

For Men and Women how Diet Affects Aging Metabolism Differently

As we age, the [body's metabolism](#) slows, a process that is further exacerbated by a poor diet. Biological sex plays a role in the differential extent of age-associated deterioration in metabolic health.



How Aging Alters Metabolism

With increasing age, metabolic and functional health decline. This is affected by a complex interplay of genetic, environmental, and [lifestyle factors](#). Dietary patterns, such as the Mediterranean diet, are consistently linked to healthy aging, underscoring the importance of a well-balanced diet.

There is ample evidence that men and women process dietary components differently. Before [menopause](#), women process and clear dietary fats in the liver more efficiently than men of the same age. However, these differences have received little follow-up investigation.

The importance of maintaining healthy [blood glucose](#) levels in old age is undisputed. Hyperglycemia and insulin resistance are both related to cardiometabolic disease. As people age, fasting glucose levels tend to rise while glucose tolerance and regulation decline, increasing the risk of type 2 diabetes and cardiovascular disease.

Inflammaging, aging-related [chronic inflammation](#), is a key aspect of aging that contributes to these conditions. It is driven by factors like emerging insulin resistance and high insulin levels, as well as those that cause hyperactivation of insulin-mediated pathways.

High insulin levels in the blood drive accelerated [aging](#). Multiple strategies have been proposed to increase insulin sensitivity and reduce oxidative stress, thereby slowing the aging process. These include caloric restriction, intermittent fasting, and the use of drugs like metformin.

The current study conducted exploratory analyses to investigate the relationship between nutrients and food groups and insulin sensitivity in healthy older adults, stratified by [sex](#).

Assessing Metabolic Health

The study analyzed data from the Metformin to Augment Strength Training Effective Response in Seniors (MASTERS) study, which comprises [healthy older people](#). The study included 96 participants recruited from university settings, with a median age of 69 years and body mass index (BMI) values ranging from 19 to 34 kg/m².

Most had moderate to high [physical activity](#) levels. Participants recorded their food intake over four days using detailed food diaries.

Metabolic health was assessed using measures such as insulin resistance and insulin sensitivity, based on the oral glucose tolerance test (OGTT). These were coupled with body composition measures (dual-energy [x-ray absorptiometry](#) and computed tomography).

These were fed into a feasible solutions algorithm (FSA) to find which food groups were most closely linked to [insulin sensitivity](#). Statistical models were adjusted for potential confounders such as BMI and exercise, and corrections for multiple testing were applied.

Conclusion

The findings of this study suggest that a plant-rich diet is associated with improved metabolic health in men, leading to increased insulin sensitivity. For women, this was linked to moderate [alcohol consumption](#), although this association did not remain significant after statistical adjustment. Less abdominal fat deposition occurred with increased protein and calcium intake.

These analyses require continuing validation to understand sex-specific differences in the dietary patterns that best support [metabolic health](#) with age. The researchers also noted that the findings may not generalize beyond this relatively healthy, primarily Caucasian older population.

Source:

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