

Review

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Review

# A Quick Look at the Present and Immediate Future of Type 1 DM

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**Abstract:** This work is a review of the current situation of type 1a diabetes mellitus in childhood. With a quick read, the reader will discover the current and immediate future challenges.

**Keywords:** Diabetes Mellitus; Future

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## 1. Introduction

Type 1 diabetes (T1DM) is a hyperglycemic syndrome that results from the autoimmune destruction of pancreatic beta cells. In order to achieve good metabolic control, for which we have an excellent technological tool, continuous interstitial glucose monitoring (CGM), which should be used in all pediatric patients from diagnosis. Positive results of delay in the diagnosis of DM1 and lengthening of the remission phase have been obtained with the use of monoclonal antibodies.

Without a doubt, the greatest current advances in the treatment of DM1 come from the use of technology, together with regulated/structured and continued diabetes education, this being a fundamental piece to improve control, adherence to treatment and quality of patients' lives [2]. Despite all the advances, in general the objectives advocated by international societies for this age (*American Diabetes Association* [ADA], *International Society for Pediatric and Adolescent Diabetes* [ISPAD]) are not achieved, leading to the search for other systems that lead to greater adherence to treatment.

## 2. Future

New ultra-rapid-acting insulins, such as new insulin pumps, allow for improved postprandial glycemic control. However, the main advances in recent decades have come from the use of insulin pumps [3], the use of CGM systems and the association of both, along with automatic stop algorithms and other automatic insulin release algorithms, since available in the clinic. This, together with the wireless download of data on specific platforms, most of them through the cloud, has made it possible to share them with their caregivers (parents, teachers, diabetologists) in real time and achieve better daily adjustment of the treatment.

It should be noted that in the coming years the challenge will be to be able to provide a better quality of life and lengthen the "honeymoon" time of patients in a pre-DM1 state, through the possible use of immunoregulatory drugs, such as anti CD3 recently approved by the FDA.

The challenge will then be to screen or detect these "pre-DM" cases. The Government of Italy this October has created a Law in this sense aimed at screening for Type 1 DM in children.

## 3. Other Goals

We cannot forget the importance of the child in school and his education.

The school life of a **boy or girl with** diabetes is no different from that of the rest, nor should it represent any problem for the school. Generally, a **child with diabetes** must take insulin during school hours. That is why it is necessary for teachers to know the most important aspects of the treatment, as well as the situations that may occur during the school day.

Maintaining a fluid exchange of information between families and the school will help the child keep their diabetes under control. Furthermore, the better informed the school is, the easier it will be to collaborate.

The **diet of a boy or girl with type 1 diabetes** should be healthy and balanced, appropriate for their age, with the exception of quickly absorbed sugars (candy, sweets and drinks, such as soft drinks and juices) because they can greatly increase blood glucose.

We must insist: THERE IS NO DIET FOR DIABETIC CHILDREN, but the child with type 1 DM must adapt his carbohydrate intake and insulin needs in the dining room, but he can eat anything with measure and control. Clara, depending on her age, will require help for this. The question is who, educators, teachers, caregivers, school or external nurses... ? tricky issue and source of debate.

#### 4. Looking to School

It is recommended Facilitate parents' weekly planning of the school menu so that they can make the necessary occasional adjustments. For example, for a yogurt to be equivalent to a piece of fruit for dessert, it must be fruit, flavored or sugary.

It is important to respect the child's meal schedule. **They may require having a second breakfast** coinciding with mid-morning recess time.

If there is a celebration in class, it is advisable that the teacher knows how to act. Therefore, communication with the family must be fluid.

The boy or girl with type 1 diabetes can and **should do the same exercise as his or her classmates**. Exercise can cause blood sugar to drop. To avoid this, it is recommended that the child eat a carbohydrate food before exercising. The family can guide teachers on the measures to adopt. It is convenient for the physical education teacher to have easy access to foods with sugars in case of hypoglycemia.

Exercise is contraindicated in case of glycemic decompensation (hyperglycemia and hypoglycemia).

What adverse situations can a teacher encounter related to diabetes and should they manage?

Well, above all, we have to look at hypoglycemia and detect ketosis if there is hyperglycemia.

The educator must not forget that The **child with type 1 diabetes** faces a chronic illness that involves making many decisions every day. Depending on his age, he is capable of making many of these decisions. However, all of this can have an impact on your mood and even school performance if metabolic control is not adequate.

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