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**Title**

Nutritional advice for young diabetic athletes

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**Abstract**

The principal aims of therapeutic management of the child and adolescent with type 1 diabetes are to allow good quality of life and to avoid long-term complications by maintaining blood glucose concentrations close to the normal range.

In prevention, it is important to encourage children and adolescents to be physically active. The relationship between physical activity, fitness, food, and glycemic control is complex.

This presentation is intended to address the issue of blood glucose regulation during various forms of sports and exercise; it is important for diabetes care professionals, patients, and parents.

Sport dietary recommendations issued over the last few years are the same for diabetic and non-diabetic individuals but must be adapted to permit well-being and performance. Glycemic changes during exercise depend largely on length and intensities of exercise, amount of glucose intake and blood insulin levels. In the young diabetic, during insulin deficiency, and therefore in a poor degree of metabolic control, i.e. hyperglycemic and ketotic, exercise accentuates hyperglycemia and ketosis, leading to extreme fatigue. If the insulin dosage is too high, the increase in muscular assimilation, combined with the shutdown of liver glucose production or the low intake of glucose, may result in a severe hypoglycemia. During the recovery period the repletion of muscular and hepatic glycogen stores may also provoke a hypoglycemia during hours after the cessation of muscular work.

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**Key references**

- 1) Dorchy H. Management of type 1 diabetes (insulin, diet, sport): "Dorchy's recipes". Rev Med Brux. 2010;31(2)
- 2) Dorchy H, Pieters S. "Sport and diabetes" The new guide of the young diabetic: 2nd edition, 2001 – in French
- 3) Robertson K et al. ISPAD Clinical Practice Consensus Guidelines 2014 Compendium Exercise in children and a

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**Key messages**

- 1) Obtain a good glycemic monitoring before, during, and after exercise
- 2) Adapt insulin and glucose intake in relation to exercise length and intensity
- 3) Prevent hypoglycemia after exercise

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**Questions**

- 1) How to educate athletes about nutritional requirements?
- 2) For type 2 diabetes, are the recommendations the same?