

FEATURES



Eating about two portions of oily fish, such as mackerel, per week can give a person the right amount of the right kinds of omega-3.

PHOTO: NY TIMES NEWS SERVICE

Labeling foods as rich in omega-3 can be misleading, since the term refers to three different fatty acids that do not perform in the same way

Fish oil or snake oil?

BY CLARISSE DOUAUD
AFP, PARIS

Take a walk through a supermarket in any wealthy nation and the promise of omega-3 health benefits screams off products from bread to milk to juice. But are consumers getting the superfood they paid for?

"Consumers don't understand what it is," Vivian Tysse, sales manager with Norwegian fish-oil producer Denomega, said at a health ingredients trade show in Paris this month.

Processed foods labeled with nutritious omega-3 fatty acids can contain anything from Peruvian anchovy oil, Norwegian cod liver oil, micro algae produced in vats, or prairie flaxseed. Added to other foods, omega-3 pledges to deliver the health benefits of fish oil without its smell or taste. And scientific literature links the acids to cardiovascular protection and generally better heart, brain and eye health.

But the nutrition industry says there is continuing confusion around the additives.

Unless cleared up, the world will continue to face "a high risk of chronic disease that costs health care systems trillions of dollars," said Adam Ismail,

executive director of the Global Organization for EPA and DHA Omega-3 (GOED).

According to GOED, a trade group based in Salt Lake City, "omega-3" is a blanket term that misleads consumers because it refers to three separate fatty acids — EPA, DHA and ALA — which do not perform in the same way.

While in most countries ALA (alpha-linolenic acid), which is derived from plant sources such as flaxseed, can be labeled "omega-3," it does not carry the same nutritional punch as EPA and DHA. EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) are longer chain fatty acids derived from marine sources such as oily fish, while DHA can also be taken from micro algae.

"Consumers don't really get the difference, but it's EPA and DHA that your body really needs," said Ian Lucas, executive vice-president of innovation and strategy at Ocean Nutrition Canada, an omega-3 fish-oil producer.

Nutritional balance can be achieved by eating about two portions of oily fish, containing both EPA and DHA, per week, according to Tysse.

"But people don't eat enough fish,"

said Tysse of Norway, so omega-3 added foods are "the next best way."

Producers of omega-3 fish oil hail Sweden's recent decision to essentially ban use of the term "omega-3" on food packaging meaning food manufacturers there will now have to specify which of the three fatty acids their product contains.

EAT MORE FISH

"Consumers need to be informed and make their own choice," said Philip Fass, executive director of industry and commercial relations at Martek Biosciences Corporation, a US manufacturer of oil from micro algae rich in DHA.

Martek has avoided some of the omega-3 confusion by branding its ingredients as "Life's DHA" on major food brand labels from Yoplait to Minute Maid.

But if consumers are confused, the industry itself offers little clarity.

Contrary to the message issued by fish-oil producers, Martek for instance claims DHA works alone as a nutrient. "We believe that DHA supplies all the health benefits you need," said Fass.

Meanwhile suppliers of plant-derived omega-3s claim their ingredients are more appealing to consumers and safer than fish products.

Fish-oil producers counter that contaminants found in fish are sifted out of the oil and that new technologies such as micro-encapsulation — which turns fish oil into a long lasting powder — have removed obstacles of putting fish oil into food.

"Now you can put fish oil into food without affecting the taste," said Lucas.

The fish-oil industry upholds its product as having an optimum ratio of EPA/DHA, mirroring the traditional oily fish diet that Danish researchers in the 1970s attributed to a low incidence of coronary heart disease among the Inuit.

That discovery paved the way for research into omega-3 and a booming global industry, where fish-oil producers say that by reaching into more and more food brands they can return an essential building block to human nutrition.

"We're not adding something to the diet, but giving it back," said Tysse, while admitting consumers might not be clear as to exactly what they are getting back.

[MOTORING]

The little car that couldn't

It's the end of the road for the Yugo, the boxy hatchback that has become a regular in polls for 'worst car ever'

BY KSENJA PRODANOVIC
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The production line for Yugo cars in the Zastava car factory in Kragujevac, Serbia. Zastava is ending production of the Yugo because Fiat, its new owner, plans to use the facility to assemble its own compact car, the Punto.

PHOTO: AP

The last of the Yugoslav-era cars, known for their lack of reliability as much as tasteless design and crude unworkmanlike finish, rolled off the assembly line in Serbia on Friday, nearly two decades after Yugoslavia itself fell apart.

Zastava, the car factory in the central Serbian town Kragujevac, has effectively ceased to exist and, following a massive investment by the Italian giant Fiat, is to begin making a modern small car.

Launched in 1953 in a country recovering from a destructive war while trying to implement its own form of socialism, Zastava was to prove that Yugoslavia could build a car of its own.

Some 4.3 million cars have rolled out of Kragujevac since, but only a few different models, including the Zastava 750, then the 128, and the prestigious 1300 (all based on Fiat models) and the independently made Zastava 101, the Yugo and the relatively spacious Zastava Florida.

The last Zastava car to roll off the assembly line was a 101 model, which had been in production with only slight cosmetic changes since 1971. The Yugo — the most-produced and best-known — went off out production a day before the 101 did.

The Yugo was a boxy two-door hatchback made from a design that was hopelessly outdated even when it was presented three decades ago. The Zastava 101 at least had four doors, but otherwise was largely the same car. Any Zastava engine tended to lose compression after just a few thousand kilometers and its gearbox would generally lose the third gear shortly afterward.

Zastava seats were sometimes fitted in at strange angles, the doors tended not to align with the body and could generally be unlocked with any key. The paint would go quickly in the sun, the rear windshield wiper machine would inevitably burn out.

These problems, in combination with the "Yugoslav deal of the century" in the 1980s, in which several hundred thousand of cars were shipped to the US, secured the Yugo lasting fame — or infamy, depending on one's point of view.

Unlike many other cars of similarly poor quality made around the globe, the Yugo was briefly exposed to what the average Serb called the "spoiled" market in the US. Without that exposure, the car would never have become a regular in polls for the "worst cars in history," "worst car ever" and "worst car of the millennium." Nor would it have made it to become the star of so many jokes, such as: Why does a Yugo have rear window heaters? So your palms don't freeze when you're pushing it.

The Yugo made it to Hollywood, too, starring with Tom Hanks and Dan Aykroyd in *Dragnet*, with Bruce Willis in *Die Hard 3* and in Danny DeVito and Bette Midler's *Drowning Mona*, in which everybody in the fictional town drove one.

But in Yugoslavia, later Serbia, the Yugo and the other Zastava models were the "people's car" — cheap, repairable at every street corner and as tradable as cash.

"These cars were fantastic — cheap and simple. Low maintenance costs, anyone could fix it and the parts were cheap," said Milojka Mimic, a worker in the Zastava factory.

"I'll keep it until I die," says Krsta Vukovic, a Belgrade pensioner who spends a part of virtually every dry day to tool around his 1989 — once carmine red, now faded pink — Model 101.

So despite the cars obvious shortcomings, many in Serbia will miss Zastava. To the consolation of those feeling nostalgic, the end was long overdue and would have come much sooner without massive subsidies.

After all, the production had dropped from more than 200,000 units at the peak of the deal with the US, to just a few thousand that was the benchmark for much of the past 15 years.

Now, with Fiat taking over, after many years in the doldrums, the town of Kragujevac may hope to regain at least some of the shine it had as the "industrial pearl" of Serbia.



A Yugo, center, at a dump in Belgrade. More than 100,000 Yugo GVs, standing for "Great Value," were sold in the US before Yugo America went bankrupt and Washington imposed economic sanctions on Belgrade for fomenting ethnic wars in the Balkans.

PHOTO: AP

Japanese scientists eye made-to-order bones

Researchers in Tokyo are developing artificial bones that, in theory, could be custom-made within hours by a device that works like an ink-jet printer

BY MIWA SUZUKI
AFP, TOKYO

Japanese hospitals are running a clinical trial on the world's first custom-made bones, which would fit neatly into patients' skulls and eventually give way to real bones.

If successful, the Japanese method could open the way for doctors to create new bones within hours of an accident so long as the patient has electronic data on file.

Doctors usually mend defective bones by transplanting real bones or ceramic substitutes. The Japanese implants use a powder of calcium phosphate, the substance that makes up real bones.

The new implants are called CT Bone as they are crafted using the patient's computer tomography (CT) data, a form of medical imaging. It can match the complicated structures of the jaw, cheek and other parts of the skull down to 1mm, a level significant enough to make a difference in human faces, researchers said.

"It can also be replaced by your own bone, which wasn't possible before" with conventional sintered ceramic bones, said Tsuyoshi Takato, an orthopedic surgeon and professor at the University of Tokyo's Graduate School of Medicine.

The implants are currently limited to use in the skull because, unlike limbs, they do not have to carry the body weight. The custom-made bones are created from the calcium phosphate powder and a solidifying liquid that is more than 80-percent distilled water, using computer-assisted design.

In the same way that an ink-jet printer propels droplets onto a piece of paper, a device squirts the liquid on a 0.1mm-thick layer of the powder to form a desired shape.

The device, which was developed with Tokyo-based firm Next 21, repeats the process and builds up layers that have different shapes. For example, 100 layers create a 1cm-thick implant.

Theoretically, a laboratory in Tokyo could one day use CT data to create a custom-made bone within hours for someone hurt in a car accident halfway across the world. The clinical tests will last for some two years, covering a total of 70 adults at 10 hospitals. Prior to the current project, the University of Tokyo Hospital implanted CT Bone in 10 adults, who showed promising results. The researchers expect to put it into practical use in three to four years.

The same technology has been used to make prototypes of



Tsuyoshi Takato, a professor at the University of Tokyo's Graduate School of Medicine, displays an artificial bone that fits neatly into a skull.

PHOTO: AP

industrial products.

"But it is the first time in the world to use materials that can and were implanted into the human body," said Chung Ung-il, a University of Tokyo bioengineering professor who is also part of the project.

Chung said previous studies showed the implants are replaced with regenerated real bone after one or two years, depending on the extent of the defects.

Takato said the host bone serves as "an incubator" that helps replace artificial bone as

cells invade the implant in what could be called "in-body tissue engineering." As ceramic implants are brittle, surgeons often have to scrape the patient's host bone instead to help conventional implants fit better, Takato said.

Doctors also often take bone from elsewhere in the body, particularly the hip, for conventional transplants. "Nearly half of it is often wasted in the process of making an implant that fits. It is very good to be able to reconstruct bone without taking a piece from elsewhere," Takato said.

Takato hopes to use CT Bone for children if the clinical tests go well. "Even if I want to treat their skeletal damage or development abnormality, I can't take bone from children for grafts. This technology should benefit children," Takato said.

Children usually have excellent bone growth. "Implants would be quickly replaced with their own bone, which would grow as the child grows," he said.

The technology also has narrow holes running through the artificial bones, inviting blood vessels and cells to come and help regenerate bone.

The research team is also working on a second-generation CT Bone, which contains materials that facilitate bridging between the artificial and real bone.

Experiments with implanting it in the skulls of Beagle dogs are underway with good results, he said. The ultimate goal is to be able to construct bone from the living cells of patients, allowing them to take in larger pieces.