

## Abstract

# Nutrition and Movement to Improve Quality of Life with Knee Osteoarthritis—The NUMOQUA Study <sup>†</sup>

Sabine Chmelar <sup>1,\*</sup> , Elisabeth Höld <sup>1</sup>, Gabriele Leitner <sup>1</sup>, Stefan Nehrer <sup>2</sup> , Oliver Neubauer <sup>2,3</sup>, Karl-Heinz Wagner <sup>3</sup>  and Barbara Wondrasch <sup>1</sup> 

<sup>1</sup> Institute of Health Sciences, St. Pölten University of Applied Sciences, 3100 St. Pölten, Austria; elisabeth.hoeld@fhstp.ac.at (E.H.); gabriele.leitner@fhstp.ac.at (G.L.); barbara.wondrasch@fhstp.ac.at (B.W.)

<sup>2</sup> Faculty of Health and Medicine, University of Continuing Education Krems, 3500 Krems, Austria; stefan.nehrer@donau-uni.ac.at (S.N.); oliver.neubauer@donau-uni.ac.at (O.N.)

<sup>3</sup> Department of Nutritional Sciences, University of Vienna, 1090 Vienna, Austria; karl-heinz.wagner@univie.ac.at

\* Correspondence: sabine.chmelar@fhstp.ac.at

<sup>†</sup> Presented at the 14th European Nutrition Conference FENS 2023, Belgrade, Serbia, 14–17 November 2023.

**Abstract:** Background and Objectives: Osteoarthritis (OA) has long been considered a degenerative disease of cartilage tissue resulting from bodily wear and tear. However, there is accumulating evidence that inflammation plays a key role in the pathogenesis of OA. In knee OA—the most common form of OA—exercise therapy as an effective component of early treatment mainly addresses functional deficits but not the inflammatory processes. In the course of the NUMOQUA project, an anti-inflammatory therapeutic diet named “Austrian OA Cuisine” was developed. It is based on the framework of the New Nordic Diet combined with the food-based dietary guidelines of Austria, the guidelines for OA, the Austrian food culture, and the principles of a sustainable diet. The present study examines the implementation of the “Austrian OA Cuisine” combined with the evidence-based exercise therapy GLA:D<sup>®</sup> (Good Life with osteoArthritis in Denmark) in patients with knee OA and the effects on quality of life, nutritional and inflammatory status, and oxidative stress parameters. Methods: A total of 60 participants aged 50 to 75 with knee OA will be included and randomly assigned either to the intervention group or the control group. All participants will undergo the GLA:D<sup>®</sup> program in the first six weeks. Additionally, the intervention group will receive nutritional group training and individual nutritional counseling on “Austrian OA Cuisine” over nine months. The control group will receive general information about a healthy lifestyle. Measurements at baseline and at four follow-up dates include nutritional, inflammatory, and oxidative stress parameters. Furthermore, anthropometric and behavioral parameters and clinical data will be assessed. Results: The recruitment of patients started in the autumn of 2022 and is expected to be completed by January 2024, followed by data collection in January 2025. Discussion: The prevalence of OA is expected to increase in the future due to ongoing demographic changes and rising obesity rates. The expected results will provide important evidence on whether this interdisciplinary therapeutic approach could be a new, cost-effective, and sustainable strategy to address the disease process of OA without negative side effects.

**Keywords:** osteoarthritis; GLA:D<sup>®</sup>; Austrian osteoarthritis cuisine; nutritional therapy; quality of life



**Citation:** Chmelar, S.; Höld, E.; Leitner, G.; Nehrer, S.; Neubauer, O.; Wagner, K.-H.; Wondrasch, B. Nutrition and Movement to Improve Quality of Life with Knee Osteoarthritis—The NUMOQUA Study. *Proceedings* **2023**, *91*, 216. <https://doi.org/10.3390/proceedings2023091216>

Academic Editors: Sladjana Sobajic and Philip Calder

Published: 4 February 2024



**Copyright:** © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

**Author Contributions:** Conceptualization, B.W., E.H., G.L., O.N., K.-H.W. and S.N.; writing—original draft preparation, S.C.; writing—review and editing, S.C., B.W., E.H., G.L., O.N. and K.-H.W. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the Gesellschaft für Forschungsförderung Niederösterreich m.B.H, Austria (Life Science Call, 2020, LSC20-17).

**Institutional Review Board Statement:** This study was approved by the Ethics Committee of Vienna (Ethics number: EK-22-101-0622).

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Data sharing is not applicable to this article.

**Conflicts of Interest:** The authors declare no conflict of interest.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.