

OVA How-How

A Renowned Researcher Reveals What He Eats and Why

by Jerry Brainum Photography by Michael Neveux

ontrary to popular belief, the primary health benefits of bodybuilding become most apparent after age 40. That's the beginning of the end for many people, a time when the insults they've inflicted on themselves through four decades of health neglect—smoking, drinking excessive alcohol, eating poorly and not exercising—manifest themselves. At 40, unless you do something about it, your immune system goes into a gradual decline, opening the door to potentially fatal diseases, such as cancer. Since the heart is a muscle, a lack of exercise leads to cardiac flabbiness and weakness, culminating in heart failure, a heart attack or a stroke.

The body recovers from health insults far more easily when you are young; degenerative diseases don't become apparent until you're past 40. A proper body-building lifestyle, however, can either delay or prevent many of the diseases and infirmities linked to the aging process. The quality of life you experience as you age is up to you. Exercise, typified by a balanced bodybuilding program that includes weight training, cardiovascular training and flexibility or stretching exercises, is an effective way of forestalling the effects of aging while maintaining quality of life.



Nutrition is another key to the equation. Once you hit 40, adopt an optimal nutrition program to slow the aging process and maintain muscle. Much research suggests that only one technique truly slows the aging process: restricted calorie intake, usually by about 30 percent. In various animal species, including rats, mice, dogs and fish, cutting calories leads to several beneficial changes that reflect a slowing of the aging process, starting with a vastly decreased incidence of the degenerative diseases associated with aging. Animals that eat less usually show less incidence of diabetes and cardiovascular disease, and they maintain brain function. While we don't have scientific proof of the benefits

of calorie restriction in humans, we do know that in societies in which people routinely eat far less as they age, such as on the Japanese island of Okinawa, older citizens rarely contract medical conditions common in the West. That's why many of them reach the age of 100 or more in good health.

From a bodybuilding perspective, however, severe calorie restriction isn't conducive to maintaining an anabolic state in muscles. Not only is it difficult to get enough protein when you severely restrict calories, but decreased intake also leads to a decrease in anabolic hormones associated with maintaining muscle, such as insulinlike growth factor 1 (IGF-1) and testosterone. Those who

advocate calorie restriction à la lab rats always seem to appear gaunt, with a noticeable lack of muscle.

Even so, calorie restriction fosters decreased cellular oxidation, particularly in the portion of the cell that produces energy (mitochondria); induction of "heat shock proteins" that protect cells from destruction; and insulin control.

Recent research shows that a key player in the aging process is insulin. Its various functions include promoting uptake of glucose and amino acids, as well as glycogen synthesis, but insulin in excess is a potent aging hormone. The lean body that results from calorie restriction leads to lowered resting insulin levels. A consistent finding



Lee Apperson, 47, and Jennifer Micheli

"I was first inspired to start training when I saw photos of Bob Paris," says Lee. "From then on I wanted to win the Mr. Olympia. Now I will have to win the Masters Mr. Olympia over-50 division. Watch for me in about 2 1/2 years.

"I've been eating the same way for 21 years. I eat anything and everything from November 1 to January 1. Then I have a planned diet I follow for 10 months. For supplementation I rely on Herbalife products.

"As for training, I do two bodyparts a day and take a day off when I feel I need one."

Jennifer is 43 and has three children. She's an aerobics instructor and trainer who also uses Herbalife products. She says one of her best anti-aging strategies is laughter.

in examinations of healthy older people is lower resting insulin levels. That's especially noteworthy because most people become insulin insensitive after age 40.

As you become insulin insensitive, your body attempts to compensate by secreting more insulin, fostering processes such as glycation, which deposits sugar into protein structures, including muscle and connective tissue. The heart is also adversely affected. The effects include stiffness and lack of mobility, as well as an increased tendency to become injured. If you inherited genes for type 2, or adult-onset, diabetes, the disease now becomes apparent too. Diabetics, especially those with poor glucose control, age about five times faster than normal, again because of glycation.

The good news is that exercise and good nutrition can prevent degeneration. Weight training is especially effective against diabetes because it encourages the activity of cellular glucose transporters that work with insulin in promoting glucose uptake into cells.

While nutrition and supplementation plans must be individualized based on genetics, body composition, medical problems and so on, certain principles apply equally to most people over age 40. What follows is the supplement plan that I use. For some 40 years I've served as my own guinea pig, trying every type of bodybuilding and health supplement at one time or another. Some I continue to use: others I've discarded as either ineffective or too expensive.

My rationale for choosing these supplements is grounded in scientific research you may find valuable if you're over 40 or contemplating supplement use. Unless absolutely necessary, I don't list commercial names because this isn't an advertisement. I'm all about telling the truth.

The Distant Past

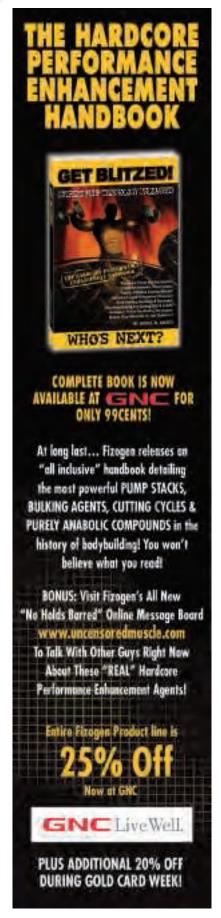
When I first began bodybuilding more than 40 years ago, supplement choices were limited. Popular supplements in those days included brewer's yeast, prized for its paltry B-complex vitamin content and for a mysterious nutrient complex then called glucose tolerance factor, which turned out to be a complex of the trace mineral chromium and amino acids. Liver tablets and powder were also popular. As a teenager I used to keep my liver powder in a drawer in my bedroom. One day my mother found the powder, took a sniff, then promptly threw it out.

Protein supplement choices were also limited. The York Barbell Company sold a powder called Protein from the Sea that looked and tasted like dried seaweed and had the consistency of fresh beach sand. Then, as now, many protein supplements were based on soy, though the compounds in those days were vastly inferior to today's versions in taste, mixability and biovalue.

I've always believed in the value of vitamins and minerals and felt they did a lot more than just prevent nutrient deficiencies. That's been confirmed by research to the extent that the word nutraceutical was coined to explain the druglike properties of some of today's compounds, minus the considerable side effects of actual drugs.

What I Use and Why

I divide my supplementation program into preventive, performance



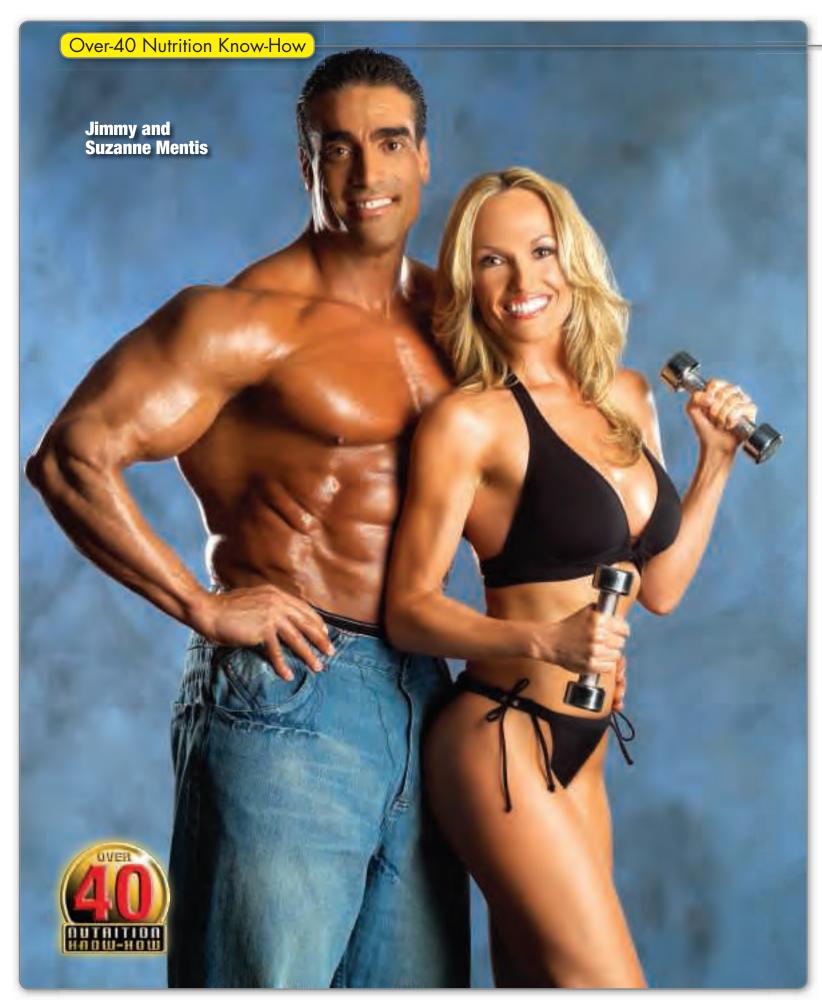
and brain nutrients. The preventive supplements, as the name implies, supply nutrients that are likely lacking in my diet. Mainstream nutrition authorities often suggest that you avoid using food supplements and rely on a balanced diet containing a large variety of foods to make sure you get all required nutrients—at least five servings a day of fruits and vegetables, with the optimal being about 11 servings of fruits and veg-

That's good advice because those foods supply nutrients that if not consumed can lead to cardiovascular disease and cancer, the two leading causes of death. The trouble is, many people don't follow anything like a balanced diet, even if they think they do, judging by surveys showing that about 90 percent of people don't have even one serving a day of fruits or vegetables.

While supplements can't totally substitute for nutrients found in food, they're without doubt better than experiencing the inevitable problems that will result if you don't get those same nutrients from any source. Besides, you can't get therapeutic levels of some nutrients from food alone without overeating, which leads to other problems, such as obesity. A notable example is vitamin E. The best food sources are vegetable oils, which are high in calories because of their rich fat content. Studies show that the true health benefits of vitamin E start at 400 units daily, an amount impossible to get just from eating food, even items listed as "rich in vitamin E."

Complicating the picture is the fact that vitamin E isn't a single vitamin but a complex consisting of four tocopherols and four tocotrienols. The most familiar, and the one most people think about when they think about vitamin E, is alpha-tocopherol, the most biologically active form and the one with the greatest absorption and retention in the body. Other members of the vitamin E family, however, also offer considerable health benefits. For example, gamma-tocopherol prevents the formation of noxious free radicals, which are damaging by-products of oxygen metabolism, far more effectively than alpha-tocopherol. Some scientists suggest that the gamma





Jimmy Mentis, 40, and Wife Suzanne, 41

Jimmy: "After 20 years of bodybuilding I've experienced the highs and lows of my physique. Now the time has come for me to slow down and enjoy other parts of my life although I think my metabolism beat me to it.

"I train four days a week and hit every bodypart once a week. My nutritional regimen was far more challenging to adjust than my workout plan. I had to lower my calories because my protein and carbohydrate requirements aren't as much now.

"I am a strong believer in supplements. I take Lglutamine, creatine and MOV (Maximal Oxygen Volumizer) from Scientific Sports Nutrition."

Suzanne: "I live by six days of healthy eating and one cheat day. I'm a flight attendant, so, depending on how long my day is, I eat four to five meals.

"From my experience consistency in supplements, eating, workouts and sleeping is the key. At 41 my workout routine has changed to accommodate gravity. I still weight train four days a week, but now I have to pay extra attention to building up my glutes in order to bring up what is trying to go south.

"What gives me the extra edge is doing morning cardio on an empty stomach and taking MAP, L- glutamine, MOV (from Scientific Sports Nutrition)."

version is also more effective at preventing cardiovascular disease and prostate cancer than its alpha

I use a vitamin E supplement that contains all the vitamin E forms, including the tocotrienols. I take it once in the morning and again at night. That gives me 800 units of the mixed tocopherols, and I get another 400 from other supplements, which gets me to a daily average of about 1,200 units.

A key aspect of nutrient supplementation involves synergy. You may have read or heard about studies showing that vitamin E didn't offer much health protection, but those studies are seriously flawed

(using a complete vitamin E supplement that includes the entire E complex would help improve them). That's because nutrients must work together to provide health benefits. For example, in the course of preventing damage from free radicals, which are single, unpaired electrons, antioxidant supplements such as vitamins E and C neutralize the effects of rampant free radicalactivity by donating an electron. The problem is that the former antioxidant nutrient becomes a free radical itself, having donated an electron. The cure is having another antioxidant in the vicinity that can "repair" the original antioxidant. Enter coenzyme Q10 and lipoic acid, both of which stabilize vitamins E and C, thus recirculating the antioxidants and extending their activity.

CoQ10 and lipoic acid preserve the vital functioning of cellular mitochondria, where fat is burned and energy is produced in the cell. For that reason, I take 100 to 200 milligrams of CoQ10 and 300 milligrams of lipoic acid daily. The lipoic acid I divide into two doses, taking the first 100 milligrams with 1,000 milligrams a day of acetyl L-carnitine, another brain-protecting nutrient, on an empty stomach, first thing in the morning. The reasoning here is animal-based research showing that the combination may protect or even regenerate "burned-out" brain mitochondria.

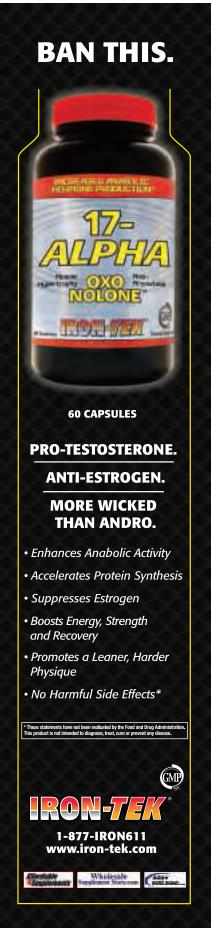
Here, in no particular order, are the other nutrients that I use and the rationale for their inclusion in my program:

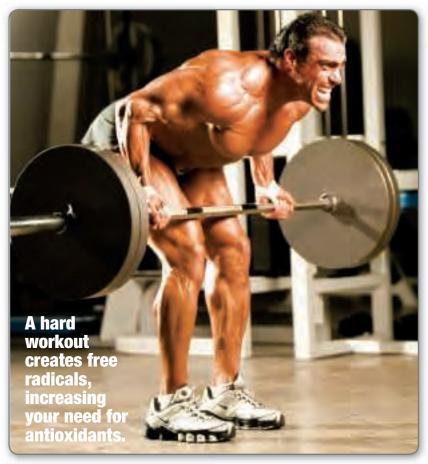
Vitamin-Mineral

It's my major source of B-complex vitamins and a few other required nutrients. I take a one-a-day highpotency formula in the morning with a fat source, such as flaxseed oil or fish oil, to promote absorption of fat-soluble nutrients, such as vitamins E, A, D and K.

Multimineral

I'm a firm believer in mineral intake. Since my vitamin-mineral formula is rich in vitamins but comparatively weak in minerals, I also take a multimineral—three





L-carnosine acts as a primary intramuscular buffer, reducing the acid that leads to muscle fatique.

Studies show that the true health benefits of vitamin E start at 400 units a day.



capsules, twice daily. Lately, I've used a supplement in citrate form, for minerals are notoriously hard to absorb even under the best conditions. Citrate is a more easily absorbed form and isn't expensive.

Astaxanthin

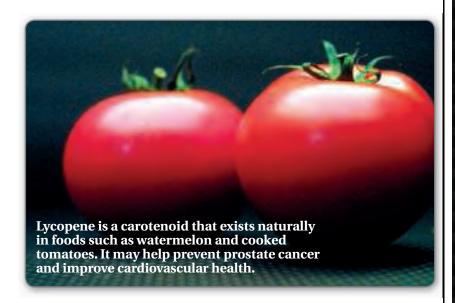
A carotenoid nutrient that provides the reddish coloring of salmon and some other foods, astaxanthin is in the same class as beta-carotene found in vegetables and fruits. Studies show that it's a potent antioxidant, about 100 times more potent than vitamin E, and that it can get through the protective blood-brain barrier, thus providing vital antioxidant activity in the brain. That's important because the brain is largely composed of fat, which, when oxidized, can bring on degenerative diseases such as Alzheimer's and Parkinson's. I use 10 milligrams, once a day.

L-carnosine

Not to be confused with L-carnitine, which I also use. Carnosine is a dipeptide, or linkage of two amino acids, histidine and alanine. In muscle it acts as a primary intramuscular buffer, reducing the acid that leads to muscle fatigue. Carnosine also blunts glycation, so culpable in the aging process. I take 1,000 milligrams daily on an empty stomach, usually in the morning.

Lycopene

Another carotenoid found naturally in foods such as watermelon and cooked tomatoes. Lycopene is similar to astaxanthin in some



respects, such as its red color. Research shows that it offers superior antioxidant protection against a type of free radical called singlet oxygen, beating even vitamin E in that respect. Lycopene may help prevent CVD by limiting oxidation of low-density lipoprotein (LDL), the "bad" kind of blood cholesterol. It may also help prevent prostate cancer, a concern of many men over age 40, by preventing fat oxidation produced by years of testosterone stimulation. I take 20 milligrams daily with fat.

Ginkgo Biloba

An herbal extract, ginkgo is a brain nutrient in that it fosters increased blood circulation and removes excess free cholesterol in the brain related to buildup of betaamyloid, a protein that in excess is linked to Alzheimer's disease.



A recent study found that of various herbs tested, only ginkgo was consistent, with a 60 percent decreased incidence of deadly ovarian cancer. I use a standardized form, 120 milligrams once or twice daily. I first took it after reading about how it may improve focus and

concentration. That was my experience, but only after about two months of use. Since it improves short-term memory, ginkgo may be a boon to students or others who need to cram a lot of information rapidly. That requires a larger dose, about 240 milligrams or more. Avoid taking ginkgo at night because when it mixes with brain chemistry, it can produce severe insomnia.

Vinpocetine

Derived from the periwinkle and native to the rain forests, this herb also provides a substance that is used to fight childhood leukemia, a previously fatal disease. Vinpocetine, like ginkgo, increases brain circulation and the brain's use of glucose—great for increasing workout focus and concentration. I take 20 milligrams daily.

Grapeseed Extract

A superior antioxidant. I use 200 milligrams daily. I wrote about grapeseed in the January '05 *IRON MAN*. Check it out for the details.

Phosphatidylserine

The big news about this brain nutrient is that it may also lower cortisol levels by about 30 percent after intense training. I use 300 milligrams daily, though for the anticortisol effect a good dose would start at 800 milligrams and go up.





Clark Bartrum, 42, and Wife Anita

"They say that 40 is the new 30, and now I know why. I actually feel better than ever at age 42. Don't get me wrong, I do feel the effects of aging, and it has changed my training protocol, but overall I'm confident that I can still keep up with guys half my age, either in the gym or on the field of play.

"As for my training, when I was 25, I would stay in the gym for two hours and train three bodyparts. It seemed my goal was to be crawling out of the gym or I didn't feel like I accomplished anything. Now I do one bodypart per day, and I'm more concerned with being efficient in every aspect of human movement and not limit myself to a physique that aches when I do something as simple as brushing my teeth.

"When it comes to my nutrition, I supplement with glucosamine, glutamine, multivitamins and the occasional meal-replacement powder. I've also learned to relax a bit and give myself a few more luxuries in life. I now understand that the mental break I get by allowing myself these certain nutritional freedoms keeps me more focused in the long run. I've finally found balance in all areas of my life both in and out of the gym.

"I am pictured with my wife of 17 years, Anita. I've seen her go through the same growing process, and that's why she's hotter than ever at 40-something than she was the day I met her more than 20 years ago."

MSM, Glucosamine, **Chondroitin and Boswellia**

I have a few joint problems, especially in my knees, and these supplements keep me pain free without resorting to drugs. I take 1,500 milligrams of glucosamine, six grams of MSM, 1,200 milligrams of chondroitin and 400 milligrams of Boswellia, a natural herbal inhibitor of the COX-2 enzyme linked to joint pain, cancer and other problems that over-40 types frequently experience.

Boswellia also inhibits leukotrienes, inflammatory chemicals linked to asthma, which I've had since age 13. I also use turmeric, another herbal supplement that shows potent anti-inflammatory effects and inhibits COX-2. Preliminary research shows that curcumin, the active ingredient in turmeric, may also prevent Alzheimer's disease.

Green Tea

I take two capsules a day of a high-potency form equal to drinking about a gallon of green tea in terms of active polyphenol content. Green tea is a potent antioxidant and disease preventive. Studies show it may protect against prostate and other cancers, as well as cardiovascular disease. Various medical "experts" have recently claimed that the effects of green tea are overrated, which makes me want to use it even more, since experts are more often wrong than right when it comes to nutrition.

(continued on page 116)

The brain is largely composed of fat, and when that fat gets oxidized, degenerative diseases such as Alzheimer's and Parkinson's can result.

Scientist's Supplement Stacks

When you have at hand one of bodybuilding's top researchers, who is also a bodybuilder himself, your first question would probably go something like this: "So what supplements do you take, and when do you take them?" Here's the answer from Jerry Brainum, our top scientific mind here at *IM*:

A.M. supplements (before morning meal on empty stomach)

Lipoic acid, 100 milligrams Acetyl L-carnitine, 1,000 milligrams L-carnosine, 1,000 milligrams Acetyl L-tyrosine, 1,000 milligrams

Supplements with first meal

Vitamin E (mixed tocopherols with gamma-tocopherol), 400 units Coenzyme Q10, 100 milligrams Vitamin-mineral (high potency), pill Multimineral, 3 capsules Astaxanthin, 10 milligrams Lycopene, 20 milligrams Ginkgo biloba, 120 milligrams Vinpocetine, 15 milligrams Grapeseed extract, 100 milligrams Phosphatidylserine, 200 milligrams MSM, 3,000 milligrams Glucosamine sulfate, 1,500 milligrams Chondroitin sulfate, 1,200 milligrams Boswellia, 400 milligrams Green tea (triple-strength formula), 1 capsule Black tea, 1 capsule Vitamin C, 1,000 milligrams Fish oil liquid, 1 tablespoon Policosanol, 10 milligrams



P.M. supplements

Garlic, 600 milligrams

7-keto DHEA, 50 milligrams

Same supplements and doses with the exception of gingko, astaxanthin, vinpocetine and 7-keto DHEA. Those stimulate the brain and may cause insomnia. For sleep he sometimes uses melatonin, 1 milligram, and 300 milligrams of 5-hydroxy tryptophane (serotonin precursor). He also substitutes one B-complex 100 for the vitamin-mineral pill.

Postworkout recovery drink

1 package of Muscle-Link's Muscle Meals mixed with three scoops of Recover-X (www.X-Stack.com), one package of fat-free Jell-O pudding for thickness and added flavor and one cup of blueberries, all mixed in blender with water.

Vitamin C

I take 3,000 milligrams a day, ensuring that I have both a morning and an evening dose. It lasts 12 hours in the blood.

Fish Oil

I prefer a liquid form, since I'd have to swallow at least 20 capsules a day to reach the amount I use. I down 10 grams a day because fish oil is a fantastic anti-inflammatory that reduces my joint pain. Fish oil also offers preventive effects against brain degeneration, with some studies showing that people who take it regularly have a whopping 75 percent decreased incidence of Alzheimer's disease. It also appears to help prevent excess fat deposits.

PS shows powerful brainboosting abilities as well as cortisolcontrol properties.



Policosanol, Red-Cell Yeast and Garlic

My blood tests recently showed a 213 total cholesterol reading, my highest ever. This combo brought my level down to 168 within two months with no change in diet or exercise, along with a drop in LDL from 138 to 101 with zero side effects. I wouldn't use these supplements, with the exception of garlic, year-round. The doses were 20 milligrams of policosanol, 1,200 milligrams of red-cell yeast and 1,200 milligrams of garlic extract a day. I've also used a proprietary anticholesterol supplement called Sytrinol, which is a combination of flavones from fruit and tocotrieonols. The dosage there was two tablets daily, totaling 300 milligrams.

7-Keto DHEA

I'm experimenting with this one. It's a form of DHEA, an adrenal steroid hormone that is a precursor of other hormones, including estrogen and testosterone. In men, however, DHEA tends to be converted into estrogen, and men over



Antioxidant supplements such as vitamin E and vitamin C neutralize the effects of rampant free-radical activity by donating an electron. which stabilizes the free radical.



40 often produce too much estrogen anyway. But since DHEA seems to offset some of the negative effects of insulin—i.e., insulin resistance with age—and offers some other health benefits, such as maintaining IGF-1, an anabolic hormone, I use the 7-keto version, which doesn't convert into estrogen or testosterone but may offer the other considerable health benefits of DHEA. Some "fat-burning" supplements now include forms of 7-keto DHEA because of its thermogenic effect in the liver, and it may prevent the drop in resting metabolism that often occurs with a reduction of calorie intake known as the dieting plateau.

Protein, Meal-Replacement and Recovery Supplements

I use a whey-and-casein protein powder that provides both rapid and sustained amino acid delivery, thus enabling me to have fewer portions than if I used just a whey-based powder. I drink a meal replacement based on the same two milk proteins and mix it with a recovery powder containing rapid carbs and whey right after the

"I down 10 grams a day because fish oil is a fantastic anti-inflammatory that reduces joint pain."



workout. That promotes optimal muscle recovery in anyone, even those younger than 40. I also use creatine but take it just once a day, five grams—avoiding the creatine load of five to six servings for five to six days. Research shows that after the first two days you excrete at least 50 percent of the creatine you took in. I cycle creatine, using it for two months, then laying off for six weeks to give the muscles time to go

back to a baseline level. Once filled with creatine, muscles stay loaded for another 30 days, even without supplementation. The rest also lets the muscle creatine transport protein kick back into gear.

That's about it for my current supplement program. In the spirit of personal experimentation, I've also used over-the-counter aromatase blockers, or estrogen-blocking supplements, *(continued on page 124)*



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as barbell rows, deadlifts, squats,

whole-food meals."

(continued from page 119) as well as the last generation of a few pro-hormone supplements. Both worked astoundingly well for me, in that I experienced significant strength increases and bodyfat loss. The final generation of prohormone supplements, which was banned by the FDA last January, worked because many of them contained actual anabolic steroids (small wonder they were banned!). One that I used contained a socalled designer steroid—though I was unaware of that at the time. The OTC estrogen blockers can be a real boon to any man over 40 who has a low testosterone level, and they're safe to use for short periods.

Among the countless supplements I've tried, the ones described here have worked best for me. The program is admittedly extensive but can be adjusted according to personal need. For example, if you eat plenty of salmon and tomatoes, you could

> **Amy Lynn-**Janicke is one popular over-40 fitness model who takes healthy eating and exercise seriously which is obvious. Check out that tiny waistline!

delete the astaxanthin and lycopene supplements. For those over 40, it's vital, however, to focus on nutrients that provide antioxidant, hormone-maintenence and antiinflammatory effects, since those factors limit your training progress and health.

Editor's note: Jerry Brainum will present a seminar, "The Truth About Sports Nutrition Supplements," at the '06 FitExpo, to be held in conjunction with the *IRON* MAN Pro Bodybuilding competition February 17-19 in Pasadena, California. Be sure to attend and learn the truth! IM