

Daily Mango Intake Improves Glycemic and Body Composition Outcomes in Adults with Prediabetes: A Randomized Controlled Study

Eating mangos daily may be a simple dietary approach to improve blood sugar control, insulin sensitivity and body composition among adults living with prediabetes.

WHY IS THIS TOPIC IMPORTANT?

More than 130 million adults in the United States are currently living with diabetes or prediabetes, approximately 98 million (1). Dietary interventions that are rich in fruits, vegetables and bioactive compounds have demonstrated positive effects on glycemic control and metabolic health (2,3). Mango is a tropical fruit that contains several bioactive compounds, such as carotenoids, gallic acid and quercetin. Previous studies have shown a positive role for mangos in blood glucose control (4,5); this is the first controlled study to directly assess how daily mango consumption affects both short- and long-term glycemic control and body composition in individuals with prediabetes.

STUDY APPROACH:

This study included 23 adults, 50–70 years old with prediabetes. Participants were randomized into two groups: one group was instructed to eat 300 g of fresh mango daily for 24 weeks, while the other group was instructed to eat a calorie-matched granola bar and avoid eating mangos for 24 weeks. All participants were instructed to keep their normal diet and lifestyle. Anthropometric measurements, blood collection, and assessments were collected and captured four times throughout the study.

STUDY FINDINGS

At the end of the 24-week intervention, mango eaters had:

- Significantly lower fasting blood glucose ($p < 0.02$)
- Significantly improved insulin sensitivity ($p = 0.02$)
- Stable HbA1C, while the control group showed a significant increase in HbA1C levels ($p = 0.02$)
- Significant increase in fat-free mass ($p < 0.03$)

Basiri R, et. al. Daily Mango Intake Improves Glycemic and Body Composition Outcomes in Adults with Prediabetes: A Randomized Controlled Study. *Foods*. 2025; 14(17):2971.



Eating mangos daily may be a simple dietary approach to improve blood sugar control, insulin sensitivity and body composition among adults living with prediabetes.

MORE ABOUT THE STUDY

This was a randomized controlled parallel design clinical trial. Inclusion criteria included a body mass index (BMI) between 18.5 kg/m² and 34.9 kg/m² and fasting blood glucose levels ranging from 100 to 125 mg/dL or HbA1c between 5.7 to 6.4%. Participants were excluded if they were diagnosed with diabetes, cardiovascular disease, uncontrolled hypertension (≥160/100 mmHg), active chronic diseases (e.g., cancer, thyroid, kidney, liver, or pancreatic disease), on hormone replacement therapy, following any specific diet, smoking, heavy alcohol consumers (>12 alcoholic drinks per week) or frequent mango eaters (more than 5 mangos in the past 2 weeks). Depending on group randomization, participants either received a six-week supply of Tommy Atkins mangos or an isocaloric commercially available granola bar during the first visit. Follow-up appointments for blood samples and testing were conducted in weeks 6, 12 and 24. The study endpoints measured included changes in fasting blood glucose and HbA1c, HOMA-IR (insulin resistance) and QUICKI (insulin sensitivity), body composition, BMI and waist-to-hip ratio.

A major strength of this study was the 24-week duration, which provided an analysis of both short and long-term effects of fresh mango consumption. Study limitations include limited racial and ethnic diversity, which may affect the generalizability of the findings, and the failure to capture objective dietary measures.

Basiri R, Dawkins K, Singar S, Ormsbee LT, Akhavan NS, Hickner RC, Arjmandi BH. Daily Mango Intake Improves Glycemic and Body Composition Outcomes in Adults with Prediabetes: A Randomized Controlled Study. *Foods*. 2025; 14(17):2971. <https://doi.org/10.3390/foods14172971>

CULINARY CORNER

Focusing on Fiber and Protein for Better Blood Sugar Control and Balanced Meals

This Easy Mango Chicken Stir Fry recipe is a simple and tasty way to build a more fruit-forward plate without skimping on the protein!

→ [Easy Mango Chicken Stir Fry](#)



REFERENCES:

1. Centers for Disease Control and Prevention. Prediabetes: Could It Be You? Infographic. <https://www.cdc.gov/diabetes/communication-resources/prediabetes-statistics.html>
2. Adiels M, et al. Overproduction of very low-density lipoproteins is the hallmark of the dyslipidemia in the metabolic syndrome. *Arterioscler Thromb Vasc Biol*. 2008;28(7):1225-1236.
3. Nachar A, et al. Phenolic compounds isolated from fermented blueberry juice decrease hepatocellular glucose output and enhance muscle glucose uptake in cultured murine and human cells. *BMC Complement Med Ther*. 2017;17:138.
4. Pinneo S, et al. Fresh mango consumption promotes greater satiety and improves postprandial glucose and insulin responses in healthy overweight and obese adults. *J Med Food*. 2022;25(4):381-388.
5. Stamper C, et al. Effects of fresh vs dried mango consumption on satiety and postprandial glucose in healthy adults. *Metab Open*. 2023;19:100253.



 @MangoBoard

 @MangoBoard

 @officialmangoboard

 @MangoBoard

 @NationalMangoBoard

