



Review article

Nutrition and social determinants of healthy ageing in the Czech Republic: a narrative review

Romana Klášterecká¹, Petra Pičmanová^{1*}, Miroslav Kopecký¹, Zuzana Svobodová²,
Tereza Schovánková³

¹ Palacký University Olomouc, Faculty of Health Sciences, Department of Preclinical Subjects, Olomouc, Czech Republic

² Palacký University Olomouc, Faculty of Health Sciences, Library, Olomouc, Czech Republic

³ Palacký University Olomouc, Faculty of Health Sciences, Science and Research Center, Olomouc, Czech Republic

Abstract

Aim: To synthesise empirical evidence on the relationship between nutrition and social determinants of health among older adults in the Czech Republic and to outline implications for practice and research.

Methods: A narrative review focusing on community-dwelling adults aged 65 years and older was conducted. A structured literature search (2014–2024) was performed in national and international databases using predefined inclusion criteria, double screening, and thematic analysis. Nineteen Czech studies of various designs were included.

Results: The evidence indicates a coexistence of overweight or obesity and the risk of undernutrition, together with low fruit and vegetable intake and frequent micronutrient deficiencies. Higher physical activity was associated with better quality of life, while sedentary behaviour increased with age. Social isolation, partner loss, and weakened social networks were linked to poorer diet quality and higher nutritional risk. Older adults emphasised food quality and trust, and the Mediterranean dietary pattern showed potential benefits, particularly for cognitive health.

Conclusion: Nutrition and social context jointly shape healthy ageing in later life. Practice should prioritise nutrition literacy, access to dietetic care, integrated diet-and-activity programmes, and measures to reduce social isolation. Future research should strengthen qualitative and mixed-methods approaches to better capture everyday social influences on diet.

Keywords: Czech Republic; Malnutrition; Nutrition; Older adults; Physical activity; Social determinants of health

Introduction

Demographic ageing is a defining trend of the 21st century, with major implications for public health (OECD, 2017; United Nations, 2015). Healthy ageing, as defined by the World Health Organization (WHO, 2017), is shaped by individual, social, and environmental factors. Nutrition plays a central role in this process as a determinant of health, functional capacity, and resilience in later life (Volkert et al., 2019).

The Czech Republic is among the fastest-ageing countries in Europe, with 2.25 million people aged 65 and over (21.4% of the population) in 2024 (Czech Statistical Office, 2024). Life expectancy at birth reached 80.6 years in 2023, although the COVID-19 pandemic temporarily reversed this trend (Institute of Health Information and Statistics of the Czech Republic, 2021, 2024).

Despite improvements in health care and living conditions, a paradox persists: overweight and obesity coexist with nutritional deficiencies, particularly among low-income older adults (Brabcová et al., 2016; Vágnerová et al., 2024). This

so-called hidden malnutrition reflects deeper socioeconomic inequalities and is linked to isolation, reduced mobility, and limited access to affordable, high-quality food (Mertens et al., 2019; Volkert et al., 2019). Although international frameworks (FAO and WHO, 2019; OECD, 2021; Volkert et al., 2019; WHO, 2017) emphasise the right to adequate nutrition, barriers remain in the Czech context, including socioeconomic disparities, low food literacy, limited availability in rural areas, and insufficient coordination between health and social policies.

The review was conducted as a narrative study incorporating selected elements of a systematic approach. The process included structured database searches, predefined inclusion and exclusion criteria, and double independent screening of the identified sources. The search was deliberately limited to publications referring exclusively to the Czech Republic and addressing adults aged 65 years and older living in community settings.

The aim of the study was to provide a comprehensive and contextually grounded overview of the Czech situation in the field of nutrition and social determinants of health.

* **Corresponding author:** Petra Pičmanová, Palacký University Olomouc, Faculty of Health Sciences, Department of Preclinical Subjects, Hněvotínská 3, 779 00 Olomouc, Czech Republic; e-mail: petra.picmanova@upol.cz
<http://doi.org/10.32725/kont.2026.021>

Submitted: 2025-10-31 • Accepted: 2026-03-25 • Prepublished online: 2026-04-02

KONTAKT 28/2: 213–221 • EISSN 1804-7122 • ISSN 1212-4117

© 2026 The Authors. Published by University of South Bohemia in České Budějovice, Faculty of Health and Social Sciences.

This is an open access article under the CC BY-NC-ND license.

The research question was formulated as follows: *What empirical evidence exists on the relationship between nutrition and social determinants of health among adults aged 65 years and older in the Czech Republic?*

Theoretical background

Nutrition in later life is shaped not only by biological processes of ageing but also by social determinants such as education, economic status, food availability, and the quality of social relationships (OECD, 2021; Volkert et al., 2019; WHO, 2017). These factors influence dietary habits and have a direct impact on nutritional status, independence, and overall quality of life (Stránský, 2015; Vágnerová et al., 2024).

International frameworks, notably the World Health Organization (WHO, 2017) and the FAO and WHO (2019), highlight adequate nutrition as a key pillar of healthy and active ageing. Increasingly, dietary patterns are assessed through the perspective of sustainability, consistent with the Sustainable Development Goals (United Nations, 2015), particularly Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-Being).

Incorporating social and cultural dimensions is therefore essential. Eating habits in later life are not determined solely by physiology but are also embedded in access to resources, life experiences, and social roles (Ferrarová et al., 2023; Hasmanová Marhánková, 2021). This perspective provides the conceptual basis for examining the interplay of nutrition and social determinants in the Czech context and for identifying strategies that support both healthy and sustainable ageing.

Materials and methods

This narrative review focuses on the relationship between nutrition and social factors in later life within the Czech population. The aim was to map the available empirical evidence from the Czech context and to identify key determinants influencing nutritional status, lifestyle, and quality of life.

Inclusion and exclusion criteria

The review included only peer-reviewed empirical studies – qualitative, quantitative, or mixed-methods – focusing on adults aged 65 and over living in community settings in the Czech Republic. Studies involving populations in long-term institutional care (e.g., nursing homes, social care facilities) were excluded. Furthermore, only studies published between 2014 and 2024, available in full text, and written in Czech or English were considered. Editorials, guidelines, theoretical or conceptual papers, abstracts, commentaries, narrative reviews without empirical evidence, and studies unrelated to the research question or Czech context were excluded.

Search strategy

The search strategy was developed through expert collaboration and adapted to the Czech context. Searches were conducted in the international databases Web of Science (WoS) and Scopus, complemented by the national Medvik database specialising in biomedicine and healthcare. Boolean logic (using the operators AND, OR, and NOT) was systematically applied to combine keywords and their variants. This approach allowed for precise delimitation of the intersection of ageing, nutrition, and social factors, while providing flexibility through the inclusion of synonyms and alternative terms.

The first phase of the search was carried out in January 2025, focusing on the basic intersection of ageing, nutrition, and social factors. For English-language sources, the query

“(healthy ageing OR healthy ageing) AND (nutrition OR food) AND (social factors)” was applied, while for Czech-language sources the query “(zdravé stárnutí) AND (výživa OR jídlo OR nutriční faktory) AND (sociální faktory)” was used. This phase retrieved 242 records (WoS $n = 79$; Scopus $n = 108$; Medvik $n = 55$), but no study meeting the inclusion criteria was identified after screening.

The second phase of the search took place in March 2025. Based on the results of the first phase, the strategy was expanded to include more specific social variables such as gender, social class, and income, as well as alternative terms for older adults. The revised English query was “(food OR nutrition) AND (social factors OR gender OR social class OR income) AND (ageing OR ageing OR older adult OR older adults)”, while the Czech equivalent was “(jídlo OR výživa OR nutriční faktory OR sociální faktory OR gender OR sociální třída OR příjem) AND (stáří OR starší dospělí OR senioři)”. This phase retrieved 482 records (WoS $n = 75$; Scopus $n = 4$; Medvik $n = 403$). After removing duplicates ($n = 23$) and assessing relevance, five studies were included – two quantitative, two qualitative, and one mixed-methods design.

The third phase was conducted in August 2025 and further expanded the keywords to reflect clinical and public health perspectives. The English query was broadened to include “(malnutrition OR nutritional status of seniors OR social determinants of health)”, while the Czech equivalent was “(malnutriční status seniorů OR sociální determinanty zdraví)”. The fourth phase was also carried out in August 2025 and focused on complementing the perspective with qualitative approaches. A targeted search was performed in Google Scholar, retrieving 37 records. After screening, 13 studies were included, providing deeper insights into the experiences of older adults in relation to nutrition and social determinants. One article that meets the review criteria was added after screening the author’s publication activity – it’s the only article published in 2025 (Hrezova et al., 2025).

The selection process of studies is summarised in Diagram 1.

Across all search phases, a total of 495 records were identified. After removing duplicates ($n = 31$) and applying all inclusion criteria, 19 studies were included in the final review and subjected to content and methodological analysis. The list of included articles is presented in Table 1.

Results

The identified Czech studies were categorised into thematic areas according to their main focus and examined social determinants. This structure summarises the key findings and provides a comprehensive overview of the evidence on nutrition, lifestyle, and social factors influencing healthy ageing and quality of life in later life in the Czech Republic. The synthesis of results contributes to a better understanding of the national context of healthy ageing and supports future research and policy development in this area.

Nutritional status, malnutrition, and food intake

Czech evidence consistently indicates that older adults are nutritionally vulnerable, with malnutrition risk frequently coexisting with overweight and obesity. Across studies, nutritional risk emerges from the interaction of biological vulnerability, mental health, and everyday dietary practices rather than from a single determinant. Unintentional weight loss, depressive symptoms, reduced food intake, and acute illness

repeatedly appear as key drivers of malnutrition risk in later life, including among community-dwelling older adults with higher body mass index (Brabcová et al., 2016; Vágnerová et al., 2024).

Beyond body weight, Czech studies document persistent inadequacies in micronutrient and food group intake. Common deficiencies include vitamin D, vitamin B₁₂, folate, and dietary fibre, reflecting a mismatch between declining energy requirements and stable or increasing micronutrient needs in older age (Stránský, 2015). This imbalance contributes to increased vulnerability to malnutrition and poorer functional and health outcomes.

Longitudinal and population-based evidence further shows that insufficient fruit and vegetable consumption is widespread and socially patterned. Nearly half of older adults fail to meet WHO recommendations, with lower intake associated with poorer self-rated health, lower education, material deprivation, and physical inactivity (Hrezova et al., 2023). These patterns indicate that dietary inadequacy is closely linked to broader social inequalities.

Qualitative research highlights the sociocultural meaning of food in later life. Food practices are closely tied to autonomy, identity, and quality of life, with control over food choices and meal preparation – particularly among women – emerging as an important yet often overlooked protective factor against nutritional risk (Ferrarová et al., 2023).

Comparative European evidence situates the Czech Republic within a less favourable dietary context. Compared to Southern European countries, the Czech population consumes less fruit, vegetables, fish, and legumes and more red and processed meat, with pronounced deficiencies in fibre, vitamin D, and folic acid (Mertens et al., 2019). These patterns reinforce the coexistence of overweight and undernutrition observed in national studies.

Czech evidence confirms the multifactorial nature of malnutrition in older adults, shaped by biological ageing, mental

health, social inequalities, and dietary environments (Brabcová et al., 2016; Stránský, 2015; Vágnerová et al., 2024). Low nutritional literacy, inadequate intake of key food groups, and limited access to preventive and dietetic care contribute to poorer health outcomes. Dietary approaches emphasising diversity and quality, including Mediterranean-style patterns, therefore represent a promising strategy for prevention and health promotion in later life (Hrezova et al., 2025; Mertens et al., 2019).

Physical activity, lifestyle, and quality of life

Czech evidence consistently demonstrates that physical activity plays a central role in maintaining health and quality of life in older adulthood. Across diverse study designs, higher levels of physical activity are associated with better self-rated quality of life, particularly in psychological well-being, while sedentary behaviour emerges as a major and age-related concern (Gaul-Aláčová et al., 2023; Hamrik et al., 2014).

Population-based data indicate that insufficient physical activity is widespread and becomes markedly more prevalent with advancing age. Nearly one third of Czech adults report low levels of physical activity, with inactivity increasing sharply among those aged 65 years and older. Prolonged sedentary behaviour is common, as more than 60% of adults spend at least four hours per day sitting, with the highest sedentary time observed among older age groups (Hamrik et al., 2014). Objective measurements further confirm that older adults spend a substantial portion of the day sedentary, while time devoted to moderate-to-vigorous physical activity (MVPA) remains limited (Vindiš et al., 2021).

Body weight and physical activity are closely interrelated. Accelerometer-based studies show that individuals with higher BMI engage in less MVPA and spend longer periods sitting compared to those with normal body weight, indicating a cumulative pattern of lifestyle-related health risks in older age (Vindiš et al., 2021).

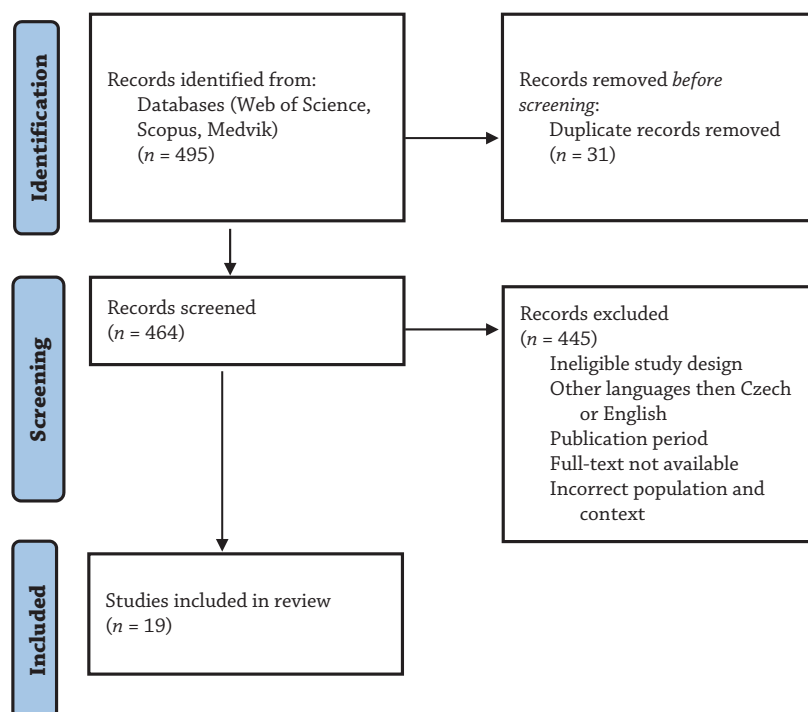


Diagram 1. PRISMA flow diagram

Table 1. Articles included in the review – Czech Republic

No.	Authors and Year	Title	Results
1	Hamrik et al., 2014	Physical Activity and Sedentary Behaviour in Czech Adults: Results from the GPAQ Study	Physical activity (PA) among Czech adults ($N = 1,753$; aged 18–90) was classified as low (32.3%), moderate (21.3%), and high (46.4%) according to GPAQ data. PA levels decreased with age, with men being more active than women. Over 60% of adults were classified as sedentary, particularly those aged 65 and older. The authors emphasised the need for national strategies and tailored interventions to promote physical activity, especially among women and older adults.
2	Netopil et al., 2014	Retirees: How Do They Choose Their Grocery Store? How Do They Shop?	A survey of 4,835 respondents (including 642 retirees) showed that older adults were more loyal to a single grocery store (42%) and valued product quality, freshness, accessibility, and cleanliness. They were highly price-conscious and frequently used flyers and promotions. Women were more likely to join loyalty programs. The authors emphasised the need to tailor retail and marketing strategies to the preferences and shopping behaviour of older consumers.
3	Stránský, 2015	Nutrition in Old Age	Systematic review identified physiological, psychological, and social determinants of nutrition in older adults. Main risks included reduced thirst and appetite, sarcopenia, and deficiencies in vitamin D, calcium, zinc, folate, and B ₁₂ . Recommended intake was ≥ 1.0 – 1.2 g protein/kg/day, ≥ 30 g fibre/day, and adequate hydration (30–45 ml/kg/day). Regular supplementation was advised mainly for vitamin D (20 µg/day) and calcium (500–1000 mg/day). Social isolation, depression, and chronic illness further increased malnutrition risk.
4	Brabcová et al., 2016	Risk Factors for Malnutrition in Seniors Aged 75+ Living in Home Environment in Selected Regions of the Czech Republic	Average BMI among older adults was 26.2 kg/m ² (overweight) and declined with age. More than one third (36.3%) were at risk of malnutrition. The strongest risk factor was unintended weight loss, strongly linked to reduced food intake ($\approx 10\times$ higher likelihood). Depression increased the risk 3.5 \times and acute illness 3 \times . Depression appeared both as a cause and a consequence of malnutrition, underscoring the multifactorial nature of nutritional risk in later life.
5	Mertens et al., 2019	Geographic and Socioeconomic Diversity of Food and Nutrient Intakes: A Comparison of Four European Countries	Comparative analysis of national dietary surveys in Denmark, the Czech Republic, Italy, and France ($n = 8,349$) revealed clear geographical and socioeconomic differences in food intake. Italy reported higher consumption of fruit, vegetables, and fish, whereas Denmark showed greater intake of dairy, sweet beverages, and alcohol. Across all countries, intake of legumes (<20 g/day) and nuts/seeds (<5 g/day) was low, while red and processed meat exceeded 80 g/day. In the Czech Republic, older adults showed particularly low folate intake (212 µg/day), highlighting the need for improved dietary diversity in later life.
6	Sunwoo, 2020	Loneliness among Older Adults in the Czech Republic: A Socio-demographic, Health, and Psychosocial Profile	Cross-sectional analysis of 2,129 older adults in the Czech Republic found that 5% reported frequent loneliness, 24% occasional, and 71% never. Loneliness was associated with poorer self-rated health, higher BMI, pain, and limitations in activities of daily living. Widowed individuals and those in the younger age group (65–74) reported more loneliness. Loneliness was strongly correlated with lower quality of life and higher levels of depressive symptoms.
7	Ferrarová et al., 2023	The Meaning of Food in Older Age	Secondary analysis of a survey among 81 older adults aged 65+ examined the social and cultural meanings of food in later life. Eating habits showed strong continuity, disrupted mainly by health-related efforts to “stay healthy”. Most participants (87%) enjoyed food, 65% valued eating with others, and 85% emphasised autonomy in meal preparation. Women highlighted independence in cooking and food choices as part of self-determination. Food was viewed as a key element of identity, social connection, and quality of life in later life.
8	Fučík, 2021	Social Participation of Older Adults in Relation to Their Partnership History	Analysis of diary data among older adults examined the relationship between social participation and partnership history. Social engagement did not differ significantly according to divorce experience, and no evidence was found that late-life divorce reduced participation. The study highlighted the importance of individual adaptation strategies for maintaining social connections and community involvement in later life.
9	Hasmanová Marhánková, 2021	Ageism, Age Divisions and Ageing in a Time of Crisis: Reflections on the Social Impact of the COVID-19 Pandemic	Qualitative sociological analysis focused on Czech adults aged 65+ during the COVID-19 pandemic revealed that chronological age became a central marker of vulnerability and access to services, reinforcing paternalistic and exclusionary discourses. Public narratives emphasised protection rather than autonomy, contributing to stereotypes and intergenerational tensions. The pandemic exposed systemic weaknesses in elderly care but also highlighted moments of solidarity and agency among older adults who resisted being defined solely as “at risk”.
10	Sýkorová, 2021	Siblings in Old Age – Relationships “On the Edge”?	Qualitative study among older adults explored the role of siblinghood in later life. Sibling relationships were not marginal but provided identity, continuity, and emotional support. They were often ambivalent, combining closeness, care, and solidarity with elements of conflict. Siblings acted as companions and keepers of family continuity, contributing to social participation and emotional well-being in older age.

Table 1. (continued)

No.	Authors and Year	Title	Results
11	Šlechtová, 2021	Late-Age Siblinghood and Siblinghood-in-law as Interdependent and Mutually Permeating Social Roles	Qualitative study among older adults analysed 91 interviews and three focus groups exploring siblinghood and siblinghood-in-law as interconnected social roles. Siblinghood involved intimacy, support, and assistance in emergencies, while in-law ties fostered family cohesion and solidarity. Both roles relied on mutual autonomy and willingness to maintain relationships. The study concluded that these roles gain increasing importance in later life as sources of identity, belonging, and intergenerational continuity.
12	Vindiš et al., 2021	Intensity- and Posture-specific 24-h Physical Behavior in the Context of Obesity in Older Adults: Results from a Pilot Study During the COVID-19 Pandemic	Pilot study among older adults used three accelerometers to analyse 24-hour physical behaviour during the COVID-19 pandemic. Significant BMI-related differences were observed: obese participants spent more time sedentary and less in moderate-to-vigorous activity ($p = 0.025$). Sedentary behaviour was strongly associated with higher obesity risk. The study demonstrated that detailed 24-hour monitoring can effectively identify behavioural patterns useful for planning physical activity interventions in older adults.
13	Hazuchová et al., 2022	Consumers' Stance on Food Waste in the Czech Republic, Poland, and Slovakia	Cross-country questionnaire survey ($n = 3,429$; CZ = 1,582) compared consumer attitudes toward food waste in the Czech Republic, Poland, and Slovakia. The most frequent causes were food spoilage during storage and expired date labels. Waste was higher among younger, wealthier households with children, while older adults tended to waste less. In the Czech Republic, spoilage was cited most often, and in Slovakia expiration dates. Planning purchases and environmental awareness significantly reduced household food waste. Older adults reported the lowest levels of food waste across all age groups.
14	Janovský et al., 2022	Measuring the Physical Activity of Seniors Before and During COVID-19 Restrictions in the Czech Republic	Retrospective study among 204 older adults in the Czech Republic (mean age 84.5) analysed changes in physical activity during COVID-19 restrictions. Overall, 58% reduced and 42% increased their activity levels, with the greatest decline (-12.3%) observed in April–May 2020. Age group, BMI, housing type, and city size did not significantly affect physical activity. The authors emphasised that understanding these patterns can help social workers design more effective activation strategies for older clients.
15	Gaul-Aláčová et al., 2023	The Use of Accelerometers to Assess Physical Activity and Quality of Life in Older Adults	Pilot study among 15 older women assessed physical activity using accelerometers and its relationship to quality of life (WHOQOL-BREF). Higher activity intensity was associated with better physical and psychological health. Significant differences in psychological well-being were found between moderate- and high-activity groups. The study confirmed that combining objective measurement with self-reported data can effectively evaluate the impact of physical activity on overall health and well-being in older adults.
16	Hrezova et al., 2023	Low Fruit and Vegetable Intake Is Associated with Poor Self-Rated Health in the Czech Part of the HAPIEE Study	Longitudinal analysis of 4,255 older adults from the Czech part of the HAPIEE study examined the association between fruit and vegetable intake and self-rated health (SRH) over a 3.7-year follow-up. At baseline, nearly half of participants consumed less than 400 g of fruit and vegetables daily. After four years, 5.1% reported poor SRH. Individuals in the lowest quartile of intake had significantly higher odds of poor health (OR = 1.24; 95% CI: 1.01–1.52). The study highlights that insufficient fruit and vegetable consumption predicts poorer subjective health in older adults.
17	Petrová Kafková, 2023	Sources of Loneliness for Older Adults in the Czech Republic and Strategies for Coping With Loneliness	Qualitative study based on 29 interviews with older adults explored perceived sources of loneliness and coping strategies. The main causes were loss of a partner, unsatisfactory family relationships, and childlessness. Gender differences were minimal; partnership history was the key dividing factor between loneliness and non-loneliness. Participants identified three coping strategies: (a) seeking activities and encounters, (b) enjoying solitude, and (c) slowing down. Active maintenance of social relations improved subjective well-being despite health decline or bereavement.
18	Vágnerová et al., 2024	Nutritional Status, Literacy, and Risk Factors of Malnutrition in the Population Over 50 Years of Age – Findings From the SHARE Project	Cross-sectional study of 2,316 older adults aged 65+ (mean age 71.7) from the Czech part of the SHARE project found undernutrition prevalence of 9.2%, overweight 42.8%, and obesity 32.2%. Poor nutritional status was significantly associated with depression, anxiety, multimorbidity, polypharmacy, and pain ($p < 0.001$). Dietary habits and physical activity often failed to meet recommendations, and fluid intake was frequently below 1.5 L/day. Awareness of dietitians and nutritional therapy remained very low, indicating insufficient nutritional literacy and preventive care among older adults.
19	Hrezova et al., 2025	Mediterranean Diet Score Linked to Cognitive Functioning in Czech Women: A Cross-sectional Population-Based Study).	Cross-sectional analysis of 6,028 adults (Czech HAPIEE study) examined the relationship between Mediterranean Diet Score (MDS) and cognitive function. Among women aged 65+, higher adherence to the Mediterranean diet (MDS 8–10 and 11–17) was linked to better composite cognitive scores ($B = 0.05$ and 0.08 ; $p < 0.05$) and improved immediate and delayed verbal memory (both $B = 0.12$). No significant associations were found in men. The results suggest that a Mediterranean-style diet may help preserve cognitive performance in older women.

At the same time, Czech studies highlight the positive potential of physical activity, even in later life. Higher intensity or more regular activity is associated with better perceived quality of life and psychological well-being, suggesting that benefits extend beyond physical health alone (Gaul-Aláčová et al., 2023). Evidence from the COVID-19 pandemic further illustrates substantial interindividual variability: although overall activity levels declined, a considerable proportion of older adults maintained or increased their physical activity, pointing to adaptive capacities and opportunities for targeted, context-sensitive interventions (Janovský et al., 2022).

Czech research confirms physical activity as a key protective factor for quality of life in older adults, while sedentary behaviour represents a persistent risk that increases with age (Hamrik et al., 2014; Vindiš et al., 2021). Despite external disruptions such as the COVID-19 pandemic, individual adaptability and engagement in moderate-intensity activity highlight the potential for effective prevention and health promotion strategies tailored to older populations (Gaul-Aláčová et al., 2023; Janovský et al., 2022).

Social determinants, isolation, and loneliness

Czech evidence consistently demonstrates that the social environment plays a central role in shaping health, nutritional status, and psychological well-being in later life. Across quantitative and qualitative studies, the quality of social ties, experiences of isolation, and exposure to age-related stereotypes emerge as key social determinants influencing quality of life among older adults (Fučík, 2021; Hasmanová Marhánková, 2021; Petrová Kafková, 2023; Sunwoo, 2020).

Although severe loneliness affects only a minority of older adults, its health consequences are substantial. Data from the sixth wave of the SHARE study indicate that loneliness, reported frequently by approximately 5% of Czech older adults, is strongly associated with poorer self-rated health, higher body mass index, multimorbidity, pain, and functional limitations (Sunwoo, 2020). These findings suggest that even a relatively low prevalence of loneliness can generate significant health burdens at the population level.

The COVID-19 pandemic further exposed social vulnerabilities in later life and reinforced age-based inequalities. Public discourse and policy responses often portrayed older adults as passive or uniformly vulnerable, contributing to ageist stereotypes and potentially undermining older individuals' sense of autonomy and social value (Hasmanová Marhánková, 2021).

Qualitative research offers deeper insight into lived experiences of isolation and resilience. Loss of a partner, widowhood, and living without close family members are repeatedly identified as major sources of loneliness in older age (Petrová Kafková, 2023). At the same time, many older adults maintain social participation, engage in meaningful activities, and reinterpret solitude as a source of autonomy rather than deprivation, challenging deficit-oriented views of ageing (Fučík, 2021).

Family and kinship relations remain an important protective resource in later life. Beyond immediate household arrangements, sibling relationships and ties with in-laws contribute to emotional support, identity, and continuity across the life course (Šlechtová, 2021; Sýkorová, 2021).

Czech studies indicate that social determinants – including the strength and quality of social ties, experiences of isolation, and societal representations of ageing – significantly shape psychological well-being and quality of life in older adults (Fučík, 2021; Hasmanová Marhánková, 2021; Petrová Kafková, 2023; Šlechtová, 2021; Sunwoo, 2020; Sýkorová, 2021).

Later life is therefore characterised by diverse social trajectories in which vulnerability and resilience coexist.

Consumer behaviour and trust in food

Czech evidence indicates that older adults display distinctive patterns of consumer behaviour and trust in food, shaped by life-course experiences, economic conditions, and perceptions of quality and safety. Across studies, older consumers tend to rely on familiar food environments and stable purchasing routines, reflecting both practical needs and the importance of trust in food sources (Hazuchová et al., 2022; Netopil et al., 2014).

Food quality, freshness, cleanliness, and accessibility emerge as key criteria guiding food choices in later life. Preference for a limited number of trusted retail outlets reflects efforts to minimise uncertainty and maintain control over food quality, while sensitivity to price promotions highlights the continued relevance of economic considerations. These findings suggest that trust and affordability are negotiated simultaneously within everyday food practices, rather than representing competing priorities (Netopil et al., 2014).

Czech studies further reveal age-related differences in food-related sustainability behaviours. Compared to younger consumers and households with children, older adults generate less food waste and adopt more frugal consumption strategies. Food waste is primarily associated with spoilage and expired use-by dates rather than over-purchasing, indicating a cautious and planned approach to food management. Conscious shopping practices and environmental awareness further contribute to reduced waste and more sustainable consumption patterns (Hazuchová et al., 2022).

Overall, Czech evidence suggests that older consumers prioritise food quality and trust, rely on familiar and accessible sources, and combine price sensitivity with frugality (Hazuchová et al., 2022; Netopil et al., 2014). These behavioural patterns reflect adaptive strategies to ageing and economic constraints, while simultaneously supporting more sustainable food consumption in later life.

Mediterranean diet and cognition

Czech evidence indicates that dietary patterns in later life are closely linked to cognitive health, particularly with respect to adherence to Mediterranean-style dietary principles. Across studies, low consumption of key Mediterranean food groups – such as fruit, vegetables, and fish – coexists with higher intake of red and processed meat, resulting in an unfavourable nutritional profile among older adults (Mertens et al., 2019).

Longitudinal evidence from the HAPIEE cohort further demonstrates that diet quality is associated with cognitive outcomes in older age. Higher adherence to the Mediterranean diet is linked to better overall cognitive function and verbal memory, with these associations being particularly evident among women (Hrezova et al., 2025). These findings suggest that dietary effects on cognition may interact with biological, social, and lifestyle factors across the life course.

Overall, Czech and comparative European evidence points to a convergence of nutritional inadequacies and increased cognitive risk in later life. Low adherence to Mediterranean dietary patterns contributes to deficits in key nutrients, including folate and vitamin D, and may increase vulnerability to cognitive decline. Promoting Mediterranean-style dietary patterns therefore represents a promising preventive strategy, supporting both nutritional status and cognitive resilience in older adulthood (Hrezova et al., 2025; Mertens et al., 2019).

Discussion

Czech studies confirm that malnutrition in older adults has a multifactorial character, associated with biological factors (weight loss, multimorbidity, polypharmacy), low intake of fruit, vegetables, and fluids, low nutritional literacy, and limited access to nutritional care. A paradoxical coexistence of overweight/obesity and undernutrition was documented; also evident in the eighth wave of the SHARE study, where malnutrition reached 9.2% and overweight/obesity affected more than 70% of older adults (Vágnerová et al., 2024). Depression, anxiety, and polypharmacy emerged as major risk factors.

International evidence is consistent. Pereira et al. (2022) found food insecurity to be associated with malnutrition (45% of studies) and obesity (27%), while in Brazil severe FI tripled malnutrition risk. In Spain, Zaragoza-Martí et al. (2020) reported low compliance with dietary recommendations, especially for vitamin D and iodine, influenced by socio-demographic factors, with higher physical activity improving adherence.

Physical activity is confirmed as crucial for healthy ageing and quality of life. Czech studies (Gaul-Aláčová et al., 2023; Janovský et al., 2022) show higher activity linked to better well-being, while COVID-19 caused an overall decline. Sedentary behaviour remains highly prevalent, particularly in older adults (Hamrik et al., 2014; Vindiš et al., 2021). Similar patterns were reported internationally: Min et al. (2023) found leisure and transport-related activity improved self-rated health and HR-QoL, whereas prolonged sedentary behaviour worsened EQ-5D outcomes.

Social isolation and loneliness also strongly affect healthy ageing. Czech evidence (Petrová Kafková, 2023; Sýkorová, 2021; Sunwoo, 2020) highlights the role of partnership and family ties, while the pandemic amplified vulnerabilities and ageist stereotypes (Hasmanová Marhánková, 2021). Miao et al. (2025) demonstrated in the UK Biobank that isolation reduced the probability of healthy ageing by 14–20%, with combined isolation and loneliness lowering the chance by up to 48% in women. These findings underline the need to strengthen social ties and address ageism in policy.

Consumer behaviour studies show that older adults prioritise quality, trust, and frugality, reducing food waste (Hazučová et al., 2022; Netopil et al., 2014). Globally, ageing shapes consumer preferences toward convenience and loyalty, influenced by psychological and socio-cultural factors (Lombardo et al., 2020; Zheng et al., 2024).

Finally, dietary patterns have cognitive implications. Consistent with international findings (Klimova et al., 2021), Czech evidence confirms the protective effects of the Mediterranean diet, especially in women (Hrezova et al., 2025). Lower adherence in the Czech population may partly explain the less favourable nutritional profile compared to Southern Europe (Mertens et al., 2019).

In summary, Czech and international evidence clearly demonstrates that nutrition, physical activity, social relationships, and consumer behaviour are interconnected determinants of healthy ageing. Effective interventions must integrate prevention of malnutrition, promotion of active lifestyles, support for social ties, and sustainable dietary patterns, in line with WHO, OECD, and SDG frameworks.

Strengths and limitations of the review

This narrative review has several strengths and limitations that should be considered when interpreting its findings. Its

main strength lies in the explicit focus on the Czech Republic and on community-dwelling older adults, allowing for a contextually grounded synthesis of evidence relevant to healthy ageing. By integrating nutritional and social perspectives, the review captures interconnected determinants shaping dietary behaviour and nutritional risk in later life.

The available Czech evidence remains limited in scope and methodologically heterogeneous, which restricts detailed comparison of findings. The review focused on adults aged 65 years and older living in the community; studies were included when this group constituted the main analytical population, or when findings were relevant to understanding the relationship between nutrition and social determinants in later life.

Some included studies did not directly address food intake or specific dietary behaviours and were intentionally retained as contextual evidence; as social determinants such as loneliness, partnership loss, social participation, and age-related stereotypes are consistently identified as key factors influencing dietary behaviour, nutritional risk, and access to food in older age.

Studies conducted in institutional or hospital-based settings were not included, as nutritional needs and social dynamics in these settings differ substantially from those of community-dwelling older adults and require a distinct analytical framework. Given the narrative design of the review, the findings should be interpreted as a qualitative synthesis rather than an exhaustive account.

Conclusion

This narrative review provides a synthesis of the available Czech empirical evidence on the relationship between nutrition and the social determinants of health among adults aged 65 years and older. The findings show that the nutritional status and dietary habits of older adults are significantly influenced by social relationships, economic conditions, living environment, and cultural attitudes toward ageing. In the Czech population, the paradoxical coexistence of obesity and malnutrition risk persists, accompanied by insufficient intake of fruits and vegetables and low levels of nutritional literacy. The quality of social ties, the degree of isolation, and the presence of depressive symptoms emerge as key factors affecting both dietary behaviour and overall quality of life.

The answer to the research question indicates that in the Czech Republic, there is a growing yet still limited body of empirical evidence on the interconnection between nutrition and social determinants of health in older adults.

From a practical perspective, it is essential to strengthen nutritional literacy, prevent malnutrition within primary care, and improve access to dietetic counselling. Community-based programmes integrating nutrition, physical activity, and social interaction should be prioritised. Furthermore, the promotion of sustainable dietary patterns – such as the Mediterranean diet adapted to Czech cultural habits – should be encouraged.

Role of individual authors

All authors contributed equally to the preparation of this paper and to the implementation of the review process on which the paper is based. Their roles included the development of the theoretical concept, literature search and analysis, preparation and writing of the manuscript, and the critical review of its final version. The authors jointly discussed and approved the submitted version of the article.

Acknowledgement

The authors would like to thank their colleagues from the Faculty of Health Sciences, Palacký University Olomouc, for their support in preparing the manuscript.

Funding

This work was supported by the project NUTRIAGE24 (SPP 801000021, source 19).

Ethical aspects and conflict of interest

The authors have no conflict of interest to declare in relation to this paper.

References

- Brabcová I, Trešlová M, Bártlová S, Vacková J, Tóthová V, Motlová L (2016). Risk factors for malnutrition in seniors aged 75+ living in home environment in selected regions of the Czech Republic. *Cent Eur J Public Health* 24(3): 206–210. DOI: 10.21101/cejph.a4283.
- Czech Statistical Office (2024). *Statistická ročenka České republiky 2024* [Statistical Yearbook of the Czech Republic. Praha: ČSÚ. [online] [cit. 2026-01-22]. Available from: <https://csu.gov.cz/docs/107508/db2ef2f9-5b1f-82c2-5ebf-621acf94791d/32019824.pdf?version=1.2>
- FAO and WHO – Food and Agriculture Organization of the United Nations and World Health Organization (2019). *Sustainable healthy diets: Guiding principles*, 44 p. [online] [cit. 2026-01-22]. Available from: <https://openknowledge.fao.org/server/api/core/bitstreams/03bf9cde-6189-4d84-8371-eb939311283f/content>
- Ferrarová E, Petrová Kafková M, Kroužková T (2023). Význam jídla ve vyšším věku. In: Horáková H (Ed.). *Sborník příspěvků 6. gerontologické mezioborové konference*. Praha: 2. lékařská fakulta Univerzity Karlovy, pp. 28–37.
- Fučík P (2021). Social Participation of Older Adults in Relation to Their Partnership History. *Czechoslov Sociol Rev* 57(2): 165–191. DOI: 10.13060/csr.2021.012.
- Gaul-Aláčová P, Svobodová A, Kláštěrecká R, Dygrýn J (2023). Vliv pohybové aktivity na kvalitu života u osob vyššího věku – pilotní studie. *Rehabilitácia* 60(4): 302–309. DOI: 10.61983/lcrh.v60i4.23.
- Hamrik Z, Sigmundová D, Kalman M, Pavelka J, Sigmund E (2014). Physical activity and sedentary behaviour in Czech adults: Results from the GPAQ study. *Eur J Sport Sci* 14(2): 193–198. DOI: 10.1080/17461391.2013.822565.
- Hasmanová Marhánková J (2021). Ageism, age divisions and ageing in a time of crisis: Reflections on the social impact of the COVID-19 pandemic. *Czechoslov Sociol Rev* 57(2): 143–163. DOI: 10.13060/csr.2021.008.
- Hazuchová N, Stávková J, Siedlecka A, Nagyová L (2022). Consumers' stance on food waste in the Czech Republic, Poland, and Slovakia. *AIMS Agric Food* 7(3): 637–658. DOI: 10.3934/agrfood.2022040.
- Hrezova E, Bobak M, Capkova N, Stefler D, Pikhart H (2023). Low fruit and vegetable intake is associated with poor self-rated health in the Czech part of the HAPIEE study. *Nutrition and Health* 29(2): 3–9. DOI: 10.1177/02601060211069209.
- Hrezova E, Stefler D, Capkova N, Vaclava H, Bobak M, Pikhart H (2025). Mediterranean diet score linked to cognitive functioning in Czech women: a cross-sectional population-based study. *Eur J Nutr* 64(5): 237. DOI: 10.1007/s00394-025-03752-4.
- Institute of Health Information and Statistics of the Czech Republic (2021). *Zdravotnická ročenka České republiky 2020*. Praha: ÚZIS.
- Institute of Health Information and Statistics of the Czech Republic (2024). *Zdravotnická ročenka České republiky 2024*. Praha: ÚZIS.
- Janovský V, Piorecký M, Včelák J, Mrissa M (2022). Measuring the physical activity of seniors before and during COVID-19 restrictions in the Czech Republic. *Healthcare* 10(3): 460. DOI: 10.3390/healthcare10030460.
- Klimova B, Novotny M, Schlegel P, Valis M (2021). The effect of Mediterranean diet on cognitive functions in the elderly population. *Nutrients* 13(6): 2067. DOI: 10.3390/nu13062067.
- Lombardo M, Aulisa G, Padua E, Annino G, Iellamo F, Pratesi A, et al. (2020). Gender differences in taste and food habits. *Nutr Food Sci* 50(1): 229–239. DOI: 10.1108/NFS-04-2019-0132.
- Miao MY, Fang F, Lyu JQ, Liu ZY, Wan ZX, Qin LQ, et al. (2025). Relationships of social isolation and loneliness with healthy ageing among older adults. *BMC Geriatr* 25(1): 267. DOI: 10.1186/s12877-025-05941-6.
- Mertens E, Kuijsten A, Dofková M, Mistura L, D'Addezio L, Turrini A, et al. (2019). Geographic and socioeconomic diversity of food and nutrient intakes: A comparison of four European countries. *Eur J Nutr* 58(4): 1475–1493. DOI: 10.1007/s00394-018-1673-6.
- Min J, Chang JS, Kong ID (2023). Domain-specific physical activity, sedentary behavior, subjective health, and health-related quality of life among older adults. *Health Qual Life Outcomes* 21(1): 52. DOI: 10.1186/s12955-023-02136-8.
- Netopil T, Antošová V, Turčínková J (2014). Retirees: How do they choose their grocery store? How do they shop? *Procedia Econ Financ* 12: 480–488. DOI: 10.1016/S2212-5671(14)00370-0.
- OECD (2017). *Preventing ageing unequally*. OECD Publishing. [online] [cit. 2026-01-22]. Available from: https://www.oecd.org/en/publications/preventing-ageing-unequally_9789264279087-en.html
- OECD (2021). *Health at a glance 2021: OECD indicators*. OECD Publishing. [online] [cit. 2026-01-22]. Available from: https://www.oecd.org/en/publications/health-at-a-glance-2021_ae3016b9-en.html
- Pereira MHQ, Pereira MLAS, Campos GC, Molina MCB (2022). Food insecurity and nutritional status among older adults: A systematic review. *Nutr Rev* 80(4): 631–644. DOI: 10.1093/nutrit/nuab044.
- Petrová Kafková M (2023). Sources of Loneliness for Older Adults in the Czech Republic and Strategies for Coping With Loneliness. *Social Inclusion* 11(1): 225–233. DOI: 10.17645/si.v11i1.6185.
- Šlechtová H (2021). Late-Age Siblinghood and Siblinghood-in-law as Interdependent and Mutually Permeating Social Roles. *Czechoslov Sociol Rev* 57(2): 219–244. DOI: 10.13060/csr.2021.011.
- Stránský M (2015). Nutrition in old age. *Kontakt* 17(3): e163–e170. DOI: 10.1016/j.kontakt.2015.08.004.
- Sunwoo L (2020). Loneliness among older adults in the Czech Republic: A socio-demographic, health, and psychosocial profile. *Arch Gerontol Geriatr* 90: 104068. DOI: 10.1016/j.archger.2020.104068.
- Sýkorová D (2021). Siblings in Old Age – Relationships “On the Edge”? *Czechoslov Sociol Rev* 57(2): 193–218. DOI: 10.13060/csr.2021.013.
- United Nations (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. [online] [cit. 2026-01-22]. Available from: <https://sdgs.un.org/2030agenda>
- Vágnerová T, Dvořáčková O, Topinková E (2024). Nutritional status, literacy, and risk factors of malnutrition in the population over 50 years of age – findings from the SHARE project. *Clin Nutr Open Sci* 54: 100–112. DOI: 10.1016/j.nutos.2024.01.006.
- Vindiš J, Pechová J, Pelclová J (2021). Intensity- and posture-specific 24-h physical behavior in the context of obesity in older adults: Results from pilot study during the COVID-19 pandemic. *Čas Lék čes* 160(7–8): 310–316.
- Volkert D, Beck AM, Cederholm T, Cruz-Jentoft A, Goisser S, Hooper L, et al. (2019). ESPEN guideline on clinical nutrition and hydration in geriatrics. *Clin Nutr* 38(1): 10–47. DOI: 10.1016/j.clnu.2018.05.024.

-
33. WHO (2017). Global strategy and action plan on ageing and health. [online] [cit. 2026-01-22]. Available from: <https://www.who.int/publications/i/item/9789241513500>
 34. Zaragoza-Martí A, Ruiz-Robledillo N, Sánchez-SanSegundo M, Albaladejo-Blázquez N, Hurtado-Sánchez JA, Ferrer-Cascales R (2020). Eating habits in older adults: Compliance with the recommended daily intakes and its relationship with sociodemographic characteristics, clinical conditions, and lifestyles. *Nutrients* 12(2): 446. DOI: 10.3390/nu12020446.
 35. Zheng Z, Hafizuddin-Syah BAM, Omar Zaki H, Tan QL (2024). Impact of ageing on consumer behavior: A review and research agenda. *Int J Consum Stud* 48: e70000. DOI: 10.1111/ijcs.70000.