

Beyond Meal Plans: A Mind Genomics Perspective on Everyday Meal Planning for Healthier Eating

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Abstract

Healthy eating involves more than nutritional recommendations, as everyday meal choices also depend on practical considerations such as preparation time, taste, affordability, and household preferences. This Perspective explores how Mind Genomics could be used to investigate the combined influence of these attributes on perceived meal suitability. An illustrative framework comprising four domains and sixteen candidate elements is presented as a starting point for future empirical research. This approach may help investigate individual differences in how people evaluate meal options and inform future research on nutritional communication. However, empirical validation and independent replication are needed to establish its practical value for everyday meal planning and healthier eating.

Keywords: Mind Genomics; Everyday Meal Planning; Healthy Eating; Food Choice; Personalized Nutrition; Nutritional Communication

Introduction

Healthy eating is widely recognized as an important component of preventing diet-related chronic diseases, yet translating nutritional recommendations into everyday food choices remains challenging. Everyday meal planning requires individuals to balance nutritional considerations with preparation time, convenience, taste, household preferences, affordability, and ingredient availability. Dietary choices are shaped by interacting social, economic, cultural, and individual factors, including food prices, personal preferences, beliefs, cultural traditions, and the availability of locally appropriate foods [1]. Time scarcity has been associated with reduced home food preparation, greater reliance on convenience foods, and fewer family meals [2]. Food choices are also shaped by social and cultural influences, including family relationships, cultural perceptions, convenience, and habitual practices, as illustrated by research examining food-choice decision-making among women in Delhi [3]. Together, these findings highlight the importance of understanding everyday food decisions within their practical, social, and cultural contexts.

Meal planning represents one potential way of translating nutritional intentions into everyday dietary practices. In a large cross-sectional study of French adults, meal planning was associated with greater food variety and better diet quality, although the study design does not establish a causal relationship [4]. However, meal-related decisions involve more than selecting foods according to their nutritional properties. Food choice is a dynamic and context-dependent process shaped by cultural ideals, personal circumstances, available resources, social relationships, and the negotiation of competing food-related values [5]. Time-related and work-related issues, as well as distractions in the home environment, have also been identified as barriers to regular family meals [6]. Research on interventions that modify the food-choice environment suggests that some strategies may encourage healthier selections, although reported effects differ across food categories and intervention strategies [7,8]. These findings support examining how nutritional objectives can be accommodated alongside the practical demands and competing priorities that shape everyday meal decisions.

Personalized nutrition provides an important foundation for addressing individual differences in nutritional requirements and responses to food. Variation in genetics, the microbiome, lifestyle, dietary intake, and environmental exposures contributes to differences in nutritional requirements and metabolic responses [9]. A systematic review of randomized controlled trials found that personalized nutrition advice could improve dietary intake compared with generalized advice, while highlighting the need for further research and appropriate behaviour-change approaches [10]. Evidence from the European Food4Me randomized controlled trial also supports the potential of personalized nutrition advice to encourage dietary behaviour change, although incorporating additional phenotypic or genotypic information did not necessarily enhance its effectiveness [11]. Nevertheless, tailoring advice to individual nutritional characteristics does not, by itself, establish how people evaluate particular meal options within their everyday circumstances. A complementary question is how nutritional guidance can account for the practical priorities, preferences, and competing considerations that influence whether a meal appears suitable for everyday use.

Research on dietary counseling and digital nutrition advice further highlights the importance of how recommendations are tailored, communicated, and interpreted. A scoping review of dietary counseling identified strategies involving motivation, counseling modalities, feedback, empathy, and consideration of clients' preferences and expectations [12]. Research on personalized nutrition advice systems has also highlighted design considerations involving the information used as input, the models through which advice is generated, and the communication of recommendations [13]. These perspectives suggest that personalization may involve not only the nutritional content of advice but also how recommendations are presented in relation to individuals' preferences and practical circumstances. However, the extent to which experimentally identified patterns of meal-related preferences could inform such approaches remains a question for empirical investigation.

Everyday meal planning therefore offers an opportunity to investigate how individuals evaluate combinations of nutritional and practical attributes. A meal may offer desirable nutritional characteristics but be perceived as time-consuming, expensive, unfamiliar, or difficult to accommodate within household routines. Conversely, a familiar and convenient meal may not fully align with nutritional objectives. Existing research provides evidence concerning food-choice influences, associations between meal planning and diet quality, personalized nutrition, and interventions designed to encourage healthier selections. A complementary direction is to investigate how people evaluate combinations of competing meal-related attributes, rather than examining each consideration only in isolation. In particular, understanding how nutritional benefits, preparation demands, taste, affordability, and household preferences contribute to the perceived suitability of everyday meal options may help clarify how nutritional recommendations interact with practical food-choice considerations. This is a proposed direction for further investigation, rather than a claim that this question has not previously been studied

Mind Genomics offers a potential experimental approach for investigating this question. It is an empirical, inductive approach that examines how people evaluate combinations of ideas or attributes presented in experimentally designed vignettes [14,15]. In a nutrition-

related application, Mind Genomics was used to examine food-related evaluations and explore response-based mindsets, illustrating the potential of the approach in a specific food-related context [15]. Such an application provides methodological precedent, but it does not establish that the same response patterns will occur in everyday meal planning or across different populations. In the proposed context, experimentally designed meal-related concepts could combine attributes representing nutrition and health, time and convenience, taste and household preferences, and cost and practical considerations. Participants' evaluations could then be analysed using regression to estimate the relative contribution of individual attributes to their ratings. Further analysis could explore whether recurring response patterns support the identification of empirically derived mindsets. Replication and independent validation would be needed to assess the reproducibility of these patterns, while their practical value for meal-planning communication or digital tools would require separate evaluation. Neither the existence of stable meal-planning mindsets nor improvements in dietary behaviour should be assumed in advance.

This perspective examines the potential contribution of Mind Genomics to everyday meal planning for healthier eating. It considers how the method could complement existing nutritional and behavioural research by investigating evaluations of combinations of competing meal-related attributes, presents an illustrative framework for future empirical investigation, and discusses potential applications alongside the validation needed before mindset-based findings can inform practical meal-planning approaches.

The everyday meal-planning problem

Everyday meal planning involves navigating competing priorities rather than simply selecting foods on the basis of their nutritional properties. Although nutritional recommendations can identify desirable dietary choices, incorporating these choices into everyday life may involve practical considerations such as time, available resources, and established food routines. Time scarcity has been associated with reduced home food preparation and greater reliance on convenience foods [2]. Similarly, observational research has linked meal planning with greater food variety and better diet quality, although these associations do not establish a causal relationship [4]. Together, these findings highlight the distinction between identifying nutritionally desirable choices and understanding the circumstances in which people can incorporate them into everyday life.

Food-related decisions are shaped by social relationships, personal preferences, cultural traditions, and socioeconomic circumstances [1,5]. The World Health Organization notes that the composition of a healthy diet can vary according to individual characteristics, cultural context, locally available foods, and dietary customs. It also identifies income, food prices, food availability, affordability, and individual preferences and beliefs as factors influencing dietary patterns [1]. These considerations provide a basis for understanding meal planning as a context-dependent activity rather than a purely nutritional exercise. For example, a meal with desirable nutritional characteristics may be perceived as difficult to prepare within a limited time, unaffordable within a household budget, or unsuitable for family preferences. Conversely, a familiar, convenient, and affordable meal may be attractive in practical terms without fully meeting the intended nutritional objectives. Such examples illustrate potential tensions between nutritional desirability and practical suitability without assuming that individuals consistently prioritize one consideration over another.

This perspective raises a question that complements existing research on food choice and personalized nutrition: how do individuals evaluate nutritional benefits alongside the practical and social attributes of everyday meal options? Personalized nutrition research has investigated differences in nutritional requirements and responses to food [9], while randomized controlled trials and systematic reviews have examined whether personalized dietary advice can improve dietary intake compared with generalized recommendations [10,11]. Research on dietary counseling and personalized nutrition advice systems has also emphasized the relevance of individual preferences, counseling approaches, and the communication of recommendations [12,13]. These lines of research provide important foundations for individualized nutritional guidance. A complementary question, however, concerns how people evaluate particular combinations of nutritional and practical attributes when considering meals for everyday use.

The relative importance of nutrition, convenience, taste, cost, and household preferences should not be assumed to be uniform across individuals or situations. Nor should people be assigned to fixed categories of meal-planning priorities in advance. Instead, whether recurring patterns of evaluation exist, whether these patterns can be distinguished empirically, and whether they are reproducible across different populations remain questions for systematic investigation. Addressing these questions requires approaches capable of examining not only individual food-choice considerations but also how combinations of meal-related attributes contribute to people’s evaluations. This provides the rationale for considering Mind Genomics as a potential complementary method for investigating everyday meal planning.

Mind genomics as a proposed approach

Mind genomics provides an experimental approach for examining how individuals evaluate combinations of ideas rather than considering each idea only in isolation. The method presents respondents with short descriptions, known as vignettes, containing combinations of selected elements. Respondents rate these combinations, and the resulting data can be analyzed to estimate the contribution of individual elements and investigate differences in response patterns across individuals [14,16]. Mind Genomics has been applied across diverse areas, including food and consumer research, healthcare, education, and social issues [14,17,18].

Everyday meal planning provides a potential application of this approach because people may consider several factors when deciding whether a meal is suitable for regular eating. These factors may include nutritional value, preparation time, personal and household preferences, affordability, and ingredient availability. Research on food-choice processes highlights the influence of personal circumstances, cultural ideals, social relationships, resources, and established routines [5]. Time scarcity has been associated with reduced home food preparation and greater reliance on convenience foods [2], while observational research has linked meal planning with greater food variety and better diet quality [4]. Research among urban Indian women has also identified family influence, cultural perceptions, convenience, and habit as relevant considerations in food choice [3]. WHO guidance further highlights nutritional adequacy, dietary diversity, cultural context, affordability, food availability, and individual preferences as relevant considerations in healthy eating [1].

Drawing on this literature, four candidate domains are proposed for an illustrative Mind Genomics exploration: Nutrition and Health, Time and Preparation, Personal and Household Preferences, and Cost and Ingredient Availability. These domains provide a practical, literature-informed starting point for organizing candidate elements related to everyday meal planning. They are proposed for illustration and are not intended to represent an established or empirically validated classification of meal-planning factors.

A 4 × 4 structure was used to organize the four proposed domains into sixteen candidate elements. BimiLeap (www.bimileap.com) is a web-based platform for designing and analyzing Mind Genomics studies. Its AI-based Idea Coach was used to generate candidate elements based on the four domains identified for the proposed everyday meal-planning approach. The generated elements were reviewed and organized to illustrate how the proposed four-domain structure could be translated into a Mind Genomics design. Table 1 presents the sixteen illustrative candidate elements.

In a future empirical implementation, the candidate elements could be combined into experimentally designed vignettes. Each vignette would contain a combination of meal-related attributes drawn from different domains. Respondents would evaluate the complete combination, allowing the overall suitability rating to be analyzed alongside the contribution of its constituent elements [14,16].

For illustration, two possible vignettes are presented below.

Silo and Story Question	Candidate Elements
Silo A — Nutrition and Health What nutritional features might make a meal suitable for everyday eating?	A1. This meal includes a variety of nutritious foods. A2. This meal includes vegetables and other nutrient-rich ingredients. A3. This meal offers a balance of different food groups. A4. This meal combines nutritional value with foods suitable for regular consumption.
Silo B — Time and Preparation What preparation-related features might make a meal practical for everyday use?	B1. This meal can be prepared in a short time. B2. This meal requires only a few preparation steps. B3. This meal can be prepared using familiar cooking methods. B4. This meal fits easily into a busy daily routine.
Silo C — Personal and Household Preferences What personal or household features might make a meal acceptable for everyday eating?	C1. This meal includes foods that match my personal preferences. C2. This meal is likely to be acceptable to other members of my household. C3. This meal includes flavours that I enjoy. C4. This meal fits with my household’s usual eating habits.
Silo D — Cost and Ingredient Availability What cost-related or ingredient-related features might make a meal practical for everyday use?	D1. This meal fits within my usual food budget. D2. This meal uses ingredients that are readily available locally. D3. This meal uses ingredients that I can easily obtain when needed. D4. This meal can be prepared without expensive or hard-to-find ingredients.

Table 1: Illustrative 4 × 4 Mind Genomics structure for everyday meal planning.

Note: The four domains and sixteen elements are illustrative candidates intended to demonstrate a possible Mind Genomics design. They have not yet been empirically tested or validated.

Illustrative vignette 1

- This meal includes a variety of nutritious foods.
- This meal can be prepared in a short time.
- This meal includes flavours that I enjoy.
- This meal fits within my usual food budget.

Illustrative vignette 2

- This meal offers a balance of different food groups.
- This meal fits easily into a busy daily routine.
- This meal is likely to be acceptable to other members of my household.
- This meal uses ingredients that are readily available locally.

In a future empirical study, respondents could evaluate each vignette using the following rating question:

“How suitable would this meal option be for your everyday eating?”

1. Not at all suitable
2. Slightly suitable
3. Moderately suitable

4. Very suitable
5. Extremely suitable.

The rating would capture respondents' perceived suitability of the combination of meal-related attributes presented in each vignette. It would not directly measure the nutritional quality of an actual meal, actual food consumption, dietary adherence, or health outcomes.

Following data collection, BimiLeap automatically analyzes the vignette ratings through its integrated Mind Genomics analytical workflow. Ordinary least-squares (OLS) regression estimates the relative contribution of individual elements to respondents' ratings, while K-means clustering groups respondents according to similarities in their response patterns. This analysis can identify empirically derived mindsets reflecting different patterns of preference for the elements presented in the vignettes [17,19].

Applied to everyday meal planning, this approach could help identify which meal attributes contribute most to perceived suitability and how respondents differ in their evaluations of meal options. Such findings could provide insights into distinct preference patterns relevant to everyday meal planning, although their consistency and reproducibility would require further investigation.

If distinct response patterns emerged, further research would be needed to assess their reproducibility in independent samples and their relevance to everyday meal-planning decisions. If these patterns proved sufficiently consistent, a Personal Viewpoint Identifier (PVI) could be explored in future research to examine how new respondents align with previously identified mindsets. Such a tool would require separate development and evaluation before practical use in meal planning [17,19].

Through this proposed approach, Mind Genomics may complement existing research on food choice, meal planning, and personalized nutrition by providing a structured way to investigate how individuals evaluate combinations of nutritional and practical attributes. Rather than assuming that particular attributes will dominate meal decisions or that distinct mindsets will necessarily emerge, the approach would allow these possibilities to be examined empirically. Its eventual usefulness for developing personalized meal-planning communication or tools would depend on the strength and reproducibility of the evidence and subsequent evaluation of its practical value.

Why this perspective matters for nutritional health

The potential value of this perspective lies in examining how nutritional goals interact with the practical considerations of everyday meal planning. Mind Genomics could provide a way to investigate how combinations of nutritional and practical attributes contribute to the perceived suitability of meal options. Rather than assuming that a single attribute, such as nutritional value or convenience, determines meal choice, this approach could help examine how different attributes contribute to people's evaluations when considered together. If future research identifies reproducible patterns in these evaluations, the findings could inform further investigation into personalized nutritional communication, everyday meal planning, and digital nutrition tools. These applications, however, remain possibilities rather than established benefits.

This perspective may be particularly relevant to the communication of healthier food choices. Nutritional recommendations may be easier to relate to everyday circumstances when their presentation takes account of practical considerations such as preparation time, affordability, taste, and household preferences. Future research could examine whether different ways of presenting meal options are perceived as more relevant by different individuals. Such findings might help generate testable approaches to nutritional communication, but whether these approaches encourage healthier food choices would need to be investigated separately.

Several limitations should be acknowledged. The proposed domains and elements are illustrative and have not yet been empirically tested or validated. Their relevance across different populations, cultural settings, and food environments would require further investigation. These ratings would indicate how suitable participants perceive the described meal options to be for everyday eating. They would not, by themselves, establish actual dietary behaviour or health outcomes. Similarly, any mindsets identified through future analysis would need to be examined for reproducibility and relevance beyond the initial study sample before they could inform practical applications.

Future research could assess the clarity and relevance of the proposed elements, examine how participants evaluate combinations of meal-related attributes, and investigate whether recurring response patterns emerge. Replication in independent samples would be important to determine whether any identified patterns are sufficiently consistent to support further investigation. If distinct and reproducible mindsets were identified, a Personal Viewpoint Identifier (PVI) could be explored as a later extension to examine how new respondents align with previously identified mindsets [19]. Its practical value for everyday meal planning would require separate development and evaluation.

Overall, Mind Genomics may complement existing research on food choice, meal planning, and personalized nutrition by providing a structured approach to investigating how people evaluate nutritional and practical considerations together. Its potential contribution would depend on the reproducibility of the findings and evidence that the resulting insights have practical value. Further research would be needed to determine whether this approach can meaningfully inform nutritional communication or support healthier everyday food choices.

Conclusion

Everyday meal planning involves balancing nutritional goals with practical considerations that influence food choices. Mind Genomics may offer a structured approach to investigating how individuals evaluate combinations of nutritional and practical attributes. The four domains and sixteen candidate elements presented in this Perspective provide an illustrative starting point for future empirical research rather than a validated framework. Further research is needed to determine whether reproducible patterns of evaluation emerge and whether the resulting insights can inform nutritional communication and everyday meal planning. The potential contribution of Mind Genomics to healthier eating will ultimately depend on empirical validation and evidence of its practical value in real-world settings.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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