MERCOLA
Take Control of Your Health

‘Failure to Thrive’ Is an Outdated Medical Diagnosis

Analysis by Dr. Joseph Mercola | July 01, 2024

STORY AT-A-GLANCE

- “Failure to thrive” is a diagnosis that arose in the earliest 20th century, and is still given to children and adults today. It ignores the underlying conditions that can contribute to poor health, mainly impaired cellular energy production
- Factors affecting cellular health include excessive linoleic acid intake, exposure to electromagnetic fields, endotoxin production in the gut and xenoestrogen ingestion from plastics
- Strategies to help optimize your health include minimizing linoleic acid consumption to below 5 grams per day from all sources, reducing reliance on plastic wrapping, avoiding processed foods and optimizing gut health
- Ultraprocessed fortified products that will “address nutritional deficiencies” and supposedly help with growth and development contain unhealthy ingredients like canola oil, soy and artificial sweeteners. They cannot substitute the nutrients you get from real whole foods

As technology advances, so has the ability of doctors to provide an accurate diagnosis to their patients. But as the saying goes, old habits die hard, and one medical diagnosis that still lives on is "failure to thrive," (FTT) which is commonly given to both children and adults.[1]

FTT carries an accusatory tone, squarely putting the blame on the patient instead of finding out underlying conditions that needs to be addressed. Getting an FTT diagnosis can cause delays in receiving health care, leading to a downward spiral of poor health.

The Origin of an Outdated Medical Diagnosis

According to a May 2024 article from The New York Times,[2] the earliest trace of the medical term "failure to thrive" was published in the 1933 edition of a medical textbook titled "The Diseases of Infancy and Childhood."[3] Essentially, it's a catch-all term for infants and young children experiencing poor growth, "regardless of the underlying cause."[4]

While pediatricians criticized and challenged the medical discourse surrounding FTT in children, this line of thinking eventually spread to geriatrics, the field of medicine focusing on the elderly.[5] According to The New York Times:

> *"In 1976, three neurologists noted[6] the similarity between this 'well-defined pediatric syndrome' and a pattern of muscle wasting and cognitive decline in some of their older patients that led to sudden death.*
>
> *Before long, adult 'failure to thrive' had become an official diagnosis and a research priority for the Institute of Medicine. Like a virus jumping from species to species, it had made the jump across specialties. And in this field, too, problems soon appeared."*

But what does FTT mean? In its simplest terms, it means that a child didn't grow as fast or as big as other children. However, the issue here is that FTT isn't clearly defined, and "ideal growth" can have different metrics.[7]

Adult FTT is similar, but the circumstances are different. It presents itself as a combination of poor nutrition, weight loss and physical inactivity, as well as psychological factors, such as depression. But again, FTT, in the case of adults, cannot be pointed to a single disease.[8]

'Failure to Thrive' Is a Failure of the Medical System

A diagnosis of FTT may be the most unacceptable verdict you can get during a visit to the doctor. It shifts back the blame to your upbringing and other factors beyond your

control, implying your parents didn't properly care for you when you were young. If your child has been diagnosed with FTT, then you're considered a bad parent.

As noted by The New York Times,[9] doctors must become detectives to address your or your child's health concerns, but FTT lazily ignores any possible solutions.

In one example, a geriatrician in St. Paul's Hospital in Canada learned that an 82-year-old man diagnosed with Alzheimer's had fallen and injured his head. Even if tests revealed internal bleeding, other doctors diagnosed him with FTT, which, is not accurate in any way at all.

This leads me to the crux of the matter — FTT does nothing to address the root cause of what patients are truly experiencing, further reinforcing my criticisms of the health care industry's preference for allopathic, or symptom-based, approach to treatment.

If you or a loved one has been recently given a diagnosis of FTT, it would be wise to not take it at face value. I believe that at the heart of FTT is poor cellular health, or your body's inability to produce energy properly, which I'll discuss below.

Four Factors That Cause Poor Cellular Health

Before I discuss the factors contributing to poor cellular health, I will outline the common denominator found in all of them — calcium dysregulation. More than just a mineral for your bones and teeth, calcium also plays a role in countless cellular activities, such as cell division and neurotransmitter release. The mitochondria within your own cells also use calcium ions for their needs, such as producing energy.[10]

As it turns out, elevated intracellular calcium can result in increased superoxide and nitric oxide levels, which combine into peroxynitrite, a potent reactive oxygen species that can contribute to poor health. Research[11] has shown that peroxynitrite can contribute to endothelial cell dysfunction and even lung injury that can lead to pulmonary edema. Among diabetics,[12] peroxynitrite may interfere with insulin signaling.

That said, here are four key factors that can affect intracellular calcium, thus your body's overall cellular health.

- **Excess polyunsaturated fat (PUFA) intake —** Linoleic acid (LA), an omega-6 PUFA found abundantly in seed and vegetable oils as well as ultraprocessed foods, may be the most harmful ingredient in the Western diet. When consumed in excess, it negatively impacts your metabolic rate and gut microbiome, which are the two of the most important factors that impact your health.

  The main issue with PUFAs is they're easily damaged through oxidation,[13] beginning the downward spiral to poor metabolic health by releasing damaging free radicals.[14] In turn, they break down further into ALEs (advanced lipoxidation end products). In the case of omega-6 fats, they turn into dangerous OXLAMs (oxidized linoleic acid metabolites).[15,16] Moreover, LA has been found to increase intracellular calcium, resulting in the generation of peroxynitrite.[17]

  In a study[18] published in Neurology, a pro-inflammatory diet was associated with a higher risk for dementia, a disease rooted in mitochondrial dysfunction.[19] If you have problems with your mitochondria, metabolic health is affected, as they play a central role in energy production.[20]

  The researchers noted that PUFAs are one of the top contributors to inflammation. Trans fat, which is a highly processed form of vegetable oil,[21] also rank high in the list of pro-inflammatory macronutrients.

- **Estrogen load from microplastics —** Did you know that you're possibly eating a credit card's worth of plastic every week? In an analysis[22] published by the World Wildlife Fund (WWF), undertaken by the University of Newcastle in Australia, data suggest that people are consuming around 5 grams of plastic every week.

  Water (from all sources, including ground water and tap water), is the largest source of microplastics. Another notable source is shellfish. Since they're eaten whole, which includes their digestive systems, any microplastics they consumed while living in plastic-filled oceans transfer to you.

That said, how are plastics related to estrogen? It turns out they have estrogenic properties,[23] and in the context of cellular health, estrogen increases intracellular calcium levels, as noted in published research.[24,25,26]

- **Endotoxin production in the gut —** In healthy intestines, the tight junctions in their walls act like gatekeepers, choosing which nutrients can enter your bloodstream to be sent to your organs that need sustenance. However, these tight junctions can open, causing substances that must remain in the gut to leak into the bloodstream.

  When this happens, your body's immune function acts up, resulting in health problems such as food sensitivities, allergies and autoimmune diseases. One such substance that more people need to be aware of is endotoxin.

  Endotoxin is a portion of the outer membrane of gram-negative bacteria, and is what remains when a bacterium disintegrates.[27] As you can imagine, if your gut permeability is compromised, more endotoxins can enter your bloodstream, triggering disease. Again, an increase in intracellular calcium plays a role in this interaction, as noted one study.[28]

  Left unabated, these endotoxins can wreak havoc on your system, which can be life-threatening. In a study[29] published in BJA Education, endotoxins can lead to septic shock, causing symptoms such as fever and hypotension. Another notable symptom is hyperventilation, which occurs due to endotoxins and other inflammatory sources stimulate the medullary respiratory center in your brain.[30]

  Endotoxin overload is a downstream problem of excessive LA intake, which sets off the chain reaction that raises oxygen levels in your large intestine (where it shouldn't be), thereby allowing endotoxin-producing, pathogenic bacteria to thrive and take over. Pathogenic bacteria can survive in oxygen-rich environments, whereas beneficial bacteria cannot.

- **Electromagnetic field (EMF) exposure —** People are bombarded with EMFs every day with hidden consequences to public health. Studies have linked them to health

issues such as lower sperm quality[31] and neuronal DNA damage.[32] Now, research has found that it's a potent factor in poor cellular health, too.

How do EMFs work against your health in this context? Again, we return to the concept of impaired release of calcium into the cell. In the case of EMFs, they activate voltage-gated calcium channel (VGCC) receptors within the cell, catalyzing the production of peroxynitrite by triggering an influx of calcium.[33]

Research[34,35,36] published by Martin Pall, Ph.D., shows that VGCCs can already be activated by low-intensity sources EMFs, such as cell phones. If that's the case, what more for stronger sources of EMFs, such as Wi-Fi and 5G towers?

Addressing the Root of Poor Cellular Health

Since your cellular health can be affected by many factors, it makes sense to apply a multifaceted approach to repair it. In this regard, adopting a combination of healthy lifestyle changes can help put you back on track. Here are my recommendations:

- **Minimize LA intake —** It would be wise to keep your LA intake below 5 grams from all sources. If you can get it below 2 grams, that's even better. To help you track your LA intake, make it a habit to enter all your foods into Cronometer, a free online nutrition tracker. That way, you can tally how much LA you're consuming per day.

  Resist the temptation to eat all processed foods, especially from fast food establishments. Remove and avoid all sources of seed oils and nuts from your diet, as these are high in linoleic acid. I also advise restricting your intake of monounsaturated fatty acids (MUFAs) like olive oil, as they contain oleic acid, which is nearly as bad as linoleic acid.

  I believe that minimizing your LA intake can help address a big part of your cellular health. Also, since LA is so pervasive in the food system, it's hard to be deficient in it. To learn more about LA's damaging effects, I recommend reading my article, "**Linoleic Acid — The Most Destructive Ingredient in Your Diet**."

- **Repair your gut health —** Complex carbs have long been thought to be beneficial for the gut microbiome, whereas simple carbs (sugar) have been linked to aging. However, I don't recommend you jump right into eating foods made of complex carbohydrates, as it can be problematic if your gut health is impaired.

  Research shows that complex carbohydrates nourish your gut microbiome, especially the ones living in your large intestine. These include plant cell wall polysaccharides, such as cellulose, which are then fermented in the gut by your microbiota.[37]

  However, the main issue with complex carbohydrates is if your gut health isn't already optimized, they can also feed pathogenic bacteria. They thrive in your gut when you're exposed to metabolic poisons like LA16 and xenoestrogens.17 As a result, mitochondrial energy production is impaired. The lack of energy allows oxygen into the large intestine, creating the ideal setting for pathogenic bacteria to grow.

  As harmful bacteria continue feeding on the complex carbohydrates you just ate, they multiply further. Once enough of them die, they leave behind an endotoxin called lipopolysaccharide that further impairs cellular energy production. If you're experiencing bowel issues, then it means your gut isn't well-equipped to digest them.

  To remedy this, slowly incorporate complex carbohydrates into your diet. I recommend fresh juice from ripe fruits. If your body can tolerate it, move onto healthy, whole ripe fruits. My top choices include:

Oranges	Tangerines	Mango
Grapes	Melon	Watermelon
Pineapple (in moderation, as it contains serotonin)		

After you've accustomed yourself to whole fruits, you can add more complex carbohydrates, but slowly. Start with cooked starches, mainly potatoes and white rice. However, potatoes contain water-soluble oxalates, which can be problematic once they accumulate in your body. So, make sure to boil them to lower their oxalate content.

You can also increase the amount of resistant starch,18 which doesn't spike your blood sugar, by cooking, refrigerating or reheating the food before eating.

- **Reduce EMF exposure —** Two of the most important actions you can do to quickly reduce EMF exposure is by turning off the Wi-Fi and opting for Ethernet cables. The other one is being diligent with your phone use, especially at night. It's best to turn it off at night, since you don't use it anyway, and purchase an analog alarm clock.

  For additional information, I recommend you to read my article, "EMFs Destroy Sperm Count" which goes into greater detail about different strategies to minimize EMF exposure in your home.

- **Reduce your plastic consumption —** Just like EMFs, plastic — which contain estrogenic chemicals — is all around us and practically inescapable, considering most food and other consumer goods are packaged in it. Here are several ways you can reduce your exposure to plastic:

Opt for products sold in glass containers rather than plastic whenever possible.	Store your food in glass containers rather than plastic ones.
Look for plastic-free alternatives to commonly used products at home, such as toothbrushes and toys.	Choose reusable products over single-use ones, such as glass bottles for your drinks, cloth grocery bags, handkerchiefs, cloth diapers and nondisposable razors.

Invest in a home filtration system for your drinking water. In addition, bring your own refillable water bottles when going out.	Bring your own silverware, as well as glass containers in the event you have to dine outside.

‘Nutritionally Fortified’ Ultraprocessed Products Will Not Solve FTT

Pharmaceutical companies have latched onto the FTT bandwagon, releasing fortified products aimed at children and adults that will "address nutritional deficiencies" and supposedly "help" their bodies grow. While the intention seems noble, do not fall for their advertising, as these products contain highly processed sugar and other ingredients that do not contribute to better health. Some examples of these products include:

- BOOST by Nestlé
- PediaSure and Ensure by Abbott
- Pro-Stat by Nutricia
- Med Pass by Hormel Health Labs
- Breakfast Essentials by Carnation

Upon close inspection, you’ll find that these ultraprocessed products contain soy protein isolates and sources of LA, such as canola oil.[38,39,40] Other unhealthy ingredients include artificial sweeteners, such as sucralose.[41]

In 2023, a woman from New York sued Abbott Laboratories, accusing the company of misleading its consumers that its PediaSure products were "clinically proven to boost children’s height." According to Reuters:[42]

> *"Joanne Noriega said she bought PediaSure Grow & Gain vanilla and strawberry drinks for her 8-year-old grandson, who was ‘short for his age,’ believing they would help him get taller.*

> *After a year of two PediaSure drinks per day, her grandson was still short for his age and had become 'so overweight' that she stopped buying the drinks.*
>
> *Noriega dismissed PediaSure as 'just a flavored sugar and milk-based drink that contains vitamins, which is not a cure for shortness.' She said also that Abbott 'knows from its own studies that its Clinically Proven Claim is false and misleading.'"*

As such, it's better to avoid them and focus on eating real, healthy foods that provide the optimal nutrition you and your child need. These synthetic, fortified products cannot replace the nutrients that fresh real foods provide.

Sources and References

- [1, 2, 9] The New York Times, May 13, 2024
- [3] Paediatrics and Child Health Volume 18, Issue 10, October 2008, Pages 464-46, Abstract
- [4] Paediatrics and Child Health Volume 18, Issue 10, October 2008, Pages 464-46, Introduction
- [5] Mount Sinai Health System, What Is Geriatrics?
- [6] The Journal of Nervous and Mental Disease 162(6):p 401-409, June 1976
- [7] Johns Hopkins Medicine, Failure to Thrive
- [8] Medscape, Failure to Thrive in Elderly Adults
- [10] Current Biology 2006; 16(18)
- [11, 12] Experimental Lung Research 2000; 26: 349-359
- [13] Oxid Med Cell Longev. 2014;2014: 360438. doi: 10.1155/2014/360438, Abstract
- [14] Pharmacognosy Review. 2010;4(8):118-126, Lipid Peroxidation
- [15] Nephrology Dialysis Transplantation, Volume 16, Issue 8, August 2001, Pages 1598–1606
- [16] Prostaglandins Leukot Essent Fatty Acids. 2012 Oct-Nov;87(4-5):135-41
- [17] Journal of Lipid Research Volume 45, Issue 5, May 2004, Pages 794-804, Abstract
- [18] Neurology. 2021 Dec 14; 97(24): e2381–e2391, Abstract
- [19] Curr Neuropharmacol. 2022 Mar 28; 20(4): 675–692, Abstract
- [20] Biochem Biophys Res Commun. 2017 Jan 15;482(3):426-431
- [21] Mayo Clinic, Trans Fat Is Double Trouble for Heart Health
- [22] World Wildlife Fund, Assessing Plastic Ingestion From Nature to People
- [23] Environ Health Perspect. 2011 Jul 1; 119(7): 989–996, Abstract
- [24] Endocrinology 2015; 131(3): 1305-1312
- [25] International Journal of Biological Sciences 2022; 18(3): 1065-1078
- [26] Proc Natl Acad Sci April 1999; 96: 4686-4691
- [27] Britannica, Endotoxin

- [28] Biochimica et Biophysica Acta (BBA) - Molecular Basis of Disease Volume 1454, Issue 1, 31 May 1999, Pages 1-10, Abstract
- [29] BJA Educ. 2022 Jun; 22(6): 224–230, Gram-Negative Septic Shock
- [30] Medscape, Septic Shock Clinical Presentation
- [31] Environ Int. 2014 Sep:70:106-12
- [32] NeuroToxicology Volume 94, January 2023, Pages 46-58, Abstract
- [33] Open Journal of Veterinary Medicine, 11, 57-86, Abstract
- [34] J Cell Mol Med. 2013 Aug;17(8):958-65
- [35] IJIREM Volume- 2 Issue- 5 Year- 2015, 71-76
- [36] Rev Environ Health. 2015;30(2):99-116
- [37] Nutrients. 2022 Sep; 14(18): 3809, Gut and Carbohydrates
- [38] Nestle, BOOST Original
- [39] Carnation, Breakfast Essentials
- [40] Hormel Health Labs, Med Pass Fortified Nutrition Shakes
- [41] Nutricia, Pro-Stat
- [42] Reuters, May 16, 2023