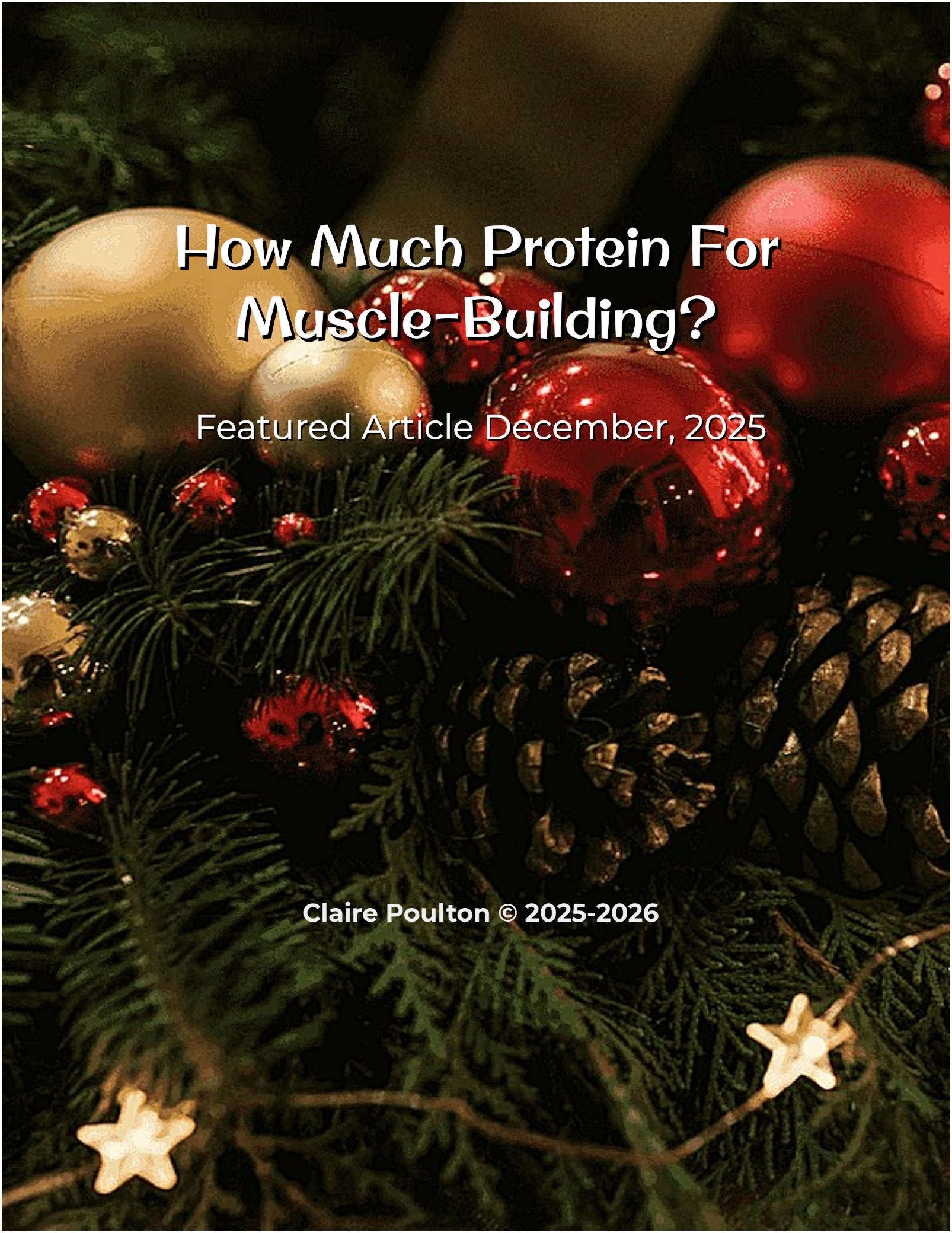

How Much Protein For Muscle-Building?

Featured Article December, 2025

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How About Some Protein Facts?

Introduction

Only a small fraction of the protein you consume, **roughly 10-20%, is ultimately used for building muscle**. The majority of the protein you eat is used for other vital bodily functions, such as creating enzymes, hormones, and connective tissues, or is oxidized for energy.

The amount of consumed protein that can be directed toward muscle building depends heavily on several factors:

Resistance Exercise

The most critical factor is engaging in resistance training. Exercise creates the demand for muscle repair and growth, which sensitizes the muscle to amino acids. Without this stimulus, extra protein is primarily burned as fuel or stored as fat.

Total Daily Intake:

Meeting a sufficient total daily protein intake is more important than how much is in a single meal. For individuals aiming to build muscle, a common recommendation is to consume between 1.6 and 2.2 grams of protein per kilogram[A] of body weight per day.

Protein Distribution:

Spreading protein consumption evenly throughout the day (*e.g., 0.4 g/kg per meal across at least four meals*) is more effective at maximizing muscle protein synthesis than consuming one or two large protein doses.

A. 1 Kilogram is equal to 2.25 Pounds

Protein Quality:

High-quality proteins, which contain all **nine essential amino acids** (*especially leucine*), are more effective for muscle building. Animal sources (*meat, fish, eggs, dairy*) are generally complete proteins, while plant-based proteins may need to be varied to ensure all essential amino acids are consumed throughout the day.

Age:

Older adults may need higher amounts of protein per meal (*up to 40 grams*) to maximally stimulate muscle protein synthesis due to age-related changes in metabolism (*anabolic resistance*[B]).

Overall Calorie Intake:

To build muscle, you generally need to be in a positive energy balance (*consuming more calories than you burn*). If you're in a calorie deficit, adequate protein is still important, but it primarily helps to preserve existing muscle mass rather than build new tissue.

In Summary

Only a small fraction of the protein you consume, **roughly 10-20%, is ultimately used for building muscle**. The majority of the protein you eat is used for other vital bodily functions, such as creating enzymes, hormones, and connective tissues, or is oxidized for energy.

The energy used to digest, absorb, and process protein (*known as the thermic effect of food or TEF*) is significant, costing approximately 20 to 30% of the total calories in the protein consumed. This is considerably higher than the energy required for other macronutrients[C].

B. Anabolic Resistance: A condition where muscles become less responsive to stimuli that normally build muscle.

C. Macronutrients: Proteins, Carbohydrates and Fats.:The body's primary fuel source and building blocks.

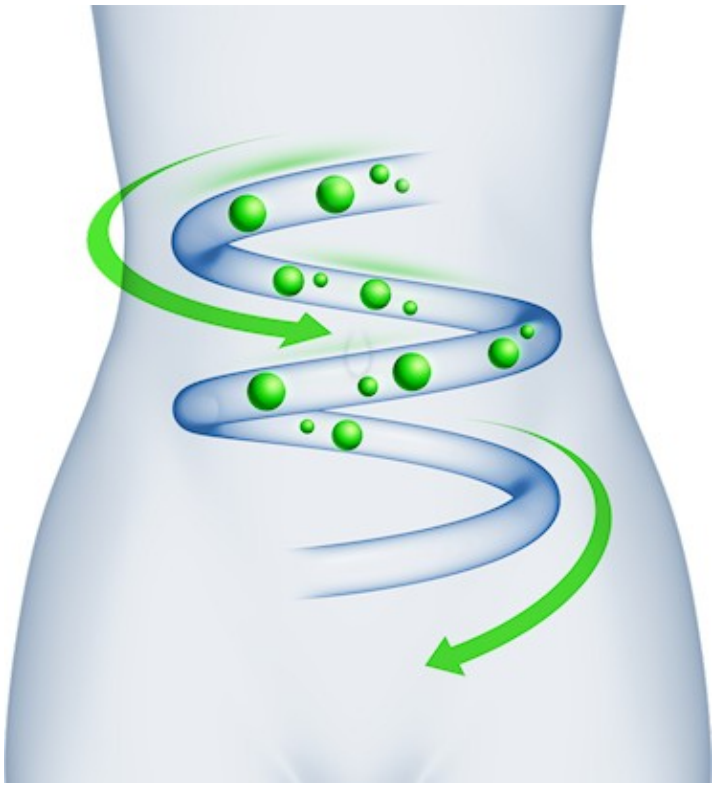
For example, if you eat 100 calories from protein, your body uses roughly 20-30 of those calories just to process it, leaving a net of 70-80 available calories. Energy Cost by Macronutrient

The percentage of calories expended on digestion varies significantly among different types of food:

1. Protein: 20-30% of the energy consumed
2. Carbohydrates: 5-10% of the energy consumed
3. Fats: 0-3% of the energy consumed

Why Protein Costs More Energy

The high energy expenditure for protein is due to several complex, energy-dependent processes in the body:



Digestion and Absorption:

Breaking down large protein molecules into individual amino acids and transporting them into the bloodstream requires specialized transport proteins and the cellular energy molecule adenosine triphosphate[D] (*ATP*).

Protein Synthesis and Turnover:

The body is constantly synthesizing and breaking down proteins (*protein turnover*), which is a major energy consumer, accounting for about 20% of the basal metabolic rate.

D. ATP: Nucleoside triphosphate that provides energy to drive and support many processes in living cells, such as muscle contraction, nerve impulse propagation, and chemical synthesis.

Metabolic Processes:

Amino acids contain nitrogen, which must be removed through a process called oxidative deamination[E], primarily in the liver. This requires significant energy and is a major contributor to the thermic effect.

In essence, the entire metabolic pathway for processing protein and amino acids is highly energy-demanding, which is why high-protein diets lead to a higher overall daily energy expenditure compared to high-fat or high-carbohydrate diets.

Here's what happens to the rest of the protein:

The majority of the remaining protein not used for immediate muscle building is used for various essential bodily functions, converted into energy or stored as fat/glucose, and the nitrogenous waste is excreted.

The body has no capacity to store excess protein as protein.

Used for other vital functions:

Amino acids (*the building blocks of protein*) are essential for creating hormones, enzymes, and other tissues like skin, hair, and immune system components.

Oxidized for energy:

If the body has met its needs for building and repair, excess amino acids are broken down and used as a fuel source (*calories*), similar to how it uses carbohydrates or fats.

E. Oxidative Deamination: A biological process that *generates α-keto acids and other oxidized products* from amine-containing compounds --- aged cheeses, cured meats, certain fish, and some fruits and vegetables, especially when overripe.

Converted to glucose or fat:

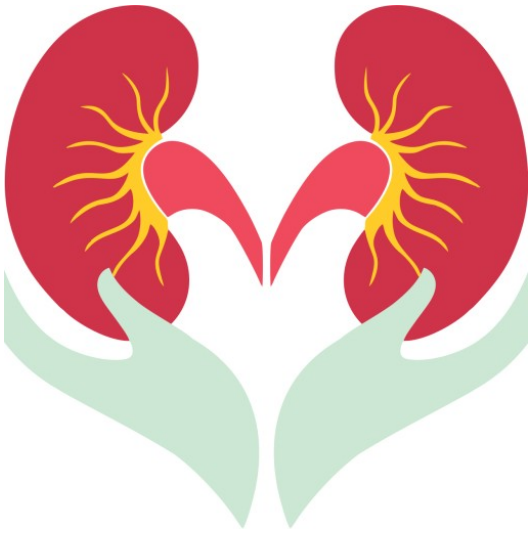
The body can convert the carbon components of surplus amino acids into glucose (*via gluconeogenesis*[F]) or store them as fat, especially if overall calorie intake is high.

Excreted as waste:

The nitrogen removed during the breakdown of amino acids is converted to ammonia, then to urea in the liver, and finally filtered by the kidneys and excreted in urine.

The Percentage Of Protein Used For Muscle Building In A Single Meal Is Limited

Consuming protein above a certain threshold at one time (*around 20-40g, depending on factors like age and activity*) doesn't result in significantly more muscle protein synthesis; the surplus is simply diverted to other metabolic pathways.



While a high-protein diet is generally considered safe for healthy individuals, consuming excessive amounts, especially over a long period, can pose several risks and side effects. These dangers often depend on the source of the protein and a person's underlying health conditions.

Potential dangers of consuming a lot of protein include:

Kidney Issues:

The kidneys filter the waste products from protein metabolism (*urea and other nitrogenous wastes*).

F. Gluconeogenesis: Main purpose is to prevent hypoglycemia (*low blood sugar*) by creating fresh glucose when dietary intake is insufficient.

High protein intake increases this workload, which can be problematic for people with pre-existing kidney disease or those at risk (*e.g., diabetics, those with high blood pressure*). For healthy individuals, the link to de novo[G] kidney damage is less clear, but long-term, extremely high intake is still a concern.

Dehydration:

The increased need to excrete nitrogenous waste requires more water, which can lead to dehydration if fluid intake is not significantly increased.

Heart Disease Risk:

Diets high in animal protein, particularly red and processed meats, often contain high levels of saturated fat and cholesterol, which could increase the risk of heart disease and stroke, but recent research has revealed that this may not be the case.

Weight Gain:

If extra protein is consumed without increasing physical activity, the excess calories can be converted to fat and stored in the body, leading to weight gain.

Bone Health (Controversial):

Some older studies suggested high protein intake could lead to calcium loss and negatively affect bone health. However, many recent studies indicate that adequate protein intake is beneficial for maintaining bone mineral density, especially in older adults, provided calcium intake is also sufficient.

Increased Cancer Risk:

G. De novo: It means something from scratch or new, such as a biological process.

High consumption of red and processed meats has been associated with an increased risk of certain cancers, particularly colorectal cancer, but has not been proven and other sources have.

Conclusion

For most healthy adults, a protein intake within the acceptable macronutrient distribution range of 10-35% of total energy (*which can be up to 1.5 g per kg of body weight for active people*) is considered safe.

It is recommended to choose a variety of protein sources, prioritizing lean meats, fish, dairy, and plant-based options, and to consult a healthcare provider or a registered dietitian for personalized advice.

While it is possible to consume exclusively plant proteins and experience similar muscle-building results, on a gram-per-gram basis, animal proteins are generally more anabolic. This anabolic advantage is due to higher concentrations of essential amino acids, particularly leucine, and also due to constituents such as taurine, carnosine, creatine, collagen, and even cholesterol, none of which are present in plant foods The lower anabolic effect in plant proteins is partly due to their lower digestibility and lower amino acid content than animal protein sources.

Products

Sculpt

Sculpt was designed to assist the body in supporting healthy weight loss by targeting the reduction of excess glucose caloric absorption, appetite suppression, and increased fat burning. This proprietary blend, which includes multi-faceted patented technology, is focused on assisting in the reduction of calories in the body by targeting the regulation and control of glucose levels in the body and increasing fatty acid breakdown.

Benefits

- Assists in Healthy Weight Loss
- Reduces Excess Glucose Caloric Absorption
- Helps to suppress appetite and reduce calories
- Increased Fat Burning
- Aids to Regulate Glucose Levels
- Fatty Acid Breakdown

Crush

Crush is a premium essential amino acid (EAA) supplement designed to fuel performance, enhance recovery, and support lean muscle growth. Featuring 7 of the 9 essential amino acids—including the three branched-chain amino acids (BCAAs): leucine, isoleucine, and valine—Crush delivers optimal muscle support for athletes and active individuals.

We've enhanced our formula with **HMB** (β-Hydroxy β-Methylbutyrate), a compound naturally produced in the body to help metabolize amino acids and preserve muscle mass. This science-backed, highly bioavailable blend supports:

- Muscle recovery and repair
- Oxidative stress reduction
- Immune system support
- Glutathione production

Whether you're crushing workouts or your daily grind, Crush provides the nutritional edge to stay strong, recover faster, and perform better.

Zero-In

In today's hectic climate, focus is at a premium. The ability to concentrate and stay zeroed-in on a task is what enables one to stand out. Whether you are hustling towards a deadline target, taking a code test, gaming all night long or simply want the ability to be on point all day, Zero-in is your answer.

Zero-in will help get you away from brain fog and into laser-sharp mental focus. It's a natural alternative to synthetic stimulants. Get all of your cylinders firing at full force. Made with turmeric, pine bark, velvet bean seed, and vitamin D.

By adding adaptogens, it helps support the nervous system instead of taxing it as stimulants do. Zero-in is more than a phrasal verb, it's the new standard of living.

Benefits:

Cognitive function:

Helps support increased attention span and concentration levels through a natural, proprietary brain formula.

Mental acuity:

Aids healthy brain function and focus while improving the delivery of oxygen to cells and increasing dopamine levels up to 14 hours.

Medical Disclaimer

The information provided is for educational purposes only and is not intended as medical advice or a substitute for the medical advice of a physician or other qualified health care professionals. This information is not to be used for self-diagnosis. Please always consult with your doctor for medical advice or information about diagnosis and treatment. Statements have not been evaluated by the Food and Drug Administration (FDA). These products are not intended to diagnose, treat, cure, or prevent any disease. ROOT is a company founded on improving people's understanding of how toxins and chemicals can harm your health. Instead of focusing on symptoms, ROOT targets the underlying root cause with natural wellness.

ABOUT THE FORMULATOR

Dr. Christina Rahm

Dr. Rahm boasts impressive credentials, including Master's and Doctorate degrees in Rehabilitation Counselling, Psychology, and Strategic Science, as well as postdoctoral studies at Harvard in Bioscience Engineering and Nanobiotechnology. She has worked in leadership roles at major pharmaceutical companies like *Pfizer*, *Johnson & Johnson*, and *Biogen*.

However, her proudest achievements are the patented solutions and trademarked methodologies she developed for families through The ***ROOT Brands***, which operates in over 89 countries. Her formulations focus on detoxification and cellular health, products she trusts for her own children. "*When you're formulating for your family, there's no room for compromise,*" she asserts.

Beyond Human Health: A Planetary Vision

Dr. Rahm's protective instincts extend beyond her immediate family to include what she refers to as the "three P's": People, Pets, and Planet. Through her portfolio of over 25 companies at DRC Ventures, she is committed to creating sustainable and health-focused solutions.

Her ventures include *Ella Pure Skincare* with clean beauty products based on her patented detox formulations, *Merci Dupre Clothiers* for sustainable fashion, *Rahm Roast* clean organic coffee, *Xoted Biotechnology Labs* - a $4.2 million research facility focused on plant-based detoxification, and *Strata Biotech* - an advanced biotechnology manufacturing facility.

"My children will inherit this planet," she emphasizes. "I refuse to hand them a world more toxic than the one I found. Every business decision, every product development choice, is made with their future in mind."