

# Artificial Intelligence in Obesity Management

**Prof. Hiba Bawadi, PhD**

**Director of Clinical Affairs – Qatar University**



# Disclosure Statement

- No relevant financial relationships to disclose
- Will not be discussing unlabeled/unapproved use of drugs or products

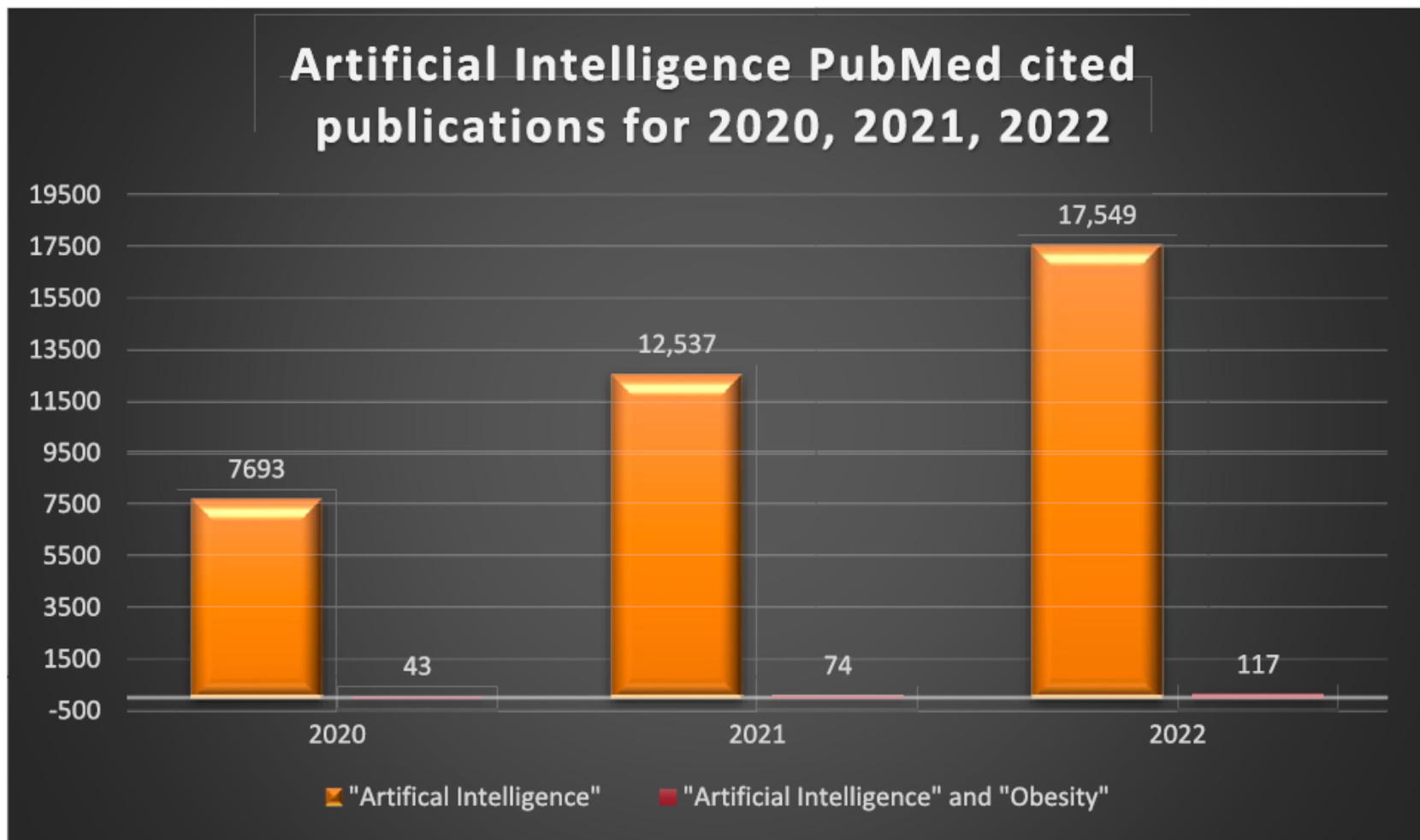


# Viral promoting videos



**The AI interference with public health  
is getting high Attention!**





**Fig. 4.** Number of yearly publications for years 2020, 2021, and 2022 for the search term “Artificial Intelligence”, as well as for “Artificial Intelligence” and “Obesity” via PubMed search on March 25, 2023.



# Potential and Pitfalls of ChatGPT and Natural-Language Artificial Intelligence Models for Diabetes Education

Gerald Gui Ren Sng,<sup>1</sup>  
Joshua Yi Min Tung,<sup>2</sup>  
Daniel Yan Zheng Lim,<sup>3</sup> and  
Yong Mong Bee<sup>1</sup>

*Diabetes Care* 2023;46:e103–e105 | <https://doi.org/10.2337/dc23-0197>

Diabetes self-management and education (DSME) is an integral part of diabetes care and has been shown to improve glycemic control, reduce complications, and increase quality of life (1). The traditional model in which clinicians and diabetes educators share responsibility for patient education faces challenges such as reduced access to care during the pandemic and a shortage of trained educators.

Licensing Examination (4). We aimed to explore the quality and veracity of DSME advice provided by ChatGPT.

We instructed ChatGPT to answer a series of questions regarding diabetes self-management. Thereafter, we presented it with common questions on four domains of DSME: first, diet and exercise; second, hypoglycemia and hyperglycemia education; third, insulin storage; and

to generate a full list of instructions for insulin administration.

ChatGPT generally performed well in generating easily understood and accurate responses to questions about diabetes care. Theoretically, stochasticity can be an issue with language models, as using statistical probability to generate replies can randomly lead to inconsistencies across iterations. However, this was not observed



Editorial

## The Role of ChatGPT, Generative Language Models, and Artificial Intelligence in Medical Education: A Conversation With ChatGPT and a Call for Papers

---

Gunther Eysenbach, MD, MPH

JMIR Publications, Toronto, ON, Canada

**Corresponding Author:**

Gunther Eysenbach, MD, MPH

JMIR Publications

130 Queens Quay East

Suite 1100-1102

Toronto, ON, M5A 0P6

Canada

Phone: 1 416 786 6970

Email: [geysenba@gmail.com](mailto:geysenba@gmail.com)

### *Abstract*

---

ChatGPT is a generative language model tool launched by OpenAI on November 30, 2022, enabling the public to converse with a machine on a broad range of topics. In January 2023, ChatGPT reached over 100 million users, making it the fastest-growing consumer application to date. This interview with ChatGPT is part 2 of a larger interview with ChatGPT. It provides a snapshot of the current capabilities of ChatGPT and illustrates the vast potential for medical education, research, and practice but also hints at current problems and limitations. In this conversation with Gunther Eysenbach, the founder and publisher of JMIR Publications, ChatGPT generated some ideas on how to use chatbots in medical education. It also illustrated its capabilities to generate a virtual patient simulation and quizzes for medical students; critiqued a simulated doctor-patient communication and attempts to summarize a research article (which turned out to be fabricated); commented on methods to detect machine-generated text to ensure academic integrity; generated a curriculum for health professionals to learn about artificial intelligence (AI); and helped to draft a call for

---



# AI in Healthcare

## **Pattern Recognition:**

AI algorithms analyze vast datasets to detect trends, anomalies, or correlations.

Example: Identifying (disease) trends across populations.

## **Predictive Analytics:**

Predict the risk of diseases based on patient history, genetic predisposition, and lifestyle.

## **Decision Support Systems:**

AI assists healthcare providers in choosing the best treatment plans.



# AI in Healthcare

## Specific to Obesity

- Lifestyle tracking.
- Personalized interventions.

ARTICLE IN PRESS



**PRACTICE APPLICATIONS**

Professional Practice



# ChatGPT and Future Artificial Intelligence Chatbots: What may be the Influence on Credentialed Nutrition and Dietetics Practitioners?

Angeline Chatelan, PhD, MSc, RD; Aurélien Clerc, MSc, RD; Pierre-Alexandre Fonta, MSc Eng

---

## **ABSTRACT**

Launched in November 2022, ChatGPT is an unprecedented publicly available and simple web interface that can “write” human-like texts. This artificial intelligence chatbot can be used in a variety of settings, including in the field of nutrition and dietetics. This article describes ChatGPT and discusses the possible opportunities and risks of using ChatGPT in the practice of credentialed nutrition and dietetics practitioners working in public health, clinical settings, academia, and other settings.

J Acad Nutr Diet. 2023;■(■):■-■.

---

<https://www.sciencedirect.com/science/article/pii/S2212267223013084>



**Weill Cornell Medicine-Qatar**

ARTICLE

Clinical Research

# Credibility of ChatGPT in the assessment of obesity in type 2 diabetes according to the guidelines

Tugba Barlas<sup>1</sup>, Alev Eroglu<sup>1</sup>

© The Author(s), under exclusive licence to Springer Nature Limited 2023

**BACKGROUND:** The ChatGPT model allows students, researchers, and patients in the medical field to access information easily and has gained attention nowadays. We aimed to evaluate the credibility of ChatGPT according to the guidelines for the assessment of obesity in type 2 diabetes (T2D), which is one of the major concerns of this century. **MATERIALS AND METHOD:** In this cross-sectional non-human subject study, experienced endocrinologists posed 20 questions to ChatGPT in subsections, which were assessments and different treatment options for obesity according to the American Diabetes Association and American Association of Clinical Endocrinology guidelines. The responses of ChatGPT were classified into four categories: compatible, partially compatible and incompatible with the guidelines. **RESULTS:** ChatGPT demonstrated a systematic approach to answering questions and recommended consulting a healthcare provider to receive personalized advice based on the specific health needs and circumstances of patients. The compatibility of ChatGPT with the guidelines was 100% in the assessment of obesity in type 2 diabetes; however, it was lower in the therapy sections, which included nutritional, medical, and surgical approaches to weight loss. Furthermore, ChatGPT required additional prompts for responses that were evaluated as "compatible but insufficient" to provide all the information in the guidelines. **CONCLUSION:** The assessment and management of obesity in T2D are highly individualized. Despite ChatGPT's comprehensive and understandable responses, it should not be used as a substitute for healthcare professionals' patient-centered approach.

## INTRODUCTION

Obesity and type 2 diabetes are the twenty-first century and the twenty-first century are the individuals, healthcare systems, and a long-lasting condition that is linked to various medical, physical, and psychological complications. One of the significant complications is the increased risk of developing T2D [2, 3]. Moreover, overweight or obese, even a modest amount of weight loss can improve glycaemic control and surgical treatments [4, 5]. The prevalence of these conditions continues to rise consistently, causing many affected individuals to look for effective obesity management strategies [6]. Large language models (LLMs) with a focus on predicting word sequences based on context [7]. LLMs allow students, researchers, and patients in the medical field to access information easily and has gained attention nowadays. We aimed to evaluate the credibility of ChatGPT according to the guidelines for the assessment of obesity in type 2 diabetes (T2D), which is one of the major concerns of this century. In this cross-sectional non-human subject study, experienced endocrinologists posed 20 questions to ChatGPT in subsections, which were assessments and different treatment options for obesity according to the American Diabetes Association and American Association of Clinical Endocrinology guidelines. The responses of ChatGPT were classified into four categories: compatible, partially compatible and incompatible with the guidelines. ChatGPT demonstrated a systematic approach to answering questions and recommended consulting a healthcare provider to receive personalized advice based on the specific health needs and circumstances of patients. The compatibility of ChatGPT with the guidelines was 100% in the assessment of obesity in type 2 diabetes; however, it was lower in the therapy sections, which included nutritional, medical, and surgical approaches to weight loss. Furthermore, ChatGPT required additional prompts for responses that were evaluated as "compatible but insufficient" to provide all the information in the guidelines. Despite ChatGPT's comprehensive and understandable responses, it should not be used as a substitute for healthcare professionals' patient-centered approach.

<sup>1</sup>Department of Endocrinology and Metabolism, Gaziantep University Faculty of Medicine, Antakya, Turkey. <sup>✉</sup>email: drtugbabarlas@gmail.com  
Received: 7 June 2023 / Revised: 11 November 2023 / Accepted: 30 October 2023

ARTICLE

Clinical Research

# Credibility of ChatGPT in the assessment of obesity in type 2 diabetes according to the guidelines

Tugba Barlas<sup>1</sup>, Alev Eroglu<sup>1</sup>, Altinova<sup>1</sup>, Mujde Akturk<sup>1</sup> and Fusun Balos Toruner<sup>1</sup>

© The Author(s), under exclusive licence to Springer Nature Limited 2023

**BACKGROUND:** The Chat Generative Pre-trained Transformer (ChatGPT) allows students, researchers, and patients in the medical field to access information easily and has gained attention nowadays. We aimed to evaluate the credibility of ChatGPT according to the guidelines for the assessment of obesity in type 2 diabetes (T2D), which is one of the major concerns of this century. **MATERIALS AND METHOD:** In this cross-sectional non-human subject study, experienced endocrinologists posed 20 questions to ChatGPT in subsections, which were assessments and different treatment options for obesity according to the American Diabetes Association and American Association of Clinical Endocrinology guidelines. The responses of ChatGPT were classified into four categories: compatible, partially compatible and incompatible with the guidelines. **RESULTS:** ChatGPT demonstrated a systematic approach to answering questions and recommended consulting a healthcare provider to receive personalized advice based on the specific health needs and circumstances of patients. The compatibility of ChatGPT with the guidelines was 100% in the assessment of obesity in type 2 diabetes; however, it was lower in the therapy sections, which included nutritional, medical, and surgical approaches to weight loss. Furthermore, ChatGPT required additional prompts for responses that were evaluated as "compatible but insufficient" to provide all the information in the guidelines. **CONCLUSION:** The assessment and management of obesity in T2D are highly individualized. Despite ChatGPT's comprehensive and understandable responses, it should not be used as a substitute for healthcare professionals' patient-centered approach.

## INTRODUCTION

Obesity and type 2 diabetes (T2D) are major health concerns in the twenty-first century and cause a significant burden on the individuals, healthcare systems, and the economy [1]. Obesity is a long-lasting condition that tends to worsen over time and is linked to various medical, physical, and psychological complications. One of the significant complications is the increased risk of developing T2D [2, 3]. Moreover, for individuals with T2D who are overweight or obese, even a modest amount of weight loss can improve glycaemic control and lead to reduced medical and/or surgical treatments [4, 5]. The prevalence of these conditions continues to rise consistently, causing many affected individuals to look for effective obesity management strategies [6]. Large language models (LLMs) are a specialized form of artificial intelligence (AI) algorithm trained for natural language processing, with a focus on predicting word sequences based on context [7]. LLMs allow students, researchers, and patients in the medical field to access information easily and has gained attention nowadays. We aimed to evaluate the credibility of ChatGPT according to the guidelines for the assessment of obesity in type 2 diabetes (T2D), which is one of the major concerns of this century. In this cross-sectional non-human subject study, experienced endocrinologists posed 20 questions to ChatGPT in subsections, which were assessments and different treatment options for obesity according to the American Diabetes Association and American Association of Clinical Endocrinology guidelines. The responses of ChatGPT were classified into four categories: compatible, partially compatible and incompatible with the guidelines. ChatGPT demonstrated a systematic approach to answering questions and recommended consulting a healthcare provider to receive personalized advice based on the specific health needs and circumstances of patients. The compatibility of ChatGPT with the guidelines was 100% in the assessment of obesity in type 2 diabetes; however, it was lower in the therapy sections, which included nutritional, medical, and surgical approaches to weight loss. Furthermore, ChatGPT required additional prompts for responses that were evaluated as "compatible but insufficient" to provide all the information in the guidelines. Despite ChatGPT's comprehensive and understandable responses, it should not be used as a substitute for healthcare professionals' patient-centered approach.

LETTER



## Personalized Obesity Treatment

... treated with traditional methods, the model that has become popular in recent years is the use of ChatGPT. Such as nutrition plans, exercise recommendations based on the individual needs of patients. ChatGPT in obesity treatment is a patient-centered approach.

... healthcare applica-

... treatment is the...  
... patients. The...  
... history, physi-...  
... and advice...  
... and...  
... patient's...  
... ord-...  
... ceed-...  
... ed

ChatGPT's designers included safeguards to prevent the AI language model from generating disparaging or harmful replies and to provide a safe and respectful user experience. ChatGPT aligns with the ethical guidelines established by the European Union for AI [10]. These guidelines emphasize the significance of human supervision, technical reliability and safety, privacy and data management, transparency, inclusivity, and equality, as well as accountability during the creation and implementation of AI systems [11]. The purpose is to promote ethical standards, comply with copyright laws, and mitigate the dangers of technological abuse. ChatGPT responds to prompts using its database in an approach that complies with these ethical considerations [9, 12]. It is easily accessible to the public and has gained attention. Although the Internet is a widely used resource for the sharing of health-related information and its utilization is increasing, the complexity of the medical literature and the risk of erroneous information may result in confusion rather than clarity [12, 13]. Providing interactive formats for easier comprehension of health information by ChatGPT may attract individuals. However, there are some concerns regarding the quality and credibility of the information accessed through ChatGPT. In addition, it is also important to consider whether the information provided has a reliable reference and is up-to-date [14, 15]. In the present study,

# Nutrient validation study

- Aim: To validate the diet plans generated by ChatGPT against WHO and DGA recommendations.



# Nutrient validation study

## Methods:

- ChatGPT produced 20 different meal plans upon the users' request
- Different IP addresses, and computer devices ChatGPT
- Fixed calorie amount (1500 kcal)
- The question was asked in different ways:
  - "Can you generate a meal plan that has 1500 kcal?", "Please provide me with six meal plans that are 1500 kcal in total.", "Can you plan a 1500 kcal diet for me?"
- ESHA Food Processor software



# Evaluation

Evaluated against the WHO and DGA guidelines



## Average daily nutrient contribution to total energy content of meals generated by ChatGPT (n = 20) compared with recommendations of DGA and WHO

Nutrient (unit)	WHO recommended nutrient content	DGA recommended nutrient content	ChatGPT
Carbohydrates (%)	55-75	45-65	43
Protein (%)	10-15	10-30	25
Fat (%)	15-30	25-35	34
Saturated Fats (%)	<10	<10	7
Trans fat (%)	<1	-	0
Fiber (g)	from food	22-25	26
Cholesterol (mg)	<300	-	280
Sodium (mg)	<2000	≤1800	1848
Iron (mg)	-	8	9

**Food groups content generated by ChatGPT (n = 20) compared with recommendations of Dietary Guidelines for Americans and World Health Organization.**

Food group	Recommended serving according to:		Average number of servings provided by Chat GPT meal plans
	DGA	WHO	
Grains and Cereals (oz)	6	2.2	2.3 ( $\pm 1.67$ )
Vegetables (cups)	2.5	2.5	2.3 ( $\pm 0.81$ )
Fruits (cups)	2	2	1.9 ( $\pm 0.71$ )
Milk and dairy (cups)	3	-	0.7 ( $\pm 0.52$ )
protein (oz)	5.5	5	9.3 ( $\pm 2.61$ )





# AI interference potential opportunities

## For Dietitians

- Obtaining a quick, 24/7 second opinion (if used advisedly)
- Brainstorming ideas (eg, research hypotheses, test questions)
- Summarizing texts quickly
- Drafting texts with adaptable tone and no spelling mistakes (eg, e-mail, clinical notes, health promoting material, paper/grant abstracts)
- Increasing in-person time due to reduced administrative workload



# AI interference potential opportunities

## **Applications of AI in Obesity Management**

- AI-powered diet recommendations/plans.
- Calorie tracking and behavior change.
- Chatbots and virtual assistants for motivation and education.
- Predictive modeling for treatment outcomes.
- Predictive Risk Modeling

# AI interference potential opportunities

## Personalized Diet Plans

AI systems, like those powered by machine learning, analyze vast datasets to develop personalized dietary recommendations.

# AI interference potential opportunities

## Behavioral Monitoring and Coaching

- AI-powered applications employ natural language processing (NLP) to provide real-time feedback and motivation. These tools track eating habits, physical activity, and emotional triggers, offering behavioral nudges to encourage healthy choices

# AI interference potential opportunities

## **Predictive Risk Modeling**

AI models can predict obesity-related risks by analyzing genetic, lifestyle, and environmental data. These predictive tools help clinicians identify at-risk populations and design preventive interventions.

# **AI interference potential opportunities**

## **Integration of outputs of wearable technology into personalized diet plans**

Wearable devices like Fitbit and Apple Watch integrate AI algorithms to track physical activity, caloric expenditure, and sleep patterns.

Outputs can be fed to chatbots and integrated to patients diet plans

# AI interference potential opportunities

## AI in Surgical Decision-Making

For patients considering bariatric surgery, AI tools assist in predicting outcomes and identifying optimal candidates. Algorithms analyze preoperative data to forecast post-surgical weight loss and complication risks, aiding surgeons in decision-making.



ELSEVIER



Surgery for Obesity and Related Diseases 20 (2024) 603–608

SURGERY FOR OBESITY  
AND RELATED DISEASES

ASMBS Guidelines/Statements

## Harnessing artificial intelligence in bariatric surgery: comparative analysis of ChatGPT-4, Bing, and Bard in generating clinician-level bariatric surgery recommendations

Yung Lee, M.D., M.P.H.<sup>a,b</sup>, Thomas Shin, M.D., Ph.D.<sup>c</sup>, Léa Tessier, M.D.<sup>a</sup>,  
Arshia Javidan, M.D., M.Sc.<sup>d</sup>, James Jung, M.D., Ph.D.<sup>e</sup>, Dennis Hong, M.D., M.Sc.<sup>a</sup>,  
Andrew T. Strong, M.D.<sup>f</sup>, Tyler McKechnie, M.D., M.Sc.<sup>a</sup>, Sarah Malone, B.H.Sc.<sup>a</sup>,  
David Jin, B.H.Sc.<sup>a</sup>, Matthew Kroh, M.D.<sup>f</sup>, Jerry T. Dang, M.D., Ph.D.<sup>g,\*</sup>, ASMBS Artificial  
Intelligence and Digital Surgery Task Force

<sup>a</sup>Division of General Surgery, McMaster University, Hamilton, Ontario, Canada

<sup>b</sup>Harvard T.H. Chan School of Public Health, Harvard University, Boston, Massachusetts

<sup>c</sup>Department of Surgery, Brigham and Women's Hospital, Boston, Massachusetts

<sup>d</sup>Division of Vascular Surgery, University of Toronto, Toronto, Ontario, Canada

<sup>e</sup>Division of General Surgery, Duke University, Durham, North Carolina

<sup>f</sup>Digestive Disease Institute, Cleveland Clinic, Cleveland, Ohio

Received 3 March 2024; accepted 9 March 2024

### Abstract

**Background:** The formulation of clinical recommendations pertaining to bariatric surgery is essential in guiding healthcare professionals. However, the extensive and continuously evolving body of literature in bariatric surgery presents considerable challenge for staying abreast of latest developments and efficient information acquisition. Artificial intelligence (AI) has the potential to streamline access to the salient points of clinical recommendations in bariatric surgery.

**Objectives:** The study aims to appraise the quality and readability of AI-chat-generated answers to frequently asked clinical inquiries in the field of bariatric and metabolic surgery.

**Setting:** Remote.

**Methods:** Question prompts inputted into AI large language models (LLMs) and were created based on pre-existing clinical practice guidelines regarding bariatric and metabolic surgery. The prompts were queried into 3 LLMs: OpenAI ChatGPT-4, Microsoft Bing, and Google Bard. The responses from each LLM were entered into a spreadsheet for randomized and blinded duplicate review. Accredited bariatric surgeons in North America independently assessed appropriateness of each recommendation using a 5-point Likert scale. Scores of 4 and 5 were deemed appropriate, while scores of 1–3 indicated lack of appropriateness. A Flesch Reading Ease (FRE) score was calculated to assess the readability of responses generated by each LLMs.

**Results:** There was a significant difference between the 3 LLMs in their 5-point Likert scores, with mean values of 4.46 (SD .82), 3.89 (.80), and 3.11 (.72) for ChatGPT-4, Bard, and Bing ( $P < .001$ ). There was a significant difference between the 3 LLMs in the proportion of appropriate answers, with ChatGPT-4 at 85.7%, Bard at 74.3%, and Bing at 25.7% ( $P < .001$ ). The mean FRE scores for ChatGPT-4, Bard, and Bing, were 21.68 (SD 2.78), 42.89 (4.03), and 14.64 (5.09), respectively, with higher scores representing easier readability.

**Funding:** The research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

\* Correspondence: Jerry Dang, M.D., Ph.D., Digestive Diseases Institute, Cleveland Clinic, Cleveland, OH.

E-mail address: dangj3@ccf.org (J.T. Dang).

<https://doi.org/10.1016/j.soand.2024.03.011>

1550-7289/© 2024 American Society for Metabolic and Bariatric Surgery. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



Microsoft Word  
Document



# Prompt Writing for Healthcare Practitioners AI

AI chatbots rely heavily on the quality of user input to generate meaningful and accurate responses.

Writing effective prompts is crucial to maximizing the utility of these tools in clinical settings.

# Basics of Prompt Engineering

Be Specific and Clear:

Example: Instead of "Tell me about obesity," use "What are the current AI-based interventions for managing obesity?"

Provide **Context**:

Example: "Generate a patient education handout summarizing the benefits of AI-powered weight management tools."

# Basics of Prompt Engineering

Use Step-by-Step **Instructions**:

Example: "List the top three AI tools for obesity management and briefly describe their functions."

Request Evidence-Based Responses (**constraints**):

Example: "Cite recent studies on the effectiveness of AI in predicting obesity-related complications."

# Basics of Prompt Engineering

## Define Expected Output

Describe how the response should look or be structured.

Iterative Refinement: Refine prompts based on initial responses to improve output quality.  
**(feedback)**

**Let us practice !!**

# Activity 1

- **Prompt 1:** *"Help with diet for a diabetic person."*

# Activity 1

**Prompt 2 :** *"You are an AI nutritionist. Develop a one-week personalized meal plan for a 40-year-old male with type 2 diabetes, who prefers vegetarian food and has a low budget. Provide the plan in a table format with breakfast, lunch, dinner, and snacks for each day."*

# Activity 2

**Consider the prompt :**

*"Help with weight loss."*

*Why is this prompt ineffective?*

*What is missing from this prompt?*



# Activity 2

## Add Context

### Prompt 2:

*"You are an AI nutritionist. Help with weight loss."*

# Activity 2

## Specify the Instruction

### Prompt 3:

*"You are an AI nutritionist. Create a weight loss plan **for an individual.**"*

# Activity 2

## Step 4: Include Details

### Prompt 4:

*"You are an AI nutritionist. Create a weight loss plan for a 35-year-old individual with type 2 diabetes."*

# Activity 2

## Add Output Format

### Prompt 5:

*"You are an AI nutritionist. Create a one-week weight loss meal plan for a 35-year-old individual with type 2 diabetes. Provide the plan in a table format, including breakfast, lunch, dinner, and two snacks per day."*

# Activity 2

## Specify Tone

### Prompt 6

*"You are an AI nutritionist. Create a one-week weight loss meal plan for a 35-year-old individual with type 2 diabetes. Provide the plan in a table format, including breakfast, lunch, dinner, and two snacks per day. Use simple, patient-friendly language."*

# Activity 2

## Add Constraints

### Prompt 7

*"You are an AI nutritionist. Create a one-week weight loss meal plan for a 35-year-old Muslim individual with type 2 diabetes. Provide the plan in a table format, including breakfast, lunch, dinner, and two snacks per day. Use simple, patient-friendly language. Ensure meals are culturally appropriate, affordable, and easy to prepare."*



## One-Week Weight Loss Meal Plan

Day	Breakfast	Snack 1	Lunch	Snack 2	Dinner
<b>Monday</b>	1 boiled egg, 1 small whole-wheat roti, and cucumber slices	1 small handful of unsalted nuts	Grilled chicken breast, sautéed okra (bamia), and ½ cup brown rice	1 small apple	Lentil soup (shorba), mixed salad (lemon dressing), and a slice of whole-grain bread
<b>Tuesday</b>	½ cup oatmeal with a sprinkle of cinnamon, chia seeds, and 1 tsp honey	1 small plain yogurt (unsweetened)	Grilled fish (like tilapia), steamed broccoli, and ½ cup quinoa	3 dates	Stir-fried tofu with vegetables (carrot, capsicum, zucchini) served with ½ whole-wheat roti
<b>Wednesday</b>	2 boiled eggs, 1 slice of whole-grain bread, and a few olives	1 cucumber with 1 tbsp hummus	Grilled lamb kebabs (minced meat), tabbouleh salad, and ½ cup bulgur	1 small handful of almonds	Chicken stew with green beans, ½ cup mashed sweet potatoes, and a side salad
<b>Thursday</b>	1 cup low-fat Greek yogurt with a handful of berries and 1 tbsp flaxseeds	1 small handful of walnuts	Baked salmon, roasted cauliflower, and ½ cup couscous	1 small orange	Vegetable curry (spinach, cauliflower) served with ½ cup brown rice
<b>Friday</b>	1 small whole-wheat wrap with scrambled eggs, spinach, and a sprinkle of cheese	1 boiled egg	Roasted chicken thigh, sautéed zucchini, and ½ cup barley	1 small handful of pistachios	Grilled shrimp, mixed grilled vegetables (eggplant, peppers, onions), and a small whole-grain roll
<b>Saturday</b>	1 slice whole-grain bread with peanut butter (unsweetened) and a few slices of banana	3 dates	Beef stew (with carrots and celery), ½ cup wild rice, and a mixed salad	1 small pear	Stuffed bell peppers with quinoa and vegetables, served with a side of yogurt
<b>Sunday</b>	Vegetable omelet (onion, capsicum, spinach) and 1 small whole-wheat roti	1 small plain yogurt (unsweetened)	Grilled chicken shawarma (homemade, with olive oil marinade), a side salad, and ½ whole-wheat pita	1 small handful of mixed nuts	Lentil dhal, sautéed spinach, and ½ cup brown rice

# Activity 2

## **Prompt 8 (Improved):**

*"You are an AI nutritionist and fitness coach. Create a one-week weight loss plan for a 35-year-old individual with type 2 diabetes. Provide the plan in a table format, including breakfast, lunch, dinner, two snacks per day, and daily physical activity recommendations. Use simple, patient-friendly language. **Integrate physical activity data from a Fitbit, assuming the individual takes an average of 5,000 steps per day and sleeps 7 hours per night. Ensure the plan is culturally appropriate, affordable, and easy to prepare.**"*





## One-Week Weight Loss and Fitness Plan

Day	Breakfast	Snack 1	Lunch	Snack 2	Dinner	Physical Activity
<b>Monday</b>	1 boiled egg, 1 small whole-wheat roti, and cucumber slices	1 small handful of unsalted nuts	Grilled chicken breast, sautéed okra (bamia), and ½ cup brown rice	1 small apple	Lentil soup (shorba), mixed salad (lemon dressing), and a slice of whole-grain bread	Walk briskly for 30 minutes after lunch. Add light stretches in the evening.
<b>Tuesday</b>	½ cup oatmeal with a sprinkle of cinnamon, chia seeds, and 1 tsp honey	1 small plain yogurt (unsweetened)	Grilled fish (like tilapia), steamed broccoli, and ½ cup quinoa	3 dates	Stir-fried tofu with vegetables (carrot, capsicum, zucchini) served with ½ whole-wheat roti	Walk for 20 minutes in the morning and do 10 minutes of light strength exercises (e.g., squats, wall push-ups).
<b>Wednesday</b>	2 boiled eggs, 1 slice of whole-grain bread, and a few olives	1 cucumber with 1 tbsp hummus	Grilled lamb kebabs (minced meat), tabbouleh salad, and ½ cup bulgur	1 small handful of almonds	Chicken stew with green beans, ½ cup mashed sweet potatoes, and a side salad	Add an extra 1,000 steps to your daily total (e.g., take a longer route to work or home). Do 5–10 minutes of deep breathing or yoga before bed for relaxation.
<b>Thursday</b>	1 cup low-fat Greek yogurt with a handful of berries and 1 tbsp flaxseeds	1 small handful of walnuts	Baked salmon, roasted cauliflower, and ½ cup couscous	1 small orange	Vegetable curry (spinach, cauliflower) served with ½ cup brown rice	Take a 30-minute evening walk with a slightly faster pace to increase heart rate.
<b>Friday</b>	1 small whole-wheat wrap with scrambled eggs, spinach, and a sprinkle of cheese	1 boiled egg	Roasted chicken thigh, sautéed zucchini, and ½ cup barley	1 small handful of pistachios	Grilled shrimp, mixed grilled vegetables (eggplant, peppers,	Walk briskly for 20 minutes after dinner and do 10 minutes of bodyweight exercises

<b>Day</b>	<b>Breakfast</b>	<b>Snack 1</b>	<b>Lunch</b>	<b>Snack 2</b>	<b>Dinner</b>	<b>Physical Activity</b>
<b>Friday</b>	1 small whole-wheat wrap with scrambled eggs, spinach, and a sprinkle of cheese	1 boiled egg	Roasted chicken thigh, sautéed zucchini, and ½ cup barley	1 small handful of pistachios	Grilled shrimp, mixed grilled vegetables (eggplant, peppers, onions), and a small whole-grain roll	Walk briskly for 20 minutes after dinner and do 10 minutes of bodyweight exercises (e.g., lunges, side planks).
<b>Saturday</b>	1 slice whole-grain bread with peanut butter (unsweetened) and a few slices of banana	3 dates	Beef stew (with carrots and celery), ½ cup wild rice, and a mixed salad	1 small pear	Stuffed bell peppers with quinoa and vegetables, served with a side of yogurt	Go for a longer walk or light hike to reach 7,000 steps total. Stretch for 10 minutes afterward.
<b>Sunday</b>	Vegetable omelet (onion, capsicum, spinach) and 1 small whole-wheat roti	1 small plain yogurt (unsweetened)	Grilled chicken shawarma (homemade, with olive oil marinade), a side salad, and ½ whole-wheat pita	1 small handful of mixed nuts	Lentil dhal, sautéed spinach, and ½ cup brown rice	Spend time outside walking at a leisurely pace for 40 minutes. Reflect on the week and plan fitness goals for the next week.

# Activity 2

- **Prompt 9 (Comprehensive):**  
*"You are an AI nutritionist and fitness coach. Create a one-week weight loss plan for a 35-year-old individual with type 2 diabetes. Provide the plan in a table format, including breakfast, lunch, dinner, two snacks per day, and daily physical activity recommendations. Use simple, patient-friendly language. Integrate physical activity data from a Fitbit, assuming the individual takes an average of 5,000 steps per day and sleeps 7 hours per night. Ensure the plan is culturally appropriate, affordable, and easy to prepare. **Additionally, include a detailed shopping list for the week and provide simple recipes for each meal and snack."***



Day	Breakfast	Snack 1	Lunch	Snack 2	Dinner	Physical Activity
<b>Monday</b>	1 boiled egg, 1 small whole-wheat roti, cucumber slices	1 small handful of unsalted nuts	Grilled chicken breast, sautéed okra (bamia), 1/2 cup brown rice	1 small apple	Lentil soup (shorba), mixed salad (lemon dressing), 1 slice whole-grain bread	Walk briskly for 30 minutes. Add light stretches in the evening.
<b>Tuesday</b>	1/2 cup oatmeal with cinnamon, chia seeds, and 1 tsp honey	1 small plain yogurt (unsweetened)	Grilled fish (like tilapia), steamed broccoli, 1/2 cup quinoa	3 dates	Stir-fried tofu with vegetables, 1/2 whole-wheat roti	Walk for 20 minutes and do light strength exercises.
<b>Wednesday</b>	2 boiled eggs, 1 slice whole-grain bread, a few olives	1 cucumber with 1 tbsp hummus	Grilled lamb kebabs, tabbouleh salad, 1/2 cup bulgur	1 small handful of almonds	Chicken stew with green beans, 1/2 cup mashed sweet potatoes	Walk for 25 minutes. Add 5 minutes of yoga or stretching.
<b>Thursday</b>	1 cup low-fat Greek yogurt, berries, 1 tbsp flaxseeds	1 small handful of walnuts	Baked salmon, roasted cauliflower, 1/2 cup couscous	1 small orange	Vegetable curry (spinach, cauliflower), 1/2 cup brown rice	Walk briskly for 30 minutes. Aim for 6,000 steps.
<b>Friday</b>	1 small whole-wheat wrap with scrambled eggs, spinach, cheese	1 boiled egg	Roasted chicken thigh, sautéed zucchini, 1/2 cup barley	1 small handful of pistachios	Grilled shrimp, mixed grilled vegetables, 1 small whole-grain roll	Walk 30 minutes after lunch. Do 10 minutes of bodyweight exercises.
<b>Saturday</b>	1 slice whole-grain bread with peanut butter, banana slices	3 dates	Beef stew with carrots, celery, 1/2 cup wild rice, mixed salad	1 small pear	Stuffed bell peppers with quinoa and vegetables, side of yogurt	Go for a 40-minute walk. Stretch for 10 minutes afterward.
<b>Sunday</b>	Vegetable omelet (onion, capsicum, spinach), 1 small whole-wheat roti	1 small plain yogurt (unsweetened)	Grilled chicken shawarma (homemade), side salad, 1/2 whole-wheat pita	1 small handful of mixed nuts	Lentil dhal, sautéed spinach, 1/2 cup brown rice	Walk leisurely for 40 minutes. Plan goals for the next week.

# AI interference potential risks

For Dietitians :

- Depending on this technology, which may lead to a decrease in critical thinking and clinical judgment
- **Liability is yours – validate always**



# Conclusion

- AI chatbots can assist CNDPs, but cannot be used as a replacement for their expertise, judgment, and soft skills.



# Declaration of AI Assistance

This presentation contains material that was generated or enhanced with the assistance of ChatGPT, an AI language model developed by OpenAI. All AI-generated content has been reviewed, edited, and verified for accuracy and relevance by the presenter. The presenter assumes full responsibility for the final content of this presentation.

THANKS

