Introduction to Longevity Medicine

[music] >> Welcome to the Trip Lab, kitchen table conversations about integrative medicine and psychedelics. [music] I'm your host and attending physician, Dr. Mary Ella Wood.

Hi everyone, welcome back. Today, we're going to dive a little bit deeper into a really exciting field, and that is longevity medicine. So, it's having a major moment right now, and I really want to break it down and provide some integrative insights into this field. So, longevity medicine is more of a broad movement rather than a specific field with a board certification, like neurology, cardiology, endocrinology.

I personally love that. So, we are seeing cardiologists, primary care doctors, OBGYNs, and specialists from all realms of medicine providing their perspectives and insights in the whole idea of longevity.

I think that is so unique, and I think it's really important for medicine and the world as a whole, because in a sense, medicine is coming together to dig deeper, learn more, and better support human health.

So, what exactly is longevity medicine, and why is it having such a moment right now? To start, I think the name is a little bit of a misnomer. We've actually moved away from focusing only on lifespan or simply prolonging life, and now we are focusing on healthspan, which is really about expanding the healthy years of life and helping people live well while they are here on this earth.

And I think that's developed because all of us, so clinicians, researchers, and the public alike, are increasingly dissatisfied with a model of care that waits for disease rather than helping shape the trajectory of health earlier.

So, that's one major reason the field is having a moment right now. Another aspect is that this field is genuinely exciting. It is future-oriented, creative in its research methods, and really helping the world look toward new possibilities. And as more research emerges, what we're actually seeing is that many of the most evidence-based interventions to promote health span actually brings us back to the basics.

So, nutrition, exercise, sleep, stress reduction, and social connection. And this is where integrative medicine has lived for a long time. And beyond that, I'm also very interested in some of the more futuristic interventions like peptides, advanced biomarker testing, and other emerging tools that we're developing. But at the same time, what is truly beautiful is that longevity medicine is also, in many ways, actually rediscovering the wisdom of ancient healing systems from around the world like Ayurveda, traditional Chinese medicine, and more. So, let's back up a little bit and talk about what longevity medicine actually is. So, historically, the field really grew out of a blend of gerontology, preventative medicine, and a growing interest in understanding why we age in the first place, and whether that process can be influenced.

Hallmarks of Aging and Longevity Testing

And over time, researchers began moving beyond the idea that aging was simply something that we had to accept passively and started asking whether the biological processes that drive aging could be measured, understood, and modified. So, moving forward to today, as I mentioned earlier, there's now a major push towards health span, not just lifespan.

And that involves focusing on prevention, identifying potential disease earlier through more advanced biomarker testing, and ultimately intervening on lifestyle and other factors that can change the trajectory of health much earlier on. And I'll say a lot of the field is very much a research field right now. And the research is really exciting. And I think one of the most notable frameworks to come out of the field to date is the mapping out of what we call the hallmarks of aging. So, these are essentially the major biological processes that scientists believe drive the aging process itself. So, these hallmarks include things like genomic instability, which refers to the damage accumulating

in our DNA over time.

Telomere attrition, which is the gradual shortening of those protective caps on the ends of our chromosomes. Epigenetic alterations, which are changes in how genes are turned on or off depending on lots of different factors. Loss of proteostasis, which means the body becomes less efficient at making, folding, and clearing proteins properly. We also have dysregulated nutrient sensing, which involves a lot of the pathways related to insulin, growth signals, and energy balance. Mitochondrial dysfunction, a personal interest of mine. Meaning that our cells become less efficient at producing energy. Cellular senescence, which is where older cells stop functioning well, but don't actually die off when they should. Then we have stem cell exhaustion, which means the body becomes less able to repair and regenerate itself over time. Then there's altered intercellular communication. So, the signaling between cells becomes more dysregulated and inflammatory as we age. And then we have newer expanded frameworks that also look at areas like chronic inflammation, immune system dysfunction, and changes in the body's microbial environment. All of which are increasingly recognized as central to aging and disease risk. So, because of this framework, testing and interventions have developed to try to assess these processes earlier and intervene earlier. So, that can include things like advanced lipid or cholesterol and metabolic testing, continuous glucose monitors, body composition analysis, inflammatory biomarkers.

We actually have biological age testing, VO2 max, which is a big one, and strength assessment, sleep tracking, and a whole lot more. There's a lot there.

Then on the intervention side, lots and lots of research from everything from exercise prescriptions and targeted nutrition strategies to sleep optimization, supplements, peptides, hormone-related interventions, and other emerging therapeutics. What I do want to point out clearly though, before we move on, is that a lot of these more futuristic interventions are still operating on emerging data. And if you've listened to any of my other podcasts, you know that I don't think this is inherently wrong or bad. I think medicine actually absolutely needs curiosity, innovation, and thoughtful exploration. But, what is important is to clearly name what is emerging, what has only been studied in the lab, versus what actually has strong human data. And what does actually have good human data? A lot of what integrative medicine is. So, integrative medicine is actually a specialty of medicine with a board certification that combines evidence-based holistic practices, many of which were previously labeled as {quote} alternative, with modern conventional medicine. So, it's not herbs over drugs, it's herbs and drugs, when appropriate, of course.

It's a lot of nutrition, exercise, mind-body medicine, sleep, stress regulation, manual medicine, and a whole lot more. So, it's really about asking how we can bring the best of modern science together with a broader, whole-person understanding of health and healing. So, let's get into all of that.

I think one of the clearest places where integrative medicine overlaps with longevity medicine is lifestyle medicine. Because when we actually look at the human data, so much of healthy aging still comes back to those lifestyle fundamentals.

So, the foundation of lifestyle medicine includes the major pillars of lifestyle, which are nutrition, movement, sleep, stress regulation, and social connection. So, let's dive into all those and look at what the studies have shown as far as longevity interventions. So, starting with nutrition, healthy dietary patterns are consistently associated with healthy aging and lower chronic disease burden. Mediterranean lifestyle patterns in particular are repeatedly linked with healthier aging trajectories and more favorable metabolic and inflammatory effects.

Lifestyle Foundations: Nutrition and Exercise

In the PREDIMED trial, one of the landmark studies in this space, people with high cardiovascular risk who followed a Mediterranean diet and supplemented with olive oil and nuts had about a 30% relative reduction in major cardiovascular events compared with the control diet. We also have more recent cohort data supporting this. In a 2024 study of more than 25,000 women followed for 25 years who adhered to the Mediterranean diet was associated with a 23% lower risk of all-cause mortality. I think what was especially interesting about this is much of that benefit appeared to be tied to pathways that are highly relevant to longevity medicine. So, inflammation, insulin resistance, body mass index, and triglyceride-rich lipoproteins. And beyond mortality and cardiometabolic disease,

nutrition also shapes how we age in visible and functional ways. Colorful fruits and vegetables are rich in phytonutrients like carotenoids, flavonoids, polyphenols, and other antioxidant compounds that help modulate oxidative stress and inflammation. So, my rule of thumb is the more colorful the better if it's a whole real food. And the literature supports this. So, reviews in dermatology and nutrition literature suggest that diets rich in these compounds may support healthier skin aging and reduce photoaging over time. One of the longer-term studies found that adults over 45 who consumed diets with higher antioxidant capacity had about 10% less photoaging over 15 years than those consuming diets with lower antioxidant capacity. So, these antioxidants, these colorful fruits and vegetables are actively reducing wrinkles and supporting skin elasticity.

Beyond that, we also have data suggesting Mediterranean-style patterns support cognitive aging as well. We have recent meta-analysis evidence showing associations with roughly 11 to 30% lower risk of age-related cognitive disorders. That includes cognitive impairment and dementia. So, what specific nutrition principles are part of this Mediterranean diet that keeps popping up in the studies? So, first, nutrition plan centered around whole foods and minimal to no processed foods.

Second, high intake of plants. So, vegetables, fruits, legumes, nuts and seeds, whole grains. Third, a shift towards healthy fats. So, especially unsaturated fats like olive oil, nuts, and fatty fish. And I think one of the most important and one of the clearest things to limit is ultra-processed foods and excess refined sugar because those patterns are significantly associated with worse metabolic health, greater insulin resistance, higher inflammatory burden, poor vascular health, and just overall higher risk of chronic disease.

Processed meats are also repeatedly showing up on the wrong side of aging and other disease outcomes as well. Okay, so that's nutrition. We could do a lot more about that, but we'll move on for now.

Next, we have exercise, which I think arguably is one of the most important longevity interventions we have. So, if you're interested in longevity and you want to know where to start, I think strength training specifically is one of the first things I would recommend incorporating. And that's because muscle mass is not just about appearance or athleticism, muscle mass and muscle strength are deeply intertwined with metabolic health, functional independence, glucose regulation, and in older adults, fall risk, frailty risk, and overall resilience as we age.

A 2022 systematic review and meta-analysis found that muscle strengthening activities were associated with about a 10 to 17% lower risk of all-cause mortality, cardiovascular disease, total cancer, diabetes, and lung cancer. We also have a 2026 cohort of over 5,000 women ages around 60 to 100, which found that greater muscular strength was associated with significantly lower mortality, even after controlling for measured physical activity, sedentary time, walking speed, and systemic inflammation.

Interestingly, women in the highest grip strength quartile had about a 33% lower mortality risk compared to those in the lower quartile. And women with the fastest chair stand times had about a 37% lower mortality risk compared with those slowest times. So, that grip strength and the chair stand test are a couple longevity assessment tools that we can use. I think the grip strength one is pretty interesting.

Because it's so simple, and yet it correlates remarkably well with broader health outcomes. In fact, meta-analysis data shows that all-cause mortality risk was about 8% lower for every 5 kg increase in grip strength. That's remarkable. So, when people ask what kind of exercise matters most for longevity, I really do think strength training deserves to be at the center of that conversation. That doesn't mean [clears throat] that cardio and other movements aren't important, they absolutely are. But, if someone is just doing one thing and wants to build an exercise foundation around longevity, I think starting to incorporate resistance training is the best place to start.

But, I do also want to talk about the broader category of movement, which also matters enormously. Because I think it's not just about workouts. So, not just sitting at your desk all day and then doing a workout afterwards. There's a lot of longevity outcomes tied to how much you move throughout the day. I think one of the more interesting studies in this area looked at what happens when prolonged sitting is interrupted with brief activity breaks. So, a 2024 randomized crossover study of overweight or obese men, researchers compared uninterrupted sitting times, so sitting at your desk all day and then doing a 30-minute walk versus short activity breaks every 45 minutes. And they found that those short activity breaks every 45 minutes, in this study they did a couple body

weight squats during those activity breaks, performed better with improved glycemic control as opposed to that single 30-minute walk. Even though the total time spent exercising was actually pretty similar when you add it up. So, I think this is a really fascinating example of how the body responds not just a formal exercise, but movement across the day. Exercise also has important effects beyond just muscle and metabolism. Regular physical activity is associated with lower risk of cognitive decline and dementia. And exercise interventions have been shown to improve global cognition, executive function, and memory, particularly in older adults. Then on the mental health side of things, a large 2023 systematic review and meta-analysis found that physical activity significantly reduced symptoms of depression, anxiety, and psychosocial distress. With effects that were comparable to, or actually in some cases greater than those seen with our other standard approaches like medications. So, when we talk about exercise in the context of longevity, we're not just talking about preserving lifespan or even physical function. We're also talking about protecting the brain, supporting emotional well-being, and preserving our quality of life.

Next, we have sleep, which is another foundational longevity intervention, and I think one that often gets underestimated here. So, sleep is not just passive downtime. It is one of the primary states in which the body carries out repair, restoration, memory consolidation, immune regulation, hormonal signaling, and metabolic recalibration. So, during sleep, the brain helps clear metabolic waste, the nervous system resets, all of the tissues in your body undergo repair and the body coordinates processes that are essential for resilience over time. So, because of all those things, you can see that it's one of the core biological conditions that determine how well we age. And when we look at the data, the relationship between sleep and longevity is very consistent.

A landmark meta-analysis published in sleep found that both shorter sleep duration and actually too long of sleep duration were both associated with all-cause mortality. So, this kind of supports the idea that sleep has this U-shaped relationship with health outcomes.

So, in that analysis, the short sleep, so not enough sleep, was associated with about a 12% increased risk in death. And long sleep, so too much, was actually about a 30% increased risk in death compared with our moderate and normal average sleep durations. More recent reviews looking specifically at sleep and healthy aging have also reached similar conclusions. In a 2022 systematic review, healthier sleep patterns, including moderate sleep duration and better sleep quality, were associated with a greater likelihood of healthy aging. On the other side of things, we have other cohort work that has also found that short, chronically disrupted, or unstable sleep patterns are associated with lower odds of successful aging. So, part of why sleep matters so much is that it is tightly linked to nearly every system we care about in longevity medicine.

Sleep, Circadian Rhythm, and Stress Regulation

Sleep affects insulin sensitivity, appetite regulation, inflammation, blood pressure, immune function, cognition, emotional regulation, and general recovery. So, if someone is sleeping poorly night after night, years on end, that's not just a quality of life issue.

It's actually a physiologic stressor that can ripple outward into metabolic, cardiovascular, cognitive, and psychiatric health over time. I also want to briefly mention circadian rhythm alignment as well, because longevity is not just about how long you sleep or getting that optimal window of sleep, but it's also about when and how your body is sleeping. So, we are increasingly learning that circadian disruption, especially with long-term night shift work, unfortunately, has implications for cancer risk, including colorectal cancer more specifically. So, 2025 meta-analysis found that night shift work was associated with a higher risk of colorectal cancer overall.

With risk increasing by about 11% for every 5 years of night shift work. So, that just makes me cringe because I think of all of us in medicine who have experienced the grueling night shifts or 24-hour schedules. It just feels devastating to me. But, moving on. Sleep also connects to the gut-brain axis as well. So, sleep and the gut microbiome appear to influence each other bidirectionally. So, poor sleep can alter microbial composition, gut permeability, inflammation, and metabolic signaling.

While the microbiome itself influences sleep through metabolites related to tryptophan, serotonin, melatonin, GABA, and short-chain fatty acids. So, when sleep is off, we're not just dealing with fatigue. We're also looking at the gut, the brain, inflammation, and systemic health all at the same time.

So, that ties nicely into the next pillar, which is stress regulation. And in more of an integrative lens, mind-body medicine. And I feel like I've been saying this about every pillar, but this one is such an important one. I think I may be biased because I think this is a personal favorite of mine.

Because if longevity medicine is ultimately about shaping the biology of aging, then stress physiology absolutely belongs central to that conversation.

Chronic stress is not just a psychological experience. It is a physiologic state that affects the nervous system, the endocrine system, immune system, inflammation, sleep, metabolic health, and of course what we're talking about today, cellular aging pathways over time. So part of why mind-body medicine works is that it helps reduce the chronic activation of the stress response. When the stress response is repeatedly activated, we see downstream effects on cortisol regulation, sympathetic nervous system tone, inflammatory signaling, insulin resistance, and cardiometabolic health.

So mind-body practices shift that physiology. They improve parasympathetic regulation, so that rest and digest. They calm down that stress response, and downstream they influence inflammatory and metabolic pathways that are highly relevant to healthy aging. And there's some pretty exciting data here. In a 2024 randomized controlled trial in older women at risk for Alzheimer's disease, Kundalini yoga improved mood and cognitive functioning and was associated with favorable immunological changes compared with memory training. We also have related work from the same research group that has shown that yoga training was associated with prevention of gray matter atrophy in women at risk for Alzheimer's disease.

So that suggests possible neuroprotective effects in a population that's already vulnerable to cognitive decline. We also have other research that has described preservation of neural pathways and brain matter decline markers in yoga groups. So yoga and other related mind-body practices actually do have real relevance for cognitive aging and dementia risk, especially because they are working across multiple domains at once. So stress, mood, autonomic balance, inflammation, and brain function. And of course meditation is also part of this conversation.

So there's actually some pretty intriguing studies looking at telomeres, inflammatory biomarkers, and biological aging signals. We have a recent 18-month randomized trial in older adults that found greater commitment to a meditation practice was associated with a protective effect on telomere length. So telomeres we chatted a little bit about at the beginning. So, these are protective caps at the ends of our chromosomes. They're like little buffers that help protect our DNA because over time, as our cells divide and the body is exposed to stress and damage, those telomeres shorten.

So, one reason why they are often being studied as a marker of biological aging. And we actually have meta-analysis evidence suggesting that mindfulness meditation can reduce pro-inflammatory biomarkers like CRP and TNF. There's evidence that mind-body exercise improves metabolic markers that matter a lot in longevity medicine. So, mind-body exercise would be things like yoga, tai chi, chi gong, movement that connects the body to the mind with the breath. A 2024 meta-analysis in people with metabolic syndrome found that mind-body exercise improved insulin resistance, obesity-related measures, blood pressure, fasting glucose, and lipid levels.

So, I could talk more about mind-body medicine, but we'll move on for now. The next pillar is actually social connection, which at first glance may seem almost peripheral or not really tied to medicine at all.

But, that actually is not the case at all. Social relationships are robustly linked with mortality and healthy aging. In the Cacioppo Holt-Lunstad meta-analysis, stronger social relationships were associated with a 50% increased likelihood of survival. 50% That's crazy. And this is not just about lifespan in some abstract sense. More recent work continues to connect loneliness and social factors with aging-related outcomes, including cognition, depression of course, and overall health.

A 2025 systematic review and meta-analysis found that loneliness was associated with a significantly increased odds of depression in older adults with an overall odds ratio of about 2.79. There's also growing evidence linking loneliness and social isolation with cognitive decline and dementia risk, suggesting that social connection is relevant not only to emotional well-being, but also to how the brain ages over time.

I feel like this one really makes intuitive sense. But of course, these studies are a great reminder that human health is never purely biochemical. We age in relationships. We regulate through relationships. We suffer through relationships and we heal through them, too. So, if longevity medicine is really about protecting vitality, resilience, and quality of life across time, then social connection is not some soft extra at the edge of medicine. It is part of the physiology of being human. Okay. So, those were the lifestyle pillars. And we see how they are truly essential to longevity medicine. Next, I actually want to briefly talk about functional medicine because its framework and philosophy really actually gets to the core of longevity. Now, before we get into it, I do want to state clearly that functional medicine can sometimes dip its toes into over-testing and extrapolating data too far. I think a lot of that is actually how some people interpret it. And in some cases, unfortunately, how people take advantage of the financial opportunities that can come from a functional medicine practice.

So, I want to name that. But I really want to show you guys how functional medicine is actually so much more than that. At its core, functional medicine is really a systems-biology-based model of care. It shifts the framework away from simply naming disease and toward asking deeper questions about how dysfunction develops, what pathways are being disrupted, and what patterns may be moving someone towards disease long before that disease is expressed. In that sense, it is deeply aligned with longevity medicine because longevity medicine is also asking how we identify risk, dysfunction, and physiological imbalance earlier before more advanced disease takes hold.

Social Connection and Functional Medicine

One of the most useful tools in functional medicine is the functional medicine matrix, which helps organize the patient's story in a more systems-based and longitudinal way. So, it looks at antecedents, triggers, and mediators. So, antecedents meaning things that may have made someone more vulnerable in the first place. So, that could be genetics, early life exposures, past illnesses, trauma, or long-standing lifestyle patterns. Then we have triggers. So, the events that may have set dysfunction into motion. So, it can be infections, major life stressors, environmental exposures, dietary shifts, or hormones. And then we have mediators or perpetuators, which are the factors that keep the dysfunction going over time.

So, this is things like chronic inflammation, ongoing stress, sleep disruption, insulin resistance, and a lot more. Then, that matrix helps us map what's going on into these seven core clinical imbalances. So, rather than breaking the body into systems like cardiology, nephrology, etc., it breaks it into these clinical imbalances and kind of regroups those different systems. So, the first is assimilation. So, this is how we take in, digest, absorb, and process what enters the body. So, especially food and nutrients, but also the health of the gut and the microbiome. Next, defense and repair.

So, this is immune function, inflammation, tissue healing, and how the body responds to injury or threat. Third is energy. So, how cells produce and use energy, including mitochondrial function, and just broader metabolic resilience. After that, there's biotransformation and elimination. So, this involves detox pathways and how the body actually clears hormones, toxins, waste products, and metabolic byproducts. Next, transport, which refers to circulation and the movement of nutrients. So, hormones, signaling molecules, and waste throughout the body. After that is communication. So, more about hormone signaling, neurotransmitters, immune signaling, and the broader communications between those organ systems. And then last, we have structural integrity, which refers to musculoskeletal, membranes, fascia or connective tissue, the physical architecture, and the overall body's structural support. So, I think if we really look at this, it really also is a longevity framework. So, it asks, where is dysfunction beginning?

What is impairing resilience? What is increasing inflammatory load, metabolic burden, or physiologic stress? What patterns are moving this person towards chronic disease or loss of function or I guess we could say accelerated aging? So, all those, those are longevity questions.

So, the philosophy of functional medicine is deeply longevity oriented. Okay. So, next, I want to talk about another core aspect of integrative medicine. And that is the integration of older healing systems and traditional medical frameworks like Ayurveda and Traditional Chinese Medicine. These and other ancient healing systems were oriented around vitality, balance, resilience, rhythm, and the preserving life force long before the language of longevity medicine existed. They are rich systems that blend philosophy with medicine. And many of those older

teachings have found their way into medicine. But beyond the now current data supporting things like Ayurvedic herbs, acupuncture, and Traditional Chinese Medicine herbs, what I really want to focus on here is the deeper emphasis on vitality itself.

So, first let's talk about Ayurveda. So, this is a traditional medical system that originated in India thousands of years ago and is still practiced today.

It is a system based on theories and philosophies of health and illness that aims to integrate and balance body, mind, and spirit with a strong emphasis on preventing illness as well as treating it. So, it's not just a collection of herbs or therapies like many people reduce it to.

It is a philosophy of living well. It asks how a person lives in relationship to food, sleep, digestion, daily rhythm, season, environment, energy, and constitution. And it is deeply interested in the conditions that sustain vitality over time. I think one of its most beautiful longevity oriented concepts is Rasayana, which is a branch of Ayurveda explicitly associated with rejuvenation, healthy aging, and longevity. Ayurveda also emphasizes Dinacharya or daily rhythm and seasonal living based on the idea that health is supported when the body lives in alignment with natural cycles.

Ayurveda and Traditional Chinese Medicine

So, it's a beautiful system. And I don't want to reduce Ayurveda to modern medical endpoints alone, but I do think there are some interesting contemporary studies that show how parts of the system intersect with current aging and health span research. So, take Ashwagandha, which is one of Ayurveda's probably most well-known herbs. It has been studied in older adults and aging populations. In one specific randomized placebo-controlled trial in adults ages 65 to 80, Ashwagandha was associated with improvements in sleep quality, mental alertness, and overall quality of life. Other randomized work actually found that aging overweight men found favorable effects on self-reported vigor and aspects of hormonal vitality. But, what makes Ayurveda so relevant to this conversation is deeper than any single study. It has long treated health as something dynamic and relational, not simply the absence of disease. It is a model that asks how to live in a way that supports resilience before breakdown occurs.

It cares about rhythms, restoration, digestion, adaptation, and the cultivation of vitality across the lifespan. Next, we have Traditional Chinese Medicine that carries a similar depth, but speaks to us in different ways. So, Traditional Chinese Medicine, or TCM, is a medical system that has been practiced also for thousands of years and is still widely used today. It is built around ideas of balance, harmony, prevention, and preserving vitality through the regulation of qi or energy, the functional integrity of organ systems, and the relationship between the body, the emotions, lifestyle, and the external environment.

So, in TCM, health is not simply the absence of symptoms. It is a state of dynamic balance, and disease is often understood as the consequence of imbalance, stagnation, depletion, or dysregulation over time.

So, that is part of why I think TCM feels so resonant in a longevity conversation. It has long emphasized supporting health before disease fully manifests, preserving vitality over time, and living in a way that maintains internal harmony. Modern reviews of TCM practices in aging often focus also on pathways that sound very familiar to a lot of what we've been talking about, including inflammation, metabolism, microbiome interactions, and resilience-related mechanisms.

Probably one of the most widely studied parts of TCM in modern medicine is acupuncture. We have evidence for chronic pain conditions, how it directly affects mobility, function, and quality of life.

Studies done on osteoarthritis, fertility, migraines. There's a lot out there about acupuncture. Sleep is another big one, which of course is one of the major pillars that we just talked about. And we have review studies of acupuncture for insomnia in older adults specifically that show improvement in sleep quality, duration, and insomnia severity. But again, what makes TCM so relevant here is deeper than any one intervention.

Like Ayurveda, it asks larger questions about how humans live, adapt, and remain well over time. It pays attention

to patterns. It pays attentions to rhythm.

>> [clears throat] >> It pays attention to depletion before collapse. And that is part of what makes it feel so compatible with longevity medicine. In their own ways, these systems are longevity medicine.

So, with all of that, let's take a step back and look at longevity medicine as a whole and how it fits into our modern medical model. I mentioned in the beginning that one of the things that I find so exciting about longevity medicine is that all of the different specialties are getting involved. So, it's not just on its own in its isolated world. It's emerging through all of our specialties, like cardiology, neurology, primary care, obstetrics, gynecology, sports medicine, all of them. All of these fields are all, in their own way, asking how we can preserve function, reduce risk, and help people live well for longer. In cardiology, for example, longevity medicine shows up in the push to think beyond standard lipid panels alone, and to look more carefully at markers like apoB, lp(a), which may help identify cardiovascular risk earlier and more precisely. Recent cardiology reviews continue to emphasize that elevated lp(a) is an important inherited risk factor for atherosclerotic cardiovascular disease.

In neurology, longevity medicine shows up in a growing focus on dementia prevention and the idea that the brain aging is not entirely fixed or passive.

The 2024 Lancet Commission on dementia prevention, intervention, and care concluded that about 45% of dementia cases may be potentially preventable or at least delayable by addressing modifiable risk factors across the lifespan. So, some of the things they mentioned were things like hearing loss, LDL cholesterol, depression, physical inactivity, diabetes, smoking, social isolation again, and so much more.

Longevity Across Medical Specialties

So, now we are asking not just how to manage dementia once it is present, but how to support brain health earlier through exercise, nutrition, cardiovascular risk reduction, and other interventions. In women's health, longevity medicine is showing up through the recognition that hormonal transitions, pregnancy history, metabolic health, bone density, cardiovascular risk, and midlife changes all shape long-term aging trajectories.

So, menopause is not just a symptom conversation, it's a longevity conversation. And in sports medicine, the overlap I think is a little bit more obvious. So, looking at strength, mobility, VO2 max, body composition, injury prevention, of course, and preserving function, which are all deeply relevant to health span. So, if we really take a step back, in one sense, longevity medicine is in some ways a pretty compelling rebrand of preventive medicine. But, it has brought fresh energy, visibility, and an urgency to it. I think it's made prevention feel more concrete, more measurable, more aspirational, and more exciting.

Where it starts to go even further though, is in forcing medicine to ask whether we should be looking for risk and intervening earlier than we have in the past or even currently. I think a great example is colorectal cancer screening. So, the recommended starting age for average risk adults was actually already lowered from 50 to 45% after rising incidence in younger adults and modeling data supported the shift. And more recent literature continues to track the importance of screening adults in their 40s as early onset colorectal cancer rises. The same applies in cardiology, where the conversation is shifting toward whether standard lipid panels alone are enough or whether markers like apoB, lp(a), high-sensitivity CRP may actually better help us identify lifetime cardiovascular risk before events occur.

And we start asking questions like should we start testing people earlier or more frequently? So, I think lots of exciting stuff here. So, to close out, my larger point is that longevity medicine may feel like a new frontier, but many of its deepest clinical foundations have actually been here all along. Longevity medicine is opening exciting new doors through emerging interventions, better measurement tools, and more sophisticated scientific understanding of aging itself. We truly are moving in an expansive direction when it's more preventative, more personalized, more systems-based, and more attentive to the long arc of human health. It is helping us bring the future into sharper focus. It's helping clinicians, researchers, and patients think more seriously about how to preserve vitality, protect function, and support health span across the lifespan. And what I personally find so beautiful about all of that is that even as we develop better biomarkers, more advanced tracking tools, and more innovative interventions, we

continue to find that many of the deepest drivers of healthy aging still come back to the fundamentals.

How we eat, how we move, how we sleep, how we regulate stress, how we connect with others, live in rhythms with the body and the world around us. So, I don't think no technology is going to ever replace those things. What it's doing is actually bringing us back to just how foundational those really are.

So, takeaways I'll end with. Longevity testing can show us a lot, but you can begin supporting your health span today. Eat real, whole foods as often as you can. Move your body regularly and if possible incorporate strength training. Protect and hone in on your sleep.

Tend to your stress. Spend time with the people you love. Stay connected to meaning, to rhythm, to nature, and to the basic conditions that help a human being stay well over time. Thanks for listening to the Trip Lab. If you liked this episode, please subscribe and share so we can get the conversation started about integrative medicine and psychedelics to destigmatize it and fully explore what this could mean in the world.

>> [music] [music]