Diet high in fiber, fermented foods could keep inflammatory diseases at bay

Switching to a traditional African diet helped protect against inflammation in a new study. Image credit: Westend61/Getty Images.

- **Chronic inflammation is a major driver of lifestyle-related diseases, like heart disease and type 2 diabetes.**
- **New research highlights how profoundly a modern Western diet, high in processed foods and low in whole plant-based foods, can contribute to this chronic inflammation.**
- **Experts recommend adopting more traditional, plant-rich diets to reduce inflammation and promote optimal immune function and metabolic health.**

Recent research published in *Nature Medicine* Trusted Source highlights the rapid impact that dietary changes can have on immune and metabolic health.

Urbanization and increased availability of processed foods in Africa are shifting dietary patterns, with many people abandoning traditional diets for Western-style diets.

To explore the effects of this dietary shift, researchers from Radboud University Medical Center and Kilimanjaro Christian Medical University College investigated the health impacts at the cellular level.

Their findings indicate that just 2 weeks of adopting a Western diet over a traditional African diet can lead to increased inflammation, weakened immune responses, and disrupted metabolic pathways tied to lifestyle-related diseases.

In contrast, switching from a Western diet to a traditional African diet or consuming traditional fermented beverages may have anti-inflammatory benefits.

While more research is needed, these results support the idea that largely plant-based heritage diets — like traditional African, Mediterranean, and Latin American diets — can improve health and lower the risk of lifestyle-related diseases.

Health effects of Western diet vs traditional African diet

This randomized controlled trial involved 77 healthy young men, with a median age of 26, residing in the Kilimanjaro region in Northern Tanzania.

Researchers assessed initial eating habits through three 24-hour food diaries recorded on nonconsecutive days, with one diary specifically collected during a festival or weekend.

They conducted the trial with three groups, providing daily meals:

- 23 rural men who typically ate a traditional Kilimanjaro-style diet were switched to a Western-style diet for 2 weeks
- 22 urban men who typically ate a Western-style diet were switched to a traditional Kilimanjaro-style diet for 2 weeks
- 22 men who typically ate a Western-style diet added Mbege, a traditional fermented drink made with bananas and millet, to their diet for 1 week.

Researchers had five participants in each of the first two groups stick to their usual diets to eliminate any external factors affecting the results.

Blood samples were taken at three key points: at the start of the study, right after the 2-week dietary intervention or the 1-week fermented beverage intervention, and again 4 weeks after the intervention ended.

The main goal was to investigate changes in the participants' immune and metabolic health, focusing on immune system function, blood inflammation markers, and various metabolic processes.

Western diet promotes inflammation, traditional African diet protects

The researchers' final analysis included only high-quality samples that met specific standards. Results were adjusted for factors including age, body mass index, and physical activity levels.

Their results showed that switching from a traditional African diet to a Western diet for 2 weeks disrupted key metabolic pathways linked to lifestyle-related diseases.

It also appeared to trigger a pro-inflammatory state involving white blood cells, inflammatory proteins in the blood, and changes in gene expression.

Additionally, their immune cells became less effective at responding to pathogens.

Conversely, transitioning from a Western diet to a mostly plant-based traditional African diet or consuming the fermented beverage resulted in mostly anti-inflammatory effects, including reduced inflammatory markers.

Certain immune and metabolic changes remained four weeks after the intervention, suggesting that even short-term dietary modifications might have some lasting effects.

This study may be the first thorough investigation of the health effects linked to a traditional African diet.

"Previous research has focused on other traditional diets, such as the Japanese or Mediterranean diet," study author Quirijn de Mast, MD, PhD, internist-infectious disease specialist from Radboud University Medical Center, said in a press release.

> "However, there is just as much to learn from traditional African diets, especially now, as lifestyles in many African regions are rapidly changing and lifestyle diseases are increasing. Africa's rich diversity in traditional diets offers unique opportunities to gain valuable insights into how food influences health."
>
> – Quirijn de Mast, MD, PhD

What makes a traditional African diet beneficial?

Medical News Today spoke with Thomas M. Holland, MD, MS, a physician-scientist and assistant professor at the RUSH Institute for Healthy Aging, RUSH University, College of Health Sciences, who was not involved in the study.

He explained that "the shift from a traditional African diet to a Western-style diet resulted in increased inflammation and weakened immune responses, likely due to differences in nutrient composition and microbial exposure."

The traditional African diet in this study was rich in:

- black tea
- green vegetables
- legumes
- plantains
- root and tuber crops (like sweet potato, cassava, and taro)
- ancient grains (like millet and sorghum).

These foods are high in dietary fiber and bioactive compounds, such as polyphenols, which help reduce inflammation and promote metabolic health. They also encourage a healthy gut microbiome and the production of beneficial metabolites that enhance overall health and well-being.

In addition, Holland emphasized the potential advantages of traditional African fermented foods and beverages, like Mbege, which "play a critical role by enriching the gut microbiome with beneficial microbes and bioactive metabolites that enhance immune function."

He noted that specific compounds present in Mbege, such as flavonoids, also likely contributed to improved immune responses and vascular health in the individuals who consumed the fermented beverage.