

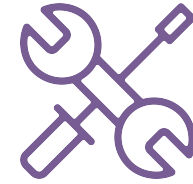
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Innovative Ways to Integrate Apps into Clinical Practice

Innovative Ways to Integrate Apps into Clinical Practice



Event Materials

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Continuing Education

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Readiness. Knowledge. Network.

This material is based upon work supported by the National Institute of Food and Agriculture,
U.S. Department of Agriculture, and the Office of Military Family Readiness Policy,
U.S. Department of Defense under Award Numbers 2019-48770-30366 and 2023-48770-41333.

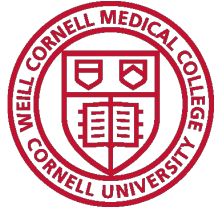
Today's Presenter



Rachel Stahl Salzman, MS, RD, CDN, CDCES

Registered Dietitian/Certified Diabetes Care &
Education Specialist

Weill Cornell Medicine
Division of Endocrinology, Diabetes & Metabolism



Weill Cornell
Medicine

As faculty of Weill Cornell Medical College, we are committed to providing transparency for external relationships prior to giving an academic presentation.

Disclosures:

Presenter: Rachel Stahl Salzman, MS, RD, CDN, CDCES

Undermyfork Inc., Clinical Advisory Board and consultant

This presentation is not endorsing any brand, company, or mobile application.

Learning Objectives

- Identify benefits of mobile health apps for promoting positive health behaviors and enhancing clinical practice
- Review potential challenges that may limit adoption
- Discuss strategies for Registered Dietitian Nutritionists to integrate apps into clinical practice

Poll



Respond in pop-up poll.

Do you recommend apps?

A) Yes

B) No

Let's discuss!



Share in the chat pod.

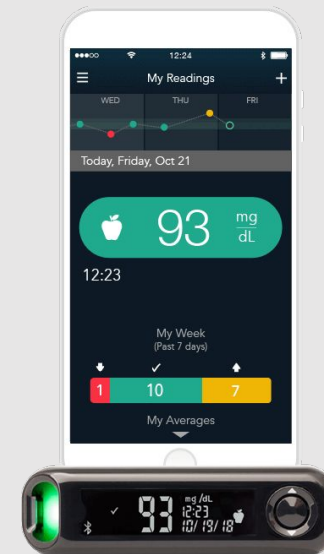
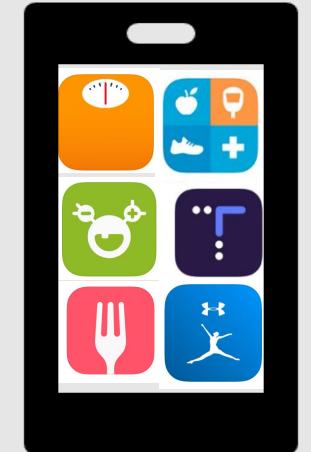
If you answered **YES**,
which apps do you
recommend?

Digital Health Revolution: Reshaping Healthcare through Accessibility, Innovation, and Personalization

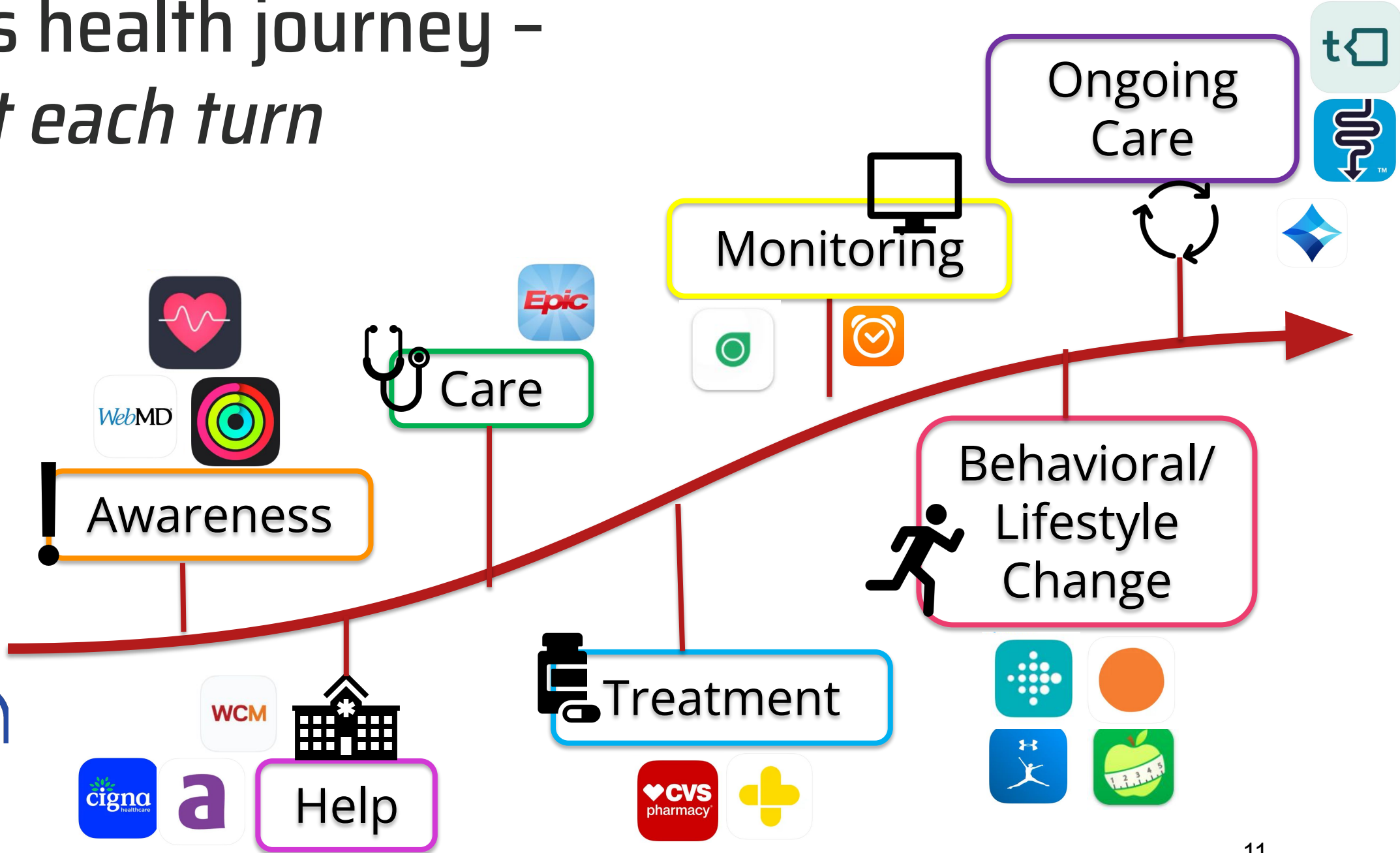
The Past



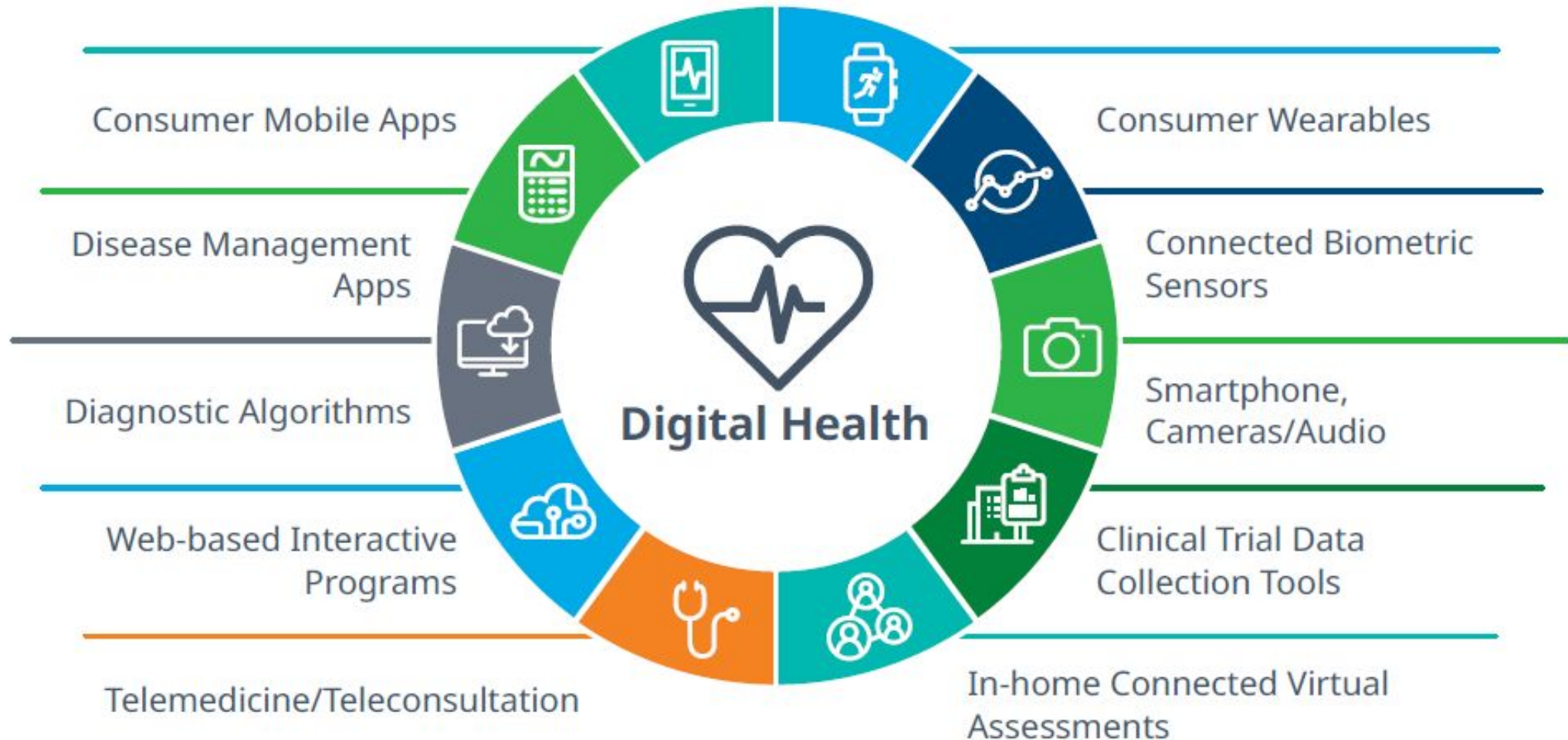
The Present



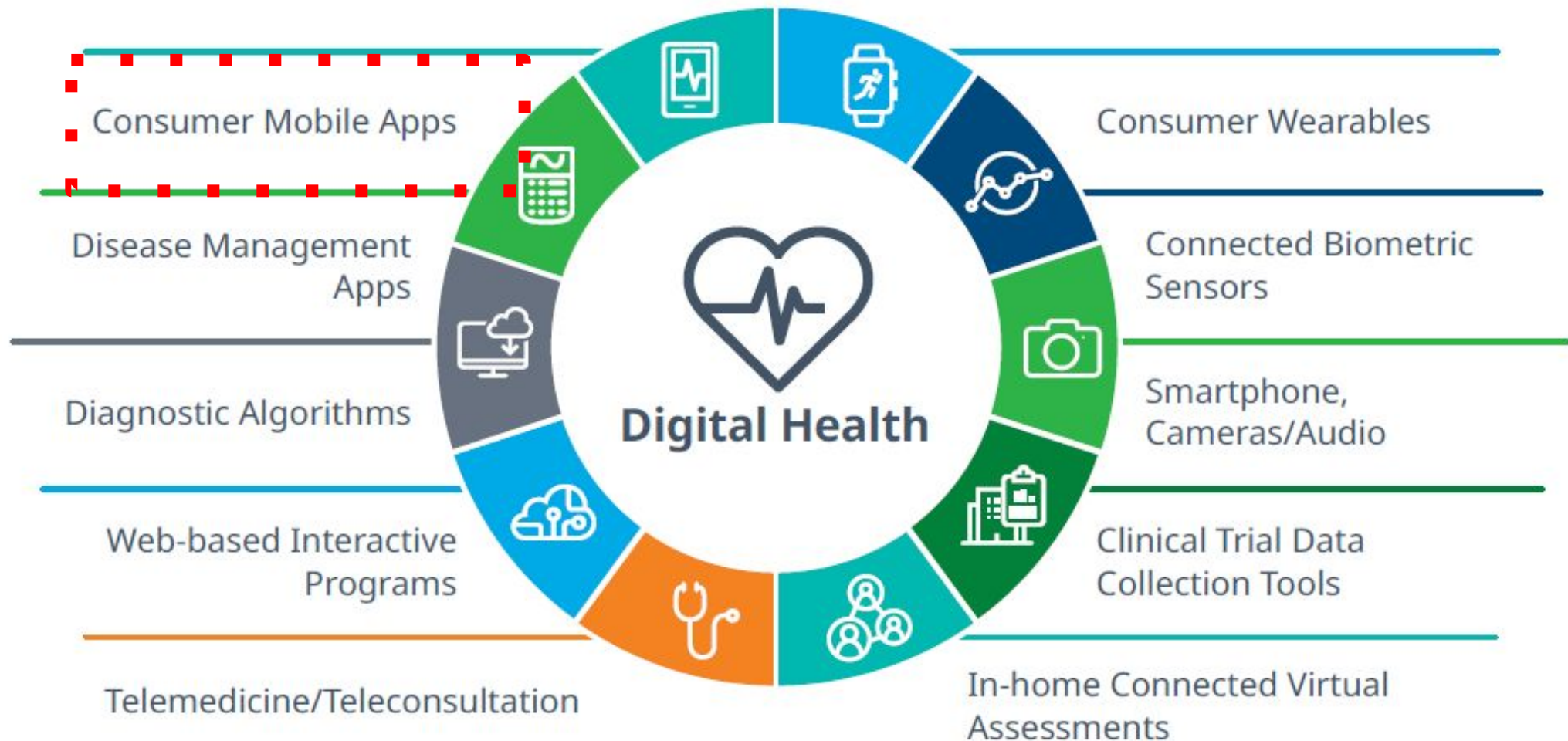
Today's health journey - *apps at each turn*



Apps are part of the Digital Health Toolbox...



And the most widely available and used





best health apps



About 3,310,000,000 results (0.35 seconds)





Did You Know??

- There are over 350,000 health apps available in app stores
- As of January 2023, 2 in 5 U.S. adults use health apps
- 3 health conditions account for nearly half of all disease-specific apps

Poll

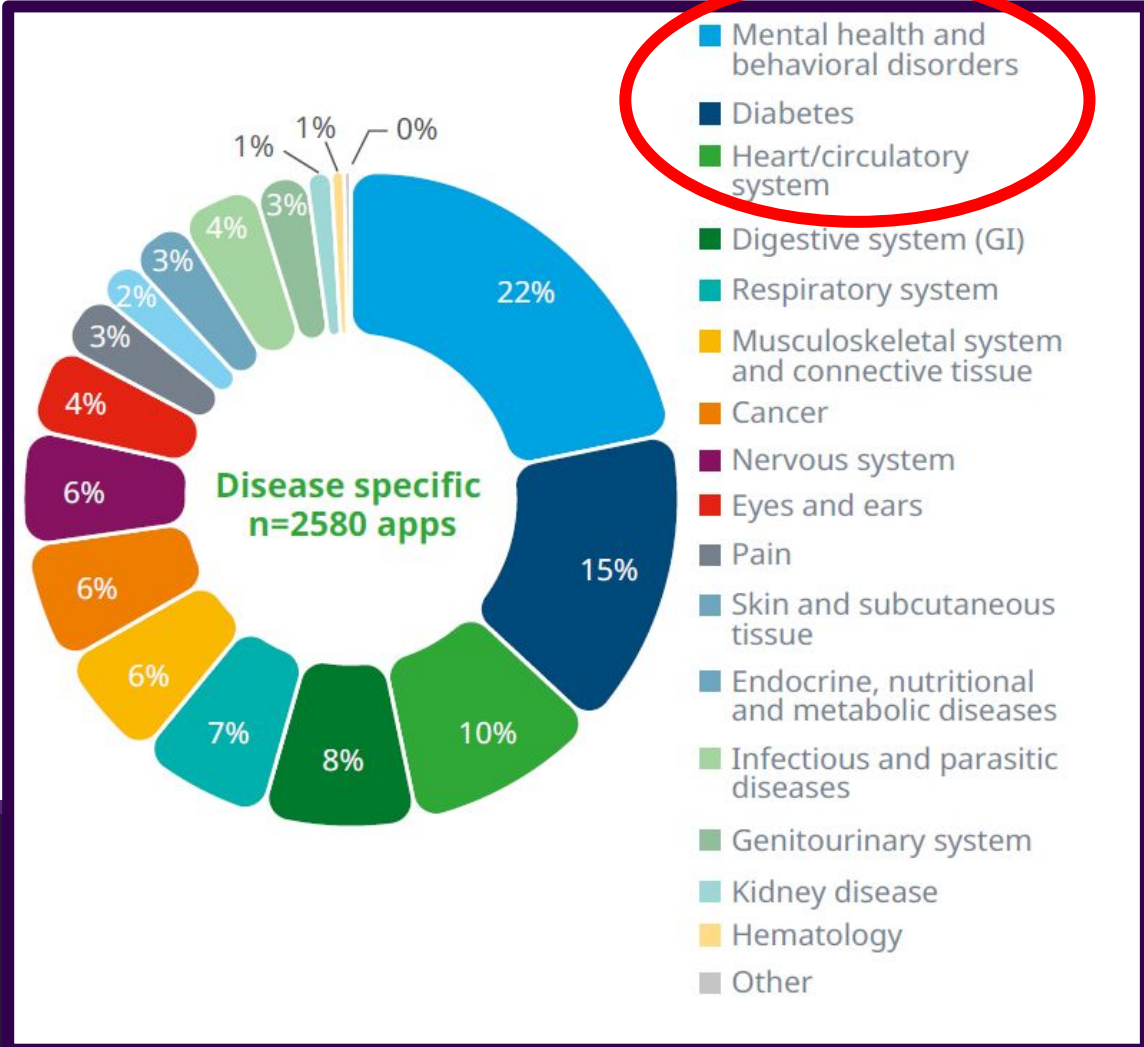


Respond in pop-up poll.

What are the largest health condition categories of apps?

- A. Mental health, cancer, musculoskeletal
- B. Mental health, diabetes, heart/circulatory system
- C. Digestive system, respiratory system, pain management
- D. Diabetes, heart/circulatory system, kidney disease

Digital Health Apps by Disease State



Some categories of health apps



Person generated health information
(e.g. tracking nutrition, activity, sleep)



Display, download
and/or use data



Health management
and education



Apps that function as
Software as a Medical Device (SaMD)

Benefits

- Simplify data tracking and download
- Provide advanced analytics
- Drive engagement



Photo credit: gettyimages.com

Data download and review

In the not-so-distant past



B = 1 bd, 1 egg, 4 chemo
 -D = 94 L = 1/2 Chinese Pao
 -B = 152 B = yogurt, blueberries, apple, nuts
 -bed = 156 L = 1/2 Chinese Pao
 D = gn. pork, mushroom, spinach, br
 B = 173 B = yogurt, blueberries
 D = 94 L = 1 bd, roast duck, Popooya
 -B = 168 B = yogurt, blueberries S = 1/2 apple
 -D = 130 L = Vermicelli w/ Chinese cabbage,
 , tofu
 -bed = 175 D = "
 -D = 145 Miss bfst; L = 2 wheat bd,
 1/2 honeycrisp apple (1st)
 P = 2 sprout bd, tuna,
 B = 129 B = yogurt +

Apps simplify data download and tracking.

Person with Diabetes



- Timeline of glucose values and activities
- Charts and graphs to visualize progress
- Pattern recognition

Healthcare Professional (HCP)

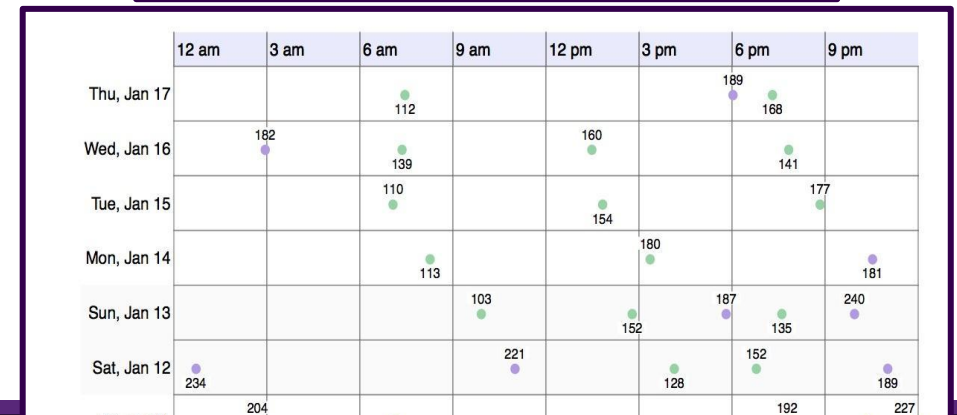
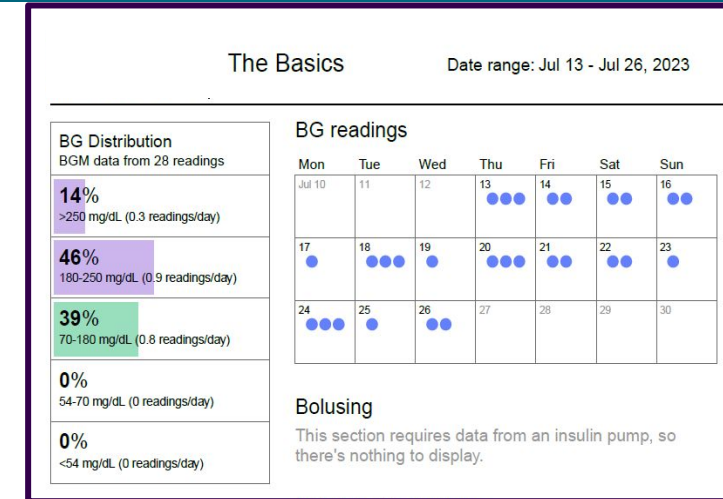
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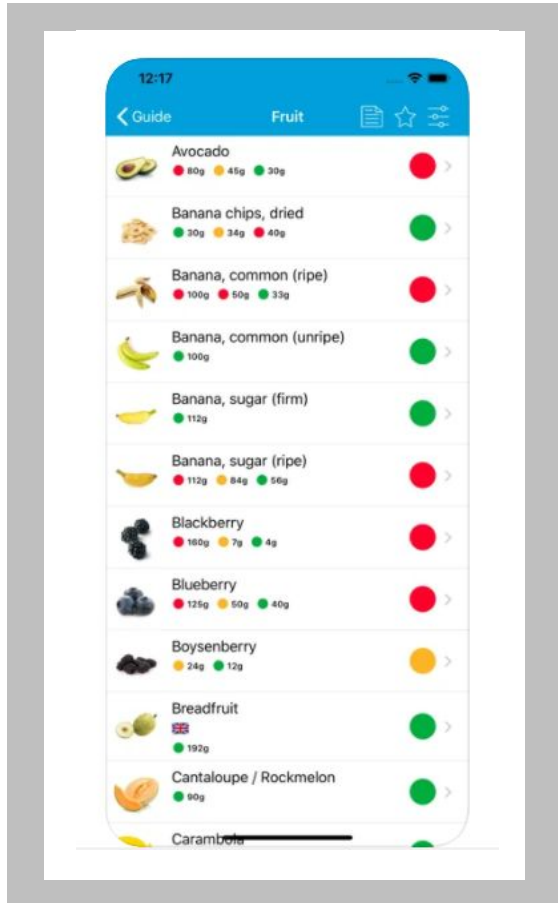
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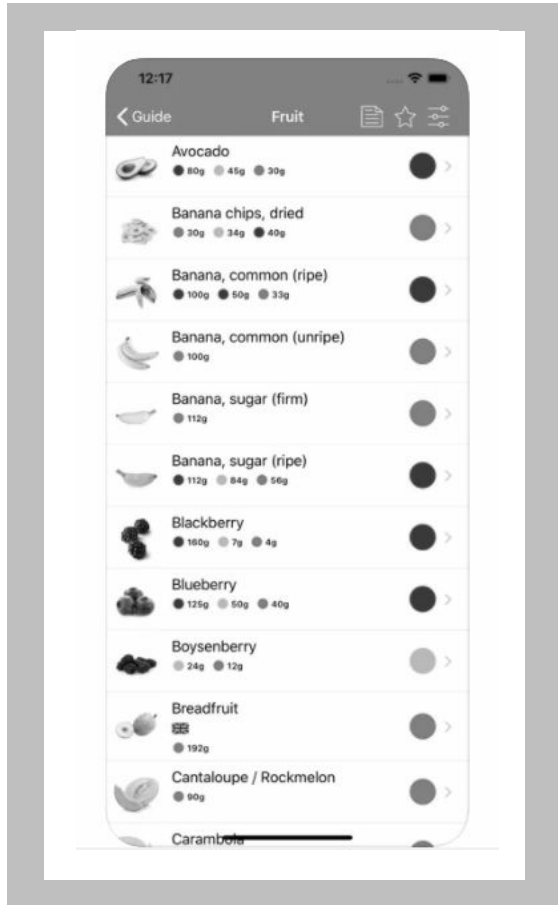
Apps can help inform decision-making.

Guidance to
minimize risks

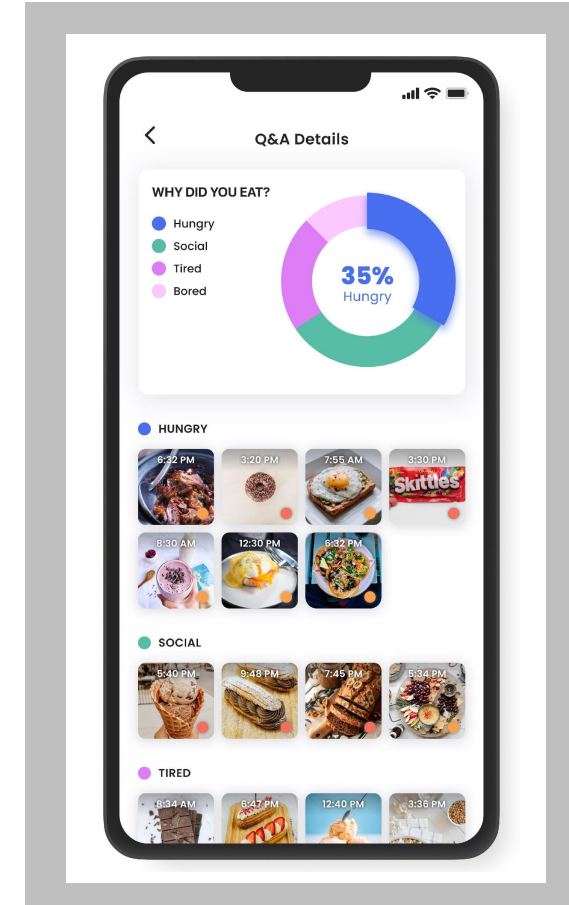


Apps can help inform decision-making.

Guidance to
minimize risks



Personalized insights based
on retrospective data



Apps drive engagement to support positive behavior change.

Notifications and reminders to take medication, track meals, stand and move



Apps drive engagement to support positive behavior change.

Notifications and reminders to take medication, track meals, stand and move

Goal setting and tracking

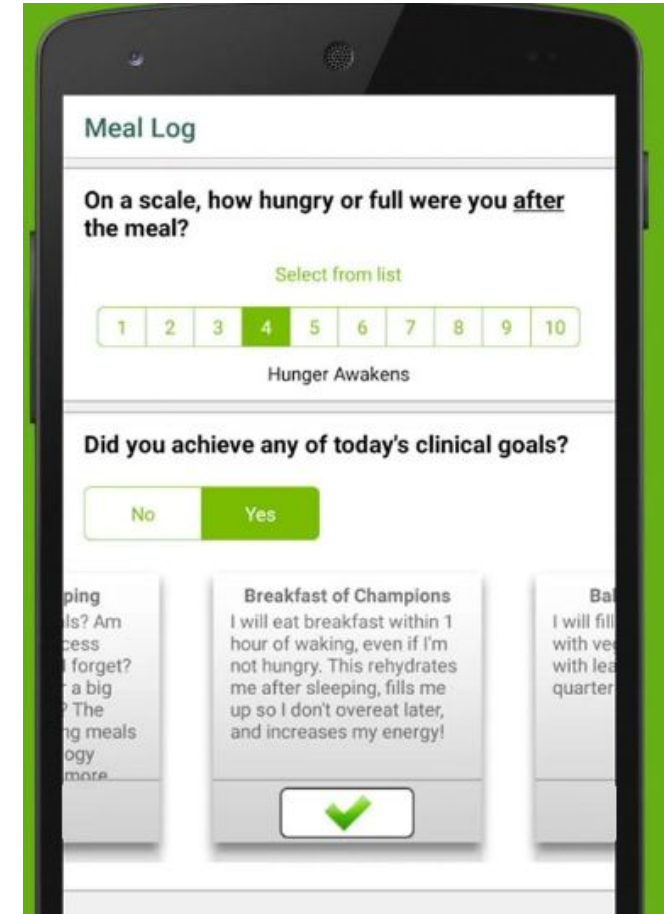


Photo credit: Nourishly website

Apps drive engagement to support positive behavior change.

Notifications and reminders to take medication, track meals, stand and move

Goal setting and tracking

Coaching

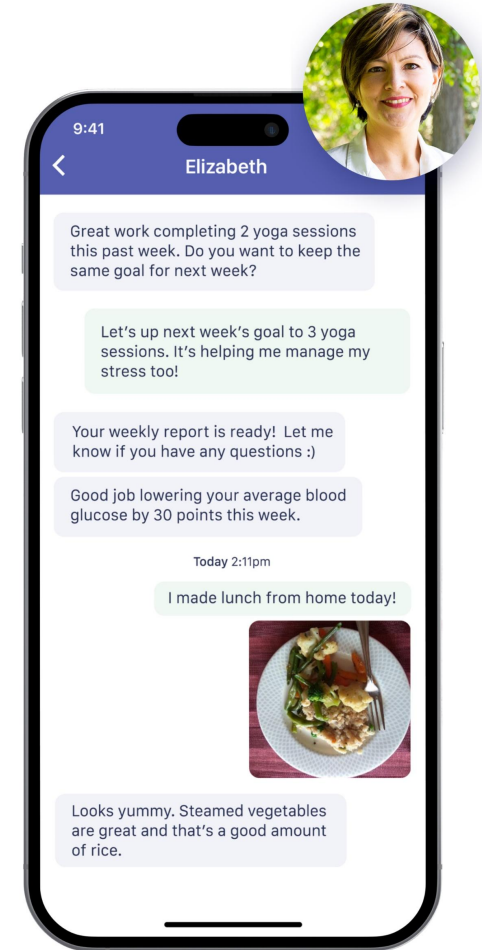


Photo credit: MySugr website

Challenges

- Limited clinical data
- Privacy, security and safety concerns





Limited Clinical Data

- Few randomized controlled trials
- Small sample size and short duration
- Evidence gaps across different populations

Diabetes Mobile Health Apps

Positive aspects of current state

- Studies show promise in disease management and promotion of health-related behaviors
- Interventional studies show improvement in short term outcomes
- First steps already taken in testing diabetes apps for accuracy of medical calculations and establishing quality assurance mechanisms
- Processes exist to transmit data from diabetes health apps to other platforms

Gaps

- Evidence better identifying differences in response among populations (e.g., based on age/generation, language, socio-economic status)
- More rigorous evidence of clinical validity, effectiveness, accuracy, safety through longer-term RCTs with larger study samples
- Further assessment of technological issues, useability, and quality
- More rigorous quality assurance mechanisms
- Greater interoperability and standardized data collection for sharing with HCPs

Stakeholder actions suggested

- Explore, and evaluate medical data security, privacy, and determine cybersecurity regulation of diabetes mobile health apps
- Train and update Health Care Professionals (HCPs) with adequate information on app utility
- Increased impact and role of professional organizations such as the ADA, EASD, AMA, and IDF in addressing digital health technology issues in diabetes
- Increased involvement of the Center for Medicare & Medicaid Services (CMS)

Apps have privacy, security, and safety concerns

- Not all apps are regulated by a governing body
- Data privacy not always well-protected
- Lack of regulation on information shared through online communities and peer support



gettyimages.com

FDA Guidance

- FDA regulates a subset of apps that function as medical devices, leaving a large gap for apps that may pose risks

But in an effort to protect and promote public health...

- The FDA launched the Digital Health Center of Excellence in 2020, which focuses on standards and guidelines for safe and clinically effective digital health technologies

Contains Nonbinding Recommendations

Policy for Device Software Functions and Mobile Medical Applications

Guidance for Industry and Food and Drug Administration Staff

Document issued on September 28, 2022.

Document originally issued on September 25, 2013.

This document supersedes “Policy for Device Software Functions and Mobile Medical Apps” issued September 27, 2019.

Digital Health Center of Excellence

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Empowering digital health stakeholders to advance health care



Our goal: Empower stakeholders to advance health care by fostering responsible and high-quality digital health innovation.

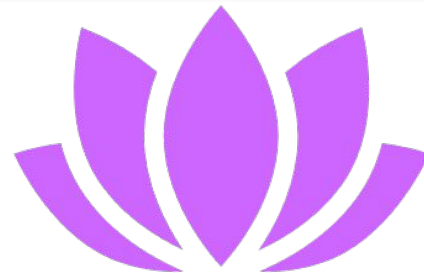
Questions?

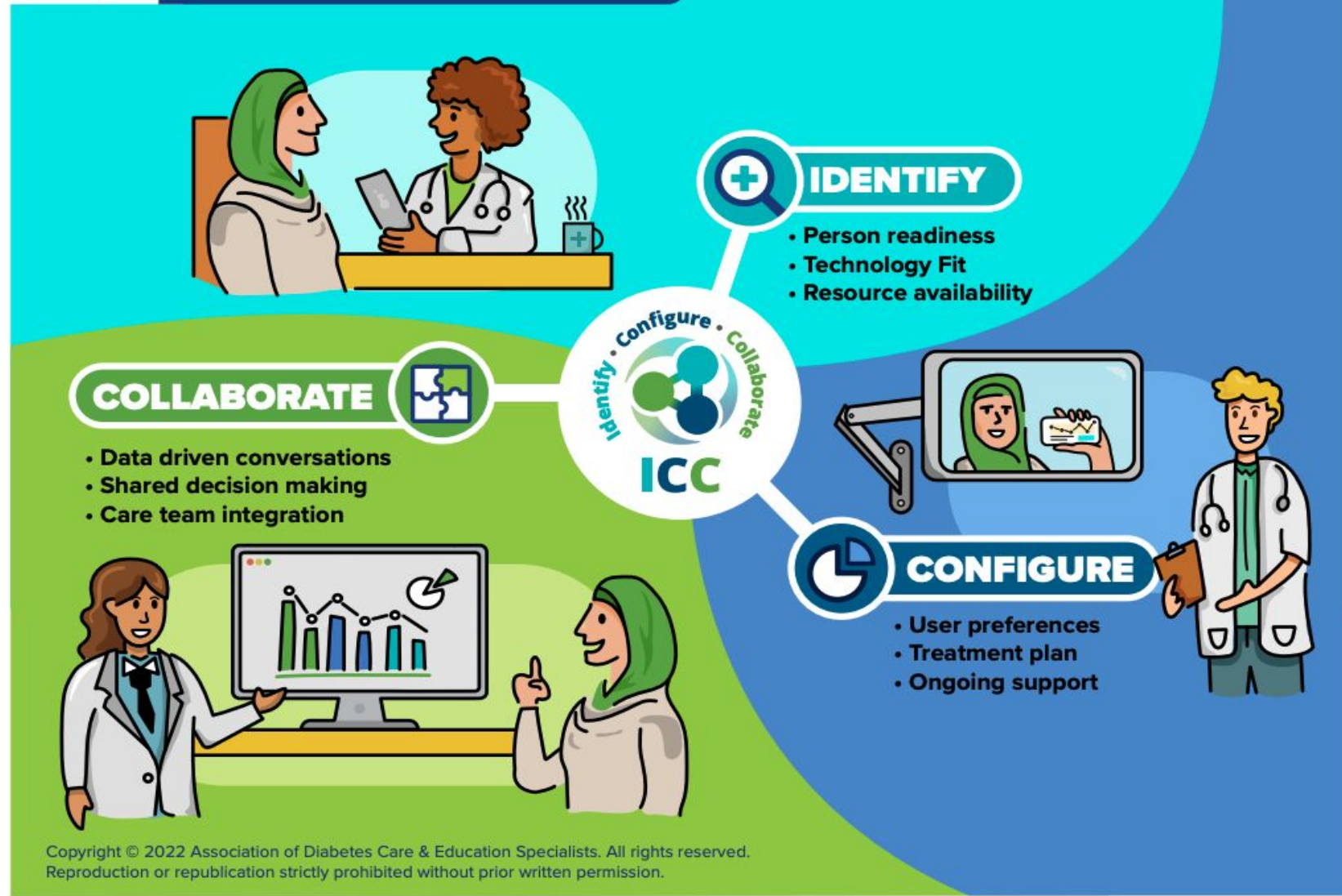


The Art of App Integration

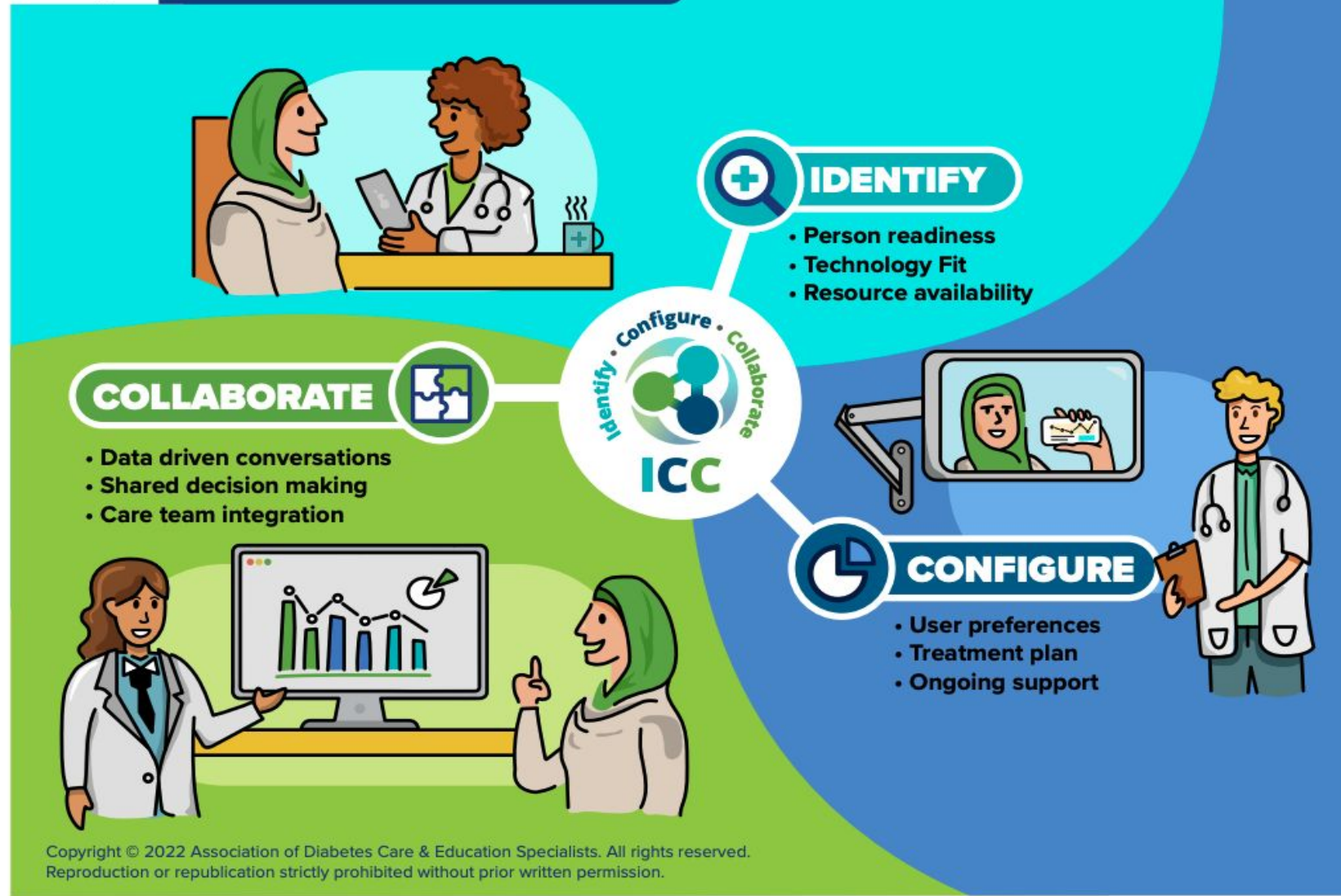
The Art of App Integration

Simply recommending an app doesn't change outcomes unless **education, training and follow-up** are provided





Identify
Configure
Collaborate (ICC)
framework
helps inform the
art of
integrating apps
to support
data-driven care





Assess their specific health concerns

Learn about their preferences and goals

Assess technology and app use

- What kind of activities do you use on your smartphone?
- Have you ever tracked any health data on your smartphone?
- Have you used any apps to help you with your health?

Discuss how apps can be used as a tool for MNT

Identify

Individualize App Selection by Considering:

Availability

Free, available in App Store/Google Play

Cost, in-app purchases, available in App Store/Google Play

Available through payee, employer or clinic, subscription based

Data integration

Integration with medical devices (e.g. CGM, blood pressure monitor, smart insulin pen)

Integration with smart devices and wearables (e.g. scale, fitness trackers, sensors)

Health information tracked

Lifestyle (nutrition, physical activity)

Wearables or other monitoring devices

Medication

Other (e.g. weight, sleep, heart rate, mood)

Reserve time during visit

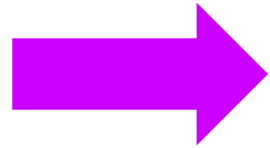
Credibility

Clinical research

FDA regulation

Clinical/scientific advisory board

Identify



Configure



Collaborate

Step 1: Download app with person

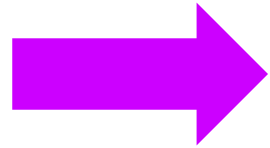
Step 2: Personalize account

Step 3: Connect to smart devices

Step 4: Enable data sharing

Step 5: Test drive app

Identify



Configure



Collaborate

Step 1: Download app with person

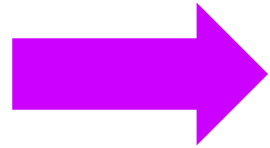
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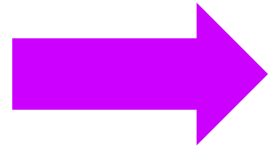
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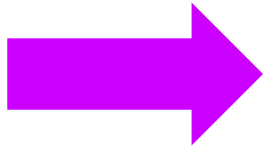
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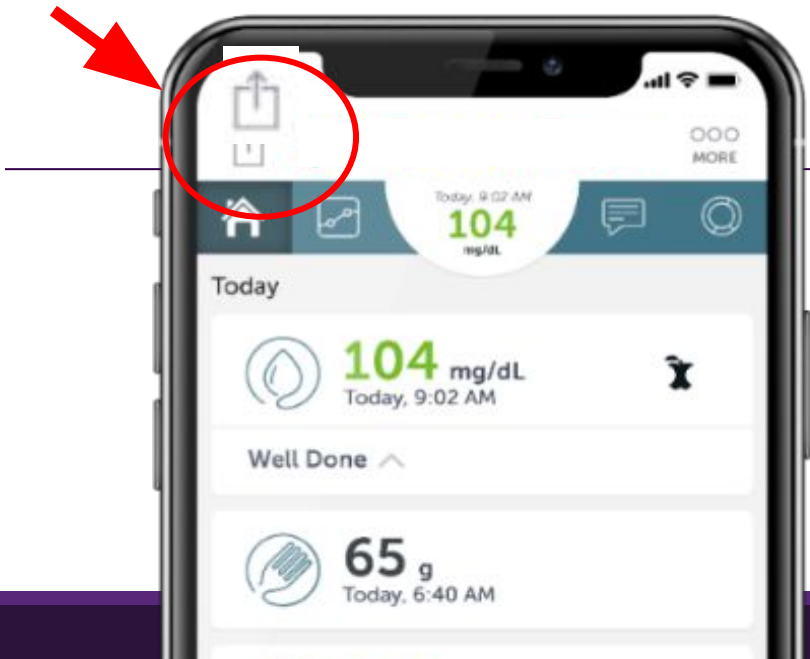
Data Sharing Examples

1 View app data directly from smartphone



Photo credit: gettyimages.com

2 Person sends data from app

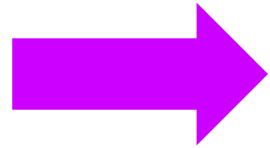


3 Individual identifier or clinic code is shared between person and RDN

4 RDN can view data in real-time through EHR

EHR= electronic health record

Identify



Configure



Collaborate

Step 1: Download app with person

Step 2: Personalize account

Step 3: Connect to smart devices

Step 4: Enable data sharing

Step 5: Test drive app

Identify



Configure



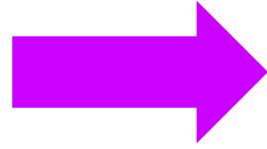
Collaborate

Develop an ongoing support plan

Facilitate data-driven discussions to promote positive health behaviors

Utilize shared decision making to develop a mutually agreed upon treatment plan

Identify



Configure



Collaborate

Case Studies Integrating Apps

Meet Julio

42-year-old, no major past medical history

BMI 21Kg/m²

Concerns: Gain weight and build more muscle

Meal plan: breakfast is butter on white roll, sweetened iced tea throughout the day

- “I know I need to change my diet”

Activity: chasing around baby



Photo credit: unsplash.com

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- “I know I need to change my diet”

Activity: chasing around baby



Photo credit: unsplash.com

Mutually agreed upon action plan during RDN visit:

- Log meals on MyFitnessPal for at least 5 days in advance of next appointment
- Scheduled telehealth visit 2 weeks later for data review

Follow up Visit

Discussion Points:

Thank Julio for using the app

What has your experience been like?

- *“Wasn’t as hard as I thought”*
- *“Accountability was helpful”*

What questions or concerns do you have about this information?

- *“Surprised how many carbs and sodium are in my Chipotle bowl”*

Review data collaboratively

- *Find successes*
- *Look for patterns and trends*

Rachel Stahl

	Calories kcal	Carbs g	Fat g	Protein g	Sodium mg	Sugar g	
Breakfast							
Fresh - Orange Juice, 0.75 cup	84	19	0	1	2	16	⊖
Ocean Spray - Cranberry Juice Cocktail, 6 oz.	83	21	0	0	4	21	⊖
hot cross bun - hot cross bun, 2 bun	320	64	4	8	400	22	⊖
Home Made - Filter Coffee With Whole Milk - No Sugar, 1 mug	33	11	9	10	98	11	⊖
Add Food Quick Tools	520	115	13	19	504	70	
Lunch							
Eggs - Sunny Side Up, 2 large	140	1	10	13	140	0	⊖
haywood and padgett - sultana scone, 46 g	163	63	9	6	0	0	⊖
Add Food Quick Tools	303	64	19	19	140	0	
Dinner							
Add Food Quick Tools							
Snacks							
Grapes-red Seedless - Grapes-red Seedless, 20 Grapes (49g)	68	18	0	1	2	15	⊖
Add Food Quick Tools	68	18	0	1	2	15	

Stop Video Security Participants 2 Chat Share Screen Record Reactions

Follow up Visit

Discussion Points:

Thank Julio for using the app

What has your experience been like?

- *“Wasn’t as hard as I thought”*
- *“Accountability was helpful”*

What questions or concerns do you have about the app?

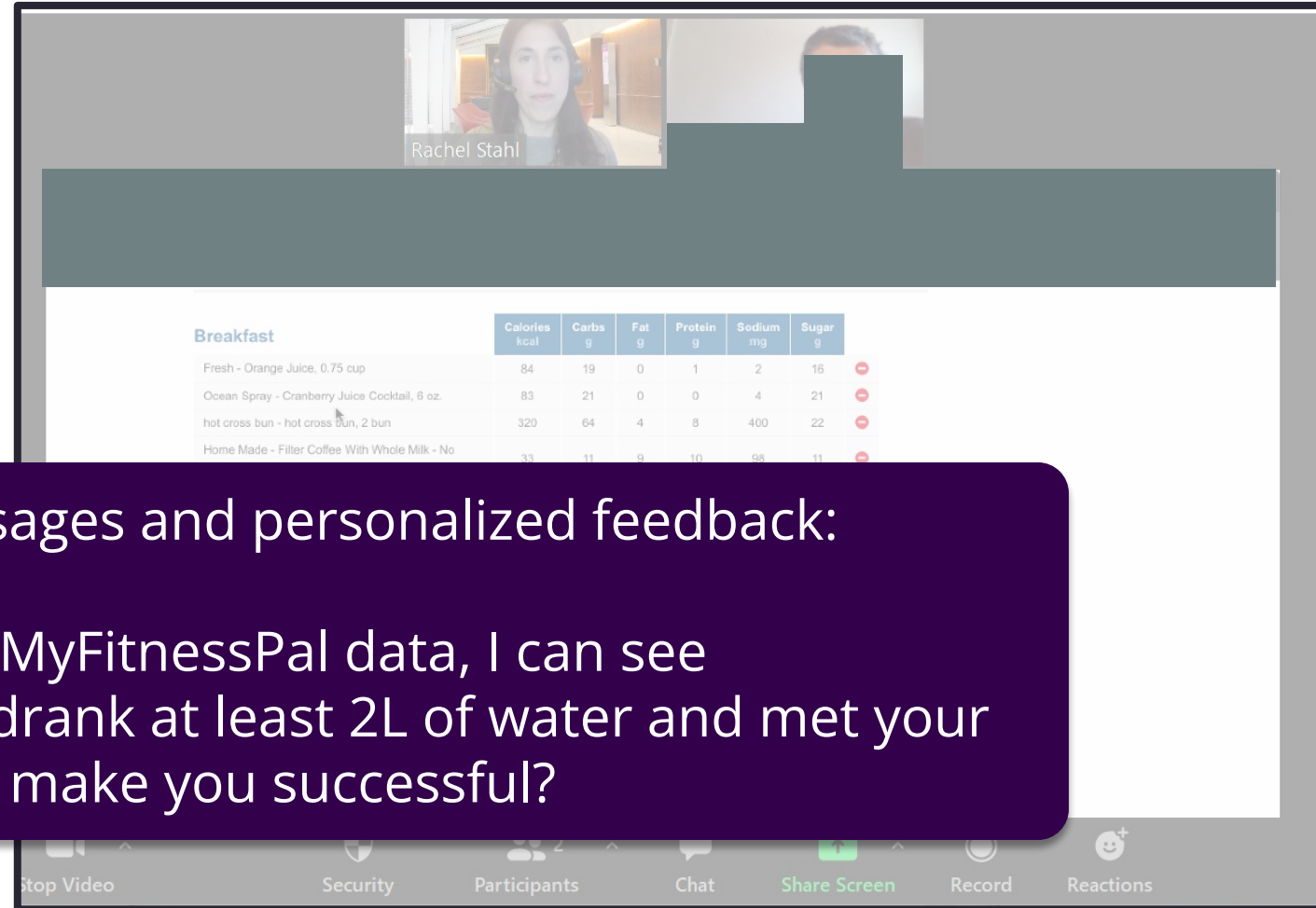
- *“Surprised and confused”*

Review data

- *Find patterns*
- *Look for patterns and trends*

You can give positive messages and personalized feedback:

“Way to go! Based on your MyFitnessPal data, I can see Monday-Wednesdays you drank at least 2L of water and met your protein goal - What helped make you successful?”



Meet T'ara

34-year-old with type 1 diabetes for 16 years

A1C 8.6% 4/2023

Diabetes meds: Insulin glargine 15 units at bedtime

Humalog I:C 1:8 ISF: 1:35

Glucose monitoring: Dexcom G6 CGM

Meal Plan: “loosely” carb counting

Physical Activity: Pilates twice/week

Stressful new job



Photo credit: unsplash.com

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Photo credit: unsplash.com

Discuss care plan including apps

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Mutually agreed upon action plan:
Log meals on Undermyfork for
at least 5 days before
next appointment

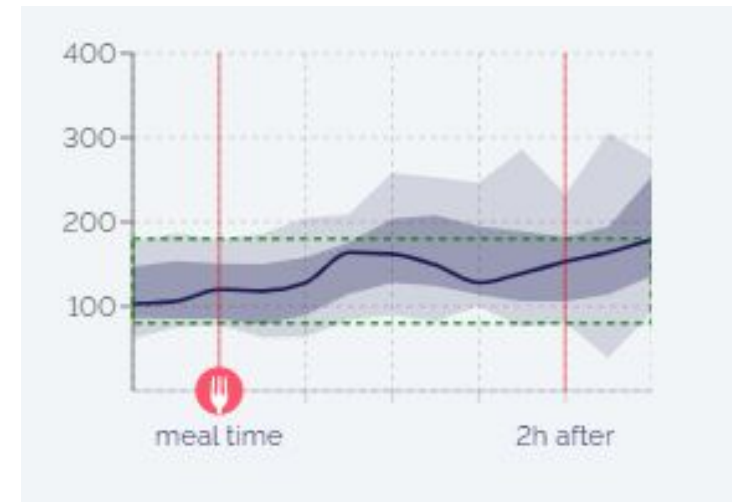
Discuss care plan including apps

Follow up Visit

Discussion Points:

- Thank T'ara for using the app
- What has your experience been like?
 - *"I like the Dexcom integration"*
 - *"Easy to take meal photos"*
- Listen and address concerns:
 - *"My numbers are always high after breakfast"*
 - *"Forget to log meals"*
- Orient T'ara to the data and review key concepts

Postprandial Glucose by Meal Time: Breakfast



Daily Glucose Charts



Follow up Visit

- Focus on the positive
- Narrow in on specific days, meals, snacks
- Explore areas for improvement
- Education provided on carb counting and balanced meal planning



15%

Before: 177 mg/dL | After: 321 mg/dL | Highest: 321 mg/dL

Bagel

26.0 U 70 G



36%

Before: 156 mg/dL | After: 271 mg/dL | Highest: 271 mg/dL

Breakfast

16.5 U 45 G



72%

Before: 120 mg/dL | After: 169 mg/dL | Highest: 194 mg/dL

15.5 U 45 G



Developing an Action Plan

- **What have you learned from your data?**
 - “When I eat a whole wheat English muffin instead of a bagel, my blood sugar is better”
 - “Walking helps bring my numbers down”
- **What would you like to work on?**
 - “Less carb guesstimations, and adding more protein to breakfast”
 - “I want to walk more, especially after meals”
- **Mutually agreed upon action plan:**
 - Substitute bagel with cream cheese for whole wheat English muffin with scrambled eggs twice/week
 - Walk 10-15 minutes after a meal at least once a day
 - Follow up appointment to discuss treatment plan with CGM/app review

Convenient

I love the personalization components which enable me to choose and customize app to my needs and preferences

Keeps me accountable, helps with motivation

What people are saying about apps

I like being able to easily visualize my progress

The ease of sharing information with my healthcare team is a huge plus

More confident in insulin dosing decisions

Healthcare professional guidance


ADCES Practice Resources

Leveraging Mobile Apps
TO SUPPORT DIABETES SELF-MANAGEMENT IN YOUR PRACTICE

The Incorporation of technology into the diabetes landscape has moved beyond basic devices to include personal health, telehealth, digital education, artificial intelligence (AI), machine learning and mobile apps. This resource from ADCES is designed to help you choose from the growing number of digital health tools available.

SUPPORTING THE DIGITALLY CONNECTED PERSON WITH DIABETES

Diabetes care and education specialists can leverage existing knowledge of technology by facilitating the adoption of apps. Data generated by the person with diabetes through apps can provide valuable insights for DSMES. This strategy fosters personalized diabetes self-management education and support (DSMES) while promoting healthy changes.



<https://www.diabeteseducator.org/docs/default-source/practice/educator-tools/mobile-apps/mobile-app-onboarding.pdf?sfvrsn=2>

ADCES IN PRACTICE

Fueling Your "App-etite":
An Introduction to Nutrition and Diabetes Apps

In today's digital age, it can be hard to keep up with the complex and evolving landscape of mobile health apps. The purpose of this article is to understand the benefits and features of diabetes apps and review challenges facing broader adoption.

Growth and Relevance in Diabetes Care
With 85% of American adults owning a smartphone and spending an average of 4.8 hours a day on them, app usage is higher than ever.^{1,2} Health apps, specifically, are growing in popularity, accelerated by the COVID-19 pandemic.

RACHEL STAHL SALZMAN, MS, RD, CDON, CDCES

Embracing Diabetes Apps in the Digital Age
A DCES Guide to Integrating Apps into Your Practice

RACHEL STAHL SALZMAN, MS, RD, CDON, CDCES • DAWN NOE, RDN, LD, CDCES

Stahl Salzman, R., Fueling Your "App-etite": An Introduction to Nutrition and Diabetes Apps, ADCES in Practice (Volume 11, Issue 2) pp. 28-32. 2023

Stahl Salzman, R, Noe, Dawn. Embracing Diabetes Apps in the Digital Age: A DCES Guide to Integrating Apps into Your Practice. ADCES in Practice (Volume 11, Issue 5) pp. 18-27. 2023.

What does the Academy say?



FROM THE ACADEMY Position Paper

Position of the Academy of Nutrition and Dietetics: Nutrition Informatics



ABSTRACT

It is the position of the Academy of Nutrition and Dietetics that nutrition informatics is a rapidly evolving area of practice for registered dietitian nutritionists and nutrition and dietetic technicians, registered; and that the knowledge and skills inherent to nutrition informatics permeate all areas of the dietetics profession. Further, nutrition and dietetics practitioners must continually learn and update their informatics knowledge and skills to remain at the forefront of nutrition practice. Nutrition informatics is the intersection of information, nutrition, and technology. However, informatics is not just using technology to do work. The essence of nutrition informatics is to manage nutrition data in combination with standards, processes, and technology to improve knowledge and practice that ultimately lead to improved quality of health care and work efficiency. Registered dietitian nutritionists and nutrition and dietetic technicians, registered, are already experts in using evidence to practice in all areas of nutrition and dietetics. To remain at the forefront of technological innovation, the profession must actively participate in the development of standards, processes, and technologies for providing nutrition care.

J Acad Nutr Diet. 2019;119(8):1375-1382.

POSITION STATEMENT

It is the position of the Academy of Nutrition and Dietetics that nutrition informatics is a rapidly evolving area of practice for registered dietitian nutritionists and nutrition and dietetic technicians, registered, and that the knowledge and skills inherent to nutrition informatics permeate all areas of the dietetics profession. Further, nutrition and dietetics practitioners must continually learn and update their informatics knowledge and skills to remain at the forefront of nutrition practice.

The image features a dark blue background with a complex, glowing white circuit board pattern. The pattern consists of numerous interconnected lines and dots, creating a sense of digital connectivity. In the center of the image, the letters "AI" are prominently displayed in a bold, white, sans-serif font. The text is enclosed within a white circular border that has a double-line effect, making it stand out against the intricate background.

AI

Stay up-to-date on apps

- Professional organizations such as the Academy of Nutrition and Dietetics, and professional societies within your health field
- Conferences and events
- Company websites
- App store reviews
- FDA Digital Health Center of Excellence



In Summary



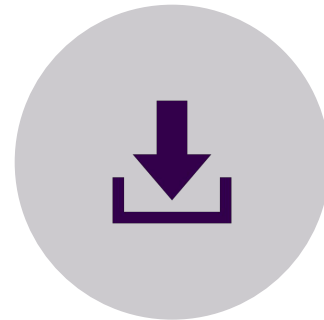
Digital technologies are driving significant changes in healthcare



Apps offer a promising opportunity to enhance health outcomes



Utilize the ICC framework to help integrate apps into nutrition care



Now is the time to try different apps and get comfortable using them

Thank you!

Rachel Stahl Salzman, MS, RD, CDN, CDCES

Division of Endocrinology, Diabetes & Metabolism
Weill Cornell Medicine

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Questions?

References

IQVIA. The Next Wave of Self-Care Digital Health.

<https://www.iqvia.com/library/white-papers/the-next-wave-of-self-care-digital-health>

<https://www.businessofapps.com/news/two-in-five-us-adults-now-use-health-apps/>

<https://www.iqvia.com/insights/the-iqvia-institute/reports/digital-health-trends-2021>

Fleming GA, Petrie JR, Bergenstal RM, Holl RW, Peters AL, Heinemann L. Diabetes digital app technology: benefits, challenges, and recommendations. A consensus report by the European Association for the Study of Diabetes (EASD) and the American Diabetes Association (ADA) Diabetes Technology Working Group. Diabetes Care 2020 Jan; 43(1): 250-260.

<https://www.iqvia.com/insights/the-iqvia-institute/reports/digital-health-trends-2021>

<https://www.fda.gov/medical-devices/digital-health-center-excellence>

<https://www.fda.gov/media/80958/download>

References

Greenwood DA, Howell F, Scher L et al. A Framework for Optimizing Technology-Enabled Diabetes and Cardiometabolic Care and Education: The Role of the Diabetes Care and Education Specialist. *Science of Diabetes Self-Management and Care*. 2020 Aug;46(4):315-322.

<https://www.diabeteseducator.org/docs/default-source/practice/educator-tools/mobile-apps/mobile-app-onboarding.pdf?sfvrsn=2>

Rusnak S., Charney P. Position of the Academy of Nutrition and Dietetics: Nutrition Informatics. *J. Acad. Nutr. Diet*. 2019;119:1375–1382.

Stahl Salzman, R., Fueling Your “App-etite”: An Introduction to Nutrition and Diabetes Apps, *ADCES in Practice* (Volume 11, Issue 2) pp. 28-32. 2023

Stahl Salzman, R, Noe, Dawn. Embracing Diabetes Apps in the Digital Age: A DCES Guide to Integrating Apps into Your Practice. *ADCES in Practice* (Volume 11, Issue 5) pp. 18-27. 2023.

Upcoming Event



Food as Medicine: A National Strategy on Hunger, Nutrition and Health

Tuesday, February 27, 2024, 11-12 ET

The second pillar of the Biden-Harris Administration National Strategy on Hunger, Nutrition, and Health calls for the integration of nutrition and health by improving access to nutrition services to better prevent, manage, and treat diet-related diseases. Food is Medicine interventions can effectively treat or prevent diet-related health conditions and reduce food insecurity.

1.0 CPEU for RDNs and NDTRs has been approved by CDR.

Continuing Education



This webinar has been approved for the following continuing education (CE) credits:

- 1.0 CPEU for RDNs and NDTRs
- 1.0 CE for Certified Family and Consumer Sciences from AAFCS
- 1.0 CE for Certified Nutrition and Wellness Educators from AAFCS
- Certificate of attendance

Evaluation Link

Go to the event page for the evaluation and post-test link.

[Continuing Education](#)

Questions?

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