



## The Best is Yet to Come: Beverages for Healthy Aging

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By now you've probably seen the statistics, heard the predictions and mused over references to the baby boomer generation as "the pig in the python." If not, here are the numbers: The 65-and-over population will grow from 38.7 million in 2008 to 88.5 million by 2050, according to the U.S. Census Bureau.

But getting old ain't what it used to be. Medical advances, improved nutrition and sheer willfulness have conspired to breed a current crop of seniors who are among the healthiest and most active ever.

They'll do what it takes to stay that way, too, making them an ideal market for beverages that fuel their golden years.

### **Can't stop the clock**

Whether you call it the new old age, positive aging or "70 as the new 50," the way we approach aging in the year 2012 really does deserve the label "paradigm shift." Never before have we seen seniors charge into their golden years better prepared to embrace the good and resist the bad. And they do so because they can. The additive effects of better medicine, the fitness boom of the late 20th century and improved nutrition mean that people now enter old age in good health, letting them live not only longer, but better.

No matter how we spin it, though, even the "new" old age is still old age, with the breakdown and senescence that entails. According to 2008 research from SymphonyIRI Group, Chicago, 60% of those over age 65 suffer from arthritis, half from high cholesterol, one-third from osteoporosis and one-fifth from diabetes. Today's seniors aren't wringing their hands over creeping debility, though. They're taking charge of their health, giving their new Medicare cards a workout and applying a three-pronged strategy of physical exercise, mental activity and—especially—savvy nutrition to keep their systems as sharp as possible for as long as possible.

### **From strength to strength**

It's a question beverage manufacturers are answering in every formulation. And more often, those formulations include protein. "Demand for protein beverages is up dramatically right now," says Walt Postelwait, vice president, sales and marketing, BI Nutraceuticals, Long Beach, C, and that's in large part thanks to seniors.

For good reason: Sarcopenia, the age-related loss of muscle mass, function and strength, is a pressing concern. Multiple studies have shown that as many as 30% of those over age 60 and half over age 80 experience the condition, with the average loss of muscle mass ranging from around 0.5% to 1% per year beginning at about age 40, according to *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* (200; 55:M716-M724).

"Emerging research suggests that higher-protein diets may help preserve lean muscle in older adults," says Mickey Rubin, Ph.D., vice president, Dairy Research Institute, Rosemont, IL. "This may allow the aging consumer to be active for a longer period." He notes that beverage manufacturers can "leverage" whey protein to address mature consumers' desire to maintain the muscle strength needed to stay on the go.

With practical, process-friendly dairy-protein ingredients, that's easier to do. Research suggests that the elderly should consume 1 to 1.5 grams of protein per kilogram of body weight per day. However, more research is needed to determine the optimal protein intake regimen for this population.

Kimberlee "K.J." Burrington, ingredient applications coordinator, Wisconsin Center for Dairy Research (WCDR), University of Wisconsin, Madison, points out ready-to-drink beverages can pack anywhere from 2% to 7% protein without concerns for safety, digestibility, processing or product texture.

"Whey protein has good solubility in the typical pH range for beverages, from 3 to 7," Burrington says. "It has its best solubility and heat stability at pH 3 to 3.4, but has slightly lower heat stability at pH 3.5 to 4.5, and the least stability at pH 6 to 7." When beverage clarity is at a premium, whey protein hydrolysates with 90% protein are the best choice in beverages at pH 3.5 to 4.5. "Non-hydrolyzed whey protein isolates don't have the ability to be as clear in this pH range because they have a higher potential for protein-protein interaction due to more attractive forces between whey protein molecules," she says. "This attraction creates a solution with more turbidity." She also notes that UHT treatments can be "strenuous" on whey proteins, and suggests hydrolyzed forms—or a combination of whey and casein in neutral applications—to increase heat stability.

As for taste, whey protein is famously mild, but Burrington says it can bind flavors over time, possibly requiring increased flavor use. From pH 4.5 down to 3, she says whey proteins work best with mango, peach, citrus, pineapple, apple and cranberry profiles, and less so with typical berry notes like strawberry and raspberry, which can accentuate the protein flavor. At higher protein levels (5% to 7%), astringency can also be a factor, she adds, although it's nothing a little extra sweetener or the addition of fiber and fat can't correct.

### **Soy power**

Of course, muscle-building protein can also come from soy, but that's hardly the only healthy-aging benefit soy ingredients provide. Soy isoflavones, a class of phytoestrogens found naturally in the soybean, may inhibit bone resorption and stimulate bone formation. A 2003 study in *The Journal of Clinical Endocrinology & Metabolism* (88(3):1048) found consuming soy protein with calcium enhanced bone formation in postmenopausal women by 69%.