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What your kids should eat to do well in school

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As children head back to the classroom, they'll need more than a new set of school supplies to excel academically. Just as athletes eat to compete, kids need to eat right to learn.

It is well established that nutrition and learning go hand in hand. Certain foods enhance brain function, memory, concentration and motor skills. Children who eat the right foods at regular intervals are more focused, have more energy for school work and have better moods.

Brain cells need twice as many calories as other cells in the body. Neurons, brain cells that communicate with one another, are constantly transmitting information throughout the body. A tired brain – or one that doesn't get proper nutrition – won't help kids (or adults) perform their best.

Your brain relies almost exclusively on carbohydrate for fuel. Once consumed, carbohydrate-rich foods such as bread, cereal, pasta and fruit are released as glucose (sugar) in the bloodstream. It's glucose that energizes brain cells and without a steady supply, the brain's fuel tank would be drained within 15 minutes.

The following tips will help kids get the carbohydrate, foods and nutrients an active brain relies on.

Start with breakfast

It's very clear that school performance suffers if the morning meal is skipped. Studies show that children who skip breakfast are more sluggish, are less attentive and have less energy for morning activities compared with classmates who eat breakfast. Breakfast foods such as cereal, toast, waffles, fruit, milk and yogurt raise blood glucose levels, supplying the brain with the food it needs to power morning activities.

Some breakfasts are better than others when it comes to helping kids learn. In a study of elementary-school children, those who ate oatmeal for breakfast scored much better on certain memory tests than kids who were given a low-fibre, refined cereal or no breakfast at all.

Oatmeal has a low glycemic index, which means it's digested slowly, providing a more sustained source of energy. Lower glycemic breakfast foods include large flake and steel-cut oats, grainy breads, high-fibre cereals, granola, nuts, yogurt, milk, unflavoured soy beverages, apples, oranges, grapefruit, pears and berries.

Include snacks

Eating a snack between meals maintains a steady stream of glucose to the brain. Glucose also enhances the production acetylcholine, a neurotransmitter that allows neurons to transmit memory messages.

To prevent "brain drain" midmorning, pack a low glycemic snack for recess. Whole fruit works best – it's portable and requires no fuss.

Afternoon snacks are needed to energize after school activities and homework. Low glycemic snacks include whole-grain crackers and part-skim cheese, trail mix (nuts and dried fruit), baby carrots and hummus, fruit and yogurt, and smoothies made with milk or soy milk and fruit.

Drink water

The body needs water to transport oxygen and nutrients to brain cells. Not drinking enough water can lead to dehydration – even mild cases can make kids sluggish and irritable in the classroom.

Provide water at every meal and snack as well as during and after sports.

Focus on iron

Low blood levels of iron (ferritin) – even in the absence of anemia – can impair concentration and memory in young kids, teenagers and adults. Iron is needed to transport oxygen to brain cells. It's used to make the memory neurotransmitter acetylcholine.

Good food sources include red meat, enriched breakfast cereals, whole-grain breads, dried fruit, beans, legumes, tofu and nuts. In addition to iron-rich foods, a multivitamin and mineral supplement will help menstruating females and vegetarian kids meet their daily iron requirements.

Boost omega-3

Omega-3 fatty acids in fish, in particular DHA, are essential for brain growth and function. These fats make up a large portion of the communicating membranes of the brain. A steady supply of them also keeps the lining of brain cells flexible so memory messages can pass easily between cells.

Serve oily fish such as salmon, trout and Arctic char twice a week. (I would include sardines and herring, but they're not exactly kid-friendly fish.) Fish rich in omega-3 fats are also low in mercury. Canned light tuna is also a good source. Canned white (albacore) tuna is higher in mercury.

If your child doesn't like fish, try foods fortified with DHA such as milk, yogurt, cheese, eggs and juice. Fish oil supplements for kids are also available.

Add choline-rich foods

This vitamin-like compound is produced in the body, but it's also found in many foods. It's used to transmit nerve impulses and maintain healthy brain cell membranes. Choline is also used as a building block to make acetylcholine.

Research has shown that extra choline boosts memory in adolescent rats, suggesting that choline-rich foods may enhance brain-cell production throughout childhood.

Good sources of choline include egg yolks, peanuts, peanut butter, green peas and soybeans.

Increase vitamin E

This vitamin's potent antioxidant effects protect brain cells from damage and inflammation.

It's found in vegetable oils (sunflower, safflower and grape seed oils have the most), margarine, sunflower seeds, almonds, hazelnuts, peanuts, peanut butter, soy beverages, wheat germ and leafy green vegetables such as spinach, kale and Swiss chard.

Go for berries

Blueberries, strawberries, raspberries and blackberries contain anthocyanins, antioxidants thought to prevent the damaging effects of oxidative stress on brain function. In rats, a blueberry-rich diet – half to one cup per day for humans – improved memory, co-ordination and balance.

Add berries to oatmeal, cold breakfast cereal, yogurt and smoothies. Serve berries as snacks and dessert.

Leslie Beck, a Toronto-based dietitian at the Medcan Clinic, is on CTV's Canada AM every Wednesday. Her website is lesliebeck.com.