**Headline:** How Lab-Grown Meat Could Bring an End to Needless Animal Cruelty

**Teaser:** Lab-grown meat is a sustainable and ethical alternative to traditional meat. It offers the same taste and texture while reducing animal suffering, environmental impact, and health risks.

By Laurie Wills

**Author Bio:** Laurie Wills is the lead grassroots campaign coordinator for the [Humane League UK](https://thehumaneleague.org.uk/), based in Cornwall, the United Kingdom.

**Source:** Independent Media Institute

**Credit Line:** *This article was produced by* [*Earth | Food | Life*](https://independentmediainstitute.org/earth-food-life/)*, a project of the Independent Media Institute.*

**Tags:** Agriculture, Animal Rights, Economy, Environment, Food, Science

**[Article Body:]**

Billions of animals are killed each year to feed an unsustainable demand for meat. Lab-grown meat—also known as cultured, cultivated, cell-based, or clean meat—can offer a kinder alternative while still meeting the growing global demand for meat.

Silicon Valley start-ups are racing to get lab-grown meat on the market. And with good reason. Bethan Grylls of Food Manufacture, a UK-based resource for food and drink processors, reports that GovGrant, a research and development tax relief consulting firm, “anticipates that by 2040 [cultured meat will make up 35 percent of global meat consumption](https://www.foodmanufacture.co.uk/Article/2024/01/05/when-will-cultured-meat-be-approved-more-widely/#:~:text=Research%20and%20development%20into%20fermentation,fifth%20at%20%C2%A328.55m.), with conventional meat accounting for 40 percent and vegan meat alternatives the remaining 25 percent.”

Cultured meat emerged in the early 2000s and is a miracle of modern science. Fish filets, burgers, and bacon produced in this way [taste just as consumers would expect them to](https://www.washingtonian.com/2023/08/03/we-tried-the-lab-grown-chicken-at-jose-andress-restaurant/), but millions of animals don’t need to be bred, confined, or slaughtered to create these actual meat products.

**How Is Lab-Grown Meat Made?**

The term “lab-grown meat” might sound off-putting. However, labs are only involved in supporting ongoing research and development. Once they begin to produce at scale, cultured meat companies will swap out laboratories for facilities resembling microbreweries—a far cry from the [industrial farms](https://thehumaneleague.org.uk/article/the-link-between-pandemics-and-factory-farming?utm_source=thehumaneleagueuk&utm_medium=blog) that profit from the abuse and slaughter of sentient animals.

Instead of using slaughtered animals, lab-grown meat is made by carefully [removing a few muscle cells from a living animal](https://crsreports.congress.gov/product/pdf/R/R47697). The pain is typically relieved with local anesthesia. The animal experiences a momentary twinge of discomfort, not unlike the feeling of getting a routine blood test at the doctor’s.

Then, a lab technician places the harvested cells in bioreactors before adding them to a bath of nutrients. The cells grow and multiply, producing actual muscle tissue, which scientists shape into edible “scaffoldings.”

These scaffoldings can transform lab-grown cells into steaks, chicken nuggets, burger patties, and fish products. National University of Singapore scientists have even begun using [sorghum grain](https://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=21067) to produce cultivated pork. These offerings could sway pork eaters who are wary of parasites and disease.

The final product is an actual cut of meat, ready to be marinated, breaded, grilled, baked, or fried—no animal slaughter required! Cells from a single cow can [produce](https://www.forbes.com/sites/daphneewingchow/2019/06/20/is-cultured-meat-the-answer-to-the-worlds-meat-problem/?sh=61ec434a4468?utm_source=thehumaneleague.org.uk&utm_medium=referral) an astonishing 175 million quarter-pounder burgers.

**Lab-Grown Meat Is More Humane and Sustainable**

Lab-grown meat is created from the same animal cells as traditional meat. The key distinction lies in the process—lab-grown meat eliminates the need for breeding, raising, and slaughtering animals, offering a more humane and sustainable alternative to conventional farming practices.

One of the most compelling aspects of lab-grown meat is its potential to reduce animal suffering. By harvesting cells without killing the animal, this innovative approach addresses the ethical concerns of consumers who oppose factory farming and industrialized slaughterhouses.

As Brian Spears, founder of New Age Meats, [explains](https://www.kqed.org/science/1944778/lab-grown-meat-no-slaughter-necessary-fights-for-acceptance?utm_source=thehumaneleague.org.uk&utm_medium=referral), “People want meat. They don’t want slaughter.” This sentiment reflects a growing demand for products that align with the values of compassion and sustainability without requiring individuals to give up their dietary preferences.

In addition to its ethical appeal, lab-grown meat could serve as a practical solution for meeting the global demand for meat while addressing the environmental and health challenges associated with traditional meat production. Industrial farming is a major contributor to greenhouse gas emissions, deforestation, and water pollution.

By bypassing the need for large-scale animal agriculture, lab-grown meat has the potential to significantly reduce the industry’s environmental footprint. Furthermore, it can be produced under controlled conditions that minimize health risks, such as antibiotic resistance and contamination from pathogens like E. coli.

Lab-grown meat represents a revolutionary shift in how we think about food production. It merges scientific innovation with ethical and environmental consciousness, providing a tangible alternative to unsustainable practices. At the same time, it is not without challenges, such as high production costs and reliance on inevitable animal-derived by-products. Ongoing technological advancements and scaling promise to address these hurdles.

For many, enjoying real meat without traditional methods’ moral and environmental consequences offers a hopeful glimpse into a future where food choices are both satisfying and responsible.

**Cultured Meat Is Not Artificial**

Lab-grown meat isn’t artificial meat—it’s real meat produced in a new, innovative way. One of the most exciting aspects of lab-grown meat is its ability to [replicate the taste, texture, and appearance](https://www.newscientist.com/article/2269671-lab-grown-meat-now-mimics-muscle-fibres-like-those-found-in-steak?utm_source=thehumaneleague.org.uk&utm_medium=referral) of conventionally produced meat. Scientists are continually refining techniques to ensure that lab-cultivated muscle tissue mimics the sensory qualities consumers expect from products like steak, chicken, and bacon. From marbled beef to flaky fish fillets, lab-grown meat offers a near-identical eating experience to traditional meat while eliminating the need for breeding, confining, and slaughtering animals. This innovation provides meat lovers with an option that aligns with their dietary preferences and ethical concerns.

Thanks to this breakthrough, consumers can enjoy the foods they already love without contributing to the cruelty and environmental damage inherent in factory farming. Lab-grown meat allows people to indulge in burgers, chicken wings, or pork chops with the peace of mind that no animal endured suffering to create their meal. As this technology scales and becomes more accessible, it can transform global food systems by providing a sustainable and humane way to meet the world’s growing appetite for meat.

**Healthier Alternative**

Meat consumption has long been associated with health risks, mainly due to meat’s high levels of cholesterol and saturated fat, which can contribute to conditions like heart disease and obesity. Traditional meat production provides little control over these factors, as the fat content of an animal’s meat is determined by its diet and genetics.

However, lab-grown meat offers a unique opportunity to address these health concerns at their source. By cultivating meat in a controlled environment, food scientists can precisely regulate its nutritional composition, reducing harmful cholesterol and saturated fat levels while retaining the flavor and texture consumers expect.

This ability to engineer healthier cuts of meat could make lab-grown products a game-changer for public health. For example, lab-grown meat can be tailored to include healthier fats, such as omega-3 fatty acids, typically found in fish and known to support heart and brain health.

Additionally, lab-grown meat could mitigate the growing threat of [antibiotic resistance](https://thehumaneleague.org.uk/article/why-do-they-give-farmed-animals-antibiotics?utm_source=thehumaneleagueuk&utm_medium=blog). Since the animals are not kept in filthy factory farms or bred in painful, disease-prone ways to maximize meat production, there is far less need for antibiotic treatment. Plus, lab-grown meat is pretty resilient against bacteria like E. coli. Thus, lab-grown meat will offer new options to consumers looking for [better proteins](https://thehumaneleague.org.uk/article/get-to-know-your-proteins?utm_source=thehumaneleagueuk&utm_medium=blog) for their health, the planet, and animals. By offering a nutritionally improved and safer alternative, lab-grown meat can revolutionize how we think about meat consumption and its impact on our well-being.

**Better for the Environment**

Industrial animal farming significantly contributes to some of the planet’s most pressing environmental issues. From climate change to deforestation and water pollution, the environmental toll of raising billions of animals for meat for a [skyrocketing human population](https://thehumaneleague.org.uk/article/world-population-day-2021) is staggering. According to the United Nations, animal agriculture accounts for [14.5 percent](https://www.fao.org/family-farming/detail/en/c/1634679/) of the world’s greenhouse gas emissions, a figure that rivals emissions from the entire transportation sector.

Industrial farming releases methane, a potent greenhouse gas, and drives deforestation to create grazing land and grow feed crops, further exacerbating the climate crisis. Lab-grown meat presents an innovative solution to these challenges by eliminating the need for large-scale animal agriculture.

One of lab-grown meat’s most notable environmental benefits is its significantly lower resource footprint than that of conventional meat production. While some lab-grown meat producers currently rely on fossil fuels to power their operations, the process still uses far less land, water, and energy than raising animals on factory farms.

Cultivating meat from animal cells does not require clearing forests for pastures or growing massive quantities of feed crops. The production process not only conserves natural ecosystems but also reduces the water and fertilizer usage that often pollutes local water supplies. As production methods evolve, transitioning lab-grown meat facilities to renewable energy sources could make them even more sustainable. Studies show that producing lab-grown meat using renewable energy would have a significantly [lower carbon footprint](https://www.fastcompany.com/90612190/whats-the-carbon-footprint-of-lab-grown-meat?utm_source=thehumaneleague.org.uk&utm_medium=referral) than even the most “sustainably raised” traditional meat products.

The potential environmental benefits of lab-grown meat extend beyond reduced resource consumption. It bypasses traditional farming practices and avoids many adverse side effects associated with industrial agriculture, such as soil degradation, water contamination from animal waste, and habitat destruction.

By offering a cleaner and more sustainable way to produce meat, lab-grown meat has the potential to drastically reduce the environmental impact of meat consumption. As this technology continues to advance and scale up, it could play a critical role in mitigating climate change and preserving the planet’s natural resources for future generations.

**Lab-Grown Meat Is Not Vegan**

Lab-grown meat is not technically [vegan](https://thehumaneleague.org.uk/article/common-fears-about-going-vegan-and-tips-to-help-you?utm_source=thehumaneleagueuk&utm_medium=blog) because it involves using cells taken from living animals. While these animals are not killed in the process, the act of harvesting cells places lab-grown meat outside the realm of purely plant-based or vegan products. However, the primary goal of lab-grown meat is not to replace vegan options but to provide a viable alternative for meat-eaters who are concerned about the ethical and environmental consequences of traditional factory farming. This innovation bridges the gap between ethical concerns and dietary preferences by offering a way to enjoy real meat without causing extensive harm to animals or the planet.

Lab-grown meat is specifically designed to appeal to consumers who might be hesitant to adopt plant-based alternatives but are nonetheless troubled by industrial agriculture practices. As Damian Carrington of the Guardian [explains](https://www.theguardian.com/environment/2020/dec/02/no-kill-lab-grown-meat-to-go-on-sale-for-first-time?utm_source=thehumaneleague.org.uk&utm_medium=referral), “The companies developing lab-grown meat believe this is the product most likely to wean committed meat-eaters off traditional sources.”

For many, the idea of consuming meat without contributing to animal suffering, confinement, and slaughter is a compelling proposition. Furthermore, lab-grown meat offers the potential for health benefits and a reduced environmental footprint, making it an increasingly attractive choice for ethically and environmentally conscious consumers.

While lab-grown meat still requires keeping animals in captivity, the scale of this practice is drastically smaller than that of traditional factory farming. Instead of raising thousands of animals in confined, inhumane conditions, cellular agriculture relies on small herds from which cells can be periodically harvested.

This significant reduction in the number of animals used can significantly diminish the suffering caused by meat production on a global scale. Additionally, because animals are not slaughtered, the process of harvesting cells avoids the emotional and physical trauma typically associated with traditional farming practices.

The widespread adoption of lab-grown meat could mark a turning point in how society approaches food production and animal welfare. By reducing the reliance on factory farms and minimizing the number of animals needed for meat production, lab-grown meat represents a more humane and sustainable future for food systems.

With continued technological advancements, increased public awareness, and support for ethical alternatives, the vision of lab-grown meat becoming a mainstream option could help shift global consumption patterns and pave the way for a more sustainable world.

**Lab-Grown Meat Isn’t Perfect**

Lab-grown meat isn’t perfect—yet. Some lab-grown meat is created using an animal by-product known as [fetal bovine serum](https://slate.com/technology/2017/07/the-gruesome-truth-about-lab-grown-meat.html). Slaughterhouses obtain fetal bovine serum by collecting blood from the unborn calves of pregnant cows after they’re killed.

San Francisco-based lab-grown meat producer [Eat Just](https://www.ju.st/?utm_source=thehumaneleague.org.uk&utm_medium=referral) uses a “very low level” serum in its chicken, the first lab-grown meat product to hit the market. In response to ethical concerns about using a slaughterhouse by-product in otherwise lab-grown meat, Eat Just is developing an [animal-free alternative](https://www.theguardian.com/food/2020/dec/07/lab-grown-chicken-tastes-like-chicken-but-the-feeling-when-eating-it-is-more-complicated?utm_source=thehumaneleague.org.uk&utm_medium=referral) to fetal bovine serum.

Another controversy surrounding lab-grown meat is its price—some companies charge around [$50 per serving](https://forward.com/news/576840/israel-approves-lab-grown-beef-is-kosher/#:~:text=Since%20the%20high%2Dtech%20meat,fine%20dining%20restaurants%2C%20Haaretz%20reported.), significantly more expensive than conventional meat. Hopefully, prices will drop as companies [scale up](https://thespoon.tech/lab-grown-meat-is-scaling-like-the-internet/) operations, making it more accessible.

A 2024 study in Nature Food Journal projects that cultivated chicken will cost [$6.20 per pound](https://pubmed.ncbi.nlm.nih.gov/39179871/), given the proper production scale. This is competitive with the current cost of traditional organic chicken.

**Lab-Grown Meat Availability**

In 2020, the Singapore government approved the sale of lab-grown meats, giving consumers in Singapore the first chance to taste [lab-grown chicken](https://www.cnbc.com/2020/12/18/singapore-restaurant-first-ever-to-serve-eat-just-lab-grown-chicken.html). But as of [March 2025](https://www.nytimes.com/2025/03/14/science/whos-afraid-of-lab-grown-meat.html), lab-grown meat is not readily available to American consumers. Lab-grown meat companies are working to [perfect their products](https://www.motherjones.com/food/2021/08/is-lab-meat-about-to-hit-your-dinner-plate?utm_source=thehumaneleague.org.uk&utm_medium=referral), lower costs, and scale up.

More consumers worldwide should soon get their first taste of lab-grown meat. In 2023, the U.S. approved sales of lab-grown meat, though Florida and Alabama have [banned](https://apnews.com/article/labgrown-meat-cultivated-ban-8dee6ce8e1282efe953ca4115db4b2c2) the product from grocery store shelves. Tyson Foods, one of the world’s ten largest meat processors, has invested millions in [Future Meat Technologies](https://www.tysonfoods.com/news/news-releases/2018/5/tyson-ventures-announces-investment-future-meat-technologies), which indicates a demand for meat industry support. Until lab-grown meat hits the market, [leaving animals off our plates](https://thehumaneleague.org.uk/article/should-i-give-up-eating-fish?utm_source=thehumaneleagueuk&utm_medium=blog) is the kindest thing we can do.