

# Outreach Resources

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## Effects of Exercise, Illness, Stress, and Growth on Blood-Sugar Levels in Children with Type 1 Diabetes

Exercise, illness, stress, and growth all affect blood-sugar levels in a child with type 1 diabetes (T1D).

Exercise helps insulin work more effectively because it allows the body to require less insulin to balance the carbohydrates consumed. Therefore, children who begin to exercise more may find that taking their regular doses of insulin before eating a typical amount of food may result in lower blood-sugar levels. (Note: Every child is unique and several factors affect blood-sugar levels, so exercise will not always result in lower blood-sugar levels.)

At school, physical education classes, where activities and intensity levels vary daily, can affect the amount of insulin children with T1D should take. Sometimes students are learning how to play a game, and the physical intensity level is low. Other days, students spend more time playing games, running, or doing other strenuous activities. On more active days, children with T1D should pay careful attention to how they are feeling and have extra snacks and insulin on hand. Physical education teachers should monitor the student more closely before and during the activity.

A child with T1D may also be more active during recess and field trips. Older children with T1D who participate in a sport need to accommodate their additional activity in their blood-sugar management. They may reduce insulin intake or eat extra food before the activity begins.

Illness and stress, by contrast, often cause blood-sugar levels to rise. A child who doesn't feel well may have trouble performing in class. She may have difficulty concentrating, for example. In such cases, the teacher can help reduce some of the stress by providing extra time for students with T1D to complete tests or other work. Teachers may also need to be more patient as these students work to grasp new ideas and concepts.

Sometimes a child will achieve (at least for a short time) the "perfect balance" of insulin and food intake. Life can seem close to normal for several months or longer then something as simple as a growth spurt suddenly throws everything off. Early adolescence is an especially difficult time for children living with T1D, as their bodies grow and their hormones change. Children may have more issues with blood sugar at this time and require more help emotionally and physically, both at home and at school.