

# mHealth app for young people with diabetes type 1 transferring from pediatric to adult care

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## 1 Background

Managing diabetes requires self-care, knowledge and support – especially when moving from pediatric to adult care. More than 75% of the young people have a poor glycaemic control. Lack of glycaemic control can lead to short- and long-term complications including critical morbidity and mortality. Finding new ways to empower young people in transition and transfer is therefore crucial.

### Objective

To develop, test and evaluate a mHealth app for young people with diabetes type 1 transferring from pediatric to adult care.

### Purpose

To provide young people with :

- An overview of their diabetes
- A coherent procedure from pediatric to adult care
- An "up-to-date" tool for young people with diabetes

## 2 Method

**Development:** We developed an app-prototype based on rapid prototyping and participatory design. 13 young people 15-22 years old with type 1 diabetes, 7 parents and 7 health care professionals participated in three workshops.

**Test:** 25 young people with type 1 diabetes, 7 parents and 21 health care professionals tested the app for two months.

**Evaluation:** We did six individual interviews. 53 completed an electronic questionnaire, including the questions :

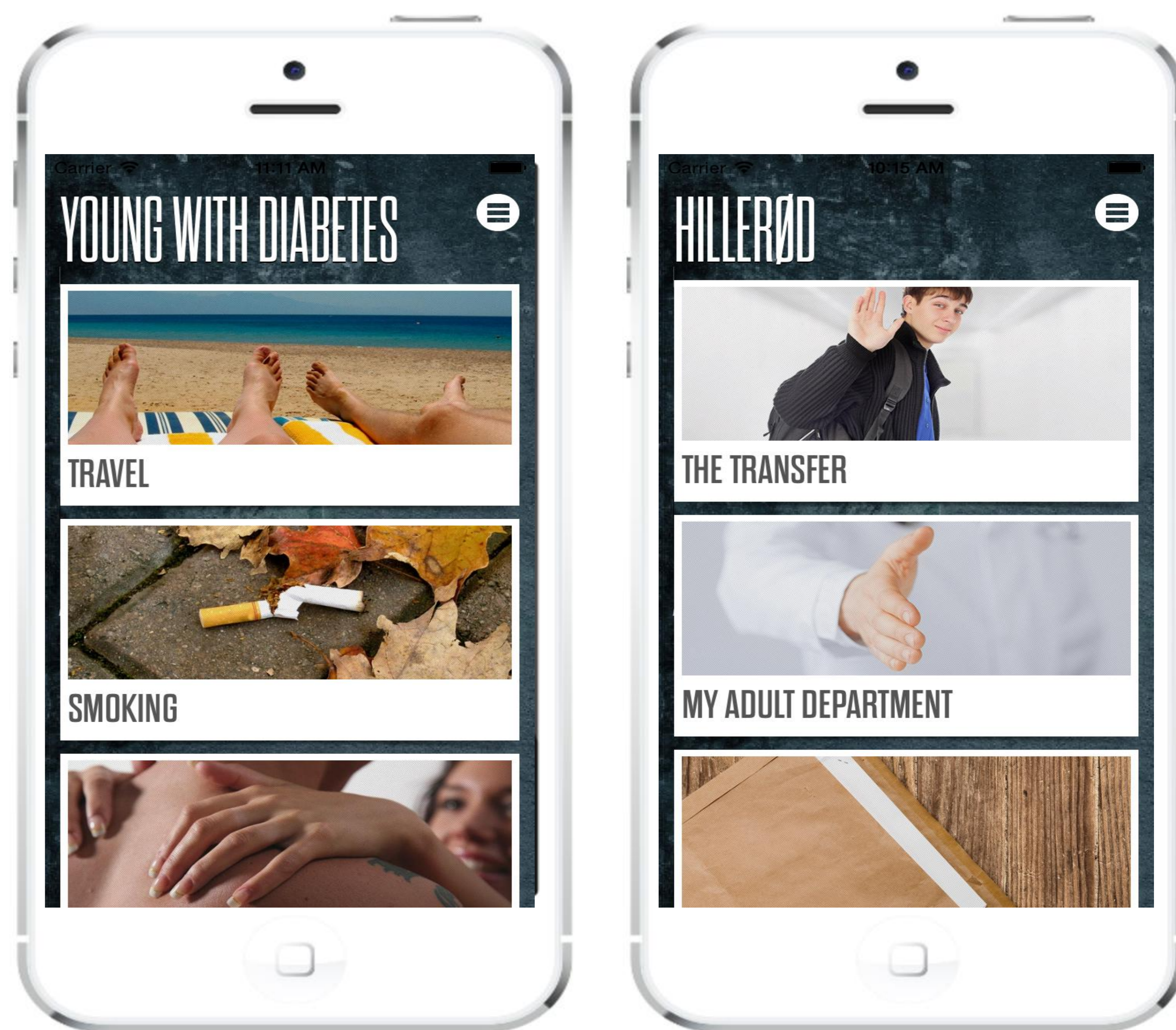
- Which part did you use?
- What was the best?
- What was the worst?

**Who participated?** The app was designed, tested and evaluated in collaboration with:

- Young people and their parents
- Two pediatric and adolescent departments
- Two adult departments
- A center of adolescent medicine
- An IT-company



Workshop: Young people shared their wishes and ideas for the app



Functional prototype: A mHealth app for young people with diabetes

## 3 Results

**Development:** Based on participatory design we developed an app with the following themes and functions:

- Being young with diabetes
- My new adult department
- Diabetes, treatment and complications
- Others experiences with diabetes
- Reminder function
- Social chat room

**Evaluation:** 80% of the young people and 71% of parents used the app to get information about diabetes and being young with diabetes. 86% of the parents and 24% of the young people used the app to get information about their new adult department. No one used the chat room.

Best and worst things:

- Rich in information, providing an overview of diabetes.
- Relevant information about the new adult department.
- Young people reported they felt less dependent on their health care providers.
- The prototype design was described as "dark" and difficult to navigate in.

## 4 Conclusion

The mHealth app "Young with diabetes" was well received by young patients, parents and staff. Prototypes can be designed, tested and evaluated within a short period of time. Especially needs of information and sharing others experiences emerged. Future research should focus on the possible role for apps to support chronically ill young people during transition in randomized controlled trials.