

Precision Nutrition

Report Form 2022-2023



Task Force Chair/s

J. Alfredo Martinez (-2022), Katherine M. Livingstone (2023),
Omar Ramos-Lopez (2023)

Task Force Members

Sarah Berry (United Kingdom)

Hisanori Kato (Japan)

J. Alfredo Martinez (Spain)

John Mathers (United Kingdom)

Jose L. Santos (Chile)

Karina Dos Santos (Brazil)

Katherine M. Livingstone (Australia)

Omar Ramos-Lopez (Mexico)

Additional international experts have been added to reflect the new and emerging areas on precision nutrition including personalised nutrition, behaviour and (Omics) biomarkers.

Has your objective(s) as a task force been modified since the original proposal? If so, please provide a brief justification.

No

Have the activities to be undertaken been modified since the original proposal? If so, please provide brief overview and justification.

Not applicable.

Brief overview of activities since last annual report

Academic and communication activities

- 15th Congress International Society of Nutrigenetics & Nutrigenomics (ISNN), Monterrey, Mexico, 2022, with the following speakers: J. Alfredo Martinez, Omar Ramos-Lopez, Jose L. Santos, and Katherine Livingstone.
- Australian Academy of Science Boden Research Conference: Advancing the Science of Precision and Personalised Nutrition, Canberra, Australia, 2023. Chaired by Katherine Livingstone; Invited speaker Sarah Berry.
<https://www.science.org.au/files/userfiles/support/documents/boden-conference-summary-report.pdf>
- Summer course 2023, From Personalized Nutrition to Precision Nutrition/Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU).Spain
- 9th International Congress of Gynaecology and Obstetrics (ICGO-2023). Session topic: Nutrigenetics in Pregnancy with Diabetes: the investigation of gene-diet interactions. Speaker: Dra. Karina dos Santos - Co-authors: Dr. Eliane Lopes Rosado, Dr. Ana Carolina Proença da Fonseca, Dr. Gabriella Pinto Belfort, Msc. Letícia Barbosa Gabriel da Silva, Dr. Marcelo Ribeiro-Alves, Dr. Verônica Marques Zembruski, Dr. Mario Campos Junior, Laísa Ramos Rodrigues, Katherine Bittencourt Mendes L de Jesus, Dr. J. Alfredo Martínez, and Dr. Cláudia Saunders. Lisbon/Portugal, July, 2023.

Research activities and Publications

- Ramos-Lopez O, Martinez JA, Milagro FI. Holistic Integration of Omics Tools for Precision Nutrition in Health and Disease. *Nutrients*. 2022 Sep 30;14(19):4074. doi: 10.3390/nu14194074. PMID: 36235725; PMCID: PMC9572439.
- Livingstone KM, Rawstorn JC, Partridge SR [...] Mathers JC et al. Determining the feasibility of a codesigned and personalised intervention (Veg4Me) to improve vegetable intake in young adults living in rural Australian communities: protocol for a randomised controlled trial. *BMJ Open* 2024;14:e078001. doi: 10.1136/bmjopen-2023-078001
- Livingstone KM, Brayner B, Celis-Morales C, Moschonis G, Manios Y, Traczyk I, Drevon CA, Daniel H, Saris WHM, Lovegrove JA, Gibney M, Gibney ER, Brennan L, Martinez JA, Mathers JC. Associations between dietary patterns, FTO genotype and obesity in adults from seven European countries. *Eur J Nutr*. 2022 Sep;61(6):2953-2965. doi: 10.1007/s00394-022-02858-3. Epub 2022 Mar 21. PMID: 35307761; PMCID: PMC9363276.

- Martínez JA, Alonso-Bernáldez M, Martínez-Urbistondo D, Vargas-Núñez JA, Ramírez de Molina A, Dávalos A, Ramos-Lopez O. Machine learning insights concerning inflammatory and liver-related risk comorbidities in non-communicable and viral diseases. *World J Gastroenterol*. 2022 Nov 28;28(44):6230-6248. doi: 10.3748/wjg.v28.i44.6230. PMID: 36504554; PMCID: PMC9730439.

- Dos Santos K, Rosado EL, da Fonseca ACP, Belfort GP, da Silva LBG, Ribeiro-Alves M, Zembrzuski VM, Campos M Jr, Zajdenverg L, Drehmer M, Martínez JA, Saunders C. A Pilot Study of Dietetic, Phenotypic, and Genotypic Features Influencing Hypertensive Disorders of Pregnancy in Women with Pregestational Diabetes Mellitus. *Life (Basel)*. 2023 Apr 28;13(5):1104. doi: 10.3390/life13051104. PMID: 37240750; PMCID: PMC10220776.

- Santos KD, Rosado EL, da Fonseca ACP, Belfort GP, da Silva LBG, Ribeiro-Alves M, Zembrzuski VM, Martínez JA, Saunders C. FTO and ADRB2 Genetic Polymorphisms Are Risk Factors for Earlier Excessive Gestational Weight Gain in Pregnant Women with Pregestational Diabetes Mellitus: Results of a Randomized Nutrigenetic Trial. *Nutrients*. 2022 Mar 1;14(5):1050. doi: 10.3390/nu14051050. PMID: 35268025; PMCID: PMC8912276.

- Huttunen-Lenz M, Raben A, Adam T, Macdonald I, Taylor MA, Stratton G, Mackintosh K, Martinez JA, Handjieva-Darlenska T, Bogdanov GA, Poppitt SD, Silvestre MP, Fogelholm M, Jalo E, Brand-Miller J, Muirhead R, Schlicht W. Socio-economic factors, mood, primary care utilization, and quality of life as predictors of intervention cessation and chronic stress in a type 2 diabetes prevention intervention (PREVIEW Study). *BMC Public Health*. 2023 Aug 30;23(1):1666. doi: 10.1186/s12889-023-16569-9. PMID: 37649005; PMCID: PMC10466828.

- Nutritional Genomics (Last updated 2023). Authors: Dawna Royall, Amber Hames, Justine Keathley, Noor Naqvi, Dawna Royall. Reviewers: Denise K. Daley, Justine Keathley, Sherly Li, Katherine Livingstone, Dawna Royall, Karina Santos, Marie-Claude Vohl. Available at: <https://www.pennutrition.com/KnowledgePathway.aspx?kpid=4541>

Please list any successes accomplished during this period (aligned with proposed measures of success from original proposal, or include justification for modifications).

-Catherine Geissler, J. Alfredo Martinez, Current nutrition within the Special IUNS supplement in *Trends in Food Science & Technology: a Foreword*, *Trends in Food Science & Technology EDITORIAL*, Volume 130, 2022, Pages 1-2, ISSN 0924-2244, <https://doi.org/10.1016/j.tifs.2022.09.001>.
<https://www.sciencedirect.com/science/article/pii/S0924224422003727>)

- Katherine M. Livingstone, Omar Ramos-Lopez, Louis Perusse, Hisanori Kato, Jose M. Ordovas, J. Alfredo Martinez, Precision nutrition: A review of current approaches and future endeavors, Trends in Food Science & Technology, Volume 128, 2022, Pages 253-264, ISSN 0924-2244, <https://doi.org/10.1016/j.tifs.2022.08.017>.
(<https://www.sciencedirect.com/science/article/pii/S0924224422003673>)

- Martínez-González MA, Kim HS, Prakash V, Ramos-Lopez O, Zotor F, Martinez JA. Personalised, population and planetary nutrition for precision health. BMJ Nutr Prev Health. 2021 Jun 2;4(1):355-358. doi: 10.1136/bmjnp-2021-000235. PMID: 34308147; PMCID: PMC8258037.

- Martínez JA. IUNS Precision Nutrition Task Force. Ann Nutr Metab. 2016;69(3-4):263. doi: 10.1159/000453631. Epub 2017 Jan 11. PMID: 28073105.

- Hisanori Kato; Nobuko Murayama; Jaques Delarue; J. Alfredo Martínez. IUNS 22nd International Congress of Nutrition. EDITORIAL Ann Nutr Metab (2023) 79 (Suppl. 1): 9–11. <https://doi.org/10.1159/000530787>.

- Hisanori Kato, Nobuko Murayama, Kiyotaka Nakagawa, Taiichiro Seki, Marcela González Gross, Elvira Larke, Jaques Delarue, J. Alfredo Martínez. IUNS 22nd International Congress of Nutrition - Abstracts. Ann Nutr Metab. 2023 Aug 3;79 Suppl 1:14-1172. doi: 10.1159/000530786. Epub ahead of print. PMID: 37536290.

22nd IUNS-ICN International Congress of Nutrition, Tokyo (Japan), diciembre 6-11, 2022.
Symposium: Nutriomic approaches to understand and implement Precision.

Chairs: Catherine Geissler (IUNS, UK), Helmut Heseker (IUNS, Germany).

SY(TI)2-1 Genotype-based nutrition and dietary guidance

*Martin Kohlmeier¹, Emmanuel Baah¹

1. University of North Carolina, Nutrition Research Institute (USA)

SY(TI)2-2 Genomic and nutrigenomic contributions to plasma triglycerides

- *Jose L. Santos¹

1. Pontificia Universidad Católica de Chile (Chile)

SY(TI)2-3 Integrated omics for applying in food and nutrition sciences

- *Hisanori Kato¹

1. The University of Tokyo (Japan)

SY(TI)2-4 Epigenetics and Mediterranean diet

Omar Ramos-Lopez², *J. Alfredo Martinez¹

1. IUNS (Spain), 2. UABC (Mexico)

Please mention your plans for the coming year and how they have been adapted based on success to date (if appropriate).

- Collaborate with RINN22 (Red Iberoamericana de Nutrición de Precisión y Nutriómicas)
- Coordinate new international collaborative publications and academic activities
- Promote viability of IUNS with AUSTRAL (LA) Summer courses
- Organization of a SESSION at I UNS-ICN Paris 2025