BIOGRAPHICAL SUMMARY

NAME	POSITION TITLE
Magzal, Faiga	PhD, RD

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable)

INSTITUTION AND LOCATION	DEGREE <i>(if</i> applicable)	MM/YY	FIELD OF STUDY
Department of Medical and Surgical Sciences – University of Bologna (UNIBO), Italy	postdoctora I training	8/2021- 1/2022	Microbiome
MIGAL-Galilee Research Institute/ Laboratory of Nutrition and Human Health	l training	04/2017- 12/2019	Clinical Nutrition
Bar-Ilan University	PhD	10/2013- 06/2017	Medical studies
Tel Hai Academic College	BSc Nutrition	10/2009- 06/2015	Nutrition
Technion - Israel Institute of Technology	MSc	10/1996- 06/1999	Biotechnology and Food Engineering

A. Personal Statement (Briefly describe how your experience and qualifies you to undertake the role assigned (e.g., PI, researcher, etc.) in the project proposed in the current application).

I am currently a Lecturer at Tel-Hai College and a Senior Researcher at the MIGAL Galilee Research Institute, where I specialize in exploring the relationship between nutrition, the gut microbiome, and health outcomes. My research focuses on the gut-brain axis, a crucial communication system that connects the gut and central nervous system, impacting mental health through microbial metabolites like short-chain fatty acids (SCFAs). I aim to develop nutritional interventions that can modulate the gut microbiome to improve health outcomes for conditions such as insomnia, depression, and neurodevelopmental disorders.

A significant portion of my research has been dedicated to mental health, particularly the connection between gut microbiota and conditions like insomnia and depression. My studies have demonstrated that specific SCFAs produced by gut bacteria are linked to sleep quality and psychological well-being, providing a foundation for dietary interventions that may alleviate symptoms of these conditions. Additionally, I have extended this research to Attention-Deficit/Hyperactivity Disorder (ADHD), investigating how gut-brain axis disruptions may contribute to ADHD symptoms and exploring potential dietary treatments.

I am also investigating how diet and food processing influence metabolic health through interactions with the gut microbiome. My work compares the effects of ultra-processed versus minimally processed plant-based foods on microbiota composition and metabolic pathways, aiming to uncover

sustainable dietary interventions that promote metabolic health. This research, supported by a MIGAL grant, seeks to address the impact of food processing on the gut-brain axis and metabolic outcomes, with future studies planned to further explore these connections.

Looking forward, my research will expand into areas such as cognitive health in aging populations through the COGNILIFT project, which focuses on preventing cognitive decline using lifestyle and nutritional interventions.

B. Positions and Honors (List in chronological order previous positions, concluding with the present position. List any honors)

01.2023: Senior Researcher - MIGAL-Galilee Research Institute - Laboratory of Nutrition and Human Health

11.2019-12.2022; Research Fellow - MIGAL-Galilee Research Institute - Laboratory of Nutrition and Human Health

2021- 2022: Lecturer - The University of Haifa -Cheryl Spencer Department of Nursing - Faculty of Social Welfare & Health Sciences

2017-present: Lecturer - Tel-Hai College - Food Science and Nutrition Science Departments - Teaching Excellence (2019)

C. Selected Peer-reviewed Publications (List selected peer-reviewed publications or manuscripts in press. Mark the 5 most relevant articles for the research proposal).

- 1. Even C, **Magzal F**, Shochat T, Haimov I, Agmon M, Tamir S. Microbiota Metabolite Profiles and Dietary Intake in Older Individuals with Insomnia of Short vs. Normal Sleep Duration. Biomolecules. 2024 Mar 30;14(4):419.
- 2. Haimov I, **Magzal F**, Tamir S, Lalzar M, Asraf K, Milman U, et al. Variation in Gut Microbiota Composition is Associated with Sleep Quality and Cognitive Performance in Older Adults with Insomnia. Nature and Science of Sleep. 2022;14:1753–67.
- 3. Levy Schwartz M, Magzal F, Yehuda I, Tamir S. Exploring the impact of probiotics on adult ADHD management through a double-blind RCT. Sci Rep. 2024 Nov 5;14(1):26830.
- 4. **Magzal F**, Even C, Haimov I, Agmon M, Asraf K, Shochat T, et al. Associations between fecal short-chain fatty acids and sleep continuity in older adults with insomnia symptoms. Sci Rep. 2021 Feb 18;11(1):4052.
- 5. **Magzal F**, Turroni S, Fabbrini M, Barone M, Vitman Schorr A, Ofran A, et al. A personalized diet intervention improves depression symptoms and changes microbiota and metabolite profiles among community-dwelling older adults. Front Nutr. 2023 Sep 14;10:1234549.
- Steckler R, Magzal F, Kokot M, Walkowiak J, Tamir S. Disrupted gut harmony in attentiondeficit/hyperactivity disorder: Dysbiosis and decreased short-chain fatty acids. Brain, Behavior, & Immunity - Health. 2024 Oct;40:100829.
- 7. **Magzal F**, Shochat T, Haimov I, Tamir S, Asraf K, Tuchner-Arieli M, et al. Increased physical activity improves gut microbiota composition and reduces short-chain fatty acid concentrations in older adults with insomnia. Sci Rep. 2022 Feb 10;12(1):2265.



Principal Investigator (Last, First, Middle):

D. Research Support (List selected ongoing and completed research projects in the past three years in order of relevance to the research proposed in the application)

- 1. 2024 (PI and coordinator): COGNILIFT: Improving **COGNI**tive health through **LIF**es**T**yle and polyphenol-based Intervention. ERA4Health (Nutribrain) (700K €)
- 2024 (PI): Impact of Food Processing on Metabolic Health and the Gut-Brain Axis: A Comparative Study of Ultra-Processed and Minimally Processed Plant-Based Foods (200K NIS)
- 3. 2022 (PI): SCFAs in the elderly with depression: the relationship to diet, depressive symptoms, and quality of life in the elderly, and their effect on a behaviour (40K NIS)
- 4. 2021 (PI): The Association of maternal prenatal psychological stressors and distress, diet pattern, early infant bacterial and metabolite profiles, and growth indices (40K NIS)

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