What this is

This is not an academic paper. The academic version exists — it's (Applebee & Combe, 2026, "*The Inverted Burden*") in this series, with 78 references and cross-cultural epidemiological analyses spanning four traditional populations. This is the kitchen table version. This is the one you can read while you're eating dinner.

Which, given the subject matter, might put you off your dinner. Sorry about that.

You don't know what's in your food

Pick something up from your kitchen. Anything in a packet. Turn it over. Read the ingredients.

You can't pronounce half of them.

Sodium tripolyphosphate. Butylated hydroxyanisole. Carboxymethylcellulose. Tertiary butylhydroquinone. Polysorbate 80.

You just put those in your body. Yesterday. The day before. Every day since you were a child.

You didn't choose to eat them. You didn't consent to eat them. You probably didn't even know they were there until just now, holding the packet and squinting at the tiny text. The text is tiny on purpose. If it were printed in the same font size as the brand name on the front, you'd have questions. They don't want you to have questions.

So you eat on faith. You trust that someone, somewhere — a government agency, a regulator, a scientist — has checked all of this and determined it's safe.

The faith is misplaced.

In the United States, a food manufacturer can declare an additive "Generally Recognized As Safe" — GRAS — without notifying the FDA, without independent testing, without publishing the determination, and without any regulatory review whatsoever (Neltner et al., 2011). The company decides its own ingredient is safe, files nothing, tells no one, and puts it in your food. Between 1997 and 2012, of the nearly 1,000 GRAS notifications the FDA did receive, zero were rejected. Not one. The system is not a gate. It's a rubber stamp — and most companies don't even bother with the stamp.

You're eating chemicals that were approved by the people selling them to you.

The burden of proof is backwards

Imagine you go to the doctor. The doctor says: "I've got a new pill for you. We haven't tested it. We don't know what it does to humans. But no one's proven it's dangerous yet, so let's give it a go."

You'd walk out. You'd report them. You'd be right to.

Now imagine the same conversation, but instead of a doctor it's the entire food industry, and instead of one pill it's thousands of chemical compounds, and instead of one patient it's every person in every industrialized country, and instead of a single dose it's every meal from birth to death.

That's the current system.

Pharmaceuticals go through preclinical testing, Phase I trials, Phase II trials, Phase III trials, regulatory review, and post-market surveillance. This takes 10-15 years and costs $1-2 billion. And that's for a substance administered to a small number of patients, under medical supervision, at specific doses, for defined durations, with informed consent.

Food additives — consumed by billions of people, without supervision, at uncontrolled doses, for a lifetime, without informed consent — face no comparable requirement.

The logic is simple, and it's inverted. The thing you swallow once, under medical guidance, has to prove it won't hurt you. The thing you swallow three times a day, every day, forever, doesn't.

The system works like this:

1. A manufacturer finds a cheap substance that extends shelf life or makes food look brighter.
2. It goes in the food.
3. People eat it for twenty years.
4. Researchers start noticing patterns in the disease data.
5. The manufacturer disputes the research.
6. Another ten years passes.
7. Maybe — maybe — a regulator acts. Partial restriction. Reduced limits. Voluntary reformulation.

Throughout all of this, you're still eating it. The burden of the delay falls on you. Not on the company. On you.

Trans fats were introduced in the early twentieth century. It took until 2015 for the FDA to determine they were "not generally recognized as safe." A century. Billions of people. How many heart attacks? We know. We can count them. The number is enormous. And the entire time, the burden was on researchers and regulators to prove harm — not on the manufacturers to prove safety.

This is not a precautionary system. It's a post-mortem system. It waits for the bodies, then argues about whether the bodies count.

Additives that give you nothing

Here's the part that should make you angry.

If these additives made your food taste better — if they made it more nutritious, more satisfying, more nourishing — you could at least understand the trade-off. Risky but delicious. Dangerous but essential.

They don't. They give you nothing.

Artificial colourings exist to make food look brighter. That's it. They don't affect taste. They don't affect nutrition. They make the red redder and the yellow yellower so it looks more appealing on the shelf. Some of them — Red 40, Yellow 5, Yellow 6 — are linked to behavioural effects in children (McCann et al., 2007). The European Union requires warning labels on foods containing these dyes. The United States does not. Same substance. Same research. Different regulatory response.

Preservatives extend shelf life. Not your life. Shelf life. BHA (butylated hydroxyanisole) is classified as "reasonably anticipated to be a human carcinogen" by the US National Toxicology Program. It's in your cereal. It's in your chewing gum. It's there so the product can sit on a shelf for months without the manufacturer losing money. The benefit is to the supply chain, not to you.

Emulsifiers change texture. They make things smoother, creamier, more uniform. Polysorbate 80 and carboxymethylcellulose — two of the most common emulsifiers in processed food — have been shown to promote intestinal inflammation and alter gut microbiota in ways associated with metabolic syndrome (Chassaing et al., 2015). They're in your ice cream. They exist because they're cheap.

Would you believe the cancer-causing ingredients give them nothing? Nothing by way of taste or experience. Nothing. It's not like they're eating something dangerous but delicious. Or dangerous but nutritious. No. These are additives that contribute absolutely zero to the animal's experience and actively damage their bodies. And they're permitted because someone with tokens found it cheaper to include them than to not.

That's the Applebee's Report. Written from the perspective of a zookeeper observing a species that poisons itself for no reason. It sounds like satire. It's not. It's a description of what's happening.

The populations that don't eat this way

Same species. Different food. Different outcomes.

This is the evidence that should end every argument. If the diseases we call "Western diseases" were inherent to being human — if cancer, heart disease, diabetes, and obesity were just what happens when you get old enough — then every human population would develop them at similar rates.

They don't.

Kitava. Staffan Lindeberg studied approximately 1,200 people on the island of Kitava in Papua New Guinea across studies spanning from 1989 through the 2000s. Their diet: tubers, fruit, fish, coconut. No processed food. No additives. No emulsifiers. No preservatives. The findings: zero acne in the entire population (Cordain et al., 2002). Near-zero cardiovascular disease. Near-zero diabetes. Near-zero cancer. Not low. Near-zero. These are not genetically privileged people. They are the same species as you. They eat differently.

Okinawa. The Okinawan population, studied extensively through the Okinawa Centenarian Study, had the highest documented longevity and the highest proportion of centenarians of any population on Earth. Traditional Okinawan diet: sweet potatoes, vegetables, soy, fish. Low calorie density. Minimal processing. Minimal additives. Cancer rates, heart disease rates, diabetes rates — a fraction of the Western world (Willcox et al., 2001). Then the younger generation adopted Western dietary patterns. The disease rates followed. Okinawa now has the highest obesity rate in Japan. Same genes. Different menu.

Inuit. Traditional Inuit populations consuming their ancestral diet — marine mammals, fish, minimal plant food — showed near-zero rates of cardiovascular disease, diabetes, and cancer (Schaefer, 1971). This was documented repeatedly across the twentieth century. When those same populations transitioned to Western diets, the diseases appeared. Within a generation. Not over evolutionary time. Within the lifetime of people who could remember eating differently.

The pattern. It's always the same pattern. Traditional diet: no Western disease. Western diet adopted: Western disease appears. Within one generation. It is not genetics. If it were genetics, the diseases would be present regardless of diet. It is the food.

This isn't an argument. It's an observation. The data is there. It has been there for decades.

The zookeeper decides what the animals eat

You think you choose your food.

You don't.

You choose from what's available. What's available is determined by what's profitable. What's profitable is shaped by what's cheap to produce and expensive to market. You walk into a supermarket and you see ten thousand products and you feel like you're making choices. You are — within the options the market has provided. You are choosing between Brand A's version of a processed thing and Brand B's version of the same processed thing.

The global food advertising spend is estimated at over $200 billion annually. That's not a number that describes information. That's a number that describes influence. No one spends $200 billion telling people what exists. They spend $200 billion telling people what to want.

Children see thousands of food advertisements per year. The overwhelming majority are for products high in sugar, fat, salt, and additives (Cairns et al., 2013). By the time a child is old enough to make their own food choices, their preferences have been shaped by a decade of targeted messaging funded by the industries that profit from those preferences. This is not conspiracy. It's marketing. It's the normal, documented, completely legal process by which demand is manufactured.

The Applebee's Report describes this through the eyes of a zookeeper — an outside observer looking at a species whose food supply is controlled by a small number of entities whose objective is not to nourish the animal but to accumulate tokens. The zookeeper metaphor isn't a metaphor. It's the accurate structural description. Someone is deciding what you eat. It's not you.

You think you're the customer. You're the animal. The customer is the shareholder.

Cancer is 90%+ preventable

Read that number again. Not 10%. Not 50%. Ninety percent.

This comes from the epidemiological literature on cancer causation. Anand et al. (2008) reviewed the evidence and concluded that only 5-10% of all cancers are attributable to genetic defects. The remaining 90-95% are rooted in environment and lifestyle — including diet.

The populations that eat traditionally don't get cancer at scale. The ones that eat industrially do. When traditional populations adopt Western diets, cancer appears within one generation.

Doll and Peto's landmark analysis estimated that 35% of cancer deaths are attributable to diet alone (Doll & Peto, 1981). Subsequent work has broadly supported this estimate. Add tobacco, environmental pollutants, and other modifiable factors, and the preventable proportion exceeds 90%.

This means the disease that terrifies people more than almost any other — the disease that has touched almost every family you know — is overwhelmingly not a disease of fate. It's a disease of environment. Of exposure. Of what goes into the body.

And what goes into the body, for the majority of people in industrialized countries, is food containing substances that have never been proven safe through anything resembling the rigor applied to pharmaceuticals.

We treat cancer as though it's a storm. Something that comes. Something that happens to you. But storms come from weather systems. And you can see the weather systems. The weather system here is the food supply. It's the thousands of chemical compounds that enter human bodies daily, untested or inadequately tested, permitted under a system designed to facilitate commerce rather than protect biology.

If 90% of cancer is preventable, then 90% of cancer is being caused. By something. The epidemiological evidence points overwhelmingly at what we eat, breathe, and absorb. The dietary component is the largest single contributor. And the dietary component is controlled not by the individual but by the food system that determines what's available, affordable, and advertised.

70 years vs millions

Every species on earth eats what it evolved to eat.

Every single one. Lions eat what lions ate a hundred thousand years ago. Salmon eat what salmon ate a hundred thousand years ago. Elephants, sparrows, beetles, whales. Every organism in every ecosystem on this planet consumes the food that shaped its biology over millions of years of evolutionary adaptation.

Except us.

Homo sapiens existed for approximately 200,000 years eating a diet of whole foods — plants, animals, fish, nuts, seeds, tubers, fruit. No additives. No preservatives. No emulsifiers. No colourings. No flavour enhancers. No stabilizers. Nothing that didn't exist in nature.

Then, approximately 70 years ago, we industrialized our food supply. Ultra-processed foods now constitute 50-60% of total caloric intake in countries like the United States, United Kingdom, Canada, and Australia (Monteiro et al., 2013). More than half of what the average person in these countries eats is food that did not exist in any human diet at any point in the preceding 200,000 years.

70 years. Against 200,000. Against millions, if you count the broader evolutionary lineage. We took a system that worked — a diet that produced the biology we currently inhabit — and replaced it with something entirely novel, entirely untested at scale, in the blink of an evolutionary eye.

The experiment ran. You don't have to speculate about the results. They're in.

Obesity: epidemic. 42% of American adults are obese (CDC, 2020). The rate was under 15% in 1970. Type 2 diabetes: epidemic. Global prevalence has quadrupled since 1980 (WHO, 2016). Heart disease: the leading cause of death worldwide. Cancer: rates climbing across virtually every industrialized population.

In 70 years.

No other species has done this. No other species has replaced its evolutionary diet with a novel industrial product and experienced the consequences at population scale. We're running an experiment on 8 billion people with no control group, no monitoring, no consent, and no exit.

Actually — that's not quite right. There is a control group. The control group is the traditional populations. Kitava. Okinawa. Inuit on traditional diet. The Wai. The Tsimane. They're the control group, and they don't have the diseases. They're the same species eating a different diet, and they're fine.

The experiment has a control group and the control group is healthy. The experimental group — us — is sick. The variable is the food.

The fix is simple

Nothing goes in food that hasn't been proven safe.

Not "probably safe." Not "no evidence of harm yet." Not "generally recognized as safe by the company selling it." Proven safe. Through independent testing, peer-reviewed research, and genuine regulatory review — before it enters the food supply, not after.

This isn't a radical proposal. It's the standard we already apply to everything else that goes in the body.

In 2013, New Zealand passed the Psychoactive Substances Act. The law reversed the burden of proof for novel psychoactive substances: manufacturers had to demonstrate safety through approved clinical trials before their products could be sold. Not "prove it's dangerous and we'll pull it." Prove it's safe or it doesn't go to market.

The food supply needs the same principle.

If a food manufacturer wants to add a chemical compound to a product that will be consumed by millions of people — including children, pregnant women, elderly people, immunocompromised people — they should be required to demonstrate, through independent testing to a standard comparable to pharmaceutical regulation, that the compound is safe for human consumption at the doses and durations at which it will actually be consumed.

If they can't demonstrate that, it doesn't go in the food.

This would eliminate, overnight, hundreds of additives that serve no nutritional or gustatory purpose. The colourings that make your cereal brighter. The preservatives that extend shelf life. The emulsifiers that make texture more uniform. The flavour enhancers that mask the absence of real food. None of them would survive a genuine safety review because none of them have ever been subjected to one.

And the food would still be food. People ate before BHA. People ate before polysorbate 80. People ate before Red 40. Every human who lived before 1950 ate without these substances and managed fine. Better than fine — they didn't have our disease rates.

The objection you'll hear is cost. It would be expensive to test everything. It would raise food prices. Products would be pulled from shelves. Companies would lose money.

Good.

The cost of not testing is measured in disease. In cancer. In diabetes. In heart attacks. In the health expenditure of entire nations — the United States alone spends $4.3 trillion annually on healthcare, and a substantial proportion of that expenditure is attributable to diet-related chronic disease. The cost of testing is trivial compared to the cost of treating the damage caused by not testing.

The thing no one says out loud

Here is the uncomfortable truth.

We know. We have known for decades. The epidemiological evidence from traditional populations has been published since the 1970s. Schaefer documented the Inuit in 1971. Lindeberg studied Kitava from 1989 onwards. The Okinawa data has been accumulating since the 1970s. Doll and Peto published in 1981.

The research community knows that Western disease is a function of Western diet. The regulatory community knows that the approval process for food additives is inadequate. The food industry knows that its products contain substances that have never been tested to a meaningful standard.

Everyone knows.

Nothing changes. Because the system is not designed to protect you. It's designed to feed the market. And the market is fed by cheap ingredients, long shelf lives, and $200 billion in advertising spend.

You are eating food that contains chemicals no one has proven are safe, approved by the companies selling them, in quantities no one monitors, for durations no one tracks, and when you get sick — when the cancer comes, when the diabetes comes, when the heart disease comes — it's treated as your problem. Your genetics. Your lifestyle choices. Your failure to eat better.

But you didn't design the menu. The menu was designed for you. By entities whose objective was never your health. And the zookeeper — the one who decides what the animals eat — is not looking out for the animals. The zookeeper is looking at a spreadsheet.

The zookeeper's menu

In the Applebee's Report, the zookeeper observes: the humans have industrialized their food. Which sounds efficient. But what they've actually done is remove the animal from the food production process entirely and handed it to a small number of operations whose primary objective is not "nourish the animal" but "accumulate tokens."

The food arrives to the human in packaging. The human has no idea what's in it. Not really. There are labels — tiny text on the back — listing chemical compounds the average human cannot pronounce let alone understand. The human puts the food in their body on faith.

That's you. That's me. That's all of us. The animal that built cities and wrote symphonies and sent machines to other planets cannot tell you what it ate for lunch. Not what was actually in it. Not what those compounds do inside a body. Not whether anyone ever checked.

Every other animal on earth eats what it evolved to eat, and a zookeeper who fed an animal something untested would lose their job. Would be charged. Would be considered negligent.

But we feed it to ourselves. Every day. And we call it normal.

70 years vs millions. Same species, different food, different outcomes. 90% of cancer preventable. Additives that give you nothing. A burden of proof that protects the seller, not the eater.

The fix is simple. Prove it's safe, or it doesn't go in the body.

The question is not whether this is the right policy. The evidence settled that decades ago.

The question is who benefits from the current one.

References

Anand, P., et al. (2008). Cancer is a preventable disease that requires major lifestyle changes. *Pharmaceutical Research*, 25(9), 2097-2116.

Cairns, G., et al. (2013). Systematic reviews of the evidence on the nature, extent and effects of food marketing to children. *Appetite*, 62, 209-215.

CDC (2020). *Prevalence of obesity and severe obesity among adults: United States, 2017-2018*. NCHS Data Brief No. 360.

Chassaing, B., et al. (2015). Dietary emulsifiers impact the mouse gut microbiota promoting colitis and metabolic syndrome. *Nature*, 519(7541), 92-96.

Cordain, L., et al. (2002). Acne vulgaris: a disease of Western civilization. *Archives of Dermatology*, 138(12), 1584-1590.

Doll, R., & Peto, R. (1981). The causes of cancer: quantitative estimates of avoidable risks of cancer in the United States today. *Journal of the National Cancer Institute*, 66(6), 1191-1308.

Lindeberg, S. (1993). Apparent absence of cerebrocardiovascular disease in Melanesians. *Risk Factors*, 1, 16-24.

Lindeberg, S., et al. (1994). Cardiovascular risk factors in a Melanesian population apparently free from stroke and ischaemic heart disease. *Journal of Internal Medicine*, 236(3), 331-340.

McCann, D., et al. (2007). Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community. *The Lancet*, 370(9598), 1560-1567.

Monteiro, C. A., et al. (2013). Ultra-processed products are becoming dominant in the global food system. *Obesity Reviews*, 14(S2), 21-28.

Neltner, T. G., et al. (2011). Navigating the U.S. food additive regulatory program. *Comprehensive Reviews in Food Science and Food Safety*, 10(6), 342-368.

Schaefer, O. (1971). When the Eskimo comes to town. *Nutrition Today*, 6(6), 8-16.

WHO (2016). *Global report on diabetes*. World Health Organization.

Willcox, B. J., Willcox, D. C., & Suzuki, M. (2001). *The Okinawa Program*. Clarkson Potter.

This paper is part of the OMXUS research series. The academic version is The Inverted Burden *(Applebee & Combe, 2026). If you want the full evidence base — 78 references, mechanistic pathways, regulatory analysis — read that one.*

If you've read this and you're looking at your kitchen differently: good. That's the appropriate response. The menu was designed for someone. It wasn't designed for you.