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With spring sports on the horizon, you and your family may be preparing for changes in schedules, after school practices, and those thrilling game days! Although sports are usually filled with fun and team building, there are factors that can halt the positive experience for kids and teens: **PROPER NUTRITION!**

Adequate fuel and hydration have a significant role in your child's performance and competition. Nutritional preparedness is essential in maintaining energy balance and preventing fluid and electrolyte loss. It can also support a healthy weight and muscle repair which are crucial during periods of unique growth demands in children and teens.

#### Resources

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## CALORIES

Energy needs are much higher in children and teens who play sports as opposed to those who do not. <sup>1</sup> Unfortunately, meeting energy requirements may be difficult especially for kids who skip breakfast or miss meals in school. Large gaps between fueling the body of a young athlete have consequences, including poor performance, earlier fatigue, higher risk of injury and recovery time, as well as menstrual dysfunction in teen girls. <sup>2</sup>

On average, kids between ages 6-12 years old, need about 1,300-1,600 calories to maintain their growth in a sedentary lifestyle. The range skyrockets to 2,400 calories in kids who are very active, meaning more than 1-2 hours of training per day. <sup>3</sup> Teen boys need roughly 2,000-2,500 calories per day and teen girls 1,500-2,000 calories per day for a sedentary lifestyle. Again, these ranges expand with intensity and length of activity per day and can average at 2,200 -3,000 calories for teen girls and 3,000-4,000 calories for teen boys. <sup>2</sup>

## CARBOHYDRATES- THE MAIN FUEL!

Carbohydrates are the main fuel for young athletes. When we eat carbohydrates, they are broken down into glucose, blood sugar, and carried to cells in our body to create energy. Some of the glucose is stored in our liver and muscles for a back-up use during high energy needs. <sup>4</sup>

School-aged children and adolescence need about 50% of their daily calories to come from carbohydrates. A higher percentage, up to 70%, may be necessary during heavy activity days. <sup>2</sup> Ideal sources of carbohydrates include fruits, vegetables, and whole grains. <sup>1</sup> Fruits and vegetables can be served as snacks, for example, carrot sticks with hummus or fruit with yogurt. Sources of whole grains include whole grain pastas, breads, rice, and legumes. Avoiding processed carbohydrates, like white bread, candy bars, and sugary snacks is key! Those foods only provide a source of carbohydrates without the other necessary nutrients like fiber, B vitamins, vitamin E, and healthy fats. <sup>1</sup>

## PROTEIN NEEDS

Child and teen athletes do need more protein than their less-active peers. When you think of protein, you may think of muscles. It is true that protein plays a vital role in repairing and building muscle, however, there is more to it. Muscle building also requires sufficient energy, physical activity, and hormones. <sup>5</sup> Whether it's endurance or strength training, some of our muscle cells break down during activity. Protein from foods can mend the muscles and build them up stronger. <sup>5</sup> The goal in a young athlete's diet is not to consume excess protein. It is to consume enough calories and carbohydrates so the protein can be spared from energy use and instead moved towards building and repairing muscles and other tissues. <sup>5</sup>

Protein needs for kids and teens vary based on age, sex, and activity level and type. Generally, children ages 6-12 years old need an average of 20-35 g protein/day, teen girls need about 46 g/day and teen boys need 52 g/day. <sup>6</sup>

For a more tailored approach to protein needs based on activity, the following guidelines apply:

- Sedentary boys and girls ages 6-12 y/o- 0.95 g protein/kg body weight <sup>6</sup>
- Sedentary teen- 0.85 g protein/kg body weight <sup>6</sup>
- Endurance athlete- 1.2-1.4 g protein/kg body weight <sup>2</sup>
- Strength and resistance athlete- 1.4-1.8 g protein/kg body weight <sup>2</sup>

One way to maximize muscle building and repair is to focus on timing and even distribution. When protein is consumed with every meal and snack, the body gets a consistent dose of building blocks. <sup>5</sup>

Despite pressure from friends, coaches, and media, meeting protein solely from foods is achievable and safer than supplements. Use of supplements and protein powders is discouraged by the American Academy of Pediatrics and the Academy of Nutrition and Dietetics. <sup>1,5</sup> This is mainly because supplements are not regulated by the Food and Drug Administration (FDA) and most products are not checked for inaccuracies in labels, ingredients, and purity.

Excessive protein may also displace carbohydrates which, as mentioned previously, is the preferred source for energy. <sup>5</sup>

Best protein sources are chicken, lean red meat, fish and seafood, ground meats, low-fat dairy products like yogurt and cheese, cow's milk, soy milk, pea protein milk, beans, lentils, eggs, nuts and nut butters.

## FLUIDS

Water is the best fluid for our bodies. It doesn't just quench thirst. It aids in transporting oxygen and nutrients to our cells and maintains body temperature. <sup>7</sup> Because thirst is not a good indicator of dehydration, drinking water before, throughout, and after training or game is important. <sup>7</sup> Dehydration from sweat loss exceeding 2 % of body weight loss may harm sports performance. <sup>8</sup>

General fluids recommendations from the American Academy of Pediatrics to prevent heat illness are as follows: <sup>9</sup>

- 1-2 hours before activity, drink 12-22 fl. oz. of water.
- 10-15 minutes before activity, drink 10-22 fl. oz. of water.
- During activity, drink 4-6 fl. oz. of water.
- After activity, drink 2-3 cups of water for every pound of weight lost during play.

Sports drinks are recommended if the sporting event or training goes over 1 hour and especially if the weather is hot and humid. Loss of important electrolytes, like sodium and chloride in sweat, need to be replenished. Sugar in sports drinks may also help bump up performance after an extended period of play. <sup>1,7</sup>

## TRAINING AND GAMEDAY TIPS <sup>8</sup>

- **Timing is gold.** Make sure your young athlete has a full meal 2-3 hours before an event and a snack 30 minutes -1 hour before an event. This will help fuel them with energy but prevent bloating or discomfort right before play.
- **Fatty foods are a no-go the day of.** They slow digestion and can make your child feel full, bloated, and sluggish. Examples include fried foods and bakery items.
- **Replenish fluids.** Monitor for signs of dehydration, including fatigue and dark urine. Encourage your child to drink 4 fl. oz. every 15 min during an event.
- **A little bit of everything is key** to nutritional preparedness. Balance all meals with a source of carbohydrates, protein, fruit, vegetable, and low-fat dairy.
- **Spread it out.** Remember to include a source of protein in all meals and snacks to support growth and muscle repair. Example: If your child has an egg sandwich with fruit and a yogurt for breakfast, offer whole grain crackers with peanut butter for a snack!