DEFYING YOUR AGE WITH CENEGENICS

A MULTI-STEP, FULL-BODY PROCESS
AGING IS AGING, RIGHT?
Conventional wisdom might say so.

From lower energy levels to chronic pain and loss of muscle tone, there are many symptoms older adults experience that are considered to be “just a part of aging.” Declining libido and weight management challenges are a few additional conditions people witness with age, and the common sentiment is that there isn’t much we can do about it.

NOT TRUE!
There is something you can do to take control of your health as you age: proactive age management. Based on science and proven by medical research, modern anti-aging solutions are powerful treatments used to improve the quality of life for individuals as they enter their senior years.

WHAT IS CENEGENICS?
Founded in 1997, Cenegenics is recognized in the medical community for its pioneering work in age management medicine. Its physicians are the leading authorities in the field, with Jeffrey P. Leake, M.D., Senior Physician and Director of Education for Cenegenics having co-authored the Textbook for Age Management Medicine. This guide serves as the foundation for clinical practice and was written based on Dr. Leake’s decade of experience at Cenegenics.
The entire Cenegenics team is passionate about helping individuals navigate the challenges of aging with greater ease. Here are some compelling statistics to note:

- 1 in 3 adults suffers from high blood pressure, while only 54% of these individuals are actively controlling it
- 70% of adults are overweight, while 34% have obesity
- 80% of adults have at least one chronic health condition, while 50% have two or more

While these conditions are not exclusive to older adults alone, we do know that aging can exacerbate symptoms or make an individual more prone to developing them. We are living longer now and, as such, there is an increasing demand to provide older adults with the specialized care they need and deserve.

This is precisely what Cenegenics aims to do. We take age management a step further by providing personalized, physician-developed age management programs to defy your age, taking an all-encompassing approach to improving wellness. Read on to find out how our programs work, and to learn what our services can do for you.

1 Centers for Disease Control, cdc.gov, 2018.
START WITH A HIGHLY COMPREHENSIVE FULL-DAY ASSESSMENT

The starting point of the Cenegenics program is the most comprehensive preventive health evaluation in the industry. It goes far beyond many well-known “Executive Health” evaluations, digging deep to establish as thorough a representation of a person’s health as possible. The testing includes:

1. Medical History & Lifestyle Assessment

Are you always tired? Have you struggled to lose weight and tone as aging progressed? Perhaps you’re experiencing hormone problems or seeking ways to improve sex drive. No matter which health issues you’re facing, the Cenegenics team wants to hear about it.

During the lifestyle assessment, you’ll provide information about your day-to-day living habits, including activity levels and eating patterns. You will also be asked to provide details about any noteworthy health issues, procedures, or other experiences you have to formulate a well-rounded overview of your medical history. This information will help the specialists shape a highly personalized program according to your unique needs.

2. Comprehensive Lab Work

The extensive lab panel measures a broad range of health indicators, including: CBC (complete blood count), evaluations on hormone levels, cardiac disease risks, lipid panels, homocysteine levels, potential prostate issues (in men), and urine analysis, among others. The results will reveal markers for disease risk and low hormone levels below the healthy range, which our programs can restore. It will also provide the opportunity to address any underlying conditions, if needed.

3. Physical Examination

When is the last time you received a full physical exam? Fewer than a quarter of all visits to family physicians are from older adults,\(^2\) which suggests that seniors aren’t seeking out preventive health care services as often as they should be. The ability to catch potentially life-threatening illnesses early on lies in routine physical examinations. The Cenegenics staff is adept at performing comprehensive, efficient exams.

Beyond drawing attention to serious health issues, physicals also provide medical experts the opportunity to take vital signs and spot any abnormalities which may have otherwise gone unnoticed. The findings from your physical will also factor into your comprehensive age management plan.

\(^2\) American Family Physician, aafp.org, 2018.
4. Dual Energy X-Ray Absorptiometry (DEXA)

The number we see on the scale only tells us one thing about our bodies. Calculating body composition, however, is far more involved than that. A number of complex factors contribute to our bodily makeup, which is why we use state-of-the-art DEXA scanning to measure:

- Lean muscle mass
- Body fat percentage
- Bone mineral density

Each Cenegenics center offers a series of comprehensive scans that provide the most accurate measurements of bone and cardiometabolic health to help specialists develop a data-driven approach to clinical treatment. If you have a condition such as poor bone health, for instance, it can be analyzed quickly, allowing you to receive an initial treatment plan tailored specifically for you upon your first physician visit. Additional risk factors are assessed that correlate with visceral body fat levels, including diabetes, cardiovascular disease, and metabolic syndrome.

5. Cardiopulmonary Exercise Testing – CPET

If you’re suffering from a lack of energy, this test could yield significant insights as to why. A VO$_2$ Max test will measure your volume of oxygen consumption by assessing your ability to perform sustained exercise at maximum exertion. If there is an obstacle getting in your way of pursuing a weight loss program through fitness, this may be the test to help uncover it. It is generally considered the best indicator of cardiovascular fitness and aerobic endurance.
VO2 Max Results allow us to design a program that will help:

- Maximize fat burning potential based on the best way to lose weight for your body type
- Condition the heart to become stronger both during physical activity and periods of rest
- Improve exercise efficiency to help you achieve powerful results

6. Carotid Artery Ultrasonography – Carotid Intima-Media Thickness (CIMT) Test

The carotid arteries (there are actually two – one on either side of the neck) supply blood to the brain, making this artery branch one of the most important systems in the body. A clinical examination of the arteries can uncover important evidence of conditions, leading to diagnosis and treatment. Inflammation of the artery, for instance, could point to an autoimmune disorder or previously undetected infection. Weakness and bulging in the artery can also indicate a number of ailments, which upon further investigation, may be treated effectively.

The CIMT Test is an FDA-approved, noninvasive advanced ultrasound evaluation of the carotid arteries. This evaluation allows for detection of existing plaque and provides a highly precise measurement of the thickness of the artery wall. Thickening of the artery wall is an early sign of vascular disease and relates to your risk of heart attack as well as stroke. Early detection allows for the formulation of proactive strategies to reduce your risk for these catastrophic events.

7. Neurocognitive Assessment
One critical aspect of age management is maintaining – and in some cases, even strengthening – cognitive abilities. We begin to experience cognitive decline as early as our mid-twenties, with the decline in thinking and reasoning skills, memory impairment, and a decreased ability to maintain focus and solve problems becoming more pronounced thereafter.\(^3\)

While cognitive decline is indeed a scientifically proven aspect of aging, that isn’t to say that there’s nothing that can be done about it. Through our computerized cognitive assessment, CNS Vital Signs, we are able to evaluate important brain functions including memory, processing speed, executive function, and many other vital activities. Once on the Cenegenics program, patients often witness a significant improvement in cognitive performance. This is because our age management solutions are not focused on one area of health exclusively; instead, we firmly believe that supporting both the mental and physical aspects of wellbeing are essential to overcoming age-related challenges.

8. Core Strength and Flexibility Assessment

If you’ve ever embarked on a weight loss program, you know that eating a balanced diet and maintaining physical fitness are the best ways to lose weight. While strength and flexibility are not the only markers of vitality, they are considered important measures of fitness. By assessing your current fitness levels, the Cenegenics team will be able to forge a comprehensive strategy to help you reach your goals.

9. Comprehensive Exercise and Nutrition Assessment

Many individuals who enter the Cenegenics program want to know how to lose weight quickly. A better question would be: How can I lose weight in a way that’s sustainable for my lifestyle? With an in-depth assessment, we will unlock the answers to this question. With that said, the program will still provide enough challenge, forcing the body to adapt and spurring noticeable results.

10. Food Allergy & Immunology Testing*

An analysis of diet-induced sensitivity pathways provides individual insights into inflammation-provoking foods and food chemicals specific to your body’s own response, which could be interfering with your health goals. Food sensitives and allergies are commonly perceived as initiating minor, temporary symptoms. Unfortunately, not all symptoms are recognizable, and more frustratingly, many symptoms associated with food allergies can be attributed to other issues.

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\(^3\) Deformation Field Morphometry Reveals Age-Related Structural Differences between the Brains of Adults up to 51 years, *The Journal of Neuroscience*, 2008.
Something as seemingly innocent as gluten could be creating a chronic inflammatory reaction within your body, causing you to experience persistent discomfort and acting as a barrier against your wellness goals. More specifically, a spike in white cells caused by an allergy can have a pro-inflammatory and pro-algesic mediator release. It is the interplay between these pro-algesic mediators (cytokines, histamines, and prostaglandins) and analgesic mediators that causes inflammatory pain. Left untreated, high levels of pro-algesic mediators can have a chronic inflammatory response which can develop into both short-term conditions and long-term disease. Our specialized diagnostics are used to assess these levels, helping our clinical team derive data-driven insights that can factor into your wellness strategy.

11. Micronutrient Analysis*

Although needed only in small amounts, micronutrients play a vital role in a number of key bodily functions, including: hormone production, immune function, enzymatic function, and metabolism of glucose, fatty acids, and amino acids. Micronutrients are also needed to support general cell replication and repair – two factors which are critical to fighting the effects of aging. By understanding micronutrient imbalances within your system, we can identify any risk factors that could contribute to degenerative diseases, balance deficiencies that could otherwise hinder anti-aging treatment, and gain further insights into common complaints related to specific diseases.

12. Genomic Testing*

Have you ever wondered why some people seem more susceptible to health conditions than others? Many risk factors have a lot to do with our genetics. Our comprehensive exome sequencing measures all 22,000 genes of your DNA and cross-references them with more than 100,000 health-related findings on cancer, cardiovascular disease, cognitive function, potential prescription drug complications, and various chronic diseases. In doing so, we can determine which types of treatments will be safest and most effective based on your genetic profile. Measurements of this degree outperform traditional genome sequencing tests, which only look at partial snippets of your DNA and cannot pinpoint the rare genetic mutations that 10% of Americans have.\footnote{Global Genes®, globalgenes.org, 2015.}
13. Telomerase Testing*

Telomeres are an essential part of human cells that affect cellular aging. They also protect critical information of our DNA. When telomeres are abnormally short, they are linked to premature cellular aging. By understanding your percentage of short telomeres, we are able to prioritize critical lifestyle changes, as well as nutraceutical selection, to improve the telomerase enzyme for healthier, longer telomeres.

14. Genetic Inflammatory Biometric Testing*

Biometric testing sounds complex, but it can be broken down rather simply. Since “bio” refers to living things and “metrics” is simply another word for measurements, genetic inflammatory biometric testing is just a phrase that describes the measurement of your inflammatory reactions based on genetic factors. Here are three of the main testing types we use to uncover these insights:

- **KIF6**: Genotype that determines if specific cardiovascular medications are useful to the individual
- **ApoE**: Genotype that determines response to dietary fat
- **9p21**: Genotype that determines risk of early onset heart attack, abdominal aortic aneurysm, and total heart disease risk

15. Cardiovascular Biomarkers*

When the heart is damaged or stressed, it releases substances called cardiac biomarkers into the bloodstream. Measuring these markers can help determine whether or not there is sufficient blood flow to the heart, among other critical functions. Here are some of the biomarkers Cenegenics can test:

- **Myeloperoxidase**: Potential inflammatory precursor to myocardial infarction
- **High-sensitivity C-reactive protein**: Measure for systemic inflammation
- **Microalbumin:creatinine ratio**: Data suggests subjects with elevated microalbumin levels have a 3x greater risk of developing heart disease
  - **F2-isoprostane:creatinine ratio**: Gold Standard in measuring oxidative stress

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What Can I Expect from the Cenegenics Program?

Each patient consults with their specialized Cenegenics physician for several hours to develop an in-depth understanding of health issues and risks based on the results of their lab and diagnostic analysis, medical history, and lifestyle assessment. The patient will then work collaboratively with their Cenegenics physician to develop an individualized, goal-oriented plan that suits their lifestyle and food and exercise preferences. All nutraceutical supplements and, if medically indicated, hormone supplementation will be prescribed by the Cenegenics physician. The patient will be closely monitored during follow-up lab analysis to ensure optimal dosages, as each patient’s body will absorb supplements at different rates and adjustments can be made to reach optimal levels.

The Cenegenics Difference: Personalized Care

Each patient is different, and that is why a “one-size-fits-all” or “take this supplement” approach will routinely fail. Some patients prefer playing tennis over going to the gym to work out, for instance. For these individuals, we custom-design exercise programs to supplement tennis playing. This maximizes efforts and eliminates redundancies, thereby delivering a comprehensive result for healthy aging.

Likewise, nutrition is highly complex and medically different for each individual (we’ll explore this in greater detail in an upcoming section). There is no such thing as a patient who eats a "perfect" diet.
With this in mind, the Cenegenics team works with patients to develop a customized nutrition plan that works for them which they can implement with ease into their lifestyle. Many of our patients are busy executives who travel often and do not have optimal food choices available, so we create a workable system. One simple Cenegenics weight loss tactic is to swap a starch for two sides of vegetables when dining out. Of course, this is just one example to showcase the level of personalization each patient receives when pursuing their wellness journey; there are many more physician-approved weight loss strategies that can be leveraged by individuals across all circumstances. These strategies can also be coupled with tactics like individualized fitness programs and nutraceuticals, if needed.

**CENEGENICS WEIGHT LOSS PROGRAMS: A BETTER UNDERSTANDING OF THE ROLE OF NUTRITION AND EXERCISE**

Nutrition and exercise are integral components of our robust age management programs. Here, we’ll take a look at why Cenegenics gets results when other weight loss alternatives you may have tried fell short.

**Nutrition & Weight Loss Programs: More than Just Calories**

Nutrition is a very important modifiable element in aging well. It sounds simple but it is not. Nutrition is a complex, polyvalent system encompassing an interplay of hormones, genomics, hedonics, energy balance, and macronutrients. Understandably, it can become very overwhelming for an individual to conceptualize the relationship between all of these moving parts, and how mastering this balance can help them lose weight.

The nutritional prescription, therefore, should be written like any other treatment for conditions such as heart disease or diabetes: based on individual needs analysis. The interplay referred to above is patient-specific, and the nutrition plan must recognize this. By carefully reviewing the nutrition-related biomarkers via blood and genomic testing, Cenegenics prioritizes which markers are playing the most detrimental role in your health, and then develops a plan of attack based on these factors.
In some individuals, for example, carbohydrate metabolism and the ability to utilize the body’s primary source of fuel can decline over many years. In certain cases, this could be a result of poor nutritional choices. Others may learn that they have genetic markers that prevent them from breaking down seemingly healthy foods appropriately, and instead their bodies respond via inflammation. Identifying these issues and developing a nutritional strategy that progresses and changes as the individual reduces their risk factors and becomes healthier is critical to long-term success.

Lose Weight & Tone with the Cenegenics Approach to Exercise

Now, let’s talk about exercise. Unfortunately, it’s impossible to exercise your way to significant fat reductions alone. However, when combined with an optimized eating program, exercise is key to aging well. Like diet, exercise must be patient-specific, comprising the proper mix of aerobic, resistance, flexibility, and balance training.

Too often, we get caught in the moment, seeking short-term solutions on how to lose weight quickly. We may succumb to fitness and exercise trends that are promoted in magazines, on television, and across social media. These programs are often presented as fail-proof and as the “ideal” form of exercise. Oftentimes, the lack of results that eventually ensues can create a perpetual sense of failure.

It is therefore critically important to understand that there is no “one-size-fits-all” approach to exercise, either. However, by incorporating metabolic testing and measuring the body’s ability to deliver oxygen to all of its working muscles, Cenegenics identifies your body’s most ideal starting point and pushes you to the appropriate intensities that you are physically capable of achieving, while also allowing for sufficient recovery. The use of scientific, evidence-based exercise allows you to see results from month-to-month, building your confidence and motivation while preventing injury.

A PILLAR OF CENEGENICS SUCCESS: CLOSE MONITORING AND CONSULTATION

While the evidence-based science and the experience of specialized Cenegenics physicians remains unmatched, another key difference of the Cenegenics program that delivers results for our patients is our close monitoring and consultation. Patients receive unlimited consultations with their full Cenegenics clinical team, including a Cenegenics age management doctor and clinical specialists in nutrition and exercise.
New patients often engage in a weekly dialogue with their clinical team to discuss progress, experience, and how they are feeling so modifications can be made as needed to optimize the program. The Cenegenics physician will prescribe ongoing blood analyses to closely monitor the body’s response to the custom-prescribed nutraceuticals and, if needed, hormone supplementation to make adjustments accordingly.

Patients will have an annual reevaluation so that we can closely monitor and manage their progress towards their healthy aging goals and identify any emerging risk factors for proactive intervention.

**DOES CENEGENICS WORK?**

**Proven Results**

Cenegenics has had over 35,000 patients on its programs. We are highly trusted within the medical community, as 25% of our patients are physicians and their families.

Based on an internal study, our average patient reduced their body fat index by 30% in the first year on the Cenegenics program**.

You can see what our patients are saying about their Cenegenics experience:

**CENEGENICS - Patient Testimonial - Look at the Results**

*Anthony Maffei, MD, FACS
Cenegenics Patient*

**CENEGENICS - Patient Testimonial - Aging Looks A Lot Better**

*Jonny Bowden, PhD, CNS
Cenegenics Patient*
ARE YOU READY TO LIVE A HEALTHIER, MORE ACTIVE LIFE?

The next step is a free, no obligation confidential consultation with a Cenegenics physician. Because each patient is different, the results the Cenegenics program can achieve for you are so unique that it requires the undivided attention of a clinical specialist provided during an exclusive in-person consultation.

Register at www.Cenegenics.com for your free consultation now!

ABOUT THE SENIOR CENEGENICS PHYSICIAN, DR. LEAKE

Dr. Leake, a board-certified anesthesiologist, educated at Ohio State University, held a 23-year tenure at Washington’s Harrison Medical Center Bremerton as Chief of Anesthesiology and Medical Director of Surgical Services.

An expert in nutrition and physiology, Dr. Jeffrey Park Leake has long been known for guiding patients in a preventive health approach. As course instructor for the Age Management Medicine Education Foundation (AMMEF), he demonstrates the established Cenegenics model for achieving optimal health and youthful aging.

He is a certified personal trainer and avidly pursues backcountry/extreme skiing, equestrian sports, weight, plyometric and yoga training.

He is a member of the Endocrine Society, North American Menopause Society, International Menopause Society, American College of Sports Medicine, American Society for Nutrition and the National Strength and Conditioning Association.

He is the author of the Textbook of Age Management Medicine and was the recipient of the Alan Mintz Award for Excellence in Age Management Medicine in 2015.

*Available at additional charge

**Based on internal study of the last 200 Cenegenics patients completing their first annual re-evaluation, the average body fat percentage declined 30% from the initial extensive evaluation when joining the Cenegenics program.