

## Camps for Children with T1DM

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**Abstract.** Summer camps for children and adolescents with Type I Diabetes Mellitus (T1DM) represent an alternative setting to improve DSME (Diabetes Self Management Education) which is the cornerstone of care for all individuals with diabetes who want to achieve a successful health related outcome. Since the first camp was set up, summer camps have become widespread throughout the world. In literature, there are many studies that involve diabetes camps but none show enough evidence to assess the their effectiveness. The examined outcome does not involve the evaluation of quality of life enough which represents a multidimensional construct covering micro e macro cultural behaviours that underline different aspects between different regions. It is necessary to improve studies in this way. In any case present day camping experiences are invaluable.

**Key words:** Diabetes camps, quality of life, diabetes self-management education

### Introduction

Type 1 Diabetes Mellitus (T1DM) is an autoimmune illness that results in complete disorder of carbohydrate metabolism caused by missing of insulin. Daily medication regimen, insulin injection and blood glucose monitoring are complex and uncomfortable. To be successful, persons with diabetes need adequate patient education and social support (1). T1DM often appears in children and adolescents who have long-term life expectation. So children and adolescents require continuing medical care and education to prevent acute complications and to reduce the risk of long-term complications and to improve their quality of life. Diabetes care is provided in a wide variety of settings and the improvement in outcomes is largely dependent on long term preventive care delivered by a coordinated team of health care providers (2).

### Diabetes Camp

In literature, recreational camps have been frequently described focusing exclusively on summer

camps for children and adolescents with T1DM (3). The first camp for children with diabetes was opened in 1925 (4). At present they are carried out all over the world. With diverse outdoor activities and inconsistent routine, children may find it difficult to follow their schedule of daily monitoring, injections and specific meal plans or they may simply lose interest in doing so (3). Summer camps represent a very important moment for children, because their parents leave them alone and they have to learn by themselves all that the professional team teaches them. The aim of diabetes camps is to allow for a camping experience in a safe environment. An other important goal is to enable children with T1DM to meet and share their experiences with one another while they learn to be more personally responsible for their disease. In the camp setting, the recreational, educational, social and health care needs of children can be met in a safe, enjoyable and productive environment (5-7).

Norris et al. wrote a systematic review in which they evaluated 10 studies about the effectiveness of Diabetes Self Management Education (DSME) interventions in recreational camps. The 10 studies examined a variety of outcomes: patient knowledge, psy-

chosocial attributes and glycemic control (8-17). According to Community evidence guide rules, evidence is insufficient to assess the effectiveness of education in summer camps, based on the lack of a sufficient number of quality studies examining health outcomes. However, the relaxed, fun, no clinical atmosphere of the camp setting and the absence of harmful situations can associate diabetes education with a positive experience. The systematic review development team identified another potential benefit, although this is not formally evaluated in the literature reviewed. So further studies are needed to determine the effectiveness of DSME in recreational camps on self-efficacy and other psychosocial mediators, behaviour change, and quality of life which represent the more important outcome of this short-term intervention.

### Quality of life

The term health-related quality of life was originally coined to integrate a new look on medical outcome. The term denotes in psychological terminology a multidimensional construct covering physical, emotional, mental, social and behavioural components of well-being and function as perceived by patients and/or observers (18). While quality of life research in adults has progressed substantially in the past, health-related quality of life in children has not yet been systematically researched, although it could be assumed that dimensions relevant for adults may also be relevant for children. Only a small subset of the studies has assessed quality of life multidimensionally and patient-based methods have so far been largely neglected in the assessment reported. Actually there are many approaches to evaluate the quality of life in children and the questionnaire method is usually favoured because of the economy of its use as well as the psychometric quality criteria which include reliability, validity and sensitivity.

### Good metabolic control, quality of life and summer camps

The main aims of diabetes care in children and adolescents are to achieve optimal blood glucose con-

trol, normal psychosocial development and support for the young person and family in developing strategies to cope with life time of diabetes (19). A major challenge is to maximize quality of life for the adolescents in the context of effective therapeutic intervention (20).

The Hvidore study group studied 2,101 adolescents with T1DM to address the relationship between quality of life, HbA1c, age, gender, duration of diabetes and family structure in a large international population of adolescents with diabetes. The relation between QOL and psychosocial issues, diabetes treatment regimens and metabolic control in adolescence is controversial. Moreover in this study a highly significant variation in satisfaction among centres was shown. This may reflect cultural, socio-economic or treatment differences among the centres which involve DSME in all settings including summer camps. Macro cultural events such as religion, family structure, diet and gender issues and micro cultural events such as support, success, empowerment and self-efficacy were always implicated underlying the difficulty to analyze in homogeneous way the educational approach to diabetes (21).

Camping experiences for children and youth with diabetes are invaluable. Most camps have a high return rate for campers, many of whom become counsellors and staff as young adults. Thus, it is reasonable to assume that they have benefited not only from the camp experience, but also from the friendships that have developed from being in an environment where the norm is to have diabetes. Providing high-standard diabetes care is imperative to maximize the experience offered by camps specialized for children with diabetes. Using the active camping environment as a teaching opportunity is an invaluable way for children with diabetes to gain skills in managing their disease within the supportive camp community.

### Conclusion

Diabetes camps are poorly represented in literature and the results shown in those studies are much debated. We think that they are difficult to analyze because the experiences that children have involve a

lot of aspects of their life such as emotive and cultural aspects and thus the criteria used to evaluate the outcome are not appropriate. The T1DM treatment is a multidisciplinary strategy as demonstrated by DCCT and diabetes camps are only one aspect of diabetes management so they cannot be analysed in isolation.

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