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Fighting Frailty with the Mediterranean Diet

By

Edward F. Ansello, PhD

What we eat affects our well-being not just in the obvious ways, like our appearance and whether we look fat or thin. Newly published analyses of various studies highlight the benefits of diet, specifically the Mediterranean Diet, in reducing risks of frailty.

Let's define terms. Frailty has been a term in use for some time, but defining it has been elusive. In 2001, L.P. Fried and colleagues argued in the *Journal of Gerontology: Biological Sciences & Medical Sciences* that frailty in old age is sufficiently prevalent and serious that it may have a biological basis and be a distinct syndrome. They assessed data from the Cardiovascular Health Study on over 5,300 community-dwelling older men and women at baseline and then at follow up four and seven years later. Fried's team defined the frailty syndrome clinically as having three or more of the following criteria: unintentional weight loss (10 pounds in the past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity.

The overall prevalence of frailty in their study population was about 7%, it increased with age, and was more common among women. Frailty overlapped with comorbidity and disability, meaning the three conditions could occur simultaneously, but frailty independently predicted falls, worsening mobility or disabilities in Activities of Daily Living, hospitalization, and death in the next three years.

Bottom line: frailty is its own risk factor for disability.

Now, research published in the *Journal of the American Geriatrics Society* (Kojima et al., January 11, 2018) and adapted in the *Journal of the American Medical Association* (Voelker, May 15, 2018) cites the benefits of the Mediterranean diet in fighting frailty.

We may be familiar with evidence that the Mediterranean Diet reduces risks of cardiovascular disease, diabetes, and overall cancer. This diet is low in saturated fat, emphasizing plant foods like vegetables, fruit, seeds, tree nuts, olives, and whole grains, low to moderate wine consumption with meals, low to moderate consumption of dairy products, fish, and poultry, and minimal consumption of red and processed meats.

It looks like the Med Diet also combats frailty.

Kojima and colleagues' systematic review and meta-analysis of four recent (2012-2017) studies, having a total of almost 5,800 older adults, showed that adherence to the Med Diet is associated with significantly lower incident frailty risk. And the greater the adherence to the Med Diet the lower the risk of frailty. The studies measured adherence to a Mediterranean Diet with the MDS (Mediterranean Diet Score), a ten point scale (0 to 9). The difference in risk for frailty between those with a high Med Diet Score (6-9) and those with a low Med Diet Score (0-3) was 56% in only four years.

Why?

Kojima and colleagues suggest that there may be several potential mechanisms at play. One possibility is that the Med Diet is full of antioxidants. “Fruits and vegetables are rich in carotenoids and vitamins, and red wine contains abundant polyphenols. Oxidative stress is a risk factor for frailty, and fruits and vegetables rich in antioxidants may decrease the risk of frailty by counteracting oxidative status.”

Another possible mechanism at work is inflammation. Individuals who are frail have higher levels of inflammatory markers like C-reactive protein, and several studies have linked chronic inflammation with frailty (and cardiovascular problems and cognitive impairment). The Med Diet may have an anti-inflammatory effect.

Voelker’s *JAMA* summary noted that investigators at Washington University in St Louis described specific components of the Med Diet that have anti-inflammatory properties; these include the outer layer of wheat bran having anti-inflammatory phytochemicals, salmon and avocados being abundant in omega-3 fatty acids that bind to a receptor that inhibits inflammation, and, most interestingly, newly pressed extra virgin olive oil containing *oleocanthal*, a phenolic compound with an anti-inflammatory effect similar to ibuprofen. In addition, the Med Diet’s recommendation of consuming fish twice a week means an individual is increasing intake of vitamin B12; insufficient B12 in a diet predicts development of memory loss and gait disorder, the latter being a clinical hallmark of frailty.

Kojima and colleagues note other Med Diet impacts:

“A Mediterranean diet is associated with low levels of inflammatory markers and may reduce frailty risk through this mechanism. Adherence to a Mediterranean diet has been associated with better cognitive function, lower rates of cognitive decline, and lower risks of Alzheimer’s disease and dementia. Moreover, the Mediterranean diet has been associated with lower incidence of cardiovascular disease and certain types of cancers, such as colorectal cancer. All of the above may contribute to the accumulation of fewer health deficits over time, resulting in a lower incidence of frailty.”

Voelker also points to an underlying change in our nutrition as we grow older: many of us tend to lose our appetite. As a result, we become less active and have less energy. Reduced income can also play havoc with diets, as we cannot afford to buy some foods we should or wish to. Not surprisingly, economically disadvantaged older adults, older women, African American elders, and those already with disabilities are more likely to develop frailty.

A solution might lie in the cultural underpinnings of the Med Diet. In the cultures around the Mediterranean, such as in Italy and Greece, food tends to be consumed in social settings. Meals are often an experience shared with family and/or friends. Some researchers have noted that the Med Diet is not just about food but is also about lifestyle. Meal time is a time to socialize and reconnect. The pleasure of this regular happening may well be an important component in how the Med Diet positively affects one’s health.

So, while we may or may not be able to adopt more of a Med Diet, depending on income and circumstances, we may well be able to establish, re-establish, or maintain social connections which are associated with the benefits of the Med Diet.

It's appropriate for each of us to examine our eating habits, not just our nutrition intake. The various aspects of the Med Diet hold potential benefits beyond the important feature of helping to reduce frailty.