

Bone and muscle health can 'make or break' care as we age

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Experts at a prestigious medical conference hosted by the American Geriatrics Society (AGS) and funded by the National Institutes of Health's (NIH's) National Institute on Aging (NIA) hope their work—reported this week in the *Journal of the American Geriatrics Society (JAGS)*—can help yield hard evidence to address the range of "soft tissue" and bone disorders that contribute to falls, fractures, and muscle loss as we age.

"Falls, fractures, and muscle loss all have a major impact on our [health](#) as older adults, not only because they stop us from keeping active but also because that inactivity can have a ripple effect on all aspects of health and quality of life," said Cathleen Colón-Emeric, MD, MHSc, FACP, AGSF, who co-chaired the AGS-NIA [conference](#) this past March. "By looking at some of the key and interrelated health conditions that can contribute to falls, fractures, and [muscle loss](#), we hope we can contribute to closing knowledge gaps as we develop better care."

The AGS-NIA "U13" conference (the term for a scientific conference funded by the NIH) brought together more than 80 national and international experts to discuss the present and future state of research on age-related aspects of osteoporosis (the medical term for bones becoming weak or brittle) and soft-tissue disorders (so named because they impact muscle, fat, and other "soft" tissue under the skin). The conference came at a pivotal time. As the prevalence of bone and soft-tissue disorders mounts—it is estimated, for example, that one in four older women and one in 20 older men already have osteoporosis—so too

do alarming and interrelated consequences. Osteoporosis and declines in soft-tissue health are known to increase risk for falls, fractures, and frailty, which in turn limit health, safety, and independence as mobility begins to wane.

For [older adults](#) and caregivers, the challenge rests in preventing these conditions as often as possible. For [health professionals](#), that means addressing an even broader set of questions about when and how these conditions arise, and what can be done to reduce risks as much as possible. Attendees at the AGS-NIA U13 conference hope the answer lies in a deeper look at fundamentals: What we know, what we don't, and what we can change when we jointly consider age, bone and muscle health, and the [health conditions](#) linking them.

Conference attendees noted, for example, that a key research priority must be identifying the "prime movers in biology," or the principal treatment targets that can address the root causes of bone and soft-tissue concerns. Refining our knowledge of how medications and other interventions like diet and exercise impact individual cell types—and even whole body systems—will be key to improving care for us all as we age.

At the same time, current perspectives on health care and health research also need to change. Developing medications to address bone and soft tissue changes that come with age can be uniquely challenging, for example, because age itself is not a disease or research endpoint recognized by the U.S. Food and Drug Administration (the federal agency that bears responsibility for approving any current or future pharmaceutical treatments).

But measures of muscle and bone function may prove helpful in this regard since they hold promise for contributing to the development of treatments to delay, prevent, or reverse a key contributor to age-related

decline: Senescence, or the loss of our body cells' power to divide and grow as they did when we were younger. Concurrently, the conference attendees also asserted that health care needs to embrace a "life-course approach" to treating bone and soft tissue concerns, since body composition and muscle function change as we grow older.

"We know more today than we ever have about the impact of [bone](#) and soft-tissue disorders on quality of life and risks for declining health and even death," Bruce Troen, MD, AGSF, co-chair of the meeting, observed. "We now need to chart a course toward identifying risk factors, health disparities, and promising interventions to treat and prevent these concerns. We're confident our work at the conference resulted in a roadmap for progress."

More information: Cathleen Colón-Emeric et al, AGS and NIA Bench-to Bedside Conference Summary: Osteoporosis and Soft Tissue (Muscle and Fat) Disorders, *Journal of the American Geriatrics Society* (2019). [DOI: 10.1111/jgs.16248](https://doi.org/10.1111/jgs.16248)

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