



ARTICLE

## Fueling Growth: The Role of Nutrition in Children's Muscle Development

5 mins read

Childhood is the most critical period for setting the foundation for a healthy future. This is the time when kids will be experiencing rapid physical, mental, and emotional growth thus it is the right time to develop healthy habits. Proper nutrition, physical exercise, and enough sleep are essential for muscle growth and developing strength and energy in support of day-to-day activity, for maintaining normal weight, and for general growth and health.

### **How Does Nutrition Play a Role in Muscle Development for Children?**

Nutrition is one of the factors that can enhance the muscle function of a child, and protein is the most crucial part of developing tissues in repairing and building. Vitamin D and Calcium are significant in muscle function. Good fats are needed for the supply of energy, as well as good muscle recovery. A diet with all these nutrient requirements, together with proper hydration, would enable a child to make those muscles stronger and allow for overall physical development.

### **Key Nutrients for Muscle Growth in Children**

Vitamin and mineral nutrients and other micronutrients help muscle progenitor cells for muscle growth. Other nutrients help in the better functioning of these progenitor cells like vitamin D, calcium, omega-3 Fatty Acids, and antioxidants defensively approach working in support of muscle repair and development. Nutrient-rich foods like vegetables, fruits, fish, and whole grains can help promote muscle health and growth in both children and adults.

Proteins are basic building blocks for muscles, as they give amino acids necessary to repair and build muscle tissue. Foods like eggs, milk, beans, and lean meats are the best sources of proteins. Calcium and Vitamin D are very important nutrients for bone maintenance; using these nutrients indirectly helps maintain muscle strength and structure, providing support for muscles during movement. They can be found in dairy products, leafy greens, fortified foods, and Vitamin D may be provided either by fortified milk, fish, or exposure to sunlight.

Healthy fats, such as omega-3 fatty acids from fish, nuts, or seeds, can help reduce inflammation and speed muscle recovery. Carbohydrates support muscle function, with whole grains, fruits, and vegetables being the best sources. Some microscopic nutrients like iron, magnesium, and iodine are very important for transporting oxygen to the muscles and allow the muscle fibres to express their contraction. This is where a balanced diet, supplemented foods, or mixes can help children meet their necessary mineral requirements while growing.

### **The Role of Protein in Building Strong Muscles**

Protein is what your child needs to grow and develop properly. The evidence suggests that providing high-quality protein can also help in making the body stronger and aiding muscle repair and growth.

Protein is an essential building block for strong muscles in children. It provides the body with amino acids that are the building blocks to repair and build muscle tissue. Foods with high-quality protein, like eggs, chicken breast, fish, milk, beans, and lentils, are especially beneficial. Adequate intake of high-quality proteins is particularly important during childhood as it supports rapid growth and development.

### **Gut Microbiome: A Hidden Ally in Muscle Growth**

The gut microbiome, which is also called the community of bacteria residing in the digestive system of the human body, plays an important role in maintaining healthy bones and muscles. Studies show that gut microbiomes can help improve nutrient absorption, strengthen the immune system, and also help in reducing inflammation. A fiber, prebiotics, and probiotics-rich balanced diet can help keep the gut microbiome healthy, which then improves bone density and muscle function. A healthy gut can also

promote the release of growth hormones that support bone and muscle development over time.

### **Fortified Foods: Enhancing Muscle Development and Overall Health**

Fortified foods contain nutrients that are mandatory for providing the development and management of muscle in children. Mostly such enriched foods are prepared rich in vitamins such as vitamin D and minerals such as calcium and iron. These foods increase the effective growth of bones which imparts strength to muscles and regulates energy metabolism. For instance, vitamin D-fortified foods enhance calcium absorption; iron-enriched foods enhance the delivery of oxygen to muscles, which is pertinent to energy and endurance.

Childhood is the most important period for building strong and healthy skeletal muscles. Childhood is a time when kids grow quickly, and their muscles and bones get stronger as they develop. This growth is important for helping them move, play, and stay healthy. Giving children the right food, encouraging them to stay active, and making sure they rest well can support their muscles and overall health as they grow.

### **Supporting Muscle with Nestle NANGROW™**

Nestle NANGROW™ is specifically formulated to meet the nutritional requirements of growing children, including healthy muscle growth. It has premium protein, vitamins, and minerals including calcium and vitamin D that are needed to maintain muscle and bone health. The protein content supports muscle repair and growth, and vitamin D helps with calcium absorption in the body, boosting the strength of the skeletal system that sustains muscle function. Additionally, Nestle NANGROW™ includes probiotics to support gut health, ensuring better nutrient absorption, which indirectly contributes to muscle development. This holistic approach makes it an ideal choice for parents looking to optimize their child's growth and strength.

### **References**

1. Fukagawa, N. K., et al. (2020). Role of Nutrition in the Regulation of Muscle Development and Repair. *Frontiers in Physiology*. <https://doi.org/10.3389/fphys.2020.01033>
2. Gatti, A., Marin, L., Vandoni, M., & Zuccotti, G. (2024). Promoting Skeletal Muscle Health in Children Through Nutrition and Exercise. *Life*, 14(9), 1198. <https://doi.org/10.3390/life14091198>
3. O'Neill, C. A., & Barlow, P. (2020). Role of the Gut Microbiome in Bone and Muscle Health. *Frontiers in Physiology*. <https://doi.org/10.3389/fphys.2020.00732>
4. Liu, Y., & Yan, C. (2022). Gut microbiota and its impact on musculoskeletal health. *Nutrients*, 14(6), 1187. <https://doi.org/10.3390/nu14061187>
5. Calvo, M. S., Whiting, S. J., & Barton, C. N. (2018). Vitamin D fortification in the United States and Canada: Current status and data needs. *The American Journal of Clinical Nutrition*, 108(4), 656–671. <https://doi.org/10.1093/ajcn/nqy209>