Multimedia Appendix 4. Overview of key functions of the Apps included

T1D

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
Kirwan et al (2013) [1]	Physical activities (minutes)	Food item in grams	Patient, Certified Diabetes Educator	√	√	×	BG	√(1,3)	Weekly	Text message
Skrøvseth et al (2015) [2]	Tailored step counter (for physical activity registration)	Eating habit registration, Photos of food and drink intake	Users, Healthcare givers	√	Not specified	√	BG	√(1)	N/A	N/A
Rossi et al (2010) [3]	Physical activity	Food intake	Patients, Physician	√	√	√	BG	√(2,3)	N/A	Text messages
Rossi	Physical	Food	Patients,	√	√	√	BG	√(2,3)	Every 1-	Text

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
et al (2013) [4]	activity	intake(CHO and calories)	Physician						3 weeks	messages
Charpentier et al (2011) [5]	Physical activity	Carbohydrate intake	Patients, investigators	×	√	√	BG	√(2,3)	Every two weeks	Telephone call

T2D

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
Quinn et al (2008) [6]	N/A	Carbohydrates intake	Research team, Patient, Physician	√	√	×	BG	√(2,3)	N/A	E-mail
Quinn et al	N/A	Carbohydrates intake	Patient, Healthcare	√	√	×	BG	√(2,3)	From every	Electronic

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
(2011) [7, 8]			provider						two months to one week	message, Telephone calls
Orsama et al (2013) [9]	Physical activity (pedometer)	N/A	Patients, Study nurse	√	Not specified	×	BP, body weight, BG (six patients with high HbA1c level)	√(1,2,3)	When necessary	N/A
Holmen et al (2014) [10-12]	Physical activity	Food intake	Patients	√	×	×	BG	√(1,2,3)	Each month for 4 months	Phone-based converations
Waki et al (2014) [13]	Pedometer counts, Type of exercise	Voice/text message about meals	Patients, Physician, Dietician	×	Not specified	×	BG, BP, body weight	√(1,2,3)	When necessary	N/A

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
	and its duration (for exercise isn't counted by a pedometer)	(main dish of the meal), Photos of meals								
Karhula et al (2015) [14]	Walking steps	N/A	Health coaches, Patients	√	×	×	BG, BP, Body weight	√(1,2,3)	Every 4 to 6 weeks	Phone-based conversation
Wayne et al (2015) [15]	Exercise frequency/ duration/intensity	Food intake (via photo journaling)	Patients, Health coach	×	Not specified	×	BG, Mood	√(3)	Any time in the 24-hour cycle	Via secure messaging, scheduled phone contact

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback and/or during in-person meetings
Weegen et al (2015) [16]	Three-dimensional (3D) activity monitor	N/A	Patients, Practice nurse	√	×	Not specified	N/A	√(1,2,3)	First week, after 2 weeks, after 2-3 months and after 4-6 months	Off-line individual consultations
Plotnikoff et al (2017) [17]	Self-monitoring the progress of weekly	N/A	Patients	√	×	×	N/A	N/A	N/A	N/A

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
	physical activity goals									
Bao et al (2017) [18]	Physical activity	Dietary intake	Patients, Research team	√	×	×	BG	√(3)	One or two times a week	The outpatient follow-up, Phone calls
Faridi et al (2008) [19]	Physical activity (pedometer)	N/A	Patients, Healthcare providers	√	×	×	BG, Body weight	√(1,2)	N/A	N/A
Nagrebetsky et al (2013) [20]	N/A	N/A	Patients, Research nursing staff	×	√	×	BG	√(1,3)	Monthly	Telephone calls
Yoo et	Exercise	N/A	Patients,	√	Not	×	BG, BP,	√(1,2,3)	When	Send

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
al (2009) [21]	time		Physicians		specified		Body weight		necessary	text messages through the system

GDM

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
Kennell yet al (2018) [22]	N/A	N/A	N/A	√	×	×	N/A	√(3)	Every 2 weeks (emails), 28 and 34 weeks of gestation	Emails, Face-to-face hospital visits

Prediabetes

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
Block et al (2015) [23]	Activity	Dietary intake	Patients	√	×	×	Body weight	√(1,2)	N/A	N/A
Fukuoka et al (2015) [24]	Total number of steps per day, The types and duration of physical activities	Total daily caloric intake	Patients	√	×	×	Body weight	√(2)	N/A	N/A
Spring et al (2017) [25]	MVPA (moderate-to-vigorous intensity physical activity)	Dietary intake	Patients, Coaches	√	×	×	Body weight	√(1,3)	Weekly for 6 months (messages). Weekly	Personalized messages, Phone calls

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
									for first eight weeks and monthly from months 3-6 (phone calls)	

T1D and T2D

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback	Type of HCP feedback
Zhou et al (2016) [26]	N/A	Carbohydrate intake	Patients, Research team	√	√	Not specified	BG, BP	√(1,2,3)	Once a week or every two	N/A

First author (year)	Physical activity monitoring	Dietary monitoring	Monitoring personnel	Health information and education	Medication adjustment support	Insulin bolus calculator	Clinical measurements logging	Feedback[a]	Freq. of HCP feedback weeks	Type of HCP feedback

[a]1: Graphical feedback; 2. Automated feedback; 3. HCP feedback

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