natural
WELLNESS

The milk farm of the future

Forty cows on an eco-friendly, zero-emission island produce high-quality sustainable milk (and dairy products). But is this food really good for us? Does it stand up to comparison with and alternative plant-based products? Our experts give their opinion

by **ANNA FREGONARA**

A married couple from Olandesi is betting on an experiment in sustainable agriculture that does not require land. Peter and Minke van Wingerden has built a small self-sufficient floating cheese factory in the port of Rotterdam to supply the local community. According to *The Guardian*, the structure is built on pontoons that rise and fall with the tides (which in the city fluctuate by a couple of meters a day). It covers 900 square meters and is home to 40 cows that produce around 800 liters of milk per day, some of which is turned into butter, yogurt, and other dairy products sold in the farm shop. Rain and desalinated seawater are purified to water the animals. Their manure becomes fertilizer for the local soccer fields, whose grass clippings are returned as feed. The couple came up with the idea

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IN ROTTERDAM
In the port of the Dutch city stands the floating farm of Mr. and Mrs. van Wingerden (*see page opposite*). Yogurt, cheese, and butter are also produced on the various floors. Manure is used as fertilizer. There is also a vertical garden for aromatic herbs
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It came when Hurricane Sandy struck in 2012, leaving New York without fresh food for several days. The city relied on a long supply chain guaranteed by trucks. This type of supply has a heavy environmental footprint due to CO2 emissions.

YOU CAN DRINK IT AT ANY AGE

For many of us, milk consumption is linked to childhood and the idea of healthy growth and strong bones. So much so that in the 1970s, Margaret Thatcher, the historic British MP, minister, and prime minister, was nicknamed "Milk Snatcher" when she cut funding for free milk in schools attended by children over the age of 7. And it is precisely age that is one of the biggest doubts about its consumption: can adults drink it too?
"It's one of the myths about milk," reassures Laura Rossi, nutritionist and researcher at the Council for Agricultural Research and Analysis of Agricultural Economics (Crea).
"From a nutritional point of view, cow's milk is extremely valuable: it is the only food that contains high levels of calcium (150 mg in 125 g of partially pasteurized milk

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ESSENTIAL SOURCE OF CALCIUM

Drinking milk as a child helps protect against osteoporosis in adulthood. "To prevent it, you need to maximize peak bone mass, which means that bones must be as strong as possible during growth, up to the age of 25," explains Laura Rossi. "After that, no more bone mass is added and, after the age of 40, bones begin to weaken, but the effects will be less significant if the bones is stronger. Bone mass is maximized with an adequate intake of calcium, about one gram per day.
The best ways to ensure adequate calcium intake
The main factors affecting bone mineral density are diet, which accounts for about 20 percent, physical activity, which increases bone mineral density, and not smoking, which increases the risk of reduced bone density, which can lead to fractures. Calcium is also found in some types of water, broccoli, almonds, and legumes, but in smaller quantities. Furthermore, it is not absorbed in the same way as calcium from milk.

STRANGE BUT TRUE

Laura Rossi, general coordinator of the guidelines for healthy eating at Crea, answers

1. Why is milk thirst-quenching? Because water makes up about 90 percent of the content of a liter of milk. The rest
It consists of proteins, sugars, and fats in varying percentages depending on the type: cow's milk is richer in protein and is less fatty than buffalo, sheep, and goat milk.

2. Is it better to drink green tea and make hot chocolate without milk? Of course. Green tea and cocoa contain antioxidant polyphenols. Their action is almost completely blocked by the casein in milk.

3. Is it true that cappuccino foam is better with skimmed or partially skimmed milk?
Yes, because the protein in milk is needed to make it, not the fat.

skimmed) easily absorbed in few calories (58) thanks to the presence of casein, the noble proteins of milk, complete from an amino acid content point of view. Less abundant, but no less important, are other minerals—phosphorus and magnesium—and vitamins A and B. The weak point is the presence of cholesterol and saturated fats, which are enemies of cardiovascular health. For this reason, unless otherwise indicated by a doctor, it is recommended to consume it partially skimmed so as not to exceed the fat requirements already present in cheese, a food we love so much. Milk can be drunk by children and adults because we have an enzyme – lactase – that allows us to digest it. With the passing of the years, the The amount of lactase may decrease, but this does not happen to everyone. In fact, many elderly people digest milk very well and often prefer it for dinner or breakfast.

WHAT IF I CAN'T DIGEST IT?

The decline in lactase may depend on the absence of a genetic mutation that allows the body to continue producing lactase into adulthood, but that's not all. Tim Spector, professor of genetic epidemiology at King's College London a n d one of the world's leading twin researchers, has noted that even if two individuals have the same genes, small differences in the composition of their gut microbes can determine a

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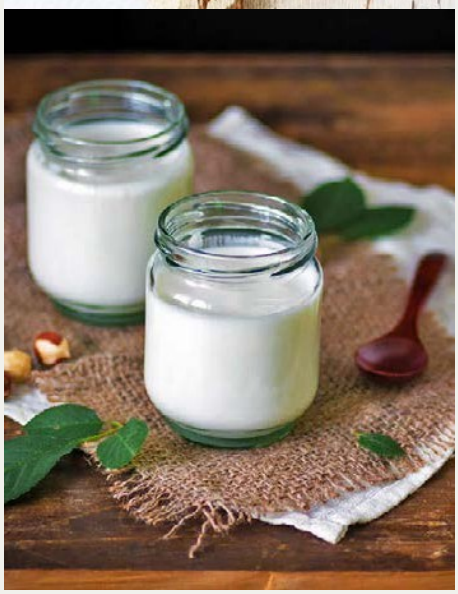
different response to milk. These small differences may depend, for example, on the use of antibiotics, smoking, or a sedentary lifestyle. "Self-diagnosing lactose intolerance, the sugar in milk, because you feel bloated or have intestinal problems is wrong because if you are not intolerant and you eliminate milk and dairy products anyway, lactase is no longer put to work and becomes inactive. The test to be done on the advice of a specialist is called a breath test: it involves ingesting lactose at regular intervals and then measuring the effects in the breath or blood glucose. If the diagnosis is confirmed, you will switch to lactose-free products, also known as high-digestibility products, mature cheeses, or fermented cheeses, such as gorgonzola, yogurt, and kefir. The latter two are usually well tolerated because the microorganisms present, which are the result of natural fermentation, pre-digest most of the lactose that is also present in goat's and sheep's milk. An alternative are drinks made from legumes, often with added calcium. They have different characteristics from milk, but allow the intake of vegetable proteins.

IN SMALL DOSES

Another much-debated issue is the possible link between milk consumption and cancer risk. As highlighted by experts from the Italian Association for Cancer Research in the 2018 Report on Diet, Nutrition, Physical Activity and Cancer published by the World Cancer Research Fund, researchers have identified After analyzing the scientific literature, a probable decrease in the risk of developing colorectal cancer linked to the consumption of milk and dairy products. However, evidence appears limited regarding a reduction in the risk of breast cancer in premenopausal women. There is limited evidence supporting an increased risk of prostate cancer with high milk intake (more than 600 ml per day). "As with all foods, it is important not to overdo it and to follow the guidelines: three servings (125 ml each) per day of semi-skimmed milk or yogurt, plus two to three servings (100 g each) per week of fresh or aged cheese (50 g). Finally, let's dispel the myths about inflammation linked to milk proteins, urine acidification, and calcium removal from bones."



HOW TO CHOOSE YOGURT

Yogurt has nutritional characteristics equivalent to those of milk, with the added the benefits of fermentation on the intestinal microbiota. Nutritionist's advice on how to choose it.

- **FOR YOUR FIGURE:** plain, semi-skimmed or skimmed, without sugar.
- **FOR A SNACK:** plain, whole, with added muesli, provided you do not have high cholesterol.
- **FOR SPORTS:** fruit yogurt, as it contains sugar.
- **FOR A CHANGE OF FLAVOR:** goat or sheep.
- **TO REPLACE A MEAL:** Greek yogurt with honey and dried fruit. Compared to low-fat yogurt, it has more protein used instead of fat to help thicken it.
- **FOR VEGETARIANS:** soy milk is low in fat and cholesterol, but it contains more sugar, so it is not recommended for diabetics. Coconut milk is cholesterol-free, but it is high in saturated fats, most of which are atherogenic. It is not recommended for people with cardiovascular problems.
- **ETHNIC FLAVOR:** kefir, the presence of acetic acid bacteria gives it a slightly alcoholic taste, which is often unpopular with children.

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