

FF INTERACT WITH EPIGENETICS AND EPIGENETICS REGULATES MANY MECHANISMS OF AGING, HOW CAN FF INTERFERE WITH AGE-RELATED DISEASES

The Epigenetic Link between Polyphenols, Aging and Age-Related Diseases

AG Hallberger

Hallmarks of aging

2021 7

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CHROMATIN CHANGES WITH AGING ; DNA-STABILITY (DE-)ACETYLATION REGULATES CHROMATIN, STABILITY ? FF-MEDIATED EPIGENETIC METHYLATION AND HISTONE

MicroRNAs and genomic stability: a new paradigm for microRNA-mediated dietary alterations (R14a)

folate, vitamin B12, niacin and zinc deficiencies impact

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EPIGENETIC METHYLATION IS THE BEST MARKER FOR BIOLOGICAL AGING. EPIGENETIC CLOCK REFLECTS CR, DIETS , LIFESTYLE

Epigenetic clock analysis of diet, exercise, education, and lifestyle factors

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AGING INCREASES DEBRIS, AUTOPHAGY IS REGULATED EPIGENETICALLY, FF INTERFERE

Epigenetic regulation of autophagy and cellular homeostasis

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AGING; TELOMERE SHORTENING BY DECREASED TELOMERASE ACTIVITY RESULTS IN AGEING, hTERT IS REGULATED EPIGENETICALLY, ROLE FOR FF

TELOMERE LENGTH AND AGING

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human telomerase reverse transcriptase (hTERT)

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LONG TELOMERS LINKED TO CANCER EGCG AFFECTS TELOMERASE IN CANCER CELLS, FIBROBLASTS DIFFERENTLY

EGCG AFFECTS TELOMERASE IN CANCER CELLS, FIBROBLASTS DIFFERENTLY

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TARGET EPIGENETIC REGULATION ? RESULTS FROM A EGCG BASED SUPPLEMENT STUDY, MLH1

The slide features the cover of the *Journal of Nutrition & Food Science* with the title "EGCG Containing Combined Dietary Supplement Affects Telomeres and Epigenetic Regulation". Below the cover is a bar chart showing MLH1 levels across different groups. The chart has four bars with approximate values of 1.0, 1.5, 2.0, and 2.5. The y-axis is labeled "MLH1" and the x-axis has four categories. The slide is attributed to AG Hallberger, 2021.

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AGING; MITOCHONDRIA; ROS; EPIGENETICS POLYPHENOLS ANTIOXIDANT ACTIVITIES

The slide contains three main components: 1) A diagram of a mitochondrion showing the aging process and the production of ROS. 2) A flowchart titled "Integrated regulation of aging" showing the interplay between various factors. 3) A line graph showing "Reactive Oxygen Species (ROS)" levels over "Time". The graph shows a peak in ROS levels followed by a decline. The slide is attributed to AG Hallberger, 2021.

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AGING AND CELLULAR OR ORGANISMIC SENESENCE, EPIGENETICS AND SENOLYTICS

The slide features a diagram of cellular senescence on the left, showing various markers and pathways. On the right is a flowchart titled "Aging" showing the progression from "Progeria" to "Senescence" and "Senolysis". The slide is attributed to AG Hallberger, 2021.

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STUDY SENOLYTICS, SENESENCE MARKERS IN BRDU TREATED PRE-ADIPOCYTES, ADIPOCYTES, 3T3

The slide includes a research abstract titled "Epigallocatechin Gallate Effectively Attenuates Senescence and Anti-SASP via SIRT1 in 3T3-L1 Preadipocytes in Comparison with Other Elavable Substrates". Below the abstract are two microscopy images: one showing "B-Gal, senescence" and another showing "Adipocytes, fat droplets". The slide is attributed to AG Hallberger, 2021.

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EGCG EFFECTIVELY REDUCE SENESENCE (P21) AND SASP
EGCG, SPERMIDINE, RESVERATROL, ANTHOCYANS STIMULATE SIRT3

The slide displays four bar charts showing the effects of different compounds on P21 and SASP levels. The compounds are EGCG, Spermidine, Resveratrol, and Anthocyanins. The charts show that EGCG effectively reduces P21 and SASP levels, while the other compounds stimulate SIRT3. The slide is attributed to AG Hallberger, 2021.

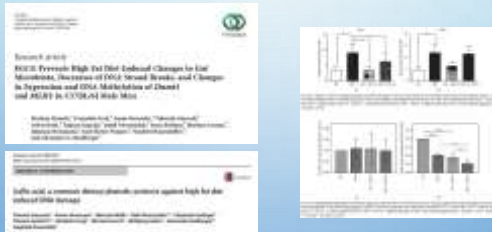
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AGING DNA-DAMAGE RESPONSE, DNA-REPAIR, EPIGENETICS, POLYPHENOLS

The slide features a diagram of the DNA damage response on the left, showing the pathways from DNA damage to cell cycle arrest and apoptosis. On the right is a table titled "Polyphenols" showing the effects of various polyphenols on different cellular processes. The slide is attributed to AG Hallberger, 2021.

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MOUSE STUDY: EGCG REDUCED HIGH FAT DIET INDUCED STRANDBREAKS, DNMT1, COMET ASSAY



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DIET MEDIATED METHYLATION OF DNA-REPAIR MLH1



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Aging and Polyphenols modify structure of gut microbiota, production of butyrate, epigenetics



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STRUCTURE, HIGHLY INDIVIDUALLY COMPOSITION OF GUT MICROBIOTA INFLUENCES THE METABOLISATION OF POLYPHENOLS



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IMPROVE, MIMIC EFFECTS OF HEALTHY MICROBIOTA STRUCTURE. NEW POSTBIOTICS, NON VIABLE BACTERIA AND EPIGENETICS



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BEST PROVEN METHOD FOR LONGEVITY CR, FASTING. ROLE OF SIRTUINS, BUTYRATE, KETONS EPIGENETIC



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THE HYPE OF CR-, FASTING- MIMETICS TARGETING SIRT, AMPK, TOR; AUTOPHAGY, INFLAMMAGING, SENOLYSIS, COGNITIVE FUNCTIONS,...

Aspirin and its active metabolite salicylate stimulate autophagic flux by inhibitory action on acetyltransferase EP300.



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STUDY COMPARING FASTING AND A FASTING MIMETIC SIRT-FOOD SHOT; EFFECTS ON KETO., SIRTUINS, FOXO, MTDNA, MICROBIOTA

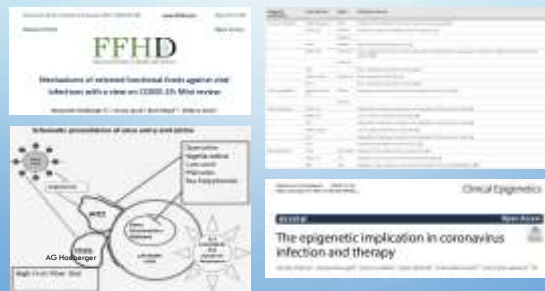


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EPIGENETIC ACTIVE FF ADDRESS EPIGENETIC MECHANISMS RNA-VIRUSES, SARS-COV USE FOR INFECTION, ATTACHMENT AND REPLICATION; INHIBITORS



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KNOWLEDGE FROM GENETICS, EPIGENETICS, MICROBIOTA, METABOLOMICS: THE WAY TO A PERSONALISED PRECISION MEDICINE; NUTRITION

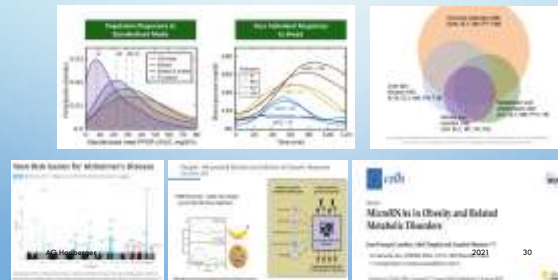


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PERSONAL DIFFERENT AGING, PERSONAL DIFFERENT RESPONSES TO NUTRITION, FOODS. GENETIC SNPs, MICROBIOTA, EPIGENETIC



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THE NEED FOR GOOD MARKERS, EPIGENETIC MARKERS IN COMBINATION WITH MICROBIOTA AND SNPS



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MOSTLY DTC TESTING FOR NUTRITIONAL ADVICE IS BASED ON CHEAP SNP TESTING ONLY –(THE PENETRANCE OF SNPS IS LOW

For diseases controlled by 1000 loci of mean relative risk of only 1.04, a case-control study with 10,000 cases and controls can lead to selection of ~75 loci that explain >50% of the genetic variance. The 5% of people with the highest predicted risk are three to seven times more likely to suffer the disease than the population average, depending on heritability and disease prevalence. Whether an individual with known genetic risk develops the disease depends on known and unknown environmental factors.

Prediction of individual genetic risk to disease from genome-wide association studies
Hershey, K. (2017). *MedicalXpress*. Published 17 and Paul M. Heston

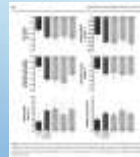
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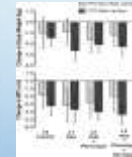
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Flagship EU- FOOD4ME STUDY RESULTS PROVE „PERSONAL NUTRITION DOES BETTER THAN ON SIZE FITS ALL“, J. MATHERS



Changes in dietary intake after personalized advice
Healthy eating index
AG Haslberger



Changes in adiposity markers were greater in participants who were informed that they carried the FTO risk allele (level 3 AT/AA carriers) than in the nonpersonalized group



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PERSONAL-, PRECISION NUTRITION FOR PREVENTION AND INTERVENTION: MARKER ANALYSIS; BIOINFORMATIC DATA INTEGRATION; INTERVENTION



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Precision nutrition for prevention and management of type 2 diabetes (D. D. Wang & Hu, 2018)

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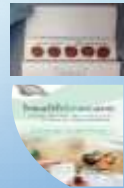
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MARKER FOR MAIN AGING MECHANISMS FOR IDENTIFICATION OF POSSIBLE DANGEROUS DEVELOPMENTS; „ACHILLES HEELS- CONCEPT“



- Telomers
- SNPs
- DNA methylation
- miRNAs
- DNA methylation, epigenetic clock
- Senescence
- DNA stability



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PERSONALISED SUPPLEMENTS, FF: IDENTIFY POSSIBLE ACHILLES HEELS FROM AGING MECHANISMS, COMPOSE ADEQUATE FF- MIX



Molecular markers based screening of dietary aging

Detection of personalized mix of additives, functional foods, nutraceuticals and probiotics

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Discussion



www.alexander-haslberger.at

www.My-Personal.Health

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