# GENERATION STRONG

Peer-Reviewed Research for Families


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# IN THIS ISSUE

1 NUTRITION

# YOUR KIDS NEED MORE PROTEIN THAN YOU THINK

*A large national study of 3,455 children confirms that higher protein intake directly builds stronger muscles and greater grip strength throughout childhood.*

| PUBLISHED | SCOPE | STUDY TYPE | POPULATION |
|---|---|---|---|
| February 2025 — PMC / National Health & Nutrition Examination Survey | 3,455 children & adolescents | Cross-Sectional Study | Children & adolescents aged 8–19 years, 2011–2014 |

## KEY FINDINGS

Using data from the nationally representative NHANES survey, researchers assessed the relationship between dietary protein intake and two key measures of musculoskeletal health — appendicular lean mass index and combined grip strength — in 3,455 children and adolescents aged 8 to 19. Higher protein intake was significantly and positively associated with both lean muscle mass and grip strength across all ages and both sexes. The association held even after controlling for total caloric intake, physical activity, and body composition. Boys showed a stronger association between protein and lean mass, while both sexes benefited equally in grip strength.

## FOR YOUR FAMILY

**The Takeaway:** Most parents track calories — almost none track protein for their kids. Yet this study, drawn from a nationally representative sample of thousands of children, confirms that protein intake is one of the clearest predictors of how much lean muscle and functional strength a child develops. For school-age children, practical daily sources include eggs, Greek yogurt, milk, chicken, cottage cheese, edamame, and nut butters. The goal isn't restriction or supplement stacks — it's simply making sure protein shows up at every meal. (.55-.77g/lb bodyweight for teens should be the daily goal)

**3,455 Children and adolescents studied** — and the finding was consistent across all ages and both sexes: more protein in the diet means more lean muscle mass and stronger grip strength. Real food, not supplements.

*Source: NHANES 2011–2014, Published February 2025 — Cross-Sectional Study, n=3,455*

2 MENTAL HEALTH

# ONE HOUR OUTSIDE CUTS YOUR CHILD'S MENTAL HEALTH RISK IN HALF

*A 2024 University of Glasgow study found that just one hour of daily nature exposure reduces children's risk of mental health problems by 50 percent.*

| PUBLISHED | SCOPE | STUDY TYPE | POPULATION |
|---|---|---|---|
| 2024 — University of Glasgow / Wellbeing, Space and Society | National representative sample | Longitudinal Study | Children & adolescents, multiple income levels |

## KEY FINDINGS

Researchers at the University of Glasgow found that children who spent one hour per day in natural outdoor environments had a 50 percent lower risk of mental health problems compared to those who did not. The benefits were strongest in the areas of behavior and social skills, and — critically — were even more pronounced for children from lower-income households. Researchers concluded that natural environments may buffer less-advantaged children against increased psychosocial and environmental stressors, suggesting that access to outdoor time is not just a wellness preference but a meaningful tool for reducing mental health inequality across income levels.

## FOR YOUR FAMILY

**The Takeaway:** One hour outside. That's the threshold the research identified. Not a structured program, not a curated experience — just consistent daily time in a natural environment. A backyard, a park, a trail, a patch of grass. The research does not require wilderness. It requires regularity. For families with younger children especially, building outdoor time into the daily routine before screens go on may be one of the most protective decisions you make for your child's long-term mental health.

**50%** **lower risk of mental health problems** in children who spent just one hour per day outdoors in nature. The effect was even stronger for children from lower-income households.

*Source: University of Glasgow — 2024 Longitudinal Study, nationally representative sample*

3 NUTRITION & EXERCISE

# DIET AND EXERCISE TOGETHER ARE THE MOST POWERFUL TOOLS FOR LOWERING LDL

*A meta-analysis of randomized controlled trials confirms that combining aerobic exercise with a fiber-rich, low-saturated-fat diet produces the greatest reductions in LDL cholesterol.*

| PUBLISHED | SCOPE | STUDY TYPE | POPULATION |
|---|---|---|---|
| Journal of Midwifery & Women's Health — April 2024 | 57 RCTs, 3,194 participants | Meta-Analysis of RCTs | Adults — aerobic exercise 12+ weeks, 2–5 sessions/week |

## KEY FINDINGS

A meta-analysis of 57 randomized controlled trials confirmed that aerobic exercise of at least 12 weeks, performed at moderate intensity two to five times per week, produced significant reductions in total cholesterol, LDL, and triglycerides when combined with dietary modifications. A separate lifestyle medicine program study showed that participants with high LDL who combined dietary counseling with structured movement experienced a 60.5 percent improvement in LDL and non-HDL levels. The evidence consistently points to the same conclusion: neither diet alone nor exercise alone is as effective as the two together. The combination is the intervention.

## FOR YOUR FAMILY

**The Takeaway:** If LDL is a concern in your household — for you, your spouse, or an aging parent — the answer from the research is not simply a pill. It is consistent movement combined with a diet lower in saturated fat and higher in fiber. For adults, two to three moderate-intensity aerobic sessions per week alongside meals built around whole grains, legumes, vegetables, and lean protein is the most well-supported non-pharmacological approach available. These are not dramatic changes. They are consistent ones — and the research shows they work.

**60.5%** **Improvement in LDL and non-HDL** cholesterol levels in adults who combined dietary changes with structured movement in a 57-trial lifestyle medicine program. No prescription required.

*Source: Journal of Midwifery & Women's Health — April 2024, meta-analysis of 57 RCTs, n=3,194*

4 EXERCISE

# EXERCISE BUILDS YOUR CHILD'S BONES — AND THE WINDOW IS NOW

*A comprehensive meta-analysis confirms that physical exercise significantly increases bone mineral density in adolescents — and the gains made now protect them for life.*

| PUBLISHED | SCOPE | STUDY TYPE | POPULATION |
|---|---|---|---|
| Frontiers in Physiology — December 2024 | 15 RCTs (1997–2023) | Systematic Review & Meta-Analysis | Adolescents aged 10–19 years |

## KEY FINDINGS

Researchers analyzed 15 randomized controlled trials published over more than two decades to assess the effects of exercise on bone mineral content, bone mineral density, and bone metabolism markers in adolescents. Exercise interventions — including resistance training, jump rope, core stability, and plyometric training — significantly improved bone density at the lumbar spine and femoral neck compared to control groups. Critically, the research confirmed that muscle mass and strength gains from exercise are directly correlated with bone mass increases — the two develop together. Adolescence is identified as the most critical window for bone development, with gains made during this period having lifelong protective effects against fractures and osteoporosis.

## FOR YOUR FAMILY

**The Takeaway:** The bones your child builds between ages 10 and 19 are largely the bones they will have for life. Peak bone mass is established during adolescence — and exercise is the primary driver of how dense and strong those bones become. Resistance training, jumping, and high-impact activity are not just for sports performance. They are investments in skeletal health that compound over decades. If your child is sedentary during these years, they are missing the most important bone-building window they will ever have.

**10–19** **The years that determine your child's peak bone mass for life.** Exercise during this window — resistance training, jumping, impact activity — directly builds the bone density that protects them well into adulthood.

*Source: Frontiers in Physiology — December 2024, Systematic Review & Meta-Analysis of 15 RCTs*

# DIETARY FIBER IS ONE OF THE MOST UNDERRATED TOOLS IN FAMILY HEALTH

*A comprehensive 2024 review confirms that higher fiber intake is independently linked to lower rates of cardiovascular disease, type 2 diabetes, obesity, and inflammation.*

| PUBLISHED | SCOPE | STUDY TYPE | POPULATION |
|---|---|---|---|
| Frontiers in Nutrition — November 2024 | Clinical trials, cohort studies & meta-analyses reviewed | Comprehensive Narrative Review | General adult & family populations |

## KEY FINDINGS

Researchers reviewed clinical trials, cohort studies, and meta-analyses to assess the relationship between dietary fiber intake and five major health conditions: cardiovascular disease, type 2 diabetes, obesity, colon cancer, and systemic inflammation. Across all five areas, the data consistently showed a clear association between higher fiber intake and lower disease incidence. Soluble fiber — found in oats, legumes, apples, and flaxseed — is particularly effective at reducing LDL cholesterol. Insoluble fiber supports gut motility and microbiome diversity. Both types are critically underconsumed in the average American diet. Most adults consume less than half the recommended daily intake, and children's intake is even lower.

## FOR YOUR FAMILY

**The Takeaway:** The average American eats roughly 15 grams of fiber per day. The recommendation is 25 to 35 grams. That gap is not trivial — it is one of the most consistent nutritional risk factors in the research literature. Practical daily fiber sources your family can build habits around include oatmeal, beans and lentils, berries, apples with the skin, broccoli, and whole grain bread. Adding fiber to meals does not require a supplement or a radical diet change — it requires slightly more intentional grocery shopping.

**15g**

**The average daily fiber intake** of American adults — less than half the recommended 25–35 grams. Closing that gap is one of the most consistently supported dietary changes in all of nutrition research.

*Source: Frontiers in Nutrition — November 2024, comprehensive review of clinical trials, cohort studies & meta-analyses*

FROM THE EDITOR

# Welcome to the Generation Strong Journal

*Dr. Jackson Taylor, PT, DPT*
*Executive Director*

Welcome to the June 2026 Generation Strong Journal. Last month we covered the mental health benefits of exercise, the power of eating together as a family, and why sleep quality matters more than most parents realize. This month we are taking that same evidence-based lens and pointing it at some of the most practical questions in family health — what your kids should be eating, why getting outside matters more than we knew, and what the research actually says about keeping your heart healthy for the long haul.

This issue's five studies all pointed toward the same truth: the fundamentals are still the fundamentals. Protein, movement, sunlight, fiber, and strong bones — none of this is complicated. What's missing for most families is not information, it's clarity. That is exactly what this journal is designed to provide.

Of everything in this issue, the research on outdoor time and children's mental health should make you look twice. One hour outside per day cuts a child's risk of mental health problems in half. Not a program. Not a prescription. Just consistent time in a natural environment. In a world handing our kids more screen time and less open space every year, that finding is something every parent needs to hear.

## About Generation Strong

Generation Strong exists for one reason: to empower families today so they can leave a legacy of health for generations to come. We educate, inspire, and guide families toward stronger lives through fitness, nutrition, and community — because we believe the habits built inside your home today will echo far beyond it.

This journal is one part of that mission. Each month, we take the best available research and turn it into something you can actually use — no wellness noise, no conflicting opinions, just clear, evidence-based guidance for the families who are ready to lead.

**EDUCATION**
Hundreds of educational videos on strength, nutrition, and health — and much more.

**TRAINING**
Comprehensive training programs built for every fitness level, so no one gets left behind.

**COMMUNITY**
Resources, Q&As, and everything your family needs to stay on track. All at generationstrong.org

*Until next month – keep training, keep modeling, and keep showing up.*

**Dr. Jackson Taylor**
*Executive Director & Editor – Generation Strong*