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# The role of self-efficacy in the management of T1DM in adolescence: an opportunity toward adulthood



**A**lthough it is difficult to find an official registry providing up-to-date data on the incidence and prevalence of type 1 diabetes mellitus (T1DM), all recent epidemiological studies conducted to date indicate an increase in diagnosed cases, not only globally but also at the national level. One of the most recent studies in the Spanish context, published in 2025, describes the incidence of T1DM based on information collected in the Primary Care Clinical Database (PCCD). Despite reporting notable territorial variability, it indicates a prevalence close to 0.2% in the pediatric population, meaning that 1 in every 500 children in Spain is diagnosed with T1DM before the age of 15. It is estimated that approximately 1,400 new cases are added annually. This figure, together with the chronic nature of the condition, explains why thousands of children live with T1DM (1).

The fact that T1DM is a chronic condition primarily diagnosed during childhood and adolescence means that individuals will live with it for most of their lives, significantly increasing exposure to risk factors that may lead to long-term complications. In this regard, without diminishing the role of biomedical sciences in the treatment and control of T1DM, we recognize the importance of a comprehensive approach and, from behavioral sciences and psychology, the wide scope »

» of action individuals have based on their beliefs and behaviors.

## T1DM AND ADOLESCENCE

T1DM can indeed appear at any age. However, nearly 90% of cases are diagnosed before the age of 20<sup>2</sup>. This means that most individuals with T1DM will experience part or all of their adolescence with this condition already established.

Adolescence is a transitional stage between childhood and adulthood that is not clearly defined. Its ambiguity stems from its strong cultural, rather than purely biological, connotation. Historically, adolescence was much shorter; today, it is associated with prolonged schooling, lack of full responsibility, ongoing supervision, and sociocultural factors that mark its end with economic independence and job stability. To this context must be added developmental milestones common to adolescence: biological changes such as hormonal fluctuations and increased impulsivity due to delayed prefrontal cortex maturation; psychological aspects such as body image concerns and emotional instability; and social elements such as identity formation and the need for group belonging.

It is within this complex scenario that the gradual transfer of T1DM management occurs. Until now, T1DM had been primarily a family responsibility; however, during adolescence, individuals begin to take leadership over their condition, moving toward self-care. Therefore, managing T1DM becomes one of the first exercises in adult responsibility.

## THE IMPORTANCE OF BELIEFS FOR BEHAVIORAL CHANGE

In psychosocial sciences, particularly health psychology, multiple theoretical frameworks coexist to explain how individuals perceive illness, cope with it, adopt control behaviors, and adapt to chronic conditions. These models are not mutually exclusive; rather, they complement each other to provide a holistic understanding.

To understand behavior in adolescents with T1DM, it is essential to consider Albert Bandura's social cognitive theory (1925–2021), particularly the concept of reciprocal determinism, which highlights the interaction be-

tween individual, environment, and behavior (3, 4, 5). Individuals are thus agents of change, capable of regulating their thoughts, emotions, and motivations, and influencing their environment through decisions.

Within this framework, self-efficacy emerges as a key concept, defined as the set of beliefs regarding one's ability to organize and execute actions required to manage specific situations—that is, confidence in one's ability to take control (5).

## POSITIVE EXPECTATIONS AND SELF-EFFICACY FOR T1DM MANAGEMENT

Positive expectations and self-efficacy are effective tools not only for changing beliefs but also behaviors (5), with greater and more sustained effects when developed during childhood or adolescence (6).

In this regard, it is important to highlight that self-efficacy for the management of T1DM—understood as the belief in one's ability to maintain control and cope effectively—has demonstrated a positive impact on psychosocial variables such as perceived well-being in the adolescent population with T1DM (7). Furthermore, high self-efficacy has also been associated with improvements in glycemic control markers such as time in range<sup>8</sup>. These relationships do not occur arbitrarily, but rather have been derived from the development of complex explanatory models of beliefs and behaviors exhibited by adolescents with T1DM in relation to a set of psychosocial and biomedical variables (7, 8, 9).

From the analysis of these models, the following practical implications can be drawn:

- Greater self-efficacy predicts better health markers, such as increased time in range, as well as self-care behaviors like time devoted to active glucose monitoring. This self-efficacy marker becomes more relevant as individuals transition from parental management of T1DM to self-management (during adolescence).

- Higher levels of positive expectations regarding the chronic condition, together with greater self-efficacy in managing T1DM, are associated with improved emotional well-being in this adolescent population. »

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» - Social support, particularly from the family environment, shows a direct relationship with optimal levels of self-efficacy for managing T1DM.

- Self-efficacy for managing T1DM acts as a mediator between family social support and emotional well-being. In other words, despite the importance of family

support, it only predicts emotional well-being when adolescents present high levels of self-efficacy in managing their chronic condition. »

## » IN SUMMARY

T1DM is a chronic condition primarily diagnosed during childhood and adolescence. This fact shapes the development of young individuals, particularly during adolescence, when they must simultaneously manage the condition and devote considerable effort to its supervision and control. Self-efficacy, understood as the belief in one's ability to achieve goals in the management of T1DM, is positioned as a key element in regulating behavior related to this condition: first, because individuals regulate their beliefs and perceptions, and subsequently

because they regulate their behavior. Therefore, psychosocial variables such as perceived social support within the family environment may explain high levels of self-efficacy for managing T1DM and, most importantly, high self-efficacy, in turn, optimizes adolescents' self-care behaviors derived from this condition. In summary, and based on these premises, future psychoeducational interventions aimed at improving emotional well-being and T1DM management in this context should explicitly address self-efficacy for T1DM control and the social support environments of adolescents with this condition and their caregivers. **D**

## CONCLUSIONS

- **Most individuals with T1DM experience adolescence with the condition already established. As adolescence represents a transition to adulthood, self-care awareness in T1DM may be one of the first major responsibilities assumed in adult life.**
- **Self-efficacy refers to confidence in one's ability to control a situation; in this case, confidence in managing T1DM.**
- **High levels of self-efficacy optimize adolescents' self-care behaviors and are associated with improved biomedical markers such as time in range.**
- **Future psychoeducational interventions in adolescents with T1DM should explicitly target self-efficacy and social support environments for both patients and their families.**

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