral students

SUBJECT INFORMATION SHEET

University: Comenius University in Bratislava
Faculty: Faculty of Medicine
Subject title: Healthy aging
Type, scope and method of educational activities: face-to-face format - 12 hours of lectures per semester - concluded with an exam (subject guarantor: prof. RNDr. Jana Muchová, PhD.)
Number of credits: 10 credits
Recommended semester/trimester of study: 2nd or 4th semester of PhD. studies
Level of study: 3rd level of education
Conditions for completing the course: award of credits with min. 75% attendance at lectures and successful completion of the exam
Learning outcomes: After completing the course, the student will acquire basic knowledge about healthy nutrition, a healthy lifestyle and their impact on people's health from birth to senior age. At the same time, he will get information about the impact of an incorrect lifestyle on life expectancy in health and about the possibilities of how to extend "healthy aging".
Course contents: - **Basic principles of a healthy lifestyle - nutritional requirements and physical activity.** - **Eating habits in youth and their effect on health in old age.** - **Physical activity as a means of promoting health in youth and old age.** - **The role of minerals, vitamins and other nutrients in the prevention of aging-related diseases.** - **Omega-3 fatty acids and their effect on mental and physical health.** - **Intestinal microbiota and its changes in disease and aging. Possibilities of modulation of microbiota composition by food and probiotics.** - **The role of carbohydrates in nutrition, their impact on health and the development of nutrition-related diseases.** - **Final discussion, questions and answers (roundtable).**
Recommended literature: - Keresteš J. et al.: Human health and nutrition, CAD Press, Bratislava 2011 - Teaching material from NutriAging project - scientific literature - PubMed system,
Language, the knowledge of which is necessary to pass the course: Slovak language, English language
Evaluation of subjects: New subject within the EU project from the cross-border cooperation program, Interreg SR-AT "NutriAging" V-014 Final assessment: "passed", "failed"

A	B	C	D	E	FX

Teacher: Prof. Ing. Z. Ďuračková, PhD., Assoc. Prof. RNDr. J. Muchová, PhD., Assoc. Prof. Ing. I. Žitňanová, PhD., RNDr. Z. Paduchová, PhD., RNDr. Z. Országhová, PhD., prof. dr. K-H. Wagner (Faculty of Nutritional Sciences, University of Vienna - as a guest)
Date of last change: 16-06-2020
Approved:

Education

1st Summer school

September 21, 2021

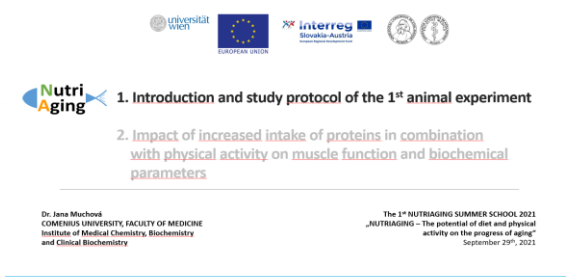
1st NUTRIAGING SUMMER SCHOOL 2021, 29 September 2021 - ONLINE

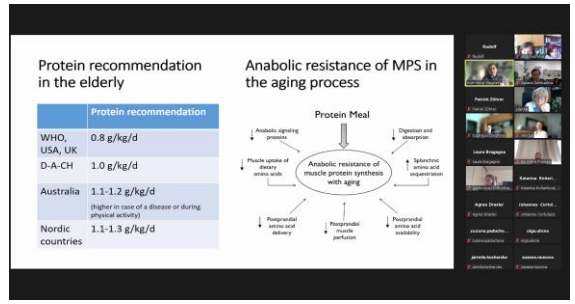
Title: "NUTRIAGING – The potential of diet and physical activity on the progress of aging"

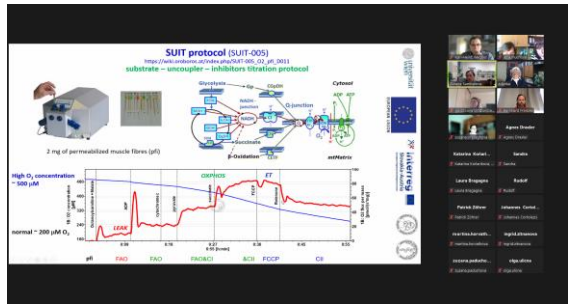
Draft Agenda

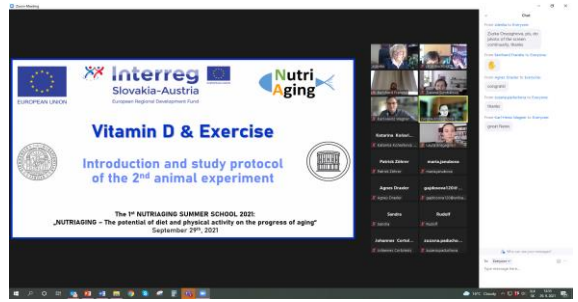
	Program NUTRIAGING Summer School No.1 29. September, Online (ZOOM) https://univienna.zoom.us/j/96910598602?pwd=NGN5SHB2VXpKZXVDbGlsY1Axe
09.00 - 09.45	Welcome, and introduction into the program, introduction of participants Background of the Nutriaging project, Importance of Nutrition and Physical Activity for the Aging progress, which nutrients are related to Aging *Teams in Bratislava and Vienna*
09.45 – 12.00	Impact of Protein on Aging • Introduction and study protocols from Vienna and Bratislava ➢ Introduction and study protocol of the 1st animal experiment (*J. Muchová*) and the human study (*B. Franzke*) • Impact of increased intake of protein and its combination with physical activity on: ➢ the muscle function and biochemical parameters (*J. Muchová*) ➢ the muscle quality, body composition, functional parameters (*S. Unterberger*) ➢ the molecular mechanisms of sarcopenia (*L. Gajdošová*) ➢ mitochondrial function and antioxidant content in skeletal muscle and liver (*Z.Sumbalová*) ➢ oxidative stress and DNA damage (*A. Draxler, L. Bragagna, J. Cortolezis*) ➢ markers of oxidative stress and antioxidant defense (*Z. Paduchová*) ➢ inflammatory markers (*M. Horváthová*) ➢ the microbiota (*P. Zöhrer*) ➢ on behavioral parameters evaluating learning, anxiety and exploration (*A. Černáčková*) ➢ Proteomics (*B. Franzke*) ➢ Metabolomics (*t.b.d.*) • Discussions, Q&A
12.00 - 12.45	***Lunch Break***
12.45 - 13.45	Impact of Fatty acids (Omega-3 and 6) on Aging • Introduction and study protocol of the 3rd animal experiment and human study with omega-3 fatty acids supplementation (*I. Žitňanová*) ➢ Effect of DHA and EPA on cell senescence (*M. Janubová*) • Discussions, Q&A
13.45 – 16.00	Impact of Vitamin D on Aging • Introduction and study protocols from Vienna and Bratislava ➢ Introduction and study protocol of the 2nd animal experiment (*Z. Orszýghová*) and the human study (*K-H. Wagner*) • Impact of increased intake of vitamin D and its combination with physical activity on: ➢ the muscle quality, body composition, functional parameters (*S. Unterberger*) ➢ physical performance (*R. Aschauer*) ➢ chromosomal damage (*A. Draxler*) ➢ oxidative stress and DNA damage (*A. Draxler, L. Bragagna, J. Cortolezis*) ➢ the microbiota (*P. Zöhrer*) ➢ Effect of vitamin D and hyperglycemic conditions on senescent cells (*K. Koňariková*) • Discussions, Q&A
16.00 - 16.30	Biomarkers of Aging (*K-H. Wagner*)
16.30 - 17.00	Discussions, Q&A
17.00 - 17.30	Outlook, Summary, Closing *Speakers:* *Bernhard "Billy" Franzke, Patrick Zöhrer, Agnes Draxler, Sandra Unterberger, Rudi Aschauer, Laura Bragagna, Johannes Cortolezis, Sabine Trettenhahn, Nadine Sedlka, Karl-Heinz Wagner* *Mária Janubová, Katarina Koňariková, Lívia Gajdošová, Martina Horváthová , Alena Černáčková, Zuzana Paduchová, Zuzana Orszýghová, Zuzana Sumbalová, Jana Muchová, Ingrid Žitňanová, Zdeňka Ďuračková*

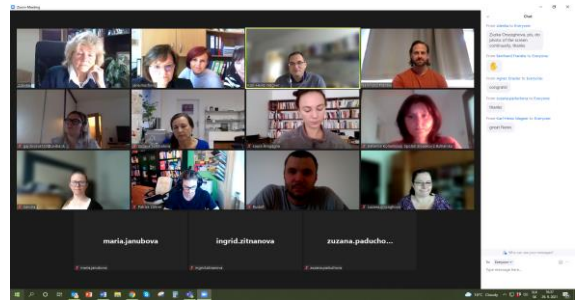
Target groups: Master students, PhD students, Participants of the Nutriaging study, Cooperation partner











Education

2nd Summer school

September 20, 2022

Lekárska fakulta >

O ÚROVEŇ VYŠŠIE
AKTUALITY
O FAKULTE
PRACOVISKÁ
ŠTÚDIUM
VEDA
SLUŽBY
MEDZINÁRODNÉ VZŤAHY
KONTAKT

NUTRIAGING - VÝŽIVA A ZDRAVÉ STARNUTIE

pozvánka na podujatie - 20. - 21. septembra 2022

12. 09. 2022 14.29 hod.

Pozývame vás na podujatia, ktoré sú organizované v rámci projektu VÝŽIVA A ZDRAVÉ STARNUTIE (NutriAging), realizovaného v rámci Programu cezhraničnej spolupráce Interreg V-A Slovenská republika – Rakúsko, prioritná os 1: Prispievanie k inteligentnému cezhraničnému regiónu.

Program Interreg podporuje spoluprácu významných výskumných pracovísk zo Slovenska (Bratislava) a Rakúska (Viedeň) , úlohou ktorej je vzájomné vymieňanie si skúseností a poznatkov a ich následné šírenie širokej verejnosti.

Podujatia sa uskutočnia online formou v prostredí MS Teams a zároveň aj prezenčne v Ladzianskeho posluchárni LFUK:

20.9.2022 - 2. LETNÁ ŠKOLA EURÓPSKEHO PROJEKTU NUTRIAGING: „Čo sa študenti a mladí vedci môžu naučiť z európskeho projektu NutriAging" - MS Teams link

	NUTRIAGING Summer School No.2 – Final program September 20, 2022, Ladziansky Auditorium, Faculty of Medicine, Comenius University, Bratislava and Online (MS Teams)
10.00 – 11.30	Arrival of participants in Bratislava and short lunch
12.30 – 13.00	Welcome, and introduction to the program of the Summer School *Karl-Heinz Wagner and Jana Muchová*
13.00 – 13.30	Plenary lecture: Small dense LDL and dyslipidemia *Stanislav Oravec*
13.30 – 14.45	Paduchová Zuzana: Pitfalls and advantages of determination of lipoprotein subfractions by the Lipoprint system Sumbalová Zuzana: Impact of omega-3 fatty acids and their combination with physical activity on mitochondrial functions Koňariková Katarína: Effects of vitamin D on cell senescence Janubová Mária: γ- and δ-Tocotrienols interfere with senescence leading to decreased viability of cells Gajdošová Lívia: Behavioural testing of rats - Impact of omega-3 fatty acids and their combination with physical activity on locomotor activity, exploratory activity and anxiety
14.45 – 15.15	***Coffee Break***
15.15 - 16.30	Draxler Agnes: Insights into methods to determine chromosomal damage in humans Unterberger Sandra: Association between body composition and physical performance in older adults Stelzer Tamara: Insights into vitamin D and physical activity on gene expression in older age Bragagna Laura: Spectrophotometric methods to determine oxidative damage Zöhrer Patrick: Microbiome and its importance in older age
16.30 - 17.00	Final remarks and closing of NutriAging Summer School II

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Interreg Slovakia-Austria
European Regional Development Fund