glooko

Digital Diabetes Management Application Improves Glycemic Outcomes in People With Type 1 and Type 2 Diabetes

Offringa et al. (2018)

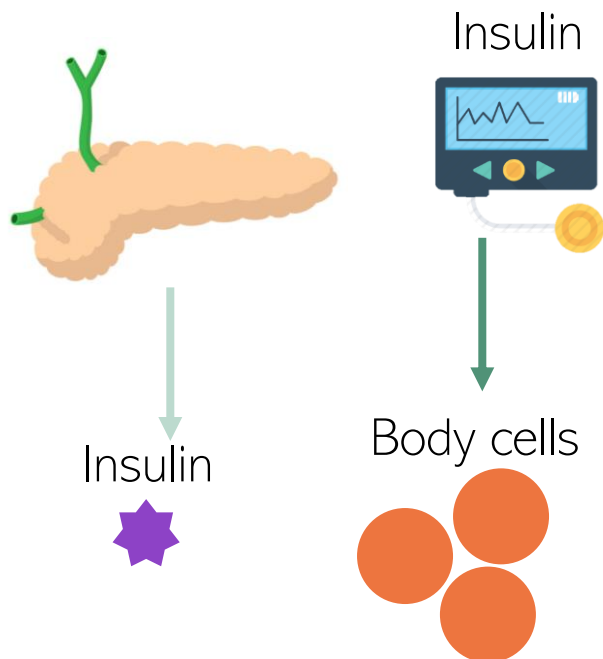Seminar Medical Informatics – INFOSMI
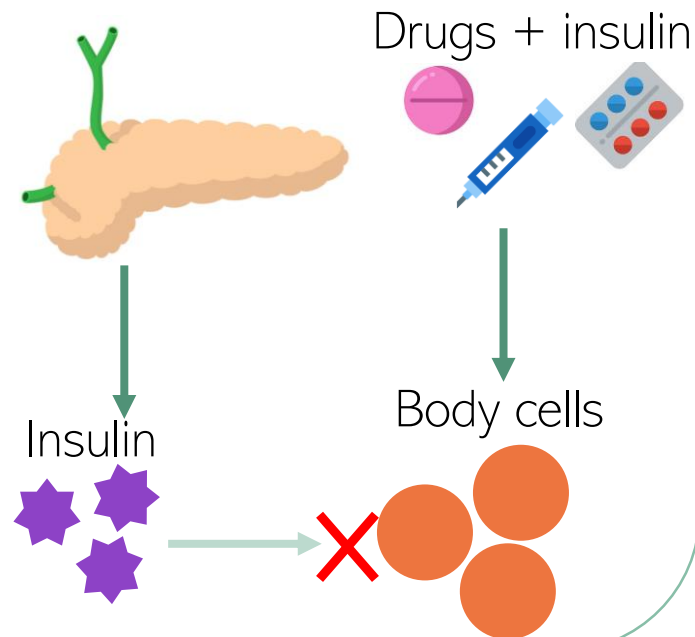
February 25th, 2019

Hedy te Rietmole

DIABETES MELLITUS

- Chronic disease
- High blood sugar levels → body damage

Type 1: pancreas doesn't produce enough insulin

Insulin

Insulin

Body cells

Type 2: cells of the body don't respond properly to the insulin that is produced

Drugs + insulin

Insulin

Body cells

Gestational: abnormal high blood glucose level during pregnancy

MANAGEMENT OF DIABETES

- Blood sugar values are depending on many factors
  - E.g. environment, stress and hormones
- Management in lifestyle and daily routine helps keeping blood glucose levels in range
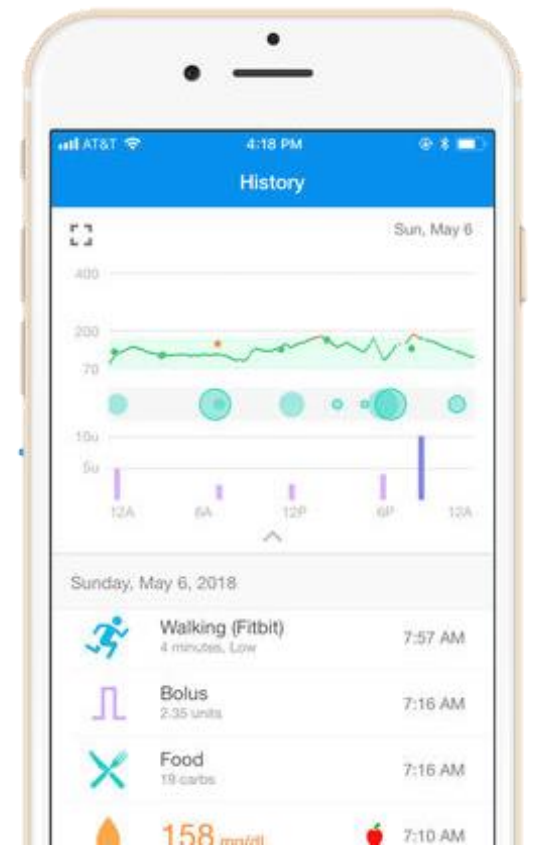- Application of mHealth

THE GLOOKO APPLICATION

- Subscription-based diabetes management platform
- Provides a digital logbook, reminders and integration with activity trackers

- Sync diabetes data from blood glucose meters, insulin pumps, CGM (continuous glucose monitoring) and fitness and health apps
  - Many devices can be connected, irrespective of device brand

THE GLOOKO APPLICATION

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- Tracks medication, food and lifestyle data to create a digital logbook
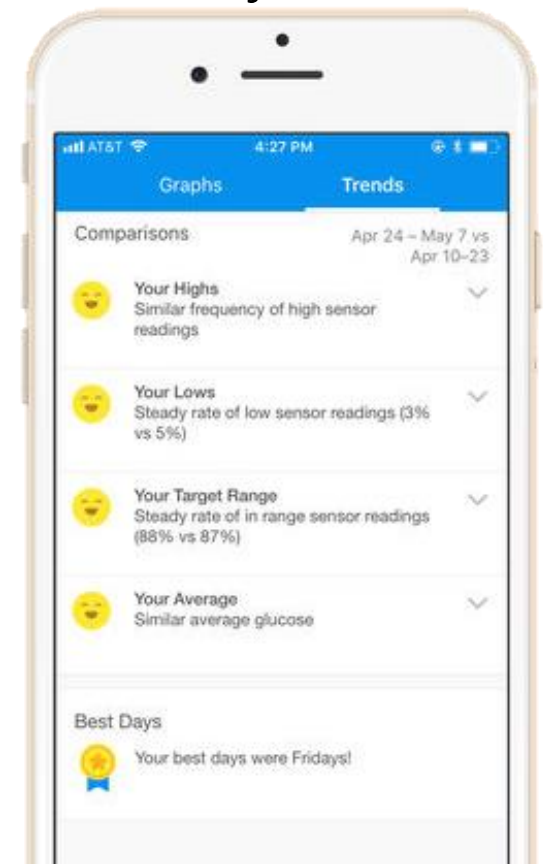 - Barcode scanner
  - Correlations are calculated

THE GLOOKO APPLICATION

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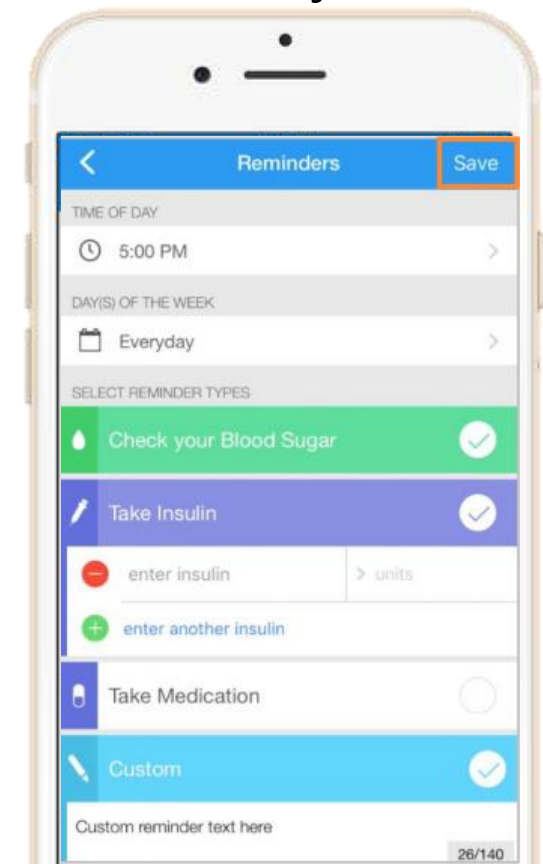- Contains pattern recognition features by which trends in blood glucose level can be identified

THE GLOOKO APPLICATION

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- Reminders can be set to check blood sugar, take medications, insulin and more

THE GLOOKO APPLICATION

- Subscription-based diabetes management platform

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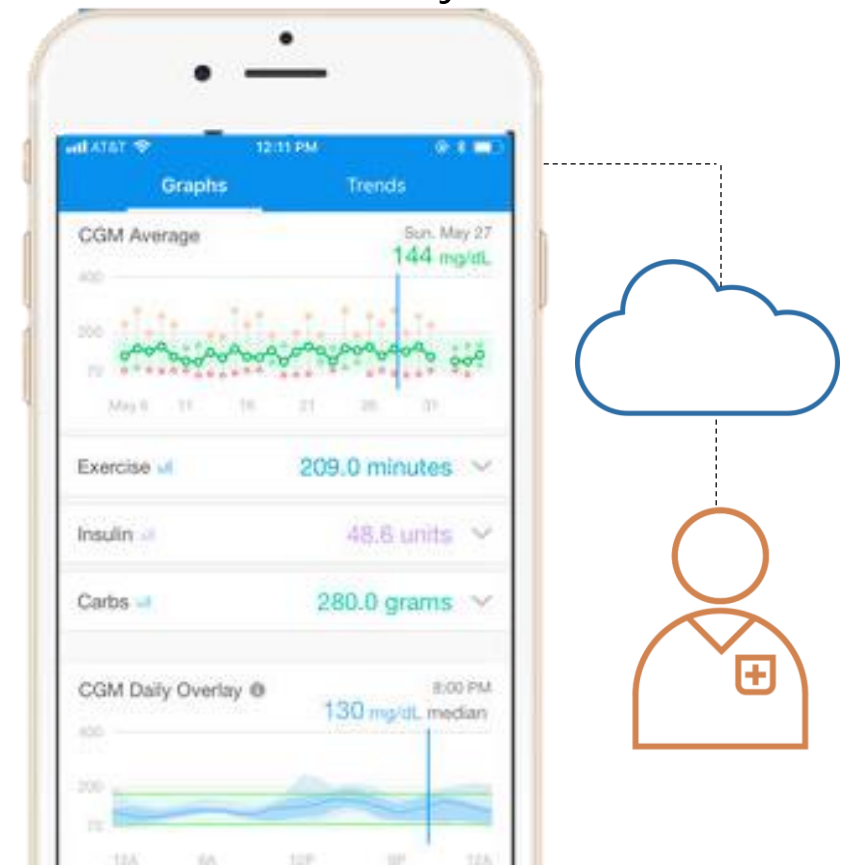
- Data is presented in useful graphs

THE GLOOKO APPLICATION

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- Share data automatically with a health care team

BIG DATA

- Use of data analytics platforms to identify trends and create reports

- Pattern recognition features

- The data may help diabetes prevention and slowing down progression of disease in people already diagnosed

PATIENT SAFETY AND TRANSPARENCY OF INFORMATION

- Goal to be transparent and protective of private data
- Users/patient's choice to provide the data

- Technical and organizational precautions to secure personal data and prevent loss, misuse or alteration
- Data is encrypted and safely transferred and collected on secure servers
- Passwords to access and use the data

- All data is stored centrally
- Information that is showed is the same for health care provider and the patient

INTEROPERABILITY

- 2017: Glooko (US) merged with Diasend (Sweden) → Glooko
  - User friendly platform + global capabilities
  - 4000 diabetes clinics in 23 countries and across 15 languages
- Glooko integrates with major EHRs, care management and more

THE ARTICLE (Offringa et al., 2018)

- Aim: determine real-world glycemic benefits of a mobile diabetes management platform used by individuals with type 1 and 2 diabetes
- Participants randomly selected from a database of diabetes users
  - Mobile group: any user of the mobile app
  - Control group: any individual not using the mobile app, who uploaded data at their health care office

- Results:
  - Significant increase in frequency of BG monitoring among mobile platform users
  - Fewer hyperglycemic events and lower average BG levels compared to control group
  - Significant decrease in average BG and decrease in hyperglycemia after 2 months

- Conclusion: digital technologies can enhance diabetes care in real-world setting

QUESTIONS

- Do you think, the conclusion based on this study is reasonable?

- Share your experiences!