

Five-a-Day: Medically Tailored Meal Program Supports Intake of Recommended Fruit and Vegetable Servings

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Objective

To assess intake of fruits and vegetables and corresponding nutrients among individuals with serious illness participating in a community-based medically tailored meal program.

Background

MANNA (Metropolitan Area Neighborhood Nutrition Alliance) is a “Food is Medicine” program that provides 21 medically tailored meals/week to community members with serious illness and nutritional risk.¹ Individuals are offered nutrition counseling from a Registered Dietitian while receiving meals. The program is designed to be short term, averaging 3-6 months. The goal is for individuals to achieve adequate nutritional status and be able to follow their prescribed diet independently.

Most Americans do not consume recommended levels of fruits and vegetables.² Meals provided by MANNA include levels of fruits and vegetables that follow evidence-based guidelines such as the 2020-2025 Dietary Guidelines for Americans.³ However, it is unknown if individuals who receive medically tailored meals consume recommended servings of fruit and vegetables or achieve adequate intakes of corresponding nutrients.

Individuals enrolled in the medically tailored meal program consumed on average **5 servings of fruits and vegetables** per day, meeting recommended dietary allowances for **vitamin C** and **potassium**

MANNA's sample menu



Breakfast

Waffles with fruit and sliced potatoes



Lunch

Turkey burger with lettuce, tomato, and a fruit cup



Fresh fruit

Four pieces of whole fruit per week



Dinner

Stuffed bell pepper with steamed broccoli

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Evaluation Methods

A random group of individuals who received medically tailored meals from MANNA between January and March 2021 were contacted telephonically by students from Drexel University and asked to participate in the evaluation (N=415).

The 10-item Block Fruit/Vegetable/Fiber Screener (NutritionQuest)⁴ was used for assessment of dietary intake. Estimated number of daily servings of fruits and vegetables and intake of vitamin C, magnesium, potassium, and dietary fiber were calculated using raw scores and gender from prediction equations provided by NutritionQuest.

Results

Of the random sample of 415 individuals contacted for participation, 204 (49%) agreed to complete the survey. Participants were 59% female and 41% male. The average age of the participant group was 61.7 years (SD 14.7). Illnesses included cancer (25%), diabetes (25%), kidney disease (13%), HIV/AIDS (13%), heart disease (11%), and others (11%). Estimated intakes of fruit and vegetable servings, vitamin C, magnesium, potassium, and fiber for male and female participants are shown in Table 1.

Table 1. Mean estimated daily intakes of fruit and vegetable servings and associated nutrients for medically tailored meal program participants (N=204)

	Male (95% CI) n=84	Female (95% CI) n=120
Fruits and vegetables (servings)	4.9 (±0.4)	4.7 (±0.3)
Vitamin C (mg)	151.6 (±9.6)	130.6 (±8.5)
Magnesium (mg)	384.5 (±17.4)	300.0 (±15.7)
Potassium (mg)	3643.0 (±170.2)	2966.3 (±152.5)
Fiber (g)	17.2 (±1.2)	12.5 (±1.1)

Conclusion

MANNA's medically tailored meal program supports recommended intakes of fruits and vegetables (5/day)⁵. Recommended dietary allowances (RDA) for vitamin C and potassium were also met.⁶ Magnesium intake was slightly below and fiber intake was significantly below the RDA for both males and females.⁶ Adding menu items with more whole grains and legumes may help increase intake of magnesium and fiber.