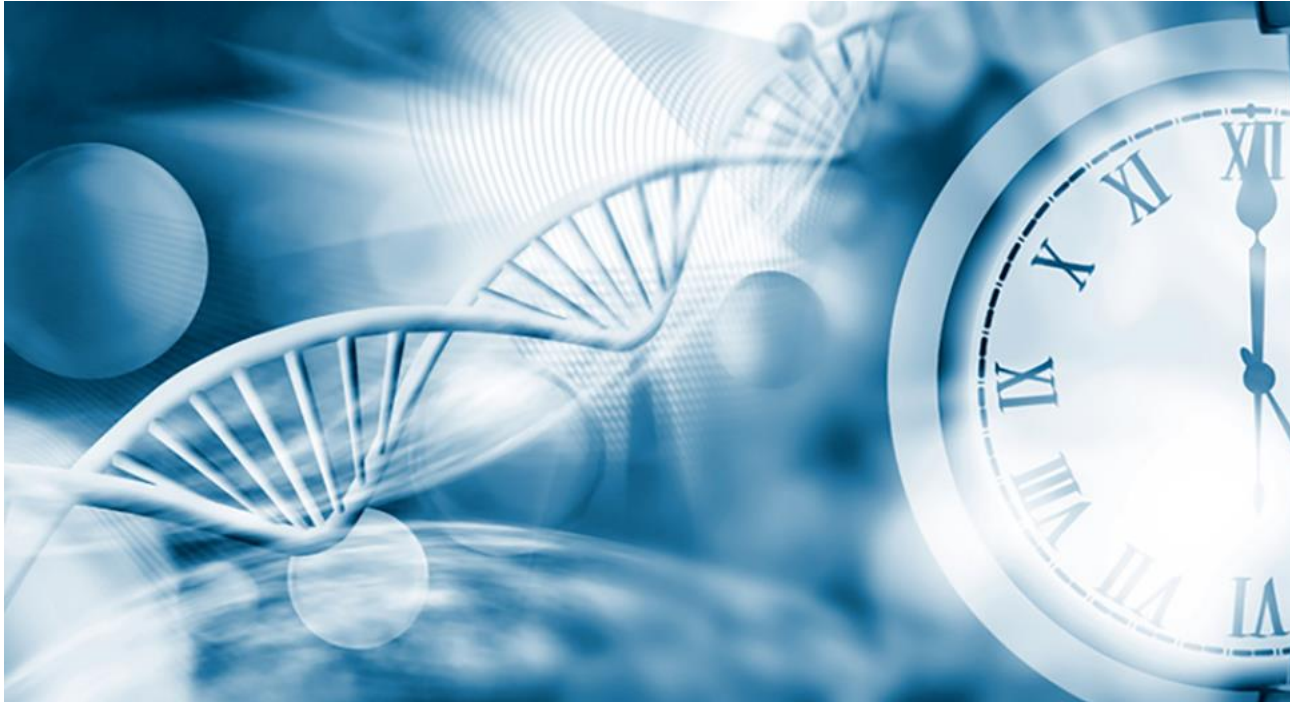


REVERSING THE BIOLOGICAL CLOCK: LESSONS LEARNED IN GEROSCIENCE

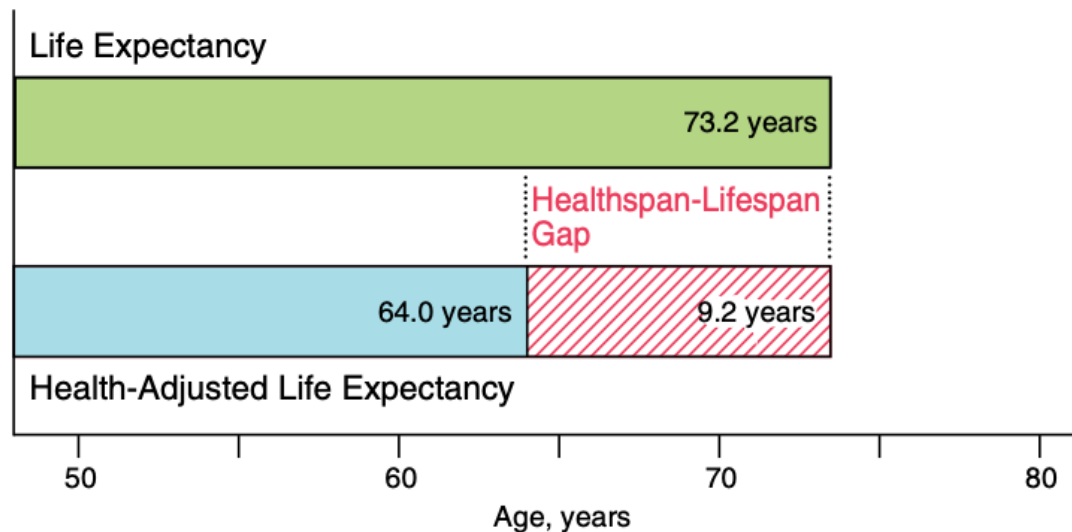


OVERVIEW

1. Introduction
2. What is ageing?
3. The key hallmarks of ageing
4. Why is autophagy imperative to counter cellular ageing?
5. How do pH changes aggravate ageing processes and contribute to chronic disease?
6. What is NMN and how does it promote longevity?
7. Which dietary and lifestyle interventions are supportive of healthy ageing?

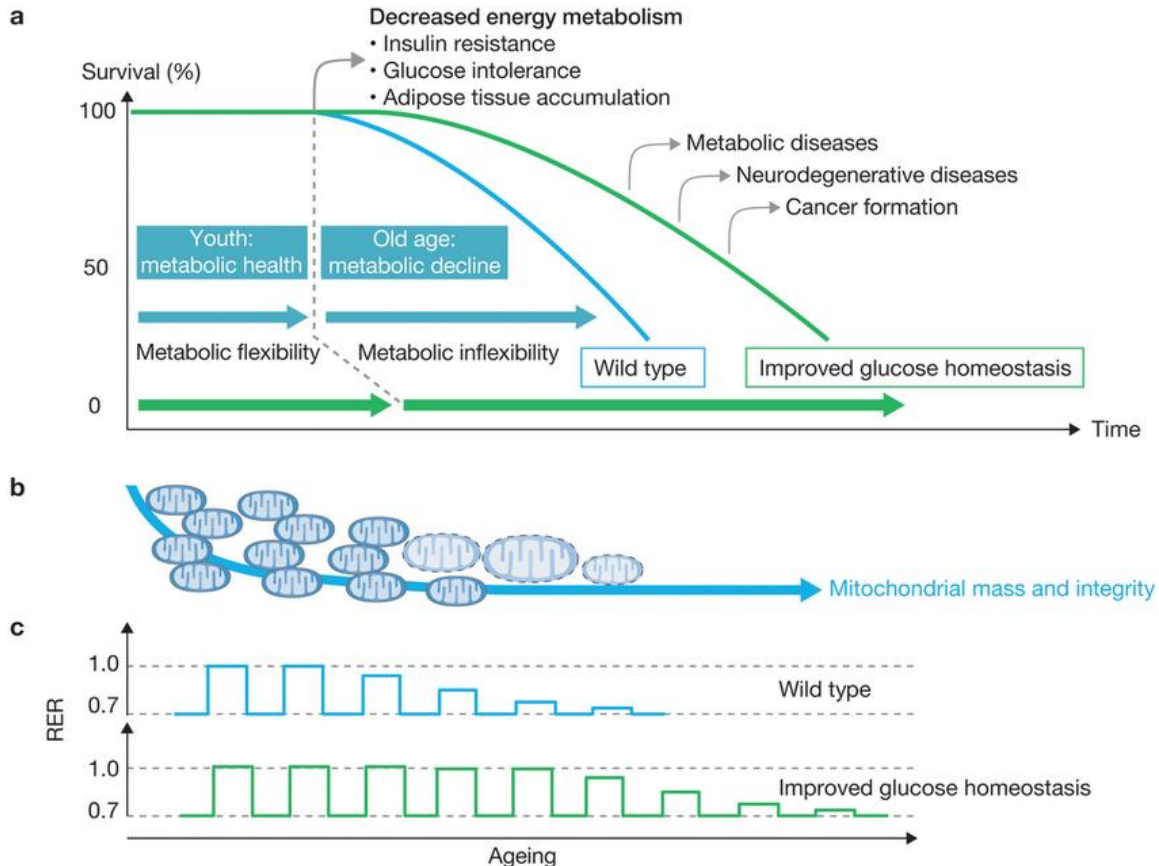
THE HEALTHSPAN-LIFESPAN GAP

- Since the mid-twentieth century, **life expectancy** has increased by **three decades**
- Unfortunately, **healthspan** has not followed suit, largely due to the **mass of chronic diseases** which plague the growing older population



Garmany, A., Yamada, S., & Terzic, A. (2021). Longevity leap: Mind the healthspan gap. *npj Regenerative Medicine*, 6(1), 1-7.

METABOLIC FLEXIBILITY CONTROLS HEALTHSPAN & LIFESPAN



Riera, C. E., & Dillin, A. (2015). Tipping the metabolic scales towards increased longevity in mammals. *Nature cell biology*, 17(3), 196-203.

WHAT IS AGEING?

- Telomere shortening
- Higher probability of disease
- Accumulation of intracellular and extracellular waste



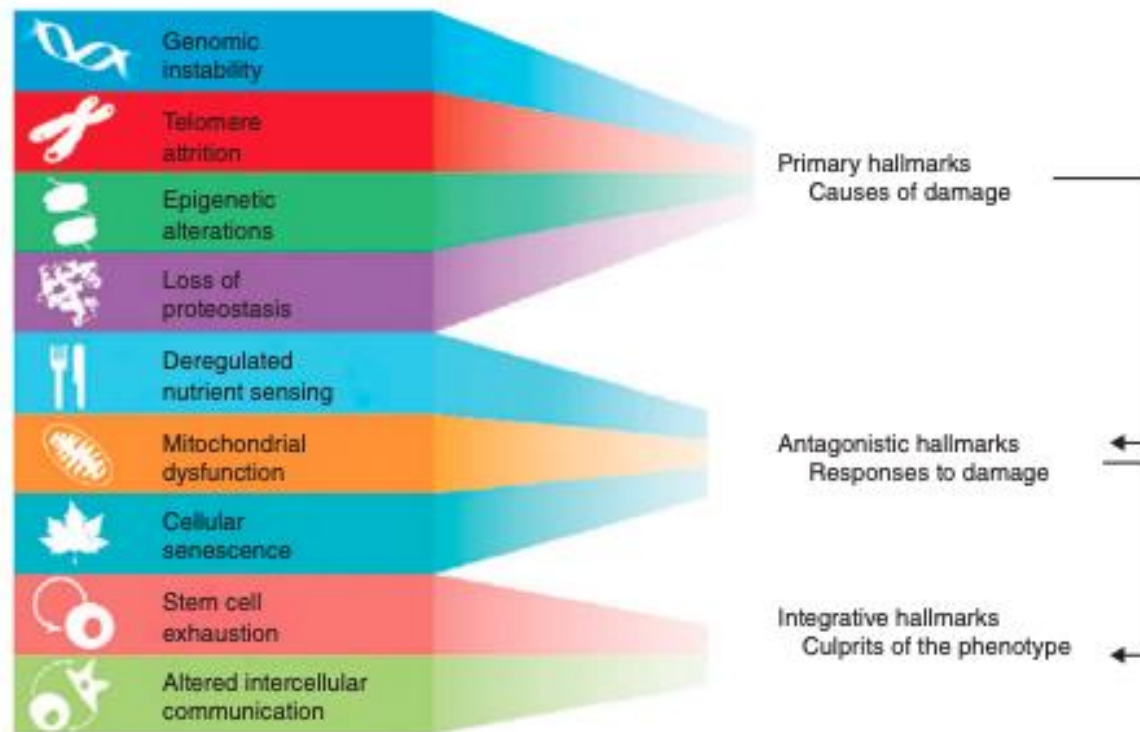
HALLMARKS OF AGEING

- Age is a leading risk factor for several common diseases, including type 2 diabetes, cancer, Alzheimer's disease and heart disease
- 58% of chronic disease-related mortality transpires in individuals over 70 years of age



Aunan, J. R., Watson, M. M., Hagland, H. R., & Sørreide, K. (2016). Molecular and biological hallmarks of ageing. *Journal of British Surgery*, 103(2), e29-e46.
Garmany, A., Yamada, S., & Terzic, A. (2021). Longevity leap: Mind the healthspan gap. *npj Regenerative Medicine*, 6(1), 1-7.

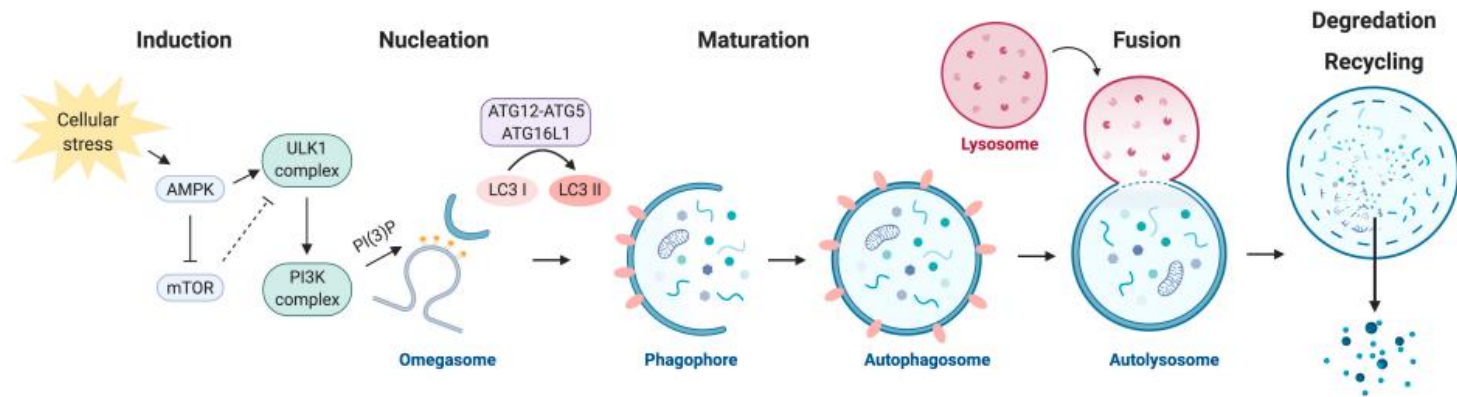
A CLOSER LOOK AT THE 9 HALLMARKS OF AGEING



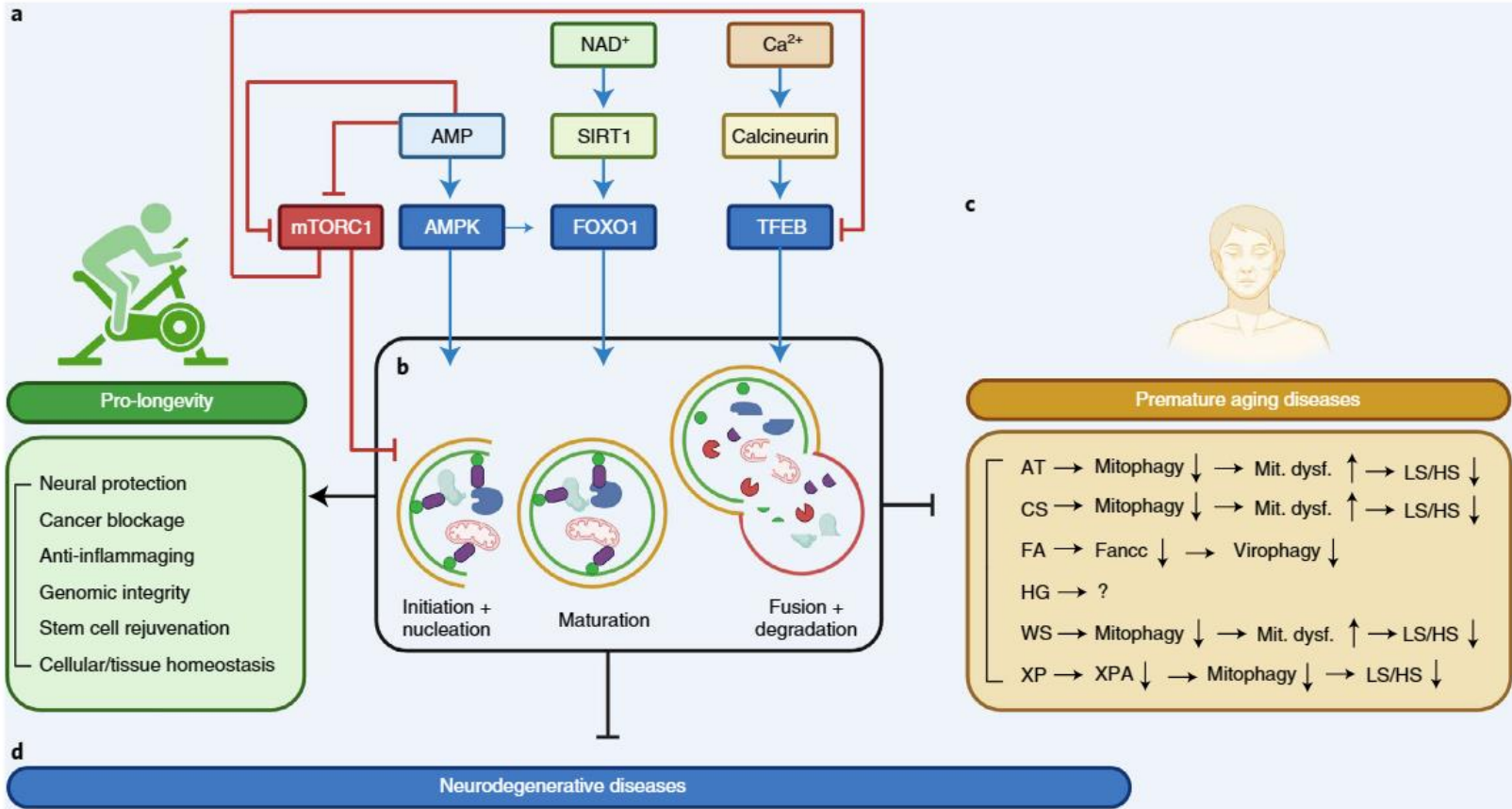
Aunan, J. R., Watson, M. M., Hagland, H. R., & Sørdeide, K. (2016). Molecular and biological hallmarks of ageing. *Journal of British Surgery*, 103(2), e29-e46.
Garmany, A., Yamada, S., & Terzic, A. (2021). Longevity leap: Mind the healthspan gap. *npj Regenerative Medicine*, 6(1), 1-7.

STRATEGIES FOR REVERSING THE BIOLOGICAL CLOCK

Reduction of intracellular waste - autophagy

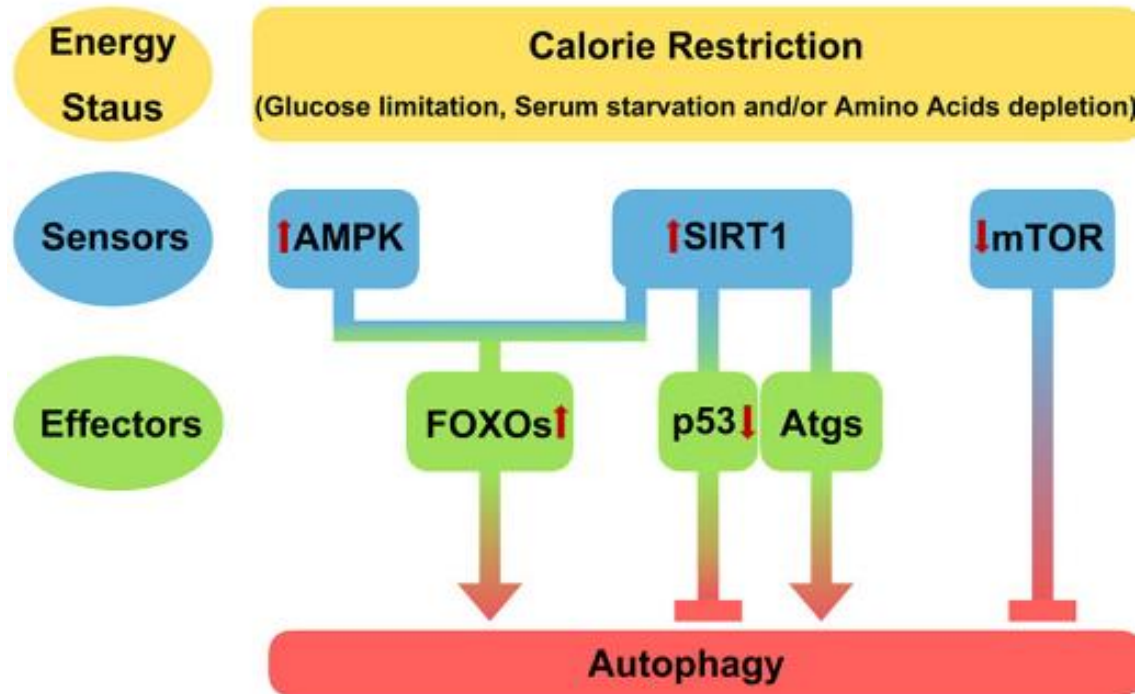


Chang, N. C. (2020). Autophagy and stem cells: self-eating for self-renewal. *Frontiers in Cell and Developmental Biology*, 8, 138.



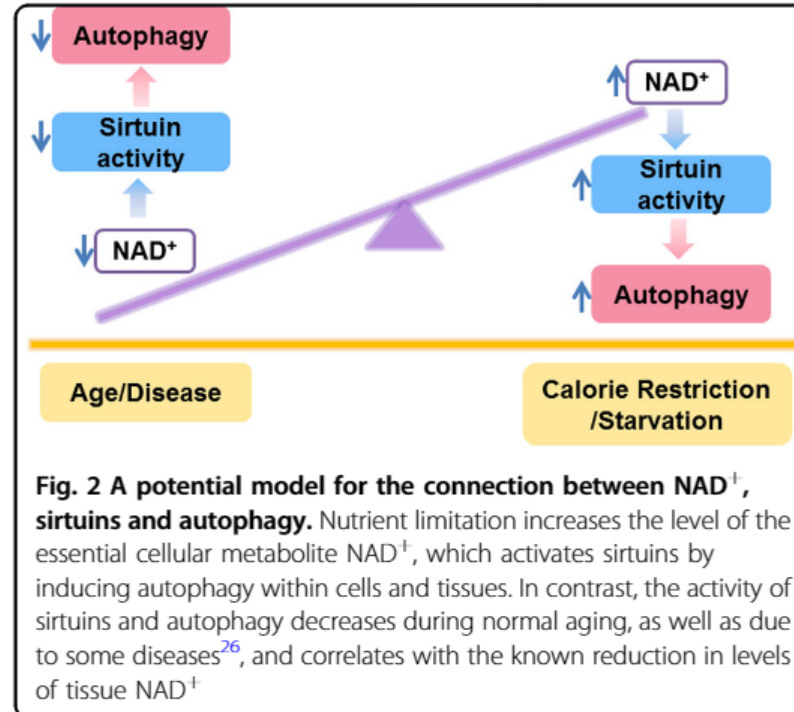
Aman, Y., Schmauck-Medina, T., Hansen, M. *et al.* Autophagy in healthy aging and disease. *Nat Aging* 1, 634–650 (2021).

THE REGULATION OF AUTOPHAGY BY SIRT1 UNDER CALORIE RESTRICTION



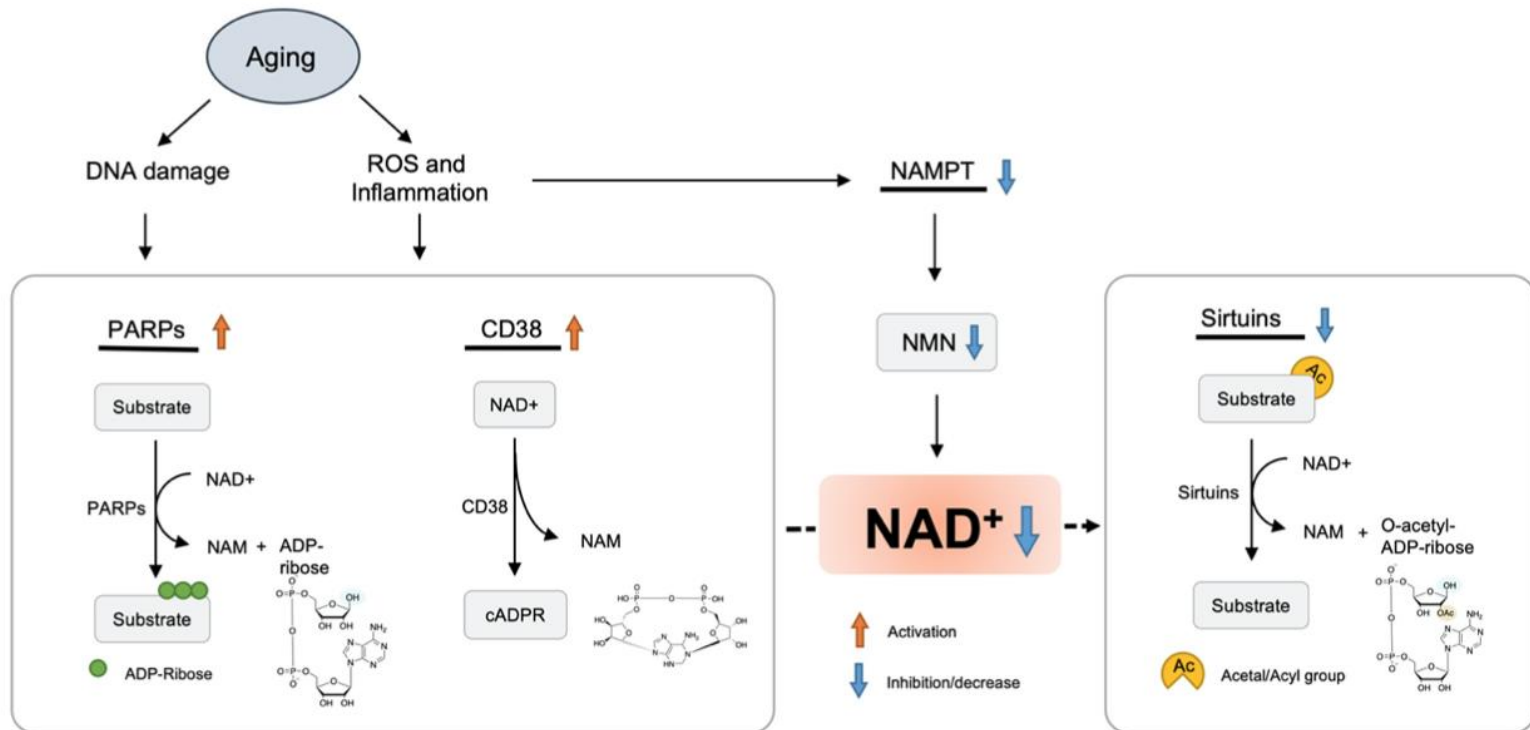
Lee, I. H. (2019). Mechanisms and disease implications of sirtuin-mediated autophagic regulation. *Experimental & molecular medicine*, 51(9), 1-11.

THE CONNECTION BETWEEN NAD⁺, SIRTUINS & AUTOPHAGY

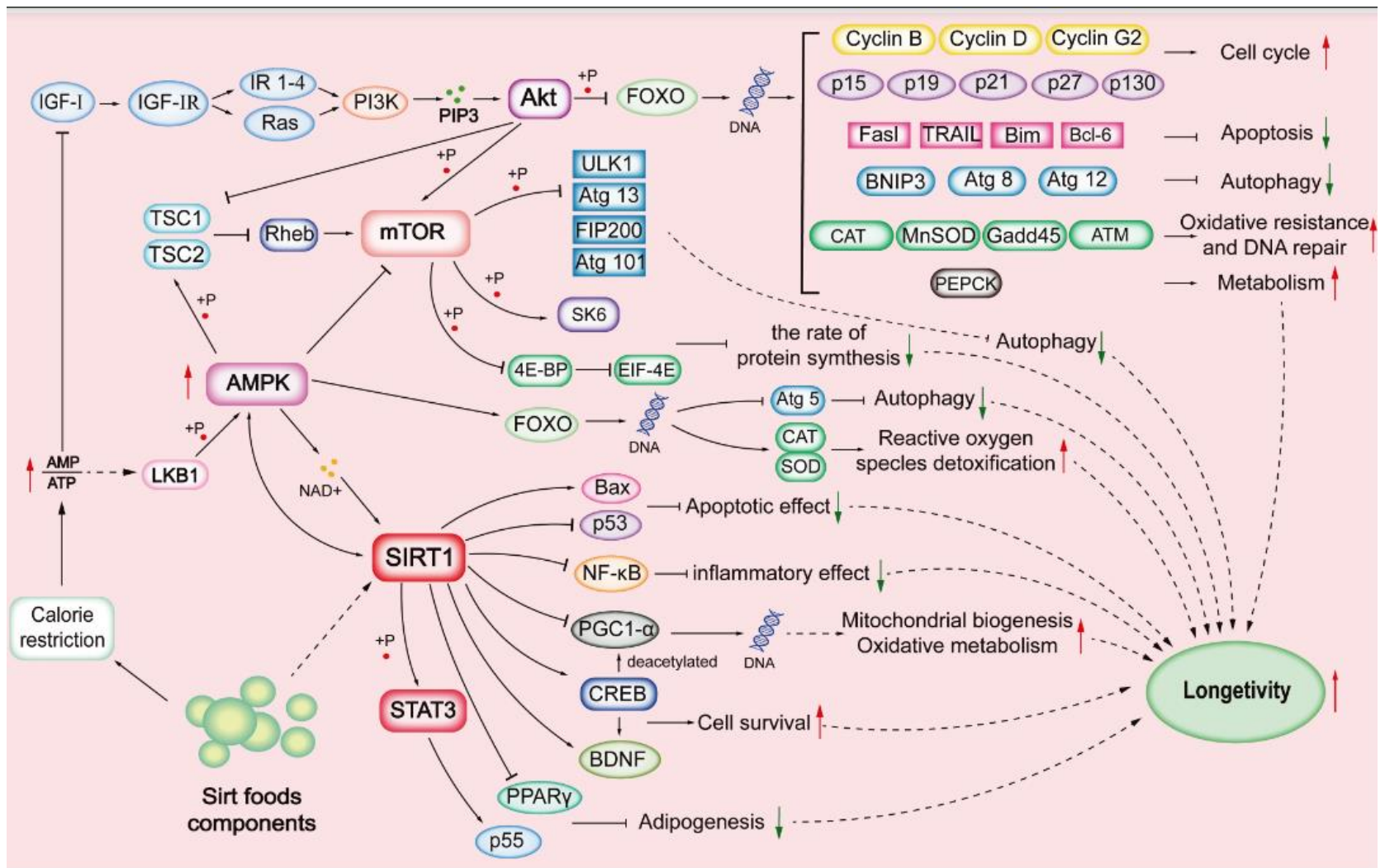


Lee, I. H. (2019). Mechanisms and disease implications of sirtuin-mediated autophagic regulation. *Experimental & molecular medicine*, 51(9), 1-11.

NAD+ BIOSYNTHETIC PATHWAYS DECLINE WITH AGE



Hong, W., Mo, F., Zhang, Z., Huang, M., & Wei, X. (2020). Nicotinamide mononucleotide: a promising molecule for therapy of diverse diseases by targeting NAD⁺ metabolism. *Frontiers in cell and developmental biology*, 8, 246.



Akan, O.D.; Qin, D.; Guo, T.; Lin, Q.; Luo, F. Sirtfoods: New Concept Foods, Functions, and Mechanisms. *Foods* **2022**, *11*, 2955.

TOP 20 SIRT FOODS

- Kale
- Red wine
- Strawberries
- Onions
- Soy
- Parsley
- Extra virgin olive oil
- Dark chocolate (85% cocoa)
- Matcha green tea
- Buckwheat
- Turmeric
- Walnuts
- Arugula (rocket)
- Bird's eye chili
- Lovage
- Medjool dates
- Red chicory
- Blueberries
- Capers
- Coffee



Akan, O.D.; Qin, D.; Guo, T.; Lin, Q.; Luo, F. Sirtfoods: New Concept Foods, Functions, and Mechanisms. *Foods* **2022**, *11*, 2955.

FASTING PROMOTES LONGEVITY

Functional Foods in Health and Disease 2020; 10(10):439-455

www.ffhdj.com

Page 439 of 455

Research Article

Open Access



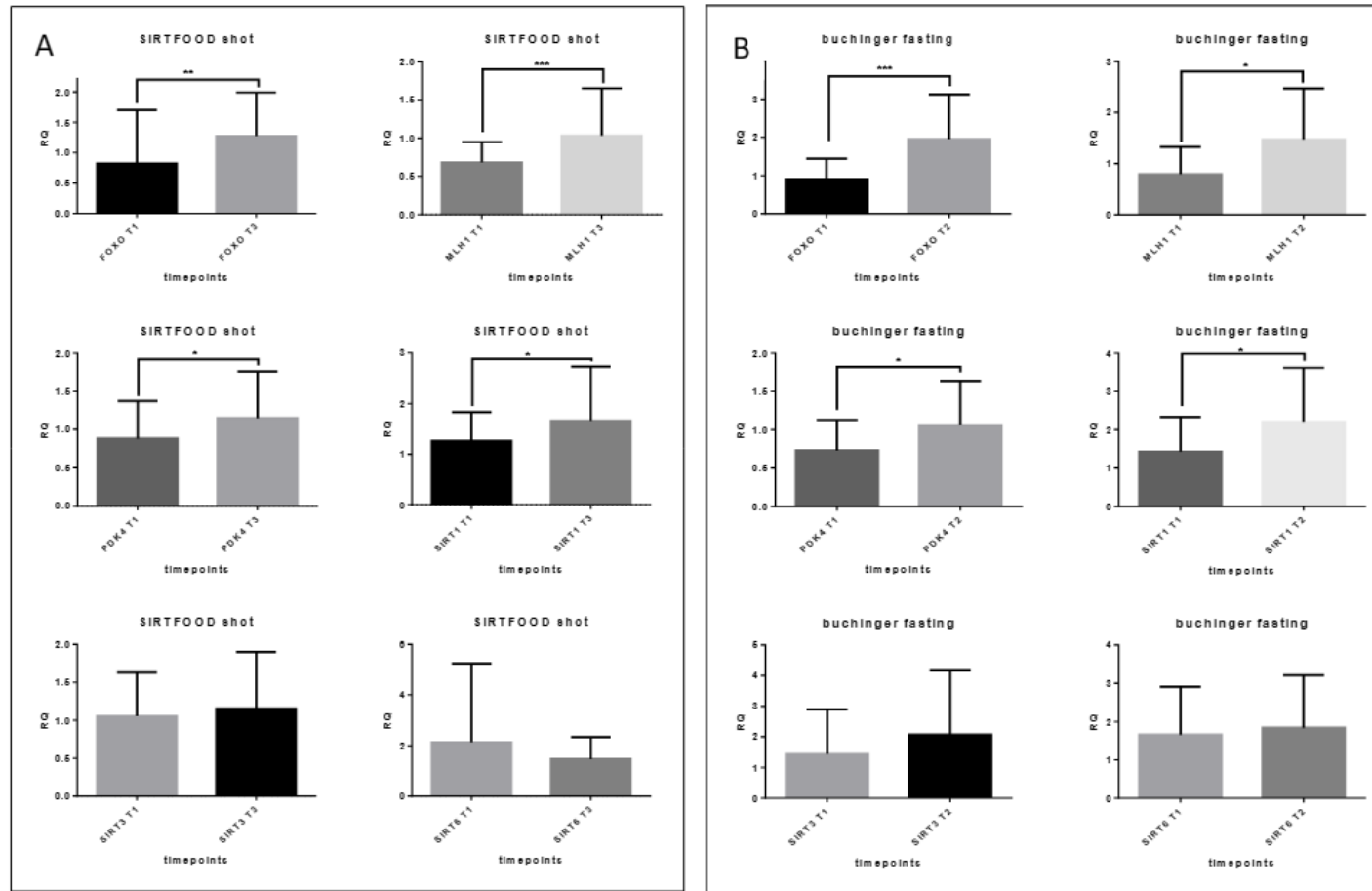
Fasting and fasting mimetic supplementation address sirtuin expression, miRNA and microbiota composition

Stephanie Lilja¹, Angelika Pointner¹, Hanna Bäck¹, Kalina Duszka¹, Berit Hippe¹, Lucia Suarez¹, Ingrid Höfinger², Tewodros Debebe³, Jürgen König¹, Alexander G. Haslberger¹

¹Department of Nutritional Sciences, University of Vienna, 1090 Vienna, Austria, ²Monastory, Pernegg, ³Biomes NGS GmbH, Germany

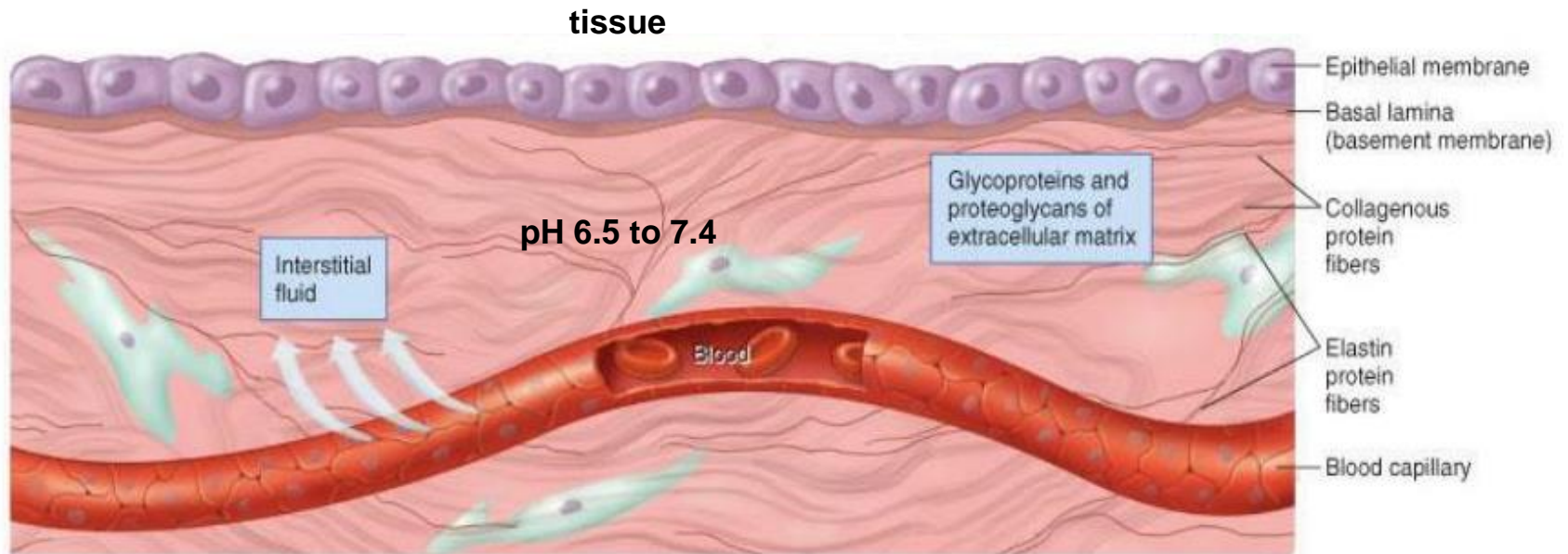
Conclusions: Our results confirm the effects of fasting on longevity associated mechanisms but also suggest that SIRTFOOD shot intervention addresses some of these effects.

Lilja, S., Bäck, H., Duszka, K., Hippe, B., Suarez, L., Höfinger, I., ... & Haslberger, A. (2020). Fasting and fasting mimetic supplementation address sirtuin expression, miRNA and microbiota composition. *Functional Foods in Health and Disease*, 10(10), 439-455.

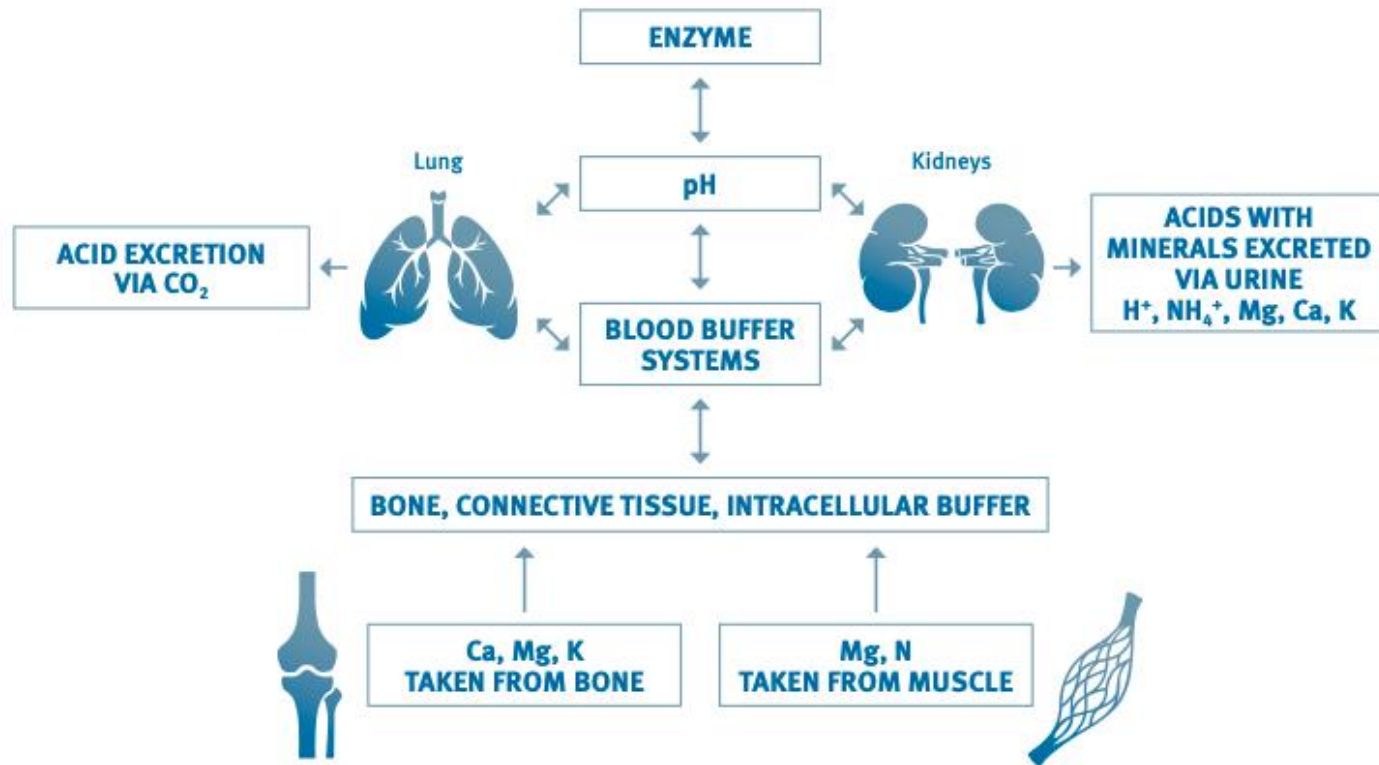


Lilja, S., Bäck, H., Duszka, K., Hippe, B., Suarez, L., Höfingier, I., ... & Haslberger, A. (2020). Fasting and fasting mimetic supplementation address sirtuin expression, miRNA and microbiota composition. *Functional Foods in Health and Disease*, 10(10), 439-455.

PH & AGEING



REGULATION OF ACID-BASE METABOLISM



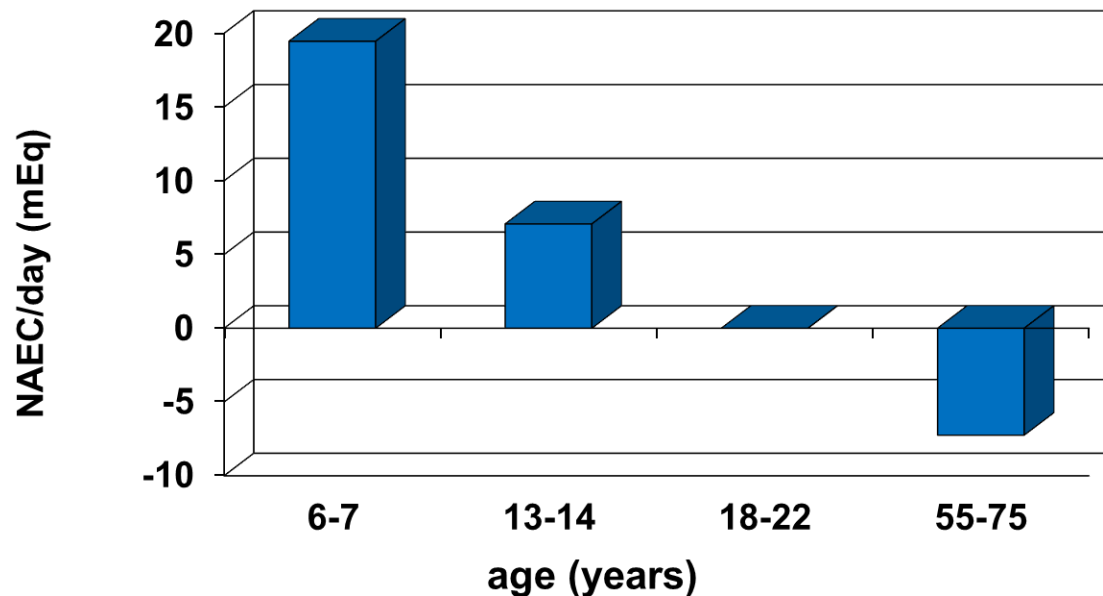
Vormann, J., & Goedecke, T. (2006). Säure-Basen-Haushalt: Latente Azidose als Ursache chronischer Erkrankungen. *Schweizerische Zeitschrift für Ganzheitsmedizin/Swiss Journal of Integrative Medicine*, 18(5), 255-266.

CAUSES OF LATENT ACIDOSIS

- High intake of acidic food ingredients, mainly protein and phosphates.
- Low intake of alkaline foods (vegetables, fruits) in our usual diet.
- Protein metabolism - sulphur-containing amino acids:
methionine/cysteine \rightarrow glucose + urea + SO_4^{2-} + 2H^+
- Dieting and fasting
- Strenuous activity (athletes)
- Acute or chronic inflammation



RELATIVE ACID EXCRETION CAPACITY (NAEC) IN HEALTHY PEOPLE OF DIFFERENT AGES



Berkemeyer, S., Vormann, J., Günther, A. L., Rylander, R., Frassetto, L. A., & Remer, T. (2008). Renal net acid excretion capacity is comparable in prepubescence, adolescence, and young adulthood but falls with aging. *Journal of the American Geriatrics Society*, 56(8), 1442-1448.

DIETARY ACID LOAD & TYPE 2 DIABETES RISK

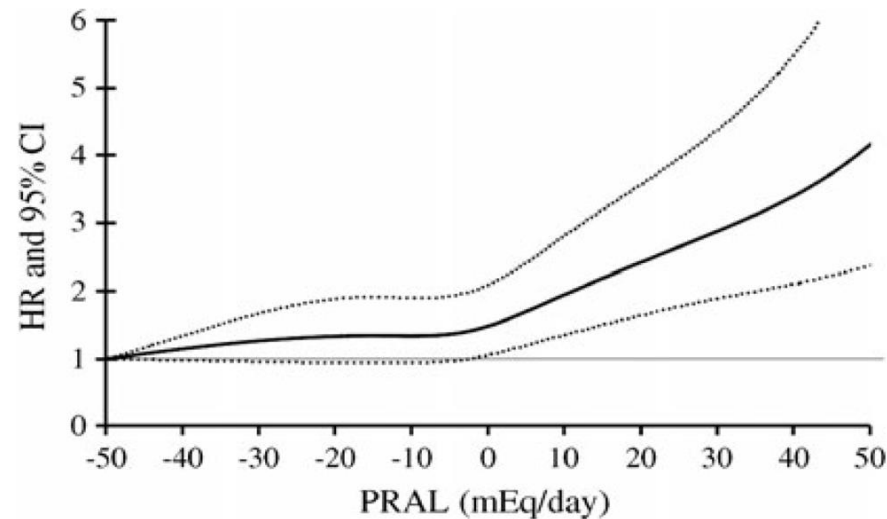


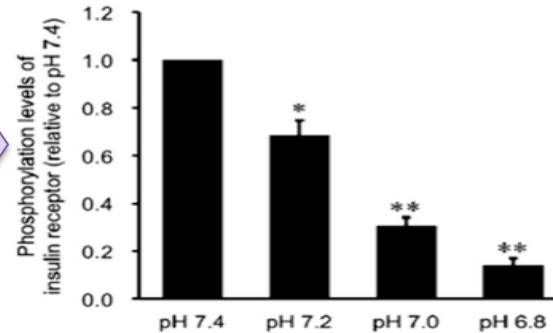
Fig. 1 Cubic spline regression model between PRAL score and risk of type 2 diabetes (E3N-EPIC cohort data, $N=66,485$).

Fagherazzi et al. Dietary acid load and risk of type 2 diabetes: the E3N-EPIC cohort study. *Diabetologia*. 2014 Feb;57(2):313-20.

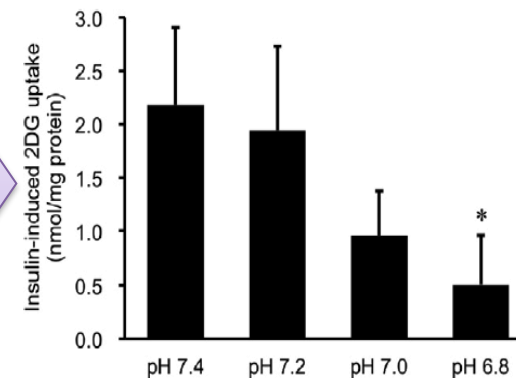
INSULIN RECEPTORS AND PH

- Higher fasting insulin after induction of acidosis.
- Glucose uptake decreased at low pH.
- Insulin receptors (and AKT phosphorylation) decreased in low pH media.

Insulin receptor activation



Uptake of glucose into the cell



Hayata, M et al. (2014). The serine protease prostaticin regulates hepatic insulin sensitivity by modulating TLR4 signalling. *Nature communications*, 5, 3428



Article

Exercise Training, Intermittent Fasting and Alkaline Supplementation as an Effective Strategy for Body Weight Loss: A 12-Week Placebo-Controlled Double-Blind Intervention with Overweight Subjects

Kuno Hottenrott ^{1,*} , Tanja Werner ², Laura Hottenrott ³, Till P. Meyer ⁴ and Jürgen Vormann ⁵

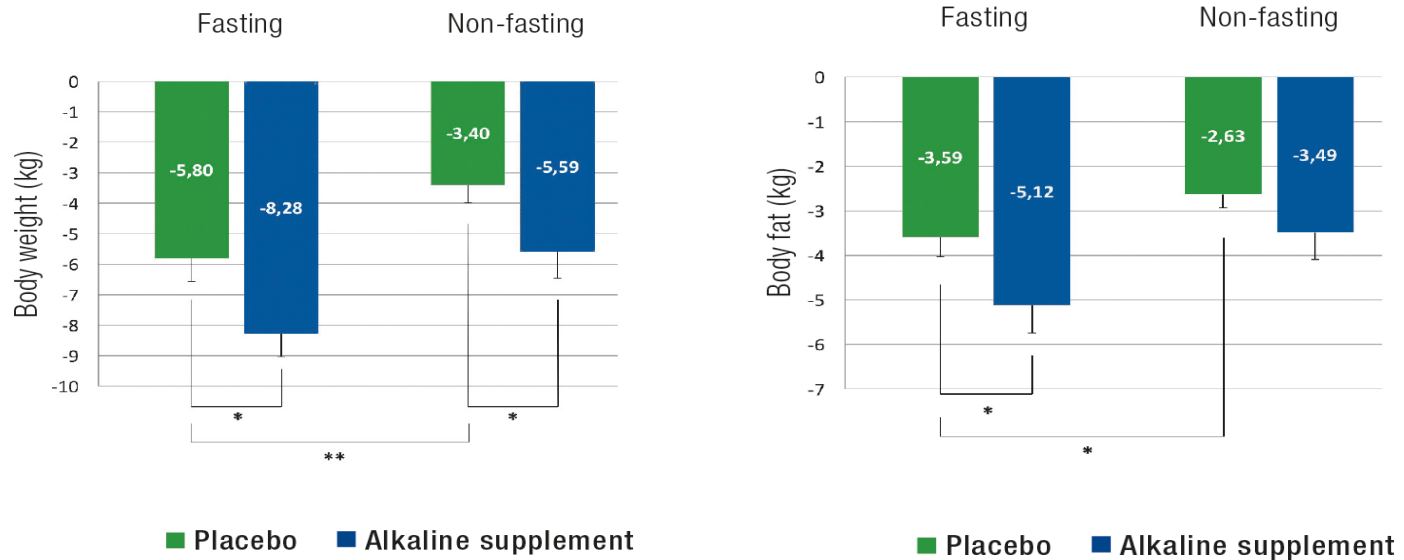
- ¹ Institute for Performance Diagnostics and Health Promotion, Martin-Luther-University of Halle-Wittenberg, 06108 Halle, Germany
 - ² NuOmix Research k.s. Applied Nutriomic Research, Martin, 81106 Bratislava, Slovakia; werner@nuomix-research.com
 - ³ Faculty of Sport Science, Ruhr-University Bochum, 44801 Bochum, Germany; laura.hottenrott@rub.de
 - ⁴ Institute of Sport Science, Martin-Luther-University of Halle-Wittenberg, 06108 Halle, Germany; till-meyer@gmx.net
 - ⁵ Institute for Prevention and Nutrition, 85737 Ismaning, Germany; vormann@ipev.de
- * Correspondence: kuno.hottenrott@sport.uni-halle.de

Received: 11 May 2020; Accepted: 19 May 2020; Published: 21 May 2020



Hottenrott, K., Werner, T., Hottenrott, L., Meyer, T. P., & Vormann, J. (2020). Exercise training, intermittent fasting and alkaline supplementation as an effective strategy for body weight loss: A 12-week placebo-controlled double-blind intervention with overweight subjects. *Life*, 10(5), 74.

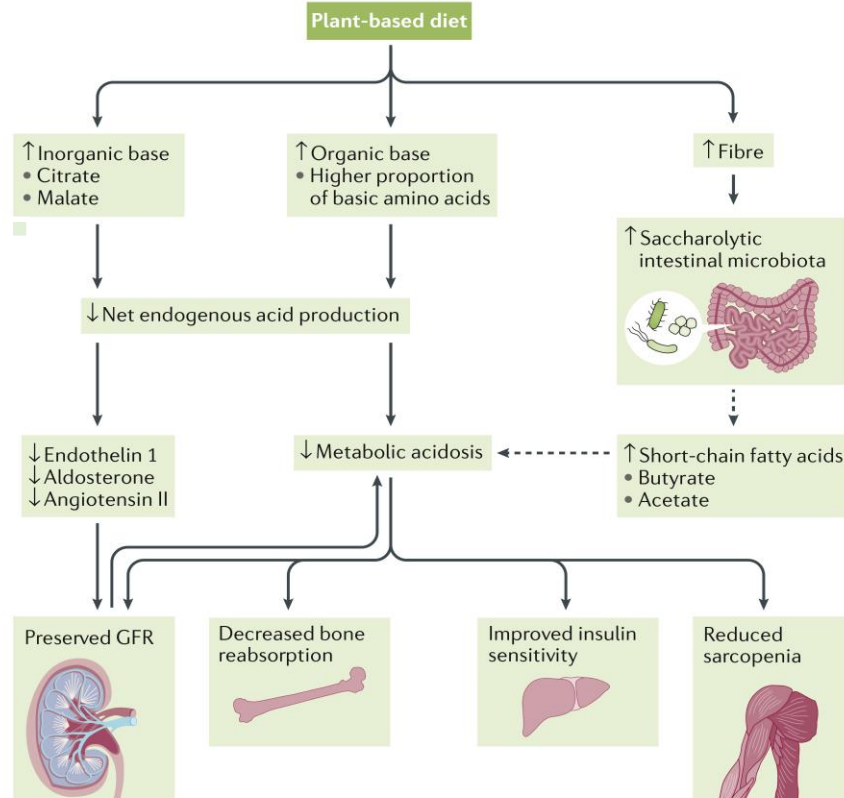
RESULTS: WEIGHT



Body weight loss (left) and body fat loss (right) with fasting and non-fasting subjects taking placebo and alkaline supplement. * $p < 0.05$; ** $p < 0.01$

Hottenrott, K., Werner, T., Hottenrott, L., Meyer, T. P., & Vormann, J. (2020). Exercise training, intermittent fasting and alkaline supplementation as an effective strategy for body weight loss: A 12-week placebo-controlled double-blind intervention with overweight subjects. *Life*, 10(5), 74.

PLANT FOOD INTAKE & ACID-BASE HOMEOSTASIS



Carrero, J. J., González-Ortiz, A., Avesani, C. M., Bakker, S. J., Bellizzi, V., Chauveau, P., ... & Fouque, D. (2020). Plant-based diets to manage the risks and complications of chronic kidney disease. *Nature Reviews Nephrology*, 16(9), 525-542.

ACIDIC VERSUS ALKALINE FOODS

acidic food (positive PRAL)



alkaline food (negative PRAL)

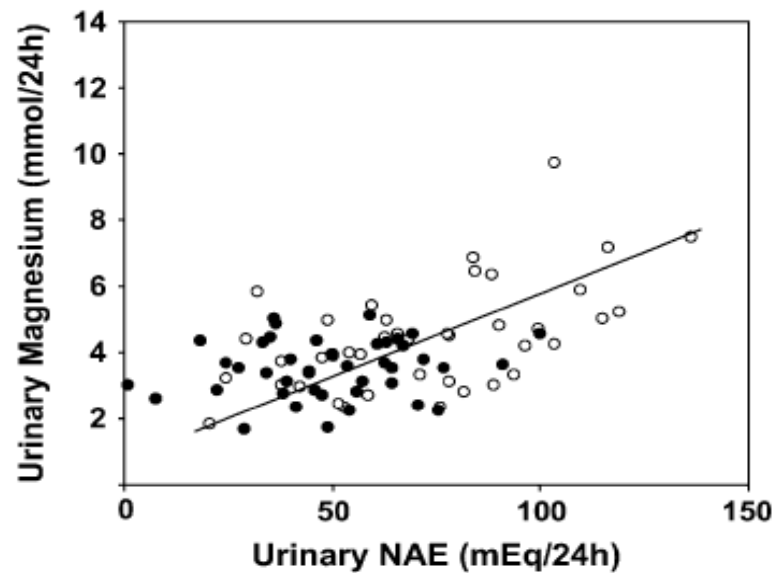




Acid-Base Status Affects Renal Magnesium Losses in Healthy, Elderly Persons¹

Ragnar Rylander,^{2*} Thomas Remer,³ Shoma Berkemeyer,³ and Jürgen Vormann⁴

²University of Göteborg, Gothenburg, Sweden; ³Research Institute of Child Nutrition, 44225 Dortmund, Germany; and ⁴Institute for Prevention and Nutrition, 85733 Ismaning, Germany



Rylander, R., Remer, T., Berkemeyer, S., & Vormann, J. (2006). Acid-base status affects renal magnesium losses in healthy, elderly persons. *The Journal of nutrition*, 136(9), 2374-2377.

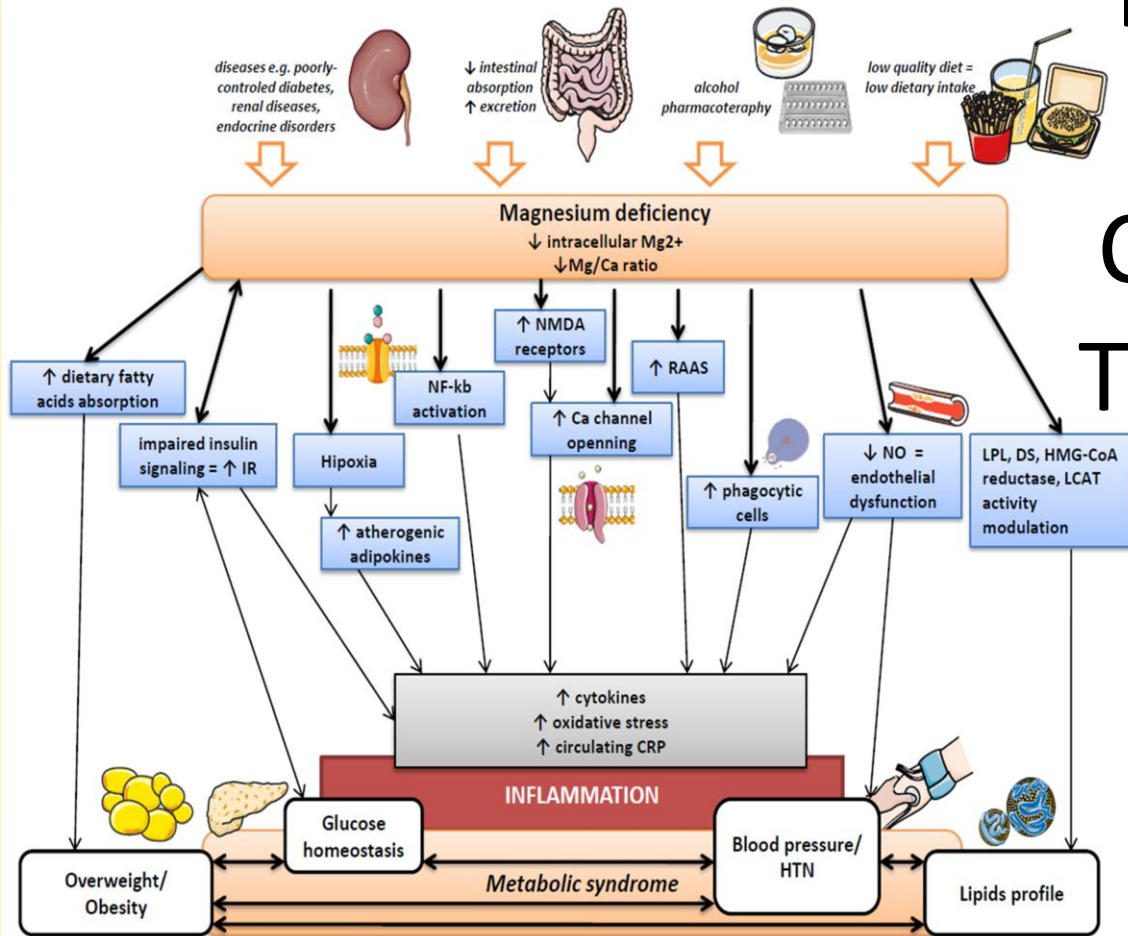
Magnesium Deficiency

What Is Our Status?

Adela Hruby, PhD, MPH
Nicola M. McKeown, PhD

Low magnesium intake has been implicated in a broad range of cardiometabolic conditions, including diabetes, hypertension, and cardiovascular disease. Dietary magnesium and total body magnesium status are widely used but imperfect biomarkers in serum magnesium. Despite serum magnesium's limitations, it is nevertheless observed to be lower in those with cardiometabolic disease than in generally healthy people. Although some 50% of Americans do not meet recommended levels of magnesium intake, the extent of prevalent magnesium deficiency is unknown. Given magnesium's role in a multitude of chronic conditions that are increasingly common across the globe, here, we summarize recently published literature reporting prevalent hypomagnesaemia in generally representative populations and in populations with type 2 diabetes mellitus, metabolic syndrome, and obesity. On the basis of these studies, we estimate that up to a third of the general population may be magnesium deficient and that outside of acute clinical encounters or hospitalization, hypomagnesaemia is likely frequently overlooked in general clinical practice. Nutr Today. 2016;51(3):121–128

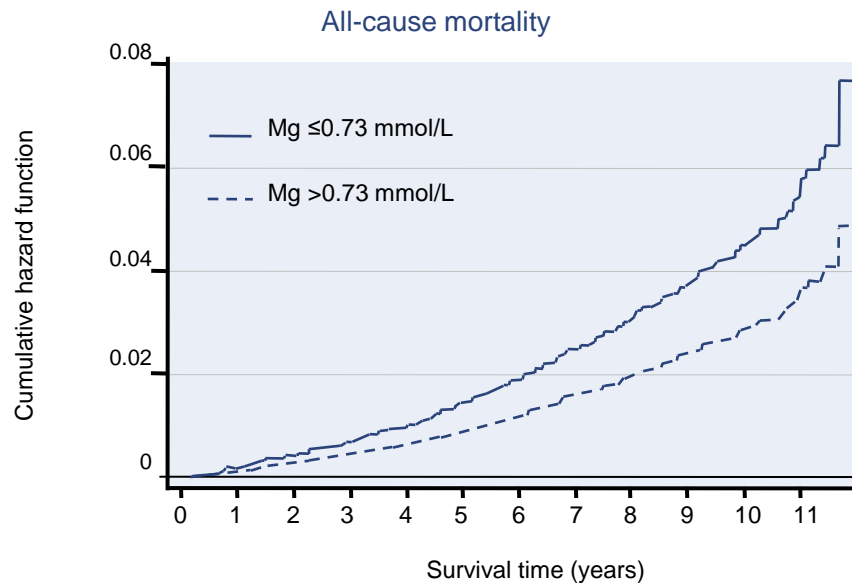
MAGNESIUM DEFICIENCY CONTRIBUTES TO METABOLIC DISEASE



Pelczyńska et al. The Role of Magnesium in the Pathogenesis of Metabolic Disorders. *Nutrients*. 2022; 14(9):1714.

LOW SERUM MG ASSOCIATED WITH HIGHER ALL-CAUSE MORTALITY

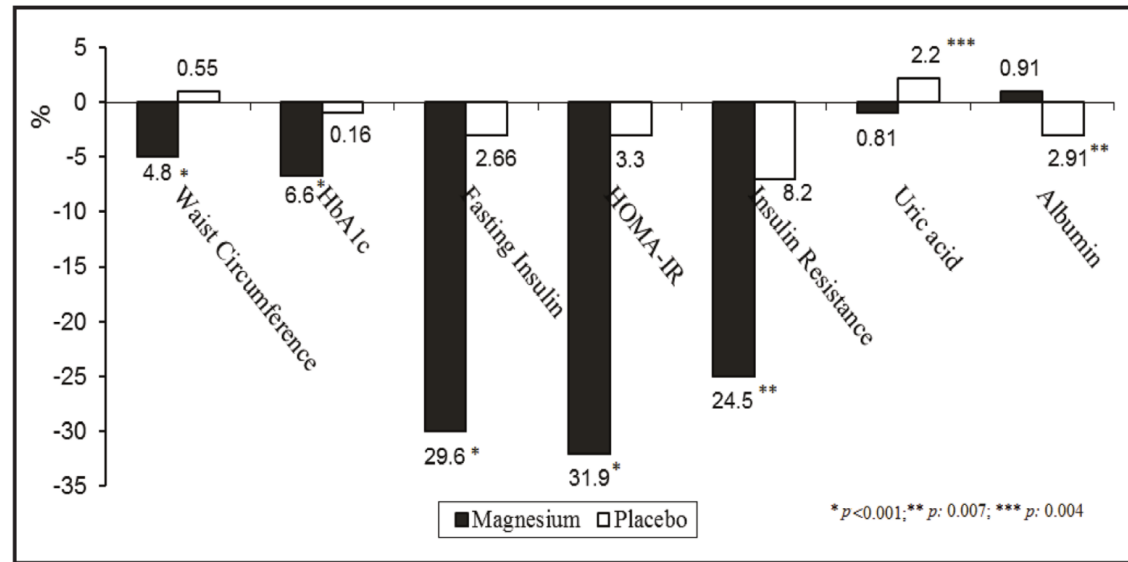
Five-year follow-up of the population-based Study of Health in Pomerania (SHIP) (n=4203, exclusion of subjects with Mg supplementation).



Reffellmann, T., Ittermann, T., Dörr, M., Völzke, H., Reinthaler, M., Petersmann, A., & Felix, S. B. (2011). Low serum magnesium concentrations predict cardiovascular and all-cause mortality. *Atherosclerosis*, 219(1), 280-284.

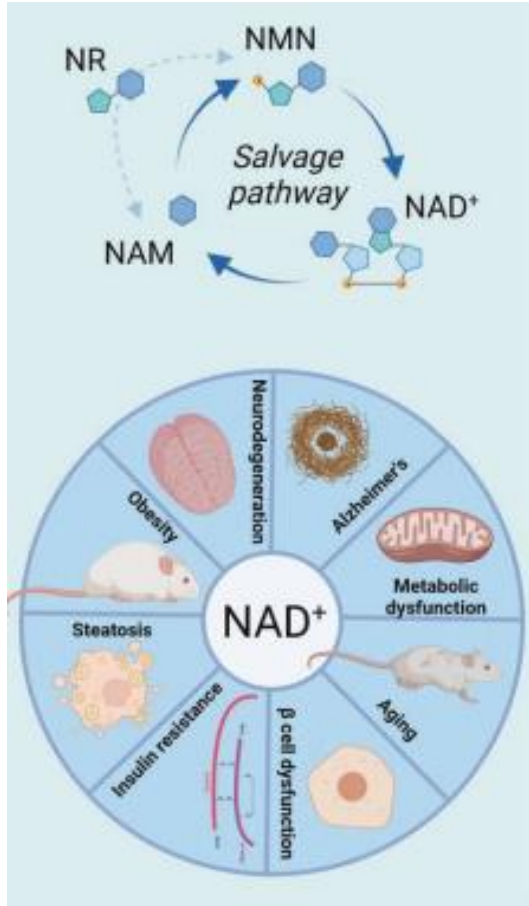
MAGNESIUM SUPPLEMENTATION IMPROVES METABOLIC PROFILE

Fig. 2. Significant mean changes by percentage in metabolic parameters after treatment in the study groups. HOMA-IR, homeostatic model assessment for insulin resistance, HbA1c, hemoglobin A1c.



Toprak O, Kurt H, Sarı Y, Şarkış C, Us H, Kırık A. Magnesium Replacement Improves the Metabolic Profile in Obese and Pre-Diabetic Patients with Mild-to-Moderate Chronic Kidney Disease: A 3-Month, Randomised, Double-Blind, Placebo-Controlled Study. *Kidney Blood Press Res.* 2017;42(1):33-42.

NMN BOOSTS NAD⁺ LEVELS

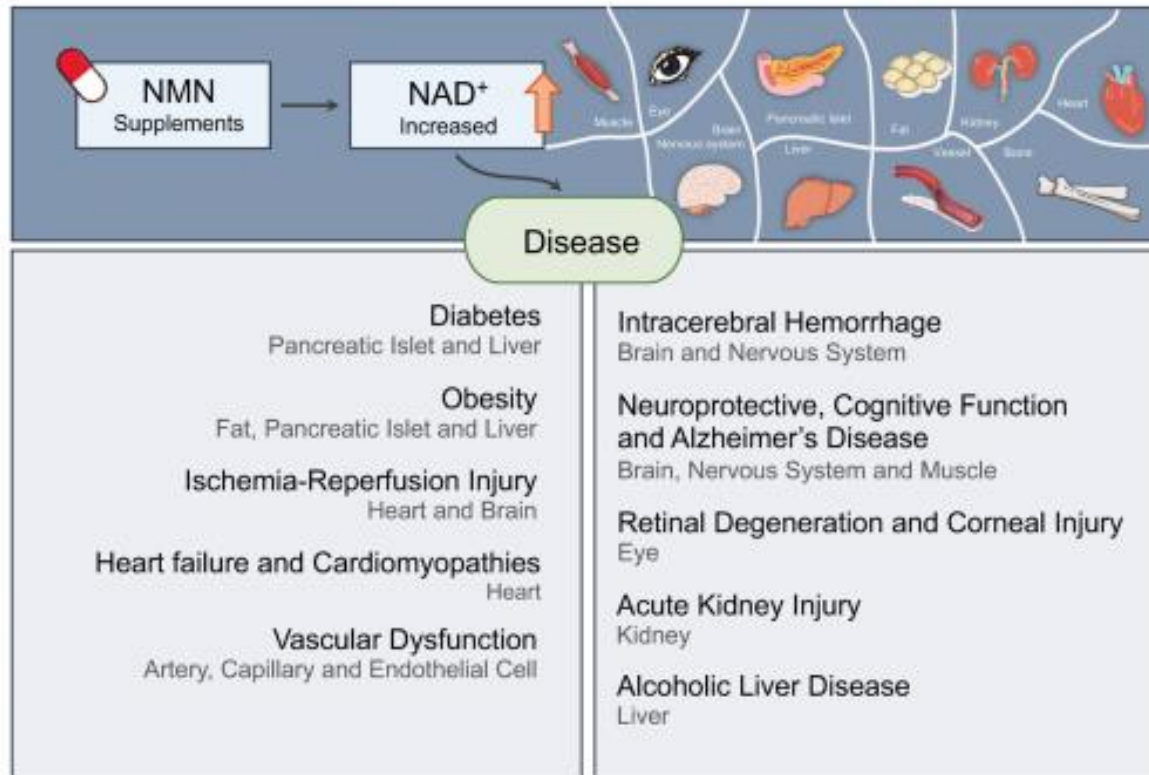


- To maintain metabolic flexibility, mitochondria require substrates, oxygen, and cofactors for energy production.
- Nicotinamide mononucleotide (NMN) is particularly important as the orally bioavailable precursor to NAD⁺, the essential coenzyme required for energy transduction and cell signalling.

Alegre GFS, Pastore GM. NAD⁺ Precursors Nicotinamide Mononucleotide (NMN) and Nicotinamide Riboside (NR): Potential Dietary Contribution to Health. *Curr Nutr Rep.* 2023 Sep;12(3):445-464. doi: 10.1007/s13668-023-00475-y. Epub 2023 Jun 5. PMID: 37273100; PMCID: PMC10240123

Roos, J., Zinngrebe, J., & Fischer-Posovszky, P. (2021). Nicotinamide mononucleotide: a potential effective natural compound against insulin resistance. *Signal transduction and targeted therapy*, 6(1), 310.

NMN SUPPORTS METABOLIC FLEXIBILITY

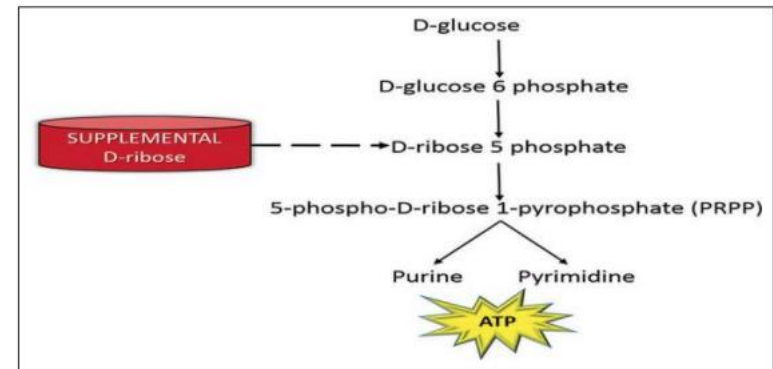


NMN supports metabolic flexibility via NAMPT and NAD⁺ production.

Hong, W., Mo, F., Zhang, Z., Huang, M., & Wei, X. (2020). Nicotinamide mononucleotide: a promising molecule for therapy of diverse diseases by targeting NAD⁺ metabolism. *Frontiers in cell and developmental biology*, 8, 246.

NMN & D-RIBOSE: A POWERFUL DUO FOR METABOLIC HEALTH

- **D-ribose** acts as a co-substrate during the salvage pathway for NAD⁺, facilitating the conversion of NMN to NAD⁺.
- Studies supporting the combination of 240 mg/day NMN and 1280 mg/day D-ribose demonstrate improvements in:
- high energy phosphates;
- blood glucose levels;
- insulin sensitivity;
- ATP/AMP ratios; and
- salivary cortisol reduction.



Xue, Y., Shamp, T., Nagana Gowda, G. A., Crabtree, M., Bagchi, D., & Raftery, D. (2022). A Combination of Nicotinamide and D-Ribose (RiaGev) Is Safe and Effective to Increase NAD⁺ Metabolome in Healthy Middle-Aged Adults: A Randomized, Triple-Blind, Placebo-Controlled, Cross-Over Pilot Clinical Trial. *Nutrients*, 14(11), 2219. <https://doi.org/10.3390/nu14112219>

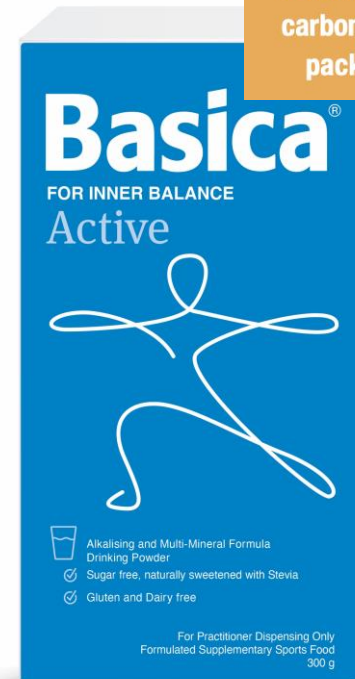
SUMMARY

- Healthspan is contingent on metabolic flexibility, the ability to switch between glucose and fatty acid utilisation depending on availability.
- Induction of autophagy, the reduction of intracellular waste, promotes metabolic flexibility and supports healthy ageing.
- Calorie restriction, i.e. intermittent fasting, initiates autophagy and increases NAD⁺ levels. Reduced NAD⁺ is associated with metabolic and age-related diseases.
- Relative acid excretion capacity (NAEC) declines with age, further increasing susceptibility to disease.
- Daily supplementation with alkalisng minerals aids the maintenance of healthy pH and supports longevity.
- Nicotinamide mononucleotide (NMN) increases NAD⁺ levels, supports metabolic flexibility and aids the prevention of age-related disease.

BASICA ACTIVE – KEY FEATURES

- ✓ **OPTIMAL ALKALISATION:** Contains alkalising minerals in “citrate” form (potassium, magnesium, molybdenum, selenium, chromium, calcium and zinc)
 - **Potassium & Magnesium** for electrolyte balance, and muscle & nervous system function
 - **Magnesium** for energy metabolism & reduction of fatigue
 - **Calcium** necessary for normal bone structure & enhanced bone mineral density
 - **Vitamins C, B2 and Zinc** contribute to cell protection from free radical damage
- ✓ **SUITABLE FOR SENSITIVE PATIENTS:** Sulfite Free formula does not disturb digestive processes
- ✓ **OPTIMAL BIOAVAILABILITY:** Calcium carbonate and citric acid, when added to water, effervesce to produce calcium citrate, thereby supplying ‘citrates’ in a soluble form
- ✓ **PROVEN EFFICACY:** Alkalising mineral citrates for optimal pH balance backed by clinical trials

The same great tasting, effective formula now in carbon neutral packaging



MAGNESIUM DIASPORAL— KEY FEATURES

- ✓ **PROVEN EFFICACY:** Backed by over 25 human clinical trials with 100 years of clinical use, MAGNESIUM Diasporal® has demonstrated efficacy in hormonal, musculoskeletal, cardiometabolic & nervous system health AND:
 - ✓ Relieves symptoms of mild migraines & anxiety
 - ✓ Supports energy production & general health and wellbeing
 - ✓ Supports musculoskeletal health, muscle function & bone health
 - ✓ Supports nerve conduction & nervous system health
 - ✓ Relieves menstrual cramps & symptoms of menstrual tension
 - ✓ Maintains cardiovascular system & heart health
- ✓ **PREMIUM QUALITY:** Free from sulfites & other allergens in state of the art manufacturing.
- ✓ **OPTIMAL BIOAVAILABILITY:** Superior absorption & fast delivery for Magnesium when and where it matters
- ✓ **HIGH STRENGTH MAGNESIUM 400:** Delivering 2058mg of TriMagnesium Dicitrate, twice the amount of elemental magnesium when compared to conventional magnesium citrate.



NEW PLUS PACKS!

NEW

BRAIN+ - PRACTITIONER PACK


NOURISH, PROTECT & REINVIGORATE THE BRAIN!

SAVE 17.5%

NearOMEGA

A fish, veggie and sustainable blend of omega 3 fatty acids and vitamins D3 designed to help:

- Support cognitive and mental function
- Support nervous system function
- Support healthy brain and overall nervous system development.



MAGNESIUM Diaspora®

Replenish magnesium levels quickly and provide cognitive clarity:

- Support nervous system function and nerve conduction
- Supports energy production and electrolyte balance.
- Reduce/relieve symptoms of cognitive conditions like migraines and anxiety.

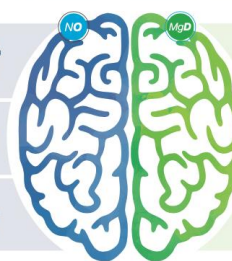
Product Code: 129130
STRICTLY LIMITED OFFER - Order now with your preferred participating distributor to reserve your BRAIN+ Practitioner Packs.

Figure 1: NearOMEGA and MAGNESIUM Diaspora® cognitive health and resilience throughout the ages

CHILD
healthy brain development

ADULT
cognitive energy & mental function

AGING BRAIN
cognitive protection & mental function



NOURISH

DNA is the most abundant fatty acid in the brain, making upwards of 40% of the protein-mediated fatty acid content. Supporting brain structure and function.¹⁷

PROTECT

Vitamin B3 and Neuroprotectin D1, a BAA derivative, protects brain cells through neurotrophic and anti-inflammatory signaling.¹⁸

REINVIGORATE

Vitamin B3 and Omega 3 fatty acids support synaptic plasticity, neurogenesis and neuronal membrane fluidity optimising brain function.¹⁹

NOURISH

Magnesium is essential for brain energy homeostasis, playing an important role in mitochondrial function and ATP activation.

PROTECT


Magnesium protects neurons from damage including NMDA excitotoxicity and neuroinflammation.²⁰

REINVIGORATE

Magnesium harmonises nerve signal transmission and preserves the blood brain barrier, optimising brain function.²¹

Provide foundational support!

Nourish, protect, and reinvigorate the brain and support:
 ✓ Memory, attention, & concentration ✓ Headaches & migraines ✓ Mental health & wellbeing
 ✓ Nervous system development



Only while stocks last!

Bio-Practica products are for healthcare practitioners only

NEW

FEMME - PRACTITIONER PACK


BALANCE HORMONES & RELIEVE PMS SYMPTOMS

SAVE 17.5%

Femme FORTE N

Specific to female health and vital to assist to balance reproductive hormones and moderate effects of hormone fluctuations such as inflammation and stress.

- Relieve the symptoms of PMS
- Reduce menstrual cycle irregularity
- Decrease menopausal symptoms
- Supports stress adaptation



MAGNESIUM Diaspora®

Replenish magnesium levels quickly and optimise reproductive health:

- Relieve PMS symptoms of menstrual spasm & cramps
- Reduce PMS symptoms of mild mood swings & stress
- Support energy production and electrolyte balance

Product Code: 129135
STRICTLY LIMITED OFFER - Order now with your preferred participating distributor to reserve your FEMME+ Practitioner Packs.

Figure 1: FemmeFORTE N and MAGNESIUM Diaspora® support female health from PMS to Menopause

RELIEVE SYMPTOMS OF PMS AND MENOPAUSE

Combine **Femme FORTE N** and **MAGNESIUM Diaspora®** for enhanced PMS and menopausal support:

- Headaches & mild migraines
- Mild anxiety & stress
- Energy and vitality
- Menstrual pain and cramping
- Support a refreshing sleep
- Bone health
- Mood, memory and cognition
- Supports menstrual regulation
- Support skin health

THROUGH HEALTHY HPM HORMONE REGULATION AND HOMEOSTASIS

FFN/FFD support Pituitary support (FSH/LH & CRH) for healthy hormonal/endorine regulation.

Downregulate the α or γ response & Protect the hormonal balance.

Adrenal support and resilience for optimal HPA function and stress adaptation.

Cycle regulation & hormonal balance during menopause
Healthy hormonal (estrogen/progesterone) and menstrual regulation, supporting regular ovulation.

PMS

Approximately 90% of Australian women aged 16-50 report period related symptoms in a typical month.

In an observational study, Magnesium-Diaspora® was shown to completely relieve PMS symptoms in 58.6% of cases.

PMS


1,634 patients with premenstrual syndrome were given an extract of *Vitex agnus castus* (Chaste tree) for 3 menstrual cycles.

95% of patients reported a decrease in premenstrual symptoms or no longer experienced symptoms.

Menopause

It is estimated up to 80% of women experience menopausal symptoms with only 15-20% reporting effective symptom management.

In a randomised, double-blind, placebo-controlled trial, Chaste tree was shown to significantly reduce total menopausal symptoms, hot flashes, and irritability.



Valid until end of MARCH 2024 or while stocks last!

Bio-Practica products are for healthcare practitioners only

NEW

IMMUNE+ - PRACTITIONER PACK


OPTIMISE MINERALS AND SUPERCHARGE IMMUNITY!

SAVE 17.5%

ImmunePRO PLUS

Natural medicines that support immune resilience:

- Cellular defence
- Recovery & repair
- Adaptive resilience



Basica® Active

Maintaining the pH of the body may:

- Contribute to cell protection
- Modulate inflammatory activity
- Enhance enzyme efficiency
- Normalise inflammatory mediators (such as nuclear kappa (NF- κ B))

Product Code: 129145
STRICTLY LIMITED OFFER - Order now with your preferred participating distributor to reserve your IMMUNE+ Practitioner Packs.

The complementary relationship between mineral citrates, zinc, vitamin C and immune herbs, Andrographis, Astragalus and Olive leaf, plus Shiitake mushroom enhances immune system health and supports an ongoing, healthy immune response.

BUILDING IMMUNE RESILIENCE WITH IMMUNE PRO PLUS & BASICA ACTIVE

Immunity may be compromised by internal and environmental stressors. Building and maintaining robust immunity for short and long term resilience involves supporting innate and adaptive responses. Stringent control of extra- and intracellular pH is essential for the cellular biochemical reactions involved with immune responses. An acidic extracellular pH can interfere with wide-ranging immunological functions.

CELLULAR DEFENCE

The first line of immunological defence protects our body from infection.

A healthy cellular defence involves a cascade of innate and adaptive immune responses that protect against cellular pathogenic infection.

Basica® Active helps restore pH levels to optimise cellular enzymes and support NK cell production, while the herbs and nutrients in **ImmunePRO PLUS** support innate and adaptive cellular defence.

RECOVERY & REPAIR

Restoring balance and function of the immune system post-activity involves the resolution of inflammation, fever and mucus production.

pH imbalances, caused by the inflammatory process, may hinder this process. **ImmunePRO PLUS** & **Basica® Active** support recovery and repair via:

- Halting recruitment of new immune and inflammatory mediators
- Promotion of extracellular matrix and lymph detoxification
- Restoring healthy proliferation and differentiation of new cells

ADAPTIVE RESILIENCE


Maintenance of healthy neuro-immune function helps prevent immune dysregulation and promotes immune resilience.

A healthy endocrine and nervous system response is supported by **ImmunePRO PLUS** through:

- Adrenal function support
- Healthy neurotransmitter synthesis and activity

AND Basica® Active, by:

- Cellular enzyme efficiency to support cellular processes and mitochondrial energy production




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BRAIN

FEMME

IMMUNE



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