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Life to Our Years
Defining, and delivering, “healthy aging”

BY KIMBERLY J. DECKER

When the 70-plus delegates, researchers, and dietary supplement industry professionals who attended 2017’s CRN-International Scientific Symposium boarded their planes home from Berlin, they did so having plumbed the cultural, psychosocial, physical, and environmental facets of a public health concept that’s only beginning to take shape: healthy aging.

And they plumbed those facets for good reason: We’re all getting older. And we’d all be better off doing so more healthily. Because, as James C. Griffiths, PhD, vice president, scientific and international affairs, CRN-I (Washington, DC), puts it, “Understanding aging is critical to ameliorating its impact on both individuals and society.”

But what, precisely, it means to age healthily—and how we can marshal public health and market resources to make it happen—remains a moving target. “Though definitions of healthy aging continue to evolve,” Griffiths concedes, “the surface has barely been scratched.”

The scientific community continues scratching. In the process, they’re learning more about how sound nutrition may add not just years to our lives, but life to our years. And the more they learn, the greater the role the dietary supplement industry stands to play.

Pricey Projections
Getting a handle on nutrition and healthy aging is hardly an academic exercise. It has real implications for the societal bottom line. As Griffiths points out, “Healthcare costs are so astronomical that anything that can address them through proper nutrition and other lifestyle factors will make a dent somewhere down the road.”

Consider that the number of Americans over age 65 is set to double from about 50 million today to nearly 100 million by 2060, according to the Population Reference Bureau. And if current trends hold, those seniors will keep Medicare plenty busy (assuming it’s still around).

As recently as 2016, the United States spent fully $3.4 trillion on healthcare, per a Centers for Medicare and Medicaid Services study; by 2025, it predicts those expenditures to hit $5.5 trillion, a growth rate of 5.6% per year driven by inflation in the cost of medical products and services directed at an aging population.
“Understanding aging is critical to ameliorating its impact on both individuals and society,” says CRN-I’s James Griffiths.

A Concept in the Making

But quantifiable healthcare expenses aren’t the only costs of aging. There’s also the toll it can exact on quality of life when our out years are fraught with debility, pain, isolation, and depression.

And this is where healthy aging comes in.

Again, a firm definition of the concept has yet to congeal, perhaps because healthy aging comprises a constellation of considerations. As the authors of a report released following the 2017 CRN-I symposium write, “Irrespective of the term or terms used, healthy ageing has evolved to include the intersection between avoiding and managing disease and disability, optimizing cognitive and physical function, and engagement with life throughout the ageing years.”

Griffiths, a coauthor of that study, points to the World Health Organization’s definition of healthy aging—"the process of developing and maintaining the functional ability that enables wellbeing into older age"—as a workable model moving forward.

Importantly, it recognizes two key pieces of the healthy-aging equation, he says: “One is ability—what can we do?—and the other is what’s inside us intrinsically that lets us do what we want to do.” By drilling into each—as Griffiths and his coauthors do—we may one day better understand both.

Extending the Healthspan

In the end, healthy aging deemphasizes morbidity and disease in favor of “the intrinsic capacity of the individual, the environments they inhabit, and the interaction between them,” the study’s authors write. And that has everyone thinking about extending potential “healthspan” rather than mere lifespan.

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For while it’s a triumph that humans are living longer than ever, the number of years we live gives “no indication of how we live the last portion of that longer lifespan,” Griffiths says. By contrast, healthspan—the period of life lived in good health, free of chronic diseases and disability—does. “So a lot of our effort has gone to looking at healthspan and asking if we have healthy years as long as possible instead of numerical years as long as possible.”

Far from meeting bare minima for survival, healthspan aims at optimization. And multiple factors determine it, from education and social connections to lifestyle, diet, and genetics. Further, Griffith notes, healthspan is a term of art, not of science.

Nevertheless, he continues, “It addresses how seniors are redefining what healthy aging means. All of us are looking for longer lives. But more importantly, we all want healthier lives.”

Measure by Measure

One impediment to achieving healthier lives as we age is the fact that accurate ways of measuring healthspan are hard to come by.

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ageing’s happened—perhaps poorly—to get the test results that tell us what went wrong.

“And that’s a critical point,” Griffiths insists. “We need a scientific undertaking to ascertain what we can measure when we’re 20, 30, and so on to show that we’re on the right course,” he says. The research community is making a “concerted effort” to identify such early-warning biomarkers; but until they do, we’re feeling our way through.

Filling the Gaps

Which offers little guidance to nutrition companies hoping to contribute to a collectively longer healthspan for today’s seniors and for generations to come. In the words of the CRN-I conference report, adequate nutrition may be fundamental to good health, but “it remains unclear what impact various dietary interventions may have on prolonging good quality of life.”

For his part, Griffiths believes “there is a role for supplements,” along with basic hygiene practices like maintaining a healthy diet, exercising, and getting a full night’s sleep. “Supplements do fit into the equation because no matter how hard we try to focus on the best nutrition, we still have those gaps to fill,” he concedes.

In fact, Griffiths is a “big believer” in bioactives for healthy aging, “whether they’re botanical or omega-3s,” and, personally, supplements with omega-3s, lutein, magnesium, and more—on top of what he considers good nutrition—“because I’m trying to make up for what I didn’t do when I was younger and should have. And who knows about genetic effects. So I try to address that through products that are on the market with proven scientific benefits.”

And those products are out there. But he can’t stress enough that the work of ageing healthily begins when we’re still young. “It’s always hard when you’re talking about prevention to recognize that it should have started decades earlier,” he says. “That’s hard messaging to accomplish.”

A more palatable message may be that ageing is not a disease state. In a perfect world, all ageing would be healthy.

But we’re not there. And we won’t be for a while. As Griffiths says, “We have no preconceptions that this is likely to happen in the next couple years. Public health policy moves only incrementally and only after there’s sufficient science and push from the scientific and nutritional communities to demonstrate these changes. We’re probably talking about a decade or more of continued research and conferences and publications along these lines.”

If a longer healthspan results, it will be worth the wait.

Increasing our collective healthspan may be outside our grasp for now, but read on to learn how nutrition brands can still make better nutrition easier for today’s seniors to achieve.

Know Your Audience

A key step in helping seniors age as vitally as they can involves understanding who they are. Or, as Andrew Stablein, research analyst, Euromonitor International (Chicago), says, “When we think about where there’s the
“The developer...can’t just put ‘senior’ on a product and think that’s all it takes,” says CRN-I’s Griffiths.

The greatest opportunity for growth in dietary supplements positioned for seniors, we have to think in terms of need: What concerns do seniors have about their health? What gaps in their diets are they looking to fill? And in what form do seniors prefer to take their supplements?

Ergo, “Specifically targeting the chronic conditions that seniors face,” he says, is the way to go.

Griffiths agrees, noting that joint and bone health are super-critical to seniors. “And cognition and heart health are areas that if seniors don’t worry about they should,” he adds.

Don’t forget healthy vision and eyes, which—along with joint and muscle pain—ranked of highest concern for seniors in Euromonitor’s 2019 Health and Nutrition survey, Stablein says.

It’s up to product developers, Griffiths says, “to stay up with the most current science and do their homework as to the products that have shown these benefits. The science is there. The developer has to be aware of it and can’t just put ‘senior’ on a product and think that’s all it takes.”

Consider the Source

One reason brands can’t just bill a product as “for seniors” and expect it to fly is that seniors are smart. This ain’t their first rodeo.

“Seniors are well-read,” Griffiths notes. “Most have more time and interest to look into their health than do many younger people, and they’re becoming more cognizant of what’s out there and what they should be purchasing.”

Credit goes to seniors’ curiosity, as well as to increased access to information about their health and nutrition needs.

But as Stablein notes, with so much information out there, brands could improve and refine the information they provide about their supplements.

According to Euromonitor’s 2019 survey, 60-plus consumers’ source for information about taking vitamins and supplements is a doctor or medical professional, Stablein says. “So whether this materializes as reputable medical sources expanding their online information through new formats—videos, social media, et cetera,” he says, “there will always exist an opportunity to properly educate U.S. consumers on supplement use.”

Seeing Clearly

Eye and vision health is a priority for seniors for good reason: Older adults represent the bulk of the visually impaired population in the United States, according to the National Eye Institute.

So with all that dietary supplement information now available for seniors to read, brands should try to make it easier for them to do so on package labels and elsewhere.

Surprisingly, though, many aren’t. According to a 2015 online poll that Packaging Digest conducted with industry professionals, although 39% of those surveyed claimed always or usually to consider seniors’ needs when designing packaging, 24% sometimes do, 28% seldom or never do, and 9% just don’t know.”

What could they do better? Use legible print, for one thing, which grows more difficult the more information brands need to convey. (And don’t even get us started on fitting it all onto tiny packages.) And while QR codes have revolutionized how we access information about products and more, they’re not always as popular with older consumers as they are with Millennials and digital natives.

Take It Easily

As Stablein mentioned earlier, the format in which seniors prefer to take their supplements should be a top priority for brands designing for them. And on that count, he considers a “bright spot” in the senior-friendly market “the shift toward addressing ‘pill fatigue.””

The gummy platform, in particular, has made supplement compliance easier for seniors to stomach he says. It’s not hard to see why: they’re tasty, easy to chew, and a lot more fun than another tablet or softgel. And the flavorings, strategically chosen, can mask the chalky, bitter, or metallic tastes that dog too many supplements.

No wonder The New York Times reported that sales of gummy supplements have shot up more than 25% since 2015, according to the AARP.4

Kimberly J. Decker writes for the food and nutrition industries from her base in the San Francisco area, where she enjoys eating food as much as she does writing about it.

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Getting old, as the bumper-sticker says, isn’t for wimps. And today’s savvy seniors, all too aware of this fact, are doing everything they can to smooth the aging process—from watching their diets and prioritizing exercise to meditating, staying socially engaged, and, of course, taking dietary supplements.

So it’s a poignant irony that some of the same supplements that seniors hope will make aging easier to take are...hard for seniors to take, literally: hard to swallow, to keep down, to fit into their already-impacted healthcare routines.

So with more of the globe going gray, says David Tetzlaf, senior marketing manager for ingredient supplier Evolva (Reinach, Switzerland), "that makes it essential for manufacturers to design products that can improve the quality of life for this growing demographic."

Serious about Supplementation

Setting aside any looming "silver bomb," seniors already represent a valuable—and loyal—audience for dietary supplements. Tetzlaf cites GlobalData’s 2016 Global Consumer Survey as showing that 93% of Americans aged 65 and older have taken a supplement in the past 12 months. "This is quite a high percentage of the population looking for solutions to common issues around aging and shouldn’t be ignored," he notes.

Among those issues are evergreen concerns about bone, heart, and joint health, as well as the need to close nutrient gaps and maintain overall health. Indeed, the Council for Responsible Nutrition’s (Washington, DC) 2018 Consumer Survey on...
Dietary Supplements found that among consumers in the 55-plus demographic, 31% cited bone health as their top reason for taking supplements, 29% pointed to heart health, and 23% were aiming at joint health. As for healthy aging itself, that was the top motivator for 28% of the survey’s older respondents.

Yet not only are today’s seniors devoted supplement consumers; they’re reliable ones, as well. “Generally speaking,” says Eugene Ung, CEO, Best Formulations (City of Industry, CA), “they tend to be more disciplined users—higher compliance—and tend to be more brand loyal as opposed to users in other age groups.”

Hard to Take
So given their loyalty, industry can count on seniors’ patronage come what may, right? Hardly. For despite their documented dedication to dietary supplements, seniors don’t necessarily get a kick out of taking them. And they’ve been telling us about it.

“Some of their primary complaints are about having to take too many supplements, unpleasant taste, discomfort, burping, and digestion issues—basically, that taking large doses of tablets and powdered supplements on a regular basis is challenging for seniors,” says Jayesh Chaudhari, MBA, MS, CNS, senior director, R&D, Prinova Solutions (Carol Stream, IL).

Taste can be especially off-putting, he says, with most vitamins and minerals exhibiting a “vitamin-y” or metallic, bitter off note. “Botanicals impart earthy and bitter side notes, depending on the load,” he adds. “Though most omega-3 supplements are flavored, their inherently fishy notes remain pronounced and cause burping. And supplements containing higher loads of plant proteins may not be as readily digestible as animal proteins like collagen and dairy proteins like whey.”

Burden to Bear
Then there’s the phenomenon of pill burden, or fatigue. Given that seniors frequently face a battalion of prescription medications already, adding dietary supplements to their ranks “can overwhelm anyone and trigger pill fatigue,” says Tetzlaf.

“Likewise,” he continues, “keeping track of the latest ingredients that improve quality of life while simultaneously looking at potential negative interactions can also be overwhelming. Therefore, seniors often must conduct a lot of research to understand which ingredients are beneficial, and this process itself can lead to stress and cause seniors to give up.” Yikes.

Packing all those nutrients into one pill would be one way to simplify seniors’ supplementation regimen considerably. But, says Chaudhari, “Consolidating nutritional ingredients into one pill would still result in a large pill. Such a large pill size wouldn’t appeal to seniors. Besides, there’s no one pill that fits all.”

What’s more, adds Ung, “There’s still a general sense of great compliance with pills as opposed to other delivery methods, partly because if you’re taking prescription medication as a necessity, you have a routine that dietary supplement pills can integrate into, whereas other dosage formats, such as powders, gummies, etc., are hard to integrate into a compliant pill routine.” And that doesn’t even address the challenge of masking off tastes or ensuring effective dose levels that can complicate alternative formulations.

Helping Seniors Take Control
Nevertheless, alternatives to pills are gaining traction—and brands are instituting other changes that both address seniors’ concerns and accommodate their needs.
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“We’ve seen a lot of innovation in new delivery forms,” says Evolva’s David Tetzlaf.

“We’ve seen a lot of innovation in new delivery forms,” says Tetzlaf. “Pill burden is a real phenomenon and the industry is responding by developing more functional foods, gummies, melt-in-the-mouth strips, flavor packs, and powdered beverages that allow seniors to take control of how they consume their supplements.”

Chaudhari adds that “densely packed meal replacement drinks and liquid supplement shots are also expected to continue to appeal to consumers. These offer not only the ease of convenience but better sensory profiles and a better overall experience, as well. And both alleviate the need to take multiple pills.”

To address the dysphagia that makes swallowing more difficult for older consumers, some manufacturers have simply developed smaller pills, which Ung says do require more potent ingredients, as well as formulations to achieve an efficacious product in a physically smaller dose. For example, a highly concentrated fish oil that allows a smaller softgel to deliver the same amount of omega-3 fatty acids “will help with compliance,” he says.

As Chaudhari concludes, “Supplement companies understand the concepts of pill burden and dysphasia in elderly consumers.” And armed with that understanding, “They’re continuously making progress to ease supplement delivery to consumers.”

Read on for a look at some strategies supplement brands are taking to help seniors stay strong.

Send Pill Burden Packing

“We’re hearing from our branded customers that ‘pill burden’ or ‘pill fatigue’ can be a concern for any demographic,” says Ung. “One of the ways to address this is through senior-friendly packaging—i.e., using easy-to-open bottles or putting several pills into a packet for convenience and to help with the consumer experience and compliance.”

Strategically curated pill packs may not be new or innovative technologies, he concedes, “but the convenience certainly drives compliance, as does not having to deal with opening so many bottles.”

Form Foretells Function

Resveratrol—that polyphenol of the “French Paradox” fame—is just one of many nutrients of relevance to seniors. Tetzlaf says his company can help deliver it in a senior-friendly form courtesy of its neutral-flavored and 98%-pure Veri-te resveratrol product.

The cold-water-dispersible Veri-Sperse form of the polyphenol, for instance, makes quick work of formulating resveratrol-packed instant beverage powders, liquid shots, oral dispersible and effervescent tablets, and a number of other functional foods, Tetzlaf says.

“Likewise, we’ve seen customers create unique delivery systems with our Veri-te resveratrol, such as Nutrinovate’s award-winning Reserol ‘resveratrol-boosting’ films,” he says. “This novel oral film-strip technology boosts resveratrol delivery to the body through the inside of the cheek without adding another pill to a consumer’s diet.” He calls it “a great example of how innovation can reduce pill fatigue while also boosting performance.”

Plays Well with Others

“Supplements are not risk free, as some serious adverse incidents have been reported with taking dietary supplements,” Chaudhari cautions. Crucially, “Taking medicines along with supplements may further increase the risk of drug-nutrient interactions.”
This should be of concern not only to seniors taking supplements, but to brands that cater to them. Case in point: Taking blood thinners such as Coumadin and aspirin with supplements that contain ginkgo or vitamin E can increase the chance of internal bleeding or stroke; meanwhile, supplementation with vitamin K1 in conjunction with Coumadin and aspirin can cause an antagonistic effect, as the former helps to clot the blood that the latter is trying to thin.

Further, Chaudhari adds, some of the mineral forms used in supplements can act antagonistically and create imbalances with other minerals, such as iron, copper, and zinc. “The antagonist minerals also interfere with absorption of certain vitamins and drugs, like certain antibiotics.”

Jumpstarting Energy Production
No matter how old you are, “It takes energy to make energy,” says Steve Holtby, president and CEO, Soft Gel Technologies Inc. (Commerce, CA). Consider the case of coenzyme Q10 (CoQ10), or ubiquinone, a vitamin-like substance essential to the body’s ability to generate energy as adenosine triphosphate.

“Merely having CoQ10 present in your body isn’t necessarily enough to generate cellular energy,” Holtby notes. “Your body must first convert CoQ10 to ubiquinol to start the energy-production cycle.” And while the young and hale can do this with ease, as we age, our conversion efficiency diminishes.

“So by supplementing with ubiquinol, those who can’t efficiently convert CoQ10 into ubiquinol will have access to the ubiquinol necessary to jumpstart the cellular-energy generation process,” Holtby says. The formulation behind his company’s CoQH-CF softgels portfolio are available in more potent doses, they, too, “can also be delivered in smaller capsule sizes, further supporting improved and more efficient swallowing.”

Sigvertsen adds that sprinkle capsules, like Lonza’s Coni-Snap, also make supplementation easier for seniors to take. “Sprinkle capsules offer an innovative solution that enables the ingredient to be sprinkled onto food, thus delivering the correct supplement dose and increasing the nutritional value of the food without compromising quality, safety, or efficacy,” Sigvertsen says. And taking things full circle, they can even be swallowed whole, just like regular capsules. Everybody wins.

Easy to Swallow
It’s no secret that seniors can find their dietary supplement program difficult to swallow—literally. To help the medicine go down, so to speak, suppliers are developing clever delivery systems like the liquid-filled Licaps made by Lonza (Morristown, NJ).

According to Barri Sigvertsen, marketing manager for Lonza Consumer Health & Nutrition, supplements in liquid form, like the liquid-filled capsules like the liquid-filled Licaps made by Lonza (Morristown, NJ).

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At universities, hospitals, and R&D labs the world over, scientists are fast at work trying to bring about nothing less than the end of aging. And with lifespan-extension experts like British geneticist Aubrey de Grey proclaiming that “the first person to live to 1,000 has already been born,” it would appear that they’re making headway.

But if you have trouble remembering where you put your car keys now, imagine trying to find them when you’re pushing 150. For the more that medicine and technology advance the cause of longevity, the more “the biological systems with which we were born get placed under increasing levels of stress,” says Daniel A. Porada, founder and CTO, Synapse (Atlanta).

That stress can take a debilitating toll, especially on what’s arguably the most important biological system we’ve got: the central nervous system and its starring organ, the brain. So with more of us living longer—and exposing our brains to ever more stress in the process—it now more than ever becomes imperative that consumers emphasize preserving their healthful mental faculties,” Porada says. “As a professor and good friend of mine at Columbia once said, ‘What’s the good in keeping the body around for longer if the mind isn’t there to enjoy it?’”

**Brain Buzz**

That’s a question more consumers seem to be asking, as anecdotal evidence shows interest in brain health buzzing.

Notes Porada, “Organic search volumes for terms like mental performance and brain health have been on a steady and precipitous climb since we first started laying the groundwork for Synapse in 2016.” Further, he’s been “quite frankly pleasantly surprised” by the heightened interest he’s noticed among even the lay public in cognitive-care practices like meditation and mindfulness.

Also not to be dismissed is the popularity of products like Bulletproof Coffee—made with grass-fed butter and medium-chain triglycerides, and purported to sharpen the mind—and of supplementation with brain-boosting mushrooms, both of which Porada thinks reflect consumers’ willingness to take charge of their cognitive health in ways they might not have considered before, including through dietary supplementation.

**Supplements Make Sense**

And why not? Supplements should support brain health, given that the brain is an organ just like any other, right?

Porada certainly wagers so. “I think consumers are starting to gain a better understanding that despite its apparent complexity and exceptional role in creating and defining one’s reality, the brain is subject to medical and nutritional interventions just the same as something like the liver or heart,” he says. “This is an extremely encouraging sign for this space and for the state of overall brain health.”
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Indeed, a report by Allied Market Research calculates the value of the global brain health supplements market at $3.194 billion in 2016, and anticipates that to climb to $5.813 billion by 2023, at a CAGR of 8.8% from 2017 to 2023.¹

**Room to Grow**

Such growth, in both market share and product availability, has been “incredible to witness” in the three years since Porada and his partners founded their company, he says, adding that “the category has grown from mainly pills and powders found on niche websites to include recognizable products available in traditional retail environments: Brain Juice, FocusAid, and now Synapse.”

Donnelly L. McDowell, senior associate at law firm Kelley Drye & Warren LLP (Washington, DC), sees things similarly. “There are certainly more brain health supplements derived from different sources than before,” he says. “There are also more supplements that are labeled and marketed with more specific claims—concentration, memory—rather than being marketed simply through general brain health claims.”

Yet there’s still room to grow. “I think it’s safe to say that nutritional interventions in the service of brain health are still in their nascent stages,” Porada observes, “and many of the newer ingredients and techniques are still being researched and validated.”

**Aging in a Toxic Environment**

That research will continue as long as consumer demand warrants it. And with data from the United Nations’ “World Population Prospects: the 2017 Revision” indicating that the population aged 60 and older will more than double by 2050 and more than triple by 2100—rising from 962 million in 2017 to 2.1 billion in 2050 and 3.1 billion in 2100—there should be no shortage of consumers for whom brain-support supplementation might be a wise idea.

“As the baby boomer generation gets older, many are looking for new ways to maintain mental sharpness and concentration,” McDowell says. Thus, he sees the brain health market charting “a bit of a chicken-or-egg” course in which demand for brain-support products spurs scientific innovation, and innovation attracts more consumers to the category. “Companies were already investing in developing and testing supplements for maintaining mental acuity and other brain health measures,” he notes, “but market forces have probably accelerated those investments even more.”

So, too, should the realization that we’re aging in a cognitive atmosphere that doesn’t exactly foster enduring mental acuity. “Our environment and lifestyles are playing more of a role in how our brains function,” says Caspar A. Szulc, president and cofounder, Innovative Medicine (Long Island City, NY), maker of the Nadovim cognitive-support supplement. “Developments like social media are...
huge attention grabbers and actually change the neuroplasticity of our brains so that they don’t function as properly. Our attention spans now are 15 or 20 seconds.”

To neutralize the effects of this toxic environment, future brain health products must address not only mood and cognition, Szulc says, but our taxed and increasingly attenuated attention spans, as well. “Technology has its advantages,” he concedes. “It’s brought us great things. But it’s also impacted our brains in ways that we’re just starting to understand.”

Keep It Simple
So what will the future of brain-support supplementation look like? For one, it’ll depart from earlier crash-and-burn formulas that provided quick stimulation but yielded little long-term improvement. “It’s one thing to take a capsule and feel better while the brain continues to deteriorate,” Szulc says. “It’s another to identify the reasons why the brain deteriorates and give people the nutrients that can address and provide long-term prevention, health, and also optimization of the brain.”

Porada’s advice is to keep the message—however scientifically complex it may be—simple and digestible—at least for now. “You’ll notice that [mushroom product brand] Four Sigmatic doesn’t go into detail explaining the pro-serotonergic effects of cordyceps, which at this point in the lifecycle of these kinds of products would go over most consumers’ heads,” he says. “The focus is all around the product’s natural origins and the feeling it generates, and I think that’s going to be how these products will be marketed until generally available consumer knowledge catches up.” Which he has no doubt it will.

Speaking of natural, Lauren S. Clardy, president, NutriMarketing Business Group (Santa Rosa, CA), believes that “natural bio-actives and botanicals are the smart ‘new’ class of nootropics”—cognition-enhancing substances—and have gained popularity especially because smart drugs garnered so much negative press. They offer similar benefits to pharmaceuticals, but in a less extreme, more balanced manner.”

She’s putting her money on Ayurvedic herbs like bacopa, ashwagandha, and tulsi for achieving “a variety of endpoints in the cognitive space,” she says, and she’s intrigued by “unique alternative delivery technologies that have launched, including coffee chews and direct-to-mouth—DTM—product delivery.” Think Pixie Stix.

Special Delivery
Elyse Lovett, marketing manager, Kyowa Hakko USA (New York City), also sees approachable delivery as a linchpin to the category’s success. “We see a huge amount of interest in the functional food and beverage spaces for specialty products marketed in the cognitive health space,” she says. “For example, I love the innovation on the functional beverage side of brain health, with clean-label products out there that deliver functional benefits and taste great.”

And don’t assume that the only receptive audience for these products is collecting Social Security. “We’re seeing a boom of younger Millennials demanding cognitive health products made from science-backed ingredients that go beyond just brain health,” Lovett says. And they do so for a passel of reasons: sports performance, active lives, the stress of parenting, even winning at e-sports, as is the draw for the emerging “gamer” demo. “Millennial and Gen Xers are looking for products that help support these lifestyle choices, meeting focus, attention, and mental energy needs,” Lovett says.

Play It Safe
Even as brands try to meet all these needs, they should remain mindful of the potential controversy that brain-support ingredients can court.

“From a safety standpoint,” McDowell says, “I wouldn’t say that brain health supplements are of any more or less interest to regulators than others.” But when it comes to brain-health claims, “We’ve seen a number of enforcement and litigation matters by the FTC and state AGs,” he says.

“Part of this is attributable to regulator concerns about populations seen as vulnerable and thus more susceptible to misleading claims,” he continues. For example, FTC, under its former chair, Edith Ramirez, “was very clear in taking a harder look at product claims that appeared to target the elderly or non-English-speaking community,” McDowell says. And just this February, FDA Commissioner Scott Gottlieb, MD, announced the agency’s latest spate of warning letters sent to companies making unproven product claims to prevent, treat, or cure Alzheimer’s disease.

Adds Porada, “Offering people unapproved ingredients whose safety hasn’t been determined is a sure way to discredit all companies operating in the mental performance and brain health space and set the whole industry back,” he says.

But it’s by no means an inevitability. And the sector holds undeniable promise. After all, who wouldn’t want to support their brain? Says Szulc, “Your brain is the CEO of your body. It’s probably the most important organ that you have.”

*This article was originally published in the March 2019 issue of Nutritional Outlook.

References
Bone Health

Vitamin D and calcium are still popular, but so are emerging contenders in this space.

BY ROBBY GARDNER

Bone health is part of the foundation of healthy aging. Understandably, many consumers have turned to dietary supplements as part of their bone health strategy. And they will continue to do so.

A number of bone health ingredients dominate the market today, from those that are well recognized to others for which recognition is somewhat new. For many of these ingredients, there’s an overlap of benefits of bone health and overall health. As knowledge grows around each of them, manufacturers, healthcare practitioners, and consumers will benefit from staying up to state.

The Usual Suspects

To no one’s surprise, vitamin D and calcium continue to reign supreme in the bone health supplements category. Nutritional Outlook caught up with the Council for Responsible Nutrition (CRN; Washington, DC), and the organization emphasized that research continues to focus on vitamin D supplementation not just for bone health, but for cardiovascular health, immune health, and various other human health factors. If negative outcomes have resulted from any of the latest research, there’s still plenty of positive outcomes to counter them.
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Ongoing vitamin D deficiencies in the general population, due to diet or lack of sun exposure, as well as increased popular use of vitamin D testing, are also keeping vitamin D in the mainstream.

As for calcium, there has historically been cause for concern with occasional studies linking calcium supplementation to heart health risks. But in an interview with CRN’s Andrea Wong, vice president of scientific and regulatory affairs, Wong said, “Studies are reinforcing the safety of calcium. There was some noise a few years ago on calcium, but definitely in the last few years there have been large-scale trials with calcium supplementation, and those all showed that supplementation is safe.”

Given the historical sales trends and latest research, it’s safe to assume that vitamin D and calcium supplements won’t be going away anytime soon.

Market Surprises?
A look at sales data from the market research group SPINS reveals that all but three of the top 10 bone health supplement ingredients in the conventional, mult outlet retail channel saw sales declines in the 12 months ending November 4, 2018. Even vitamin D and calcium endured small sales losses. Three ingredients, however, that outperformed their previous year’s sales were magnesium, vitamin K, and collagen.

A longstanding nutrient of interest, magnesium is known to indirectly support bone health by activating vitamin D in the body. In Europe, magnesium is supported by a number of available health claims unrelated to bone health. It’s possible that magnesium’s growing reputation as an important general nutrient, and ongoing concerns about magnesium deficiencies, are contributing to magnesium’s recent success in bone health supplement sales.

Vitamin K lends much of its success to growing interest in vitamin K2, which is increasingly regarded as an important variant of vitamin K. *Nutritional Outlook* recently produced a refresher on vitamin K2 and bone health, but a lot of the latest studies are focusing on vitamin K2 for other health concerns, including eye health, heart health, skin health, and body weight.

In Japan, the fermented soy product natto is rich in vitamin K2 and popularly consumed. Western diets, however, don’t have any notable food sources of vitamin K2. They must instead rely on the conversion of vitamin K1, from foods such as leafy greens, into vitamin K2. The extra challenge makes vitamin K2 supplements worth consideration.

For what it’s worth, researchers recently discovered vitamin K2 in honey. Whether it’s of value to humans remains to be seen.

Increasingly Plant-Based
The health products industry is increasingly plant-based, and most markets based on animal ingredients are adapting. Even vitamin D is in the midst of its own plant-based transformation.

Vitamin D products are sold as either vitamin D2 (ergocalciferol) or vitamin D3 (cholecalciferol), with the former often sourced from mushrooms and yeast and the latter traditionally sourced from sheep’s wool. Regardless of which vitamin D is more bioavailable—which is an ongoing subject of scientific interest—there’s growing demand for animal-free vitamin D. Vitamin D3 from lichen, and maybe even seaweeds, creates even more plant-based competition in the vitamin D marketplace.

Convenient as vitamin D supplements are, home cooking is still a viable way to get vitamin D in the diet. Fish and culinary mushrooms can be good sources, but it’s important to recognize that certain cooking methods can degrade vitamin D more than others, as a new study shows. Consumers and food providers should stay in the know.

Collagen Success
Opposite plant-based ingredients is collagen, an animal-derived protein that’s making gains in dietary supplements. According to SPINS tracking, collagen sales rose a staggering 66% in the mainstream bone health channel last year, but the boost in collagen sales is happening across multiple other channels.

“We see a proliferation of collagen in the marketplace because it’s a component of so many parts of the body, so it could have benefits for other things beyond bone health,” says Andrea Wong. Collagen is finding its way into beauty products and joint health products, to name a few non-bone sectors, and it’s even finding its way into sports nutrition studies.

Once again, a general health halo may be benefiting sales in the bone health market specifically.

Avoiding the One-Size-Fits-All Rule
Best practices in dietary supplements include labeling products for recommended serving sizes and daily values based on industry standards and research. However, it’s important to recognize that consumers will have different needs depending on diet, age, gender, and even environmental factors.

Bone health supplements are not exempt to this unwritten rule. In the case of vitamin D and calcium, these ingredients are essential to human health, but consumer needs vary (especially from supplements). While mandatory labeling is important and rules must be abided, manufacturers can do well by reminding consumers to consult with their healthcare practitioners before just consuming a bone health dietary supplement as the label indicates.

*This article was originally published in the March 2019 issue of *Nutritional Outlook.*
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The heart health category remains important to the dietary supplement industry because it includes a stable of products that have proven efficacy and consistent usage. Ingredients such as omega-3 fish oils and coenzyme Q10 (CoQ10) remain among the top-selling dietary supplement ingredients not only in the heart health category, but in the supplements market overall.

According to SPINS, in the heart health category—specifically in the U.S. conventional, multi-outlet channel—fish oil concentrates were the number-one-selling ingredient during the 52 weeks ending November 4, 2018, followed by psyllium and CoQ10. In the U.S. natural channel, CoQ10 was the top seller, followed by fish oil concentrates, garlic, and red yeast rice.

Despite impressive sales of some of these heart health ingredients, especially in the mainstream space (where, for instance, U.S. sales of fish oil concentrate for heart health totaled a whopping $161 million last year), sales growth for many major ingredients in the heart health market has been slowing, according to SPINS. Fish oil concentrate sales declined 13.5% in the multi-outlet channel last year (although they did rise 7.4% in the much smaller natural channel). CoQ10 sales in the multi-outlet channel fell only 3.3% in the multi-outlet channel and by only 0.9% in the natural channel, staying relatively stable. Ahead, we take a look at a few category leaders.

**Omega-3s**

These fish oil numbers are consistent with other market research, according to Chris Gearheart, director of member communications and engagement for the Global Organization for EPA and DHA Omega-3s (GOED; Salt Lake City). “GOED’s most recent Ingredient Market Report corroborates a possible decline in U.S. fish oil sales. In 2017, at least, demand for EPA and DHA raw material in the U.S. appeared to be flat or slightly declining,” he explains to Nutritional Outlook.

However, U.S. sales are only part of the picture, and sales figures are looking rather positive in other parts of the world. “In contrast, demand for EPA and DHA is growing in volume and value in multiple Asian markets, especially...”
in China, South Korea, Japan, Southeast Asia, and India,” he continues.

Omega-3s declines in the U.S. may be due to negative press about omega-3s after results were released last year from two large-scale studies: the VITAL study (Vitamin D and Omega-3 Trial) and ASCEND study (A Study of Cardiovascular Events in Diabetics). In both studies, omega-3s failed to show statistically significant effects on primary outcomes, but little was reported on secondary outcomes, which did have significant positive effects. (Nutritional Outlook covered more of these outcomes in its January/February 2019 Ingredients to Watch coverage.)

Unfortunately, the lack of reported significant improvement in the primary outcomes of recent large-scale studies may be preventing physicians from recommending supplements as well. Gearheart corroborates this fact. “Our consumer data suggests that the main obstacle to Americans getting enough omega-3s is a lack of recommendation by a healthcare provider,” says Gearheart. “That’s why GOED has been doing more and more outreach to nurse practitioners, registered dietitians, physician’s assistants, and pharmacists over the past several months.” The association’s new education campaign is committed to addressing these practitioners.

CoQ10

CoQ10 is a well established and well recommended nutrient by cardiologists, particularly prescribed to patients on statins because statin drugs reduce the amount of naturally occurring CoQ10 in the body, and CoQ10 is crucial for producing cellular energy not only for the heart but for other bodily functions.

“Because of CoQ10’s ubiquitous role at the human cellular level, the ingredient plays an important role in benefiting many areas of the body,” explains Scott Steinford, president of the CoQ10 Association. “Virtually every cell of the human body utilizes CoQ10 to convert energy. Therefore, the need for CoQ10 is present in every organ. Deficiencies or inefficiencies from CoQ10 depletion are caused by aging, disease, and normal reduction of CoQ10 production through our lifetime. CoQ10 has been studied to benefit numerous areas of the body, from oral health to skin health as well as many other health concerns.”

Considering these benefits, CoQ10 may get a boost, among other ingredients, as more consumers become aware of mitochondrial health, cellular energy, and its connection to our health and aging, according to SPINS. The market researcher pegged mitochondrial health as one of the 10 market trends to watch in 2019, in its “Top 10 Trend Predictions for 2019” report.

“In terms of consumer awareness, the mitochondria’s connection to health is entering an important educational growth phase. This is similar to recent increased awareness of the endocannabinoid system, and, in some ways, it appears to be reminiscent of early-stage trends related to the microbiome from around 15 years ago,” SPINS said. “The microbiome, endocannabinoids and mitochondria are all important systems of the human body, and together they contribute to a more holistic understanding of health and wellness.”

A related product also ranked in the top 10 of cardiovascular ingredients in the multi-outlet channel, according to SPINS, is ubiquinol, the reduced form of CoQ10. Although ubiquinol was only the seventh-highest-selling ingredient in the multi-outlet channel, its sales in that channel did increase by 27%.

Ubiquinol became commercially available in 2007. It is a relatively new ingredient compared to CoQ10, which has been on the market for over 50 years. CoQ10 converts to ubiquinol in the body, and therefore ubiquinol sells to claims of better absorption, which, in addition to the ingredient’s relative novelty among consumers, may contribute to its spike in sales. However, CoQ10 still has more clinical support and a larger share of the market.

Though at times used interchangeably and at other times as competing products, CoQ10 and ubiquinol each have a role to play in the body, meaning that there is room in the heart health category for both. “The two forms do have distinct functions in the body,” says Steinford. “They actually act as redox pairs with the ability to recycle each other as needed. This is important because ubiquinone”—meaning the conventional form of CoQ10—“is essential for life, and the body cannot survive without the energy it provides, so its life-sustaining energy must be protected and maintained. This is where ubiquinol steps in to recycle and maintain ubiquinone stores, serving as a defense system with other antioxidants to also protect the body from free radicals, super-oxides and the effects of aging.”

Psyllium

Soluble fiber is also worth keeping an eye on in the heart health category. According to SPINS data, psyllium sales have been thriving. In the conventional, multi-outlet channel last year, psyllium sales increased 3.5% to total $143 million—taking the number two spot and bumping CoQ10 down to number three. This may hint at an increased interest in the role soluble fiber plays in heart health, with ingredients such as oat having a lot of recognition as a food and functionality as an ingredient.

In 2017, for example, Naturex (now a subsidiary of Givaudan; Vernier, Switzerland) acquired Swedish Oat Fiber, which specializes in oat bran and oat beta-glucan, a soluble fiber. Their Sweoat Bran ingredient comes in various concentrations to support different applications such as bakery and beverage, targeting functional foods.

“If you have 3 g beta-glucan a day for a month, you lower your cholesterol by at least 10-20%,” says Jette Bergwall, development director, oat global business, Naturex. “That is a health claim approved by FDA. It’s a health claim in Europe as well, approved by EFSA, and it’s approved by many countries all over the world where we’ve applied for health claims.”

Looking Ahead

While many of these ingredients are on a stable or slightly delayed trajectory, don’t count out the heart health category as an area of potential promise, especially as the population of aging adults continues to grow. As recently as last year, the U.S. Census Bureau predicted that the number of older people in the U.S. will outnumber the number of children for the first time in history. By 2030, the bureau notes, 1 in 5 U.S. residents will be of retirement age. The time to address potential new customers is now, and the market is backed by some solid ingredient science that hopefully will see this category thrive in years to come.

* This article was originally published in the March 2019 issue of Nutritional Outlook.
The joint health category is a healthy balance of old and new, continuing to evolve while also maintaining sales of ingredients such as glucosamine and chondroitin sulfate, which have long had a good reputation in the dietary supplement industry. According to SPINS, in the conventional, multi-outlet retail channel during the 52 weeks ending November 4, 2018, the glucosamine and chondroitin combo, and glucosamine alone, still held the number one and two spots in the joint health category—at $135 million and $39 million, respectively—despite slight, respective sales declines of 8.2% and 4.2%, compared to the previous year. The glucosamine and chondroitin combo also took the number one spot in the joint health category of the natural channel, at close to $7 million, with only a slight decline of 2.9% compared to the previous year.

Yet, newer-to-market ingredients are nipping at their heels. Turmeric is among the fastest-growing ingredients in the category. Already popular in the overall market mainstream, the herb is well known for its role in supporting healthy inflammation throughout the body. Research has shown that turmeric can improve symptoms of osteoarthritis, making it an important supplement for older consumers, but turmeric is seeing a lot of finished products positioned toward recovery from exercise, targeting younger, more active consumers.

"Curcuminoids provide protection from free radical damage and help to reduce inflammation," explains Shaheen Majeed, worldwide president of turmeric supplier Sabinsa (East Windsor, NJ). "In recent clinical studies, it was shown that curcuminoids helped to decrease muscle soreness from oxidative stress and inflammation associated with continuous exercise and thus improves athletic performance and endurance."

According to SPINS, turmeric took the number one spot in the pain and inflammation category in the natural channel last year, with stable year-over-year sales. And in the natural joint health channel, turmeric ranked number two, with sales increasing by 12.2% last year and coming in behind the number-one spot, the glucosamine and chondroitin combo. Meanwhile, in the conventional multi-outlet channel’s joint health market, turmeric ranked number three in sales, behind glucosamine-plus-chondroitin and glucosamine alone. However, turmeric was also the only ingredient in that category to experience a sales gain last year: 32.2%, to be exact. According to Innova Market Insights, globally there was a 28% increase in bone and joint products that incorporated turmeric between 2014 and 2018.

Herbs and botanicals, in general, have been making their way into the joint health category, says Innova Market Insights, whose research shows a 25% average annual growth of bone and joint supplements that used botanicals between 2014 and 2018. Other herbs, such as boswellia, tart cherry, and ginger, can also be found in joint health products whose mechanism of action is supporting inflammation, often in a post-exercise context.

Collagen is also a major force in the joint health category, ranking sixth in the joint health category in the conventional multi-outlet channel; however, because collagen straddles multiple categories, consumer attention for collagen has shifted a bit toward hair, skin, and nails. For instance, according to SPINS, while collagen saw a 25.4% decline in sales last year in the mainstream joint health category, it saw a 28.4% increase in the mainstream hair, skin, and nail category. In the natural channel joint health category, however, collagen held strong and ranked number three in sales, experiencing a 29.6% increase in year-over-year sales.

* This article was originally published in the March 2019 issue of Nutritional Outlook.
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Healthy Aging Has Changed
An ingredient supplier’s perspective on the evolving healthy-aging market

By Mariko Hill, Gencor

There has been quite a shift in the healthy-aging market over the past 20 years. These changes stem from consumers’ general growing awareness of the benefits of natural supplementation versus pharmaceutical applications to the evolution in how consumers perceive aging, changes in top-of-mind health concerns, as well as a broadening of finished-product delivery formats available to consumers today.

In 2005, a Harris Interactive poll showed that only 9% of Americans believed drug companies were generally honest, which was down from 14% in 2004.¹ As the years went on, this trend of diminishing trust continued, making consumers eager to seek safer, gentler alternatives. This changing paradigm increased sales in the supplement aisle. From 2002 to 2010, U.S. supplementation sales grew each year steadily, and in 2011, the market for the first time grew past $30 billion. And it is predicted that these sales will continue to increase, hitting just under $60 billion by 2021.²

Consumers have begun to change their perspective on what it means to age. In the past, consumers were more likely to seek out items which attempted to “prevent” aging, or the pains of aging, whereas today, the market for healthy aging has evolved into one
focused on more holistic solutions. And because we are living longer, people are starting to shift their mindset to their internal health first (aging healthfully and proactively), rather than outward appearance (“anti-aging”).

The focus on specific health conditions has also fluctuated throughout the years; however, supplementation for sports, energy, and weight management have consistently been on the top. Traditionally, these three categories have been analyzed and counted as one market, but as this space grows, sports nutrition, energy, and weight management have now become their own market categories. The sports nutrition market is breaking down even further due to various applications (i.e., powders, effervescent tablets, etc.). Other health conditions, like general health, heart health, immune health, and joint health, have all been listed as main concerns for consumers for several years.

When it comes to delivery formats, consumer interest has also changed for many reasons, including dysphagia, pill fatigue, consumer compliance, and efficacy. Back in 2014, Nutrition Business Journal (NBJ) reported that pills (19.2%) and softgels (27.1%) held a majority of the market share, followed by gummies (9.8%), chewables (3.7%), and liquids (3.2%). However, today, those market shares have shifted.

The market for healthy aging has changed in many ways, but there are still multiple ingredients that consumers stand by. Take, for instance, the cognitive herb Ginkgo biloba. In 2007, NBJ reported that ginkgo was one of the top two ingredients imported to the U.S. from China. Today, ginkgo still accounts for one of the top four primary cognitive supplement sales in the U.S.3

Curcumin has exploded in popularity over the past ten years. According to the American Botanical Council (ABC; Austin, TX), 2013 was the first time turmeric appeared among the food, drug, and mass-market sectors (FDM) top-seller rankings featured in ABC’s HerbalGram report. In 2018, HerbalGram reported that in 2017, U.S. turmeric sales grew 46.7% in the mainstream channel to over $32 million, placing it as the fifth-top-selling herbal supplement in the mainstream channel.4 The science behind turmeric’s active constituent, curcumin, is what continues to make it popular.

Muscle preservation is also an area that needs attention across all life stages as individuals participate more in regular exercise, with a particular focus on seniors as they are more prone to muscle wasting due to sarcopenia. Gen Xers and baby boomers are also looking for more ingredients tailored to enhance their sexual health and to address the areas of menopause and andropause. Ingredients like fenugreek have been clinically shown in numerous studies to help in these specific areas. Joint health is also a key concern across all generations. Seventy-three percent of U.S. supplement users reported that they were more likely to use supplements to manage joint pain/stiffness if proven effective.

As we age, our body’s metabolism and functions start to slow down; thus, the ability to produce certain hormones and/or get rid of free radicals begin to decline. For this matter, older individuals tend to accumulate free radicals and excess inflammation, further contributing to the cascade of events that are associated with aging. Oxidative stress and inflammation are considered two of the most significant factors that influence the onset of age-related conditions. Hence, conditions such as joint health and cognitive health require a multifaceted approach utilizing a combination of ingredients to target inflammation and oxidative stress.

Stress is also a rising category in today’s healthy-aging market. Due to our modern, hectic lifestyles, stress can often lead to premature aging of both body and mind. This is an issue in society today as individuals don’t realize the adverse effects until they are older and certain symptoms start to arise. By taking action from a young age, consumers can have a significant impact on their “functional reserve” and better help their goal of a healthier lifespan.

There has been a noticeable spike in performance-enhancing products (physical and mental) by younger demographics, while older consumers tend to purchase more condition-specific products to help reduce or support the symptoms they feel from aging. However, the overall understanding of aging healthfully resonates amongst all demographics as everyone strives for optimal well-being and understands that what they do today affects their quality of life tomorrow. We may not be able to stop the process of aging, but we can influence factors that impact how we age through our environment, diet, and lifestyle.

Mariko Hill is a product development executive at Gencor (Irvine, CA). As an international athlete, Hill has a particular interest in the impact of nutrition on performance and recovery. Utilizing her knowledge in the field of exercise and nutrition and further experience as a research fellow from the University of Oxford, Hill is responsible for new product development and business development at Gencor.

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