Bovine Colostrum: The Anti-Aging Revolution: What Athletes Can Teach Us About Staying Young

Part 1

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Aging is generally accepted as a normal and inevitable part of the human experience. And, the quest for longevity is almost equally normal and inevitable. We are more determined than ever to avoid the physical and mental ravages of modern diseases and to enhance quality of life. The end of humans' long search for the Fountain of Youth may be well within reach, not to mention sitting right in front of us all along. My argument has always been that athletic performance and staying young are essentially the same concept, and that anyone can employ similar strategies to maintain their youthfulness as do athletes trying to improve their performance. A more complete understanding of the connection between aging and athletic performance will demonstrate the beneficial role of bovine colostrum supplementation in both.

Professional athletes have always sought ways to enhance their performance, achieve better results, and gain an advantage over their competitors. The Olympian, or "superathlete," takes this to new heights, and in a world where performance is measured in milliseconds, any natural substance that enhances endurance and strength and reduces recovery time determines who wins the gold and who wins the silver. Many of today's superathletes are turning to bovine colostrum as a means to that coveted edge. The growth hormones in bovine colostrum help burn fat, build lean muscle, build strength, shorten recovery time, balance blood glucose levels, and prevent illness after vigorous exercise. Colostrum's ability to maintain lean body mass, facilitate fat loss, repair tissue, and accelerate healing is just as significant for an athlete as for an aging person. The hallmark signs of aging include decreased muscle and bone mass and a loss of skin elasticity, which are manifested as loss of muscle tone, sagging skin, and wrinkles, as wells as a plethora of autoimmune conditions. Is it possible that the poorly aged adult is simply an untrained, underperforming athlete?

Decline in Growth Hormone Production

The outward signs of aging are the result of the body's beginning to taper off its production of growth hormone following maturity, at around age 20 with a 15% decline every decade. By late adulthood, growth hormone levels are generally less than half the levels during early adulthood. Although this is normal, both athletes and aging adults have been lured by the promise of youth, vitality, and increased muscle mass from synthetic human growth hormone (HGH). Contrary to popular belief that HGH injections will increase muscle mass, growth hormone does not possess anti-aging properties in and of itself. Instead, growth hormone stimulates insulinlike growth factor (IGF-1 and IGF-2) production in the liver, which is responsible for cellular reproduction in all tissues. Furthermore, manufactured HGH by nature of its recombinant DNA origins is only 70% bioidentical to natural growth hormone. As a result, HGH injections may lead to cancer, joint pain, carpal tunnel syndrome, arm and leg swelling, glucose intolerance, increased risk of diabetes, and gynecomastia. Conversely, growth hormones in bovine colostrum are nearly bioidentical to growth hormones in the human body, many of which actually help prevent cancer, improve glucose tolerance, and reduce inflammation and pain. Colostrum is the only food source of all the growth hormones required by the human body.

Unlike injectable HGH and synthetic IGF-1, colostrum is not a banned substance. The International Olympic Committee (IOC) launched an inquiry into whether powdered bovine colostrum was a potentially banned substance following a higher than anticipated number of medals won by the Australian Olympic

team in the 2000 and 2004 games.[1] The Australians claimed that their winning advantage was attributable to their athletes' colostrum supplementation during training.[2,3] The IOC determined that colostrum was instead a superfood, and their ruling provided athletes with a safe, viable, and legal alternative to doping and other banned substances. The only downside to colostrum supplementation was that athletes needed 60 grams/daily, a rather large dose, to achieve results.

Growth hormones in bovine colostrum, such as IGF-l, IGF-2, and transforming growth factor (TGF-alpha and TGF-beta) have regenerative effects that extend to nearly all structural cells of the body. Bovine colostrum promotes healing and exerts the anti-aging effect by increasing IGF-1 to prepuberty levels, thereby increasing muscle mass and strength. IGF-1 also stimulates the growth and repair of DNA and RNA.[4,5]

Because the body produces fewer growth hormones and fewer antioxidants with age, reactive oxygen species can damage DNA, proteins, and lipids, thereby accelerating aging. Insufficient antioxidant production is believed to be a contributing factor in cancer, cardiovascular disease, cataracts, brain dysfunction, and immune system decline.[6] It's also been hypothesized that telomeres are the key to aging and cancer by the role that they play in maintaining the structural integrity of DNA. Chronic oxidative stress compromises telomere integrity.[7] As DNA strands become shorter with aging, they eventually become too badly damaged to replicate new cells, and senescence is associated with aging, cancer, and shorter lifespan due to an overall increased risk of death.[8–10] Geneticists have found that people over age 60 who have shorter telomeres were 3 times more likely to die from heart disease and 8 times more likely to die from an infectious disease than people with longer telomeres.[11] Bovine colostrum contains telomerase, an enzyme that helps preserve telomeres, thereby allowing identical, undamaged cells to replicate over and over.

Increasing Lean Body Mass/Burning Adipose Tissue

Increasing lean body mass and burning adipose tissue is critical for the high-caliber athlete, and it also plays an important anti-aging role in preventing those extra pounds from accumulating as metabolism slows and inactivity becomes more common. Once again, growth hormone and IGF-1 enter the equation, and increasing these naturally (and legally) can only be achieved in one or two ways: first, by performing weight-bearing exercise 1 to 2 hours daily, every day of the week, which does cause the body to increase IGF-1 production, but not significantly; second, by supplementing a sensible exercise program with bovine colostrum, which is certainly more realistic. Studies with Colostrum-LD showed that a dose of just 20 grams/day was necessary for the growth hormones to exert their fat-burning action.[12] Due to significant developments in colostrum processing, results could be achieved at one-third the dose used in earlier studies. Additionally, the desired results occur after 4 to 8 weeks of supplementation, and maintenance of health benefits requires consistent daily use.

The IGF-1 in colostrum is the *real growth hormone* that promotes muscle growth and favors adipose stores over glucose as a fuel source.[13] IGF-1 is primarily produced by the liver and production is stimulated by growth hormone. IGF-1 is the only natural hormone capable of promoting muscle growth by itself. Although synthetic IGF-1 is banned by the IOC, naturally occurring IGF-1 in bovine colostrum supplements is not, and IGF-1 is abundant in bovine colostrum. During vigorous exercise, colostrum slows protein breakdown and stimulates glucose transport in muscle. Muscles are then able to make more efficient use of the fuel available to them, which results in an increase in lean muscle mass without a corresponding increase in adipose tissue. Long-term colostrum supplementation increases IGF-1 levels.[14] Daily colostrum supplementation benefits skeletal muscle tissue by reducing the oxidant-induced damage during exercise.[15]

Colostrum supports maintaining a healthful body weight, whether it be keeping the weight on or keeping it off. Approximately one-third of adults over 60 suffer from sarcopenia, a major cause of falls and subsequent disability.[16] Colostrum contains nine essential amino acids and nine nonessential amino acids that spare and synthesize muscle tissue. Leucine, of which colostrum contains significant quantities, promotes muscle synthesis by activating a signaling pathway that stimulates the body's anabolic drive.[17,18] As aging muscle becomes resistant to leucine stimulation, colostrum supplementation can help overcome the deficit, prevent further muscle

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degradation, and promote new muscle tissue. Colostrum also benefits individuals with muscle wasting syndrome due to cancer, rheumatoid arthritis, AIDS, or other malignant disease by boosting muscle mass.

Conversely, colostrum supplementation can be a potential therapeutic treatment/prevention strategy for obesity. Bioactive peptides and amino acids enhance hormone release which leads to increased satiety and thus decreased food intake. Colostrum contains leptin, and elevated leptin levels accelerate the satiety signals from the stomach to the brain, thereby curtailing overeating and excess calorie consumption. It is, however, important to note that many people initially experience minor weight gain when they first begin supplementation, which is due to the increase in lean muscle mass.

Blood Glucose Homeostasis

Keeping blood glucose levels consistent throughout the day avoids catabolism, in which muscle protein is broken down into amino acids for fuel. When a person's glucose level begins to drop within two hours of the last meal, those amino acids are converted to glucose in order to raise the blood glucose back into homeostasis to ensure that the brain has a consistent fuel supply. The body is very efficient in this process, but rather self-defeating if the goal is to preserve or increase muscle tissue. During the fasting state between meals, the body is essentially consuming its muscle tissue to fuel the brain. Anabolism is the buildup of muscle protein from amino acids. Having some protein in the body's gas tank keeps the brain fueled and maintains muscle tissue. IGF-1 plays a critical role by preventing catabolism and promoting anabolism.

The blood glucose homeostasis benefit may be more easily recognizable to athletes in training, yet it can have a significant impact on aging well, particularly in terms of improving glucose tolerance, boosting insulin sensitivity and even reducing the risk of type 2 diabetes.[19] Diabetes is a major aging disease characterized by significant cellular damage caused by the generation of reactive oxygen species. In most cases, a high-fat diet, excessive weight gain, and obesity lead to an increased risk of type 2 diabetes and non-alcoholic fatty liver disease. Research shows that bovine colostrum can decrease levels of blood glucose and ketones, as well as reduce cholesterol and triglycerides, all of which may cause complications in type 2 diabetic patients.[20]

Bovine colostrum is the only medicinal food that can offer Fountain of Youth benefits without the financial and health costs of synthetic growth hormone. This is not to say that colostrum is a "magical anti-aging pill," but it is a significant game-changer in the arena of anti-aging medicine by virtue of its naturally occurring growth hormones. Regular physical activity and healthful lifestyle behaviors must not be overlooked. Colostrum supplementation is most effective when muscle fibers are subjected to repeated injury during exercise, such that lean body mass is maintained or increased. Trained muscles are more efficient at utilizing glucose and bigger muscles utilize more stored fat for energy. It's a win-win for people who want to age well and maintain a more youthful appearance.

Douglas Wyatt is the founder of Sovereign Laboratories LLC, a Sedona-based company dedicated to developing natural products that provide the public with the best solutions for optimal health. He is honored to be listed as the leading expert in colostrum and is credited with reintroducing bovine colostrum into human use. Additionally, he serves as the research director of the International Center of Nutritional Research, a not-for-profit institute dedicated to nutritional health, and is one of the leading figures in the natural products Industry. Doug is a leader in the research and a proponent of colostrum's unique and powerful healing components that show incredible promise for turning the tide on the prevention and treatment of the world's increasing chronic disease endemic. As a publisher, author, writer, scientist, and public speaker, Doug has appeared nationwide on television and radio shows and at health conventions worldwide. He is dedicated to the prevention of chronic disease through natural nutritional intervention and is working with the WHO (World Health Organization) and other internationally recognized research organizations on clinical trials on HIV/AIDS other infectious disease, autoimmune disease, and bowel health issues.

Notes

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