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The future of diagnostics

## The Case for Diet as a Vital Sign

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### **David L. Katz**

MD, MPH, FACPM, FACP, FACLM

As one of the leading specialists in preventative and lifestyle medicine and nutrition, Dr. Katz is the founder of both Diet ID and the non-profit True Health Initiative.



# The Case for Diet as a Vital Sign

**David L. Katz, MD, MPH, FACPM, FACP, FACLM**

*CEO, Diet ID*

*President, True Health Initiative*

*Founding Director, Prevention Research Center, Yale University*

*Past-President, American College of Lifestyle Medicine*

## LabsLive

10/16/21

The logo for Emerson Ecologics features a green leaf icon to the left of the word "emerson" in a lowercase, green, sans-serif font. Below "emerson" is the word "ecologics" in a smaller, lowercase, green, sans-serif font. A registered trademark symbol (®) is located to the upper right of "emerson".

**Diet ID**<sup>™</sup>  
DIET IS A VITAL SIGN

The Diet ID logo consists of the text "Diet ID" in a bold, black, sans-serif font, with a trademark symbol (™) to the upper right. Below this text is a horizontal line that transitions into a green ECG (heart rate) line on the right side. Underneath the horizontal line is the tagline "DIET IS A VITAL SIGN" in a smaller, black, sans-serif font.



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There's **Diet, Lifestyle** and everything else...

- McGinnis JM, Foege WH. **Actual causes of death** in the United States. *JAMA*. 1993;270:2207-12
-



“Hospitals should include nutrition in any electronic health record”

## Our Food Is Killing Too Many of Us

Improving American nutrition would make the biggest impact on our health care.

By **Dariusz Mozaffarian and Dan Glickman**

Dr. Mozaffarian is dean of the Tufts Friedman School of Nutrition Science and Policy. Mr. Glickman was the secretary of agriculture from 1995 to 2001.



Aug. 26, 2019





# Circulation: Cardiovascular Quality and Outcomes

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## Rapid Diet Assessment Screening Tools for Cardiovascular Disease Risk Reduction Across Healthcare Settings: A Scientific Statement From the American Heart Association

Maya Vadiveloo, Alice H. Lichtenstein, Cheryl Anderson, Karen Aspry, Randi Foraker, Skylar Griggs, Laura L. Hayman, Emily Johnston, Neil J. Stone, Anne N. Thorndike, ... [See all authors](#) 

Originally published 7 Aug 2020 | <https://doi.org/10.1161/HCQ.0000000000000094> | Circulation: Cardiovascular Quality and Outcomes. 2020;13

### Abstract

It is critical that diet quality be assessed and discussed at the point of care with clinicians and other members of the healthcare team to reduce the incidence and improve the management of diet-related chronic disease, especially cardiovascular disease. Dietary screening or counseling is not usually a component of routine medical visits. Moreover, numerous barriers exist to the implementation of screening and counseling, including lack of training and knowledge...



## Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017

[GBD 2017 Diet Collaborators](#) •

[Open Access](#) • Published: April 03, 2019 • DOI: [https://doi.org/10.1016/S0140-6736\(19\)30041-8](https://doi.org/10.1016/S0140-6736(19)30041-8) •



Summary

Introduction

## Summary



---

We manage...

---

**...what we measure.**

# But today's tools to measure and manage nutrition are burdensome, time-consuming, and flawed

They're nearly impossible to fit in your workflow, limiting your potential impact.

How often did you drink orange juice or grapefruit juice?

How often were your fruit drinks diet or sugar-free drinks?

How often did you drink milk as a beverage (Not coffee, NOT in cereal)? (Please include chocolate milk)

**FOOD FREQUENCY QUESTIONNAIRES**  
2 hours - 7 days + \$80

Meal	Food / Drink	# of Servings	Serving Size	Protein (g)	Carbs (g)	Sugar (g)	Fat (g)	Calories
L	Peanut Butter Sandwich	1	1	10.3	42.2	12	14.2	327

**FOOD DIARIES**  
Multiple days + manual analysis

**CALORIE COUNTERS**  
Weeks to complete & False equivalences





# To solve this need, we brought together world leading experts in nutrition and prevention...



Led by David Katz, MD



**Walter Willett,  
MD, DrPH**

Harvard School of  
Public Health



**Michael  
Dansinger, MD,  
MS**

Tufts University



**Christopher  
Gardner, PhD**

Stanford University



**Gail Frank, DrPH,  
RD**

CA State University



**Mary Murimi,  
PhD, RD**

Texas Tech  
University



**David Jenkins,  
MD PhD**

Univ. of Toronto  
*Inventor of the  
Glycemic Index*



**Linda Snetselaar,  
PhD, RD**

University of Iowa  
*President of AND*

# And invented a new methodology for diet assessment

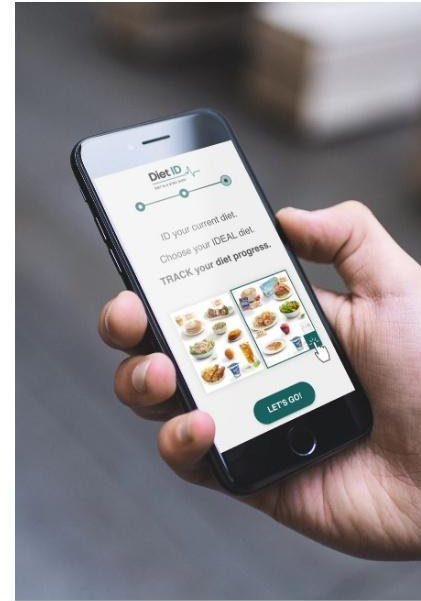
Use a simple, image-based module to get a 95% completion rate and quickly (in 1 minute) baseline your patients' nutrition needs



Like at the eye doctor...



...choose the more clear image



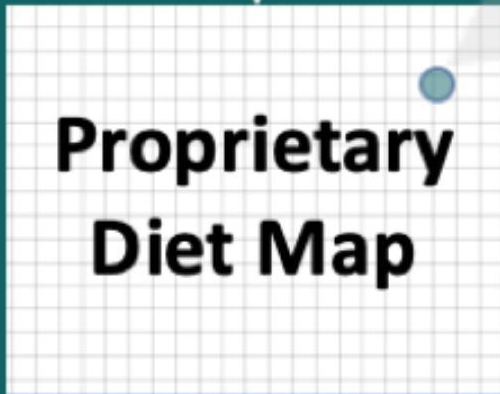
Diet ID uses image-based pattern recognition



...choose the image that looks more like how you eat routinely

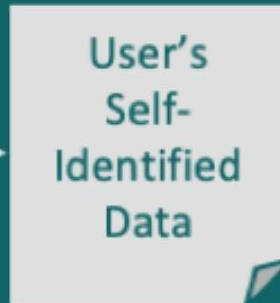
**Robust Scientific input**  
Healthy Eating Index 2015  
Epidemiological review  
NDSR analysis  
Stratification of US eating

Diet Quality ↑



Diet Type →

### Diet Fingerprint



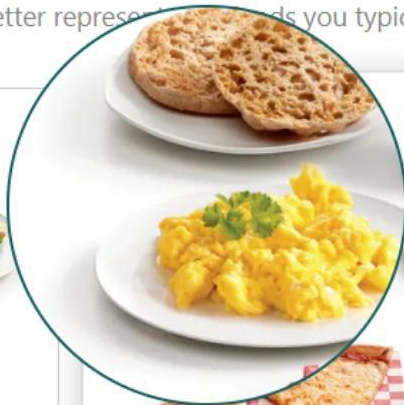
### Real-time Diet Assessment





### Find your Diet ID

Which one of these images better represents the foods you typically eat?



# We are expanding our offering to further personalize

Diet ID's core assessment represents how roughly 95% of Americans eat. We are always expanding our engine to accommodate diverse populations.



- **Ethnic populations**

- Latin American Diets

- South Asian Diets

- East Asian Diets

- **Therapeutic diets**

- Ornish Diet

- Whole Food Plant-based Diet

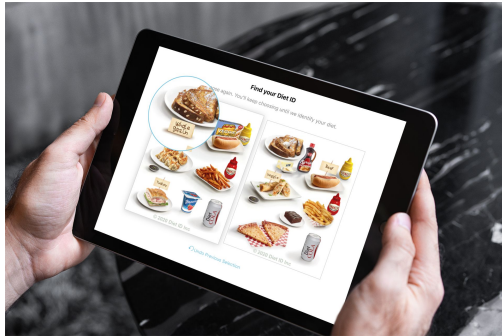
- **Restrictive patterns**

- Keto Diet

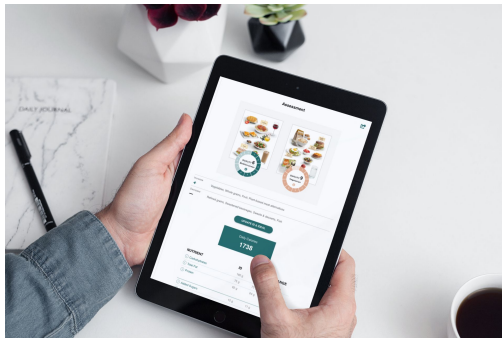
# The Patient & Provider Experience

Patients complete the assessment in as little as 1 minute on any web-enabled device

## PATIENT



Patient completes image-based assessment to evaluate current diet quality, nutrient intake and food group intake.



Based on selected health goals, patient selects goal diet and receives detailed plan to improve diet.

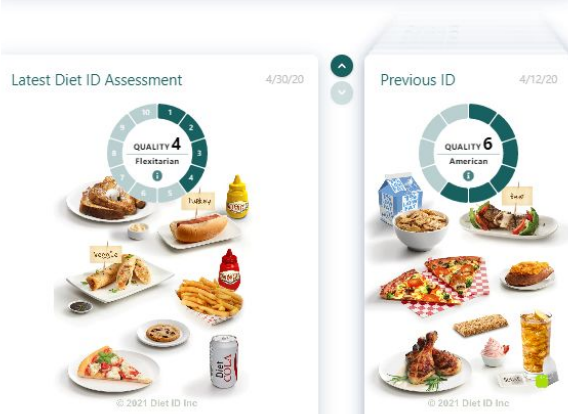
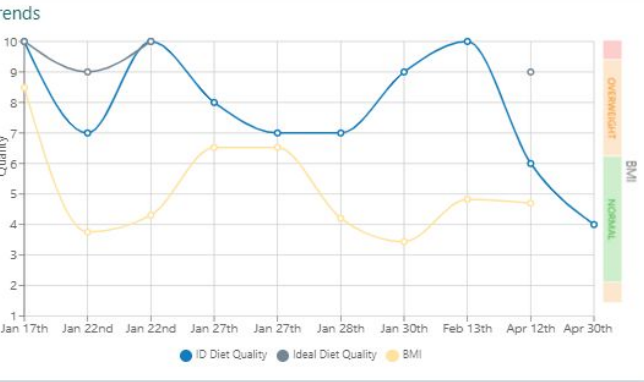
## PROVIDER



Clinician receives full analysis of current diet as well as specific nutrition plan for each individual as soon as patient completes assessment. Data is accessible via Diet ID's HIPAA compliant admin portal.



NUTRIENT	ID	IDEAL	CHANGE
<b>Estimated Calorie Intake</b>	2320 kcal	2320 kcal	0 kcal
<b>Carbohydrates</b>	257 g (44% of daily calories)	400 g (44% of daily calories)	▲ +143 g
<b>Total Fat</b>	101 g (39% of daily calories)	55 g (39% of daily calories)	▼ -46 g
<b>Protein</b>	94 g (16% of daily calories)	91 g (16% of daily calories)	▼ -3 g
<b>Added Sugars</b>	71 g	5 g	▼ -66 g
<b>Saturated Fat</b>	33 g	7 g	▼ -26 g
<b>Sodium</b>	4041 mg	1728 mg	▼ -2313 mg
<b>Dietary Fiber</b>	16 g	79 g	▲ +63 g
<b>Cholesterol</b>	443 mg	0 mg	▼ -443 mg
<b>Total Sugars</b>	106 g	113 g	▲ +7 g



### Food Group Changes

**Increase**

- Unsweetened beverages (Water)
- Plant-based meat alternatives
- Plant-based dairy alternatives
- Whole grains

**Decrease**

- Fatty condiments (Cream, Creamy dressings, Gravy)
- Sweet / salty condiments (Sugar)
- Sweets & desserts (Sugar)
- Salty snacks

Food Group	Change in Servings
Fruit Juice	0.5 → 0.1 <b>-0.4</b>
Fruit	0.3 → 6.5 <b>+6.2</b>
Vegetables	2.1 → 16.5 <b>+14.4</b>
Fried Vegetables	0.4 → 0.0 <b>-0.4</b>
Beans & Lentils	0.0 → 1.8 <b>+1.8</b>
Nuts & Seeds	0.0 → 2.2 <b>+2.2</b>
Whole Grains	0.2 → 6.3 <b>+6.1</b>
Refined Grains	5.8 → 1.8 <b>-4.0</b>
Full-Fat Dairy Products	0.5 → 0.0 <b>-0.5</b>
Reduced or Non-Fat Dairy Products	1.3 → 0.0 <b>-1.3</b>
Dairy-Based Desserts	0.3 → 0.0 <b>-0.3</b>
Plant-Based Dairy Alternatives	0.0 → 2.0 <b>+2.0</b>

# Results: Engagement with Assessment

Our assessment is the most simple, joyful dietary assessment, pairing frictionless user experience with accuracy

- **Completion rate: 96%**

96% of those who register complete the assessment and receive results

- **Time to complete: < 5 minutes**

No training required, and can be completed without any guidance

- **Accuracy Rating: 90%+**

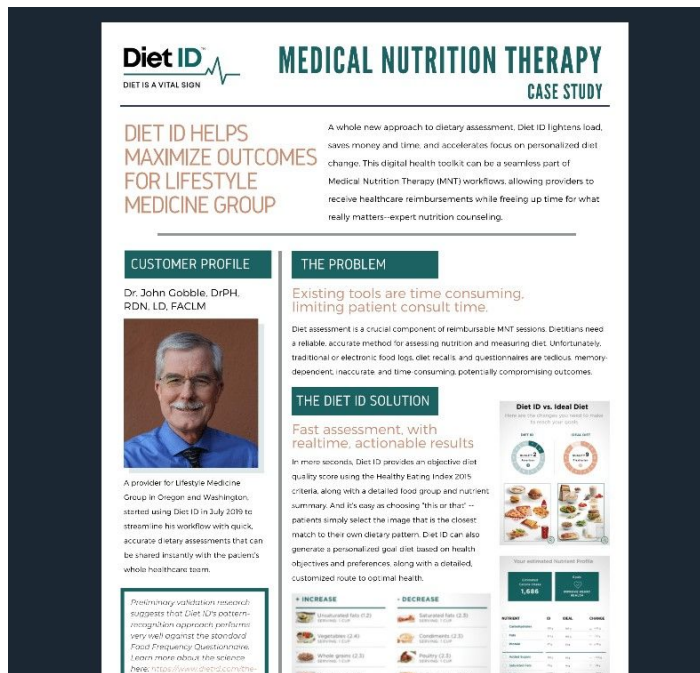
This is self-reported based on the prompt: “how accurate are your results?”

- **Usable by a diverse population - both young and old**

We successfully engage users across generations, with strong completion rates even among the 90+ population

# Results: Time Saved by using Diet ID

Case Study: Lifestyle Medicine Group, Oregon. Dr. Gobble uses Diet ID to streamline workflow and drive efficiency.



**Diet ID**  
DIET IS A VITAL SIGN

## MEDICAL NUTRITION THERAPY CASE STUDY

**DIET ID HELPS MAXIMIZE OUTCOMES FOR LIFESTYLE MEDICINE GROUP**

A whole new approach to dietary assessment, Diet ID lightens load, saves money and time, and accelerates focus on personalized diet change. This digital health toolkit can be a seamless part of Medical Nutrition Therapy (MNT) workflows, allowing providers to receive healthcare reimbursements while freeing up time for what really matters—expert nutrition counseling.

### CUSTOMER PROFILE

Dr. John Gobble, DrPH, RDN, LD, FAACM



A provider for Lifestyle Medicine Group in Oregon and Washington, started using Diet ID in July 2019 to streamline his workflow with quick, accurate dietary assessments that can be shared instantly with the patient's whole healthcare team.

### THE PROBLEM

Existing tools are time consuming, limiting patient consult time.

Diet assessment is a crucial component of reimbursable MNT sessions. Dietitians need a reliable, accurate method for assessing nutrition and measuring diet. Unfortunately, traditional or electronic food logs, diet recalls and questionnaires are tedious, memory-dependent, inaccurate and time-consuming, potentially compromising outcomes.


### THE DIET ID SOLUTION

Fast assessment, with realtime, actionable results

In mere seconds, Diet ID provides an objective diet quality score using the Healthy Eating Index 2015 criteria, along with a detailed food group and nutrient summary. And it's easy as choosing "this or that" — patients simply select the image that is the closest match to their own dietary pattern. Diet ID can also generate a personalized goal diet, based on health objectives and preferences, along with a detailed, customized route to optimal health.

#### Diet ID vs. Ideal Diet

How well do you compare to the ideal diet for your age group?



#### Your personalized nutrition profile

Current score: 70%  
Goal score: 100%

+ INCREASE		- DECREASE	
Dietary fat (12.5)	Saturated fat (12.5)	Sodium (12.5)	Total fat (12.5)
Vegetables (12.5)	Condiments (12.5)	Alcohol (12.5)	Protein (12.5)
Whole grains (12.5)	Sodium (12.5)	Saturated fat (12.5)	Total fat (12.5)
Fruit & seeds (12.5)	Saturated fat (12.5)	Sodium (12.5)	Total fat (12.5)

**REMARKS** | **GOAL** | **STATUS**

Item	Current	Goal	Status
Dietary fat	12.5	12.5	On Track
Saturated fat	12.5	12.5	On Track
Sodium	12.5	12.5	On Track
Total fat	12.5	12.5	On Track
Vegetables	12.5	12.5	On Track
Condiments	12.5	12.5	On Track
Alcohol	12.5	12.5	On Track
Protein	12.5	12.5	On Track
Whole grains	12.5	12.5	On Track
Saturated fat	12.5	12.5	On Track
Total fat	12.5	12.5	On Track
Fruit & seeds	12.5	12.5	On Track
Saturated fat	12.5	12.5	On Track
Sodium	12.5	12.5	On Track
Total fat	12.5	12.5	On Track

**Biotechnology validation research suggests that Diet ID's nutrition-proportion algorithm performs very well against the standard Food Frequency Questionnaire. Learn more about the science here: <https://www.dietid.com/ve>**

## 20 minutes per person saved

- The clinic saves 20 minutes per patient using Diet ID
- They have received 100% reimbursement for Medical Nutrition Therapy (CPT codes: 98702-98704)
- Per Dr. Gobble, “Diet ID not only takes less time to complete than other methods, it also engages the client as we explore better eating habits using the dietary quality score provided by Diet ID.”



# Results: Engagement with Navigation

Case Study: FitWorth, a City-wide public health initiative. The population included a university, a food bank, a health system, and a typical office.


**Case Study**  
Diet ID Navigation

**Diet ID**  
GET IT & STAY THERE

**Fit**  
**WORTH**

In January of 2019, **FitWorth**, the Public Health initiative in of Fort Worth, TX used the Diet ID Navigation features to aid in their mission of building a culture of healthier habits and healthier eating. Local Fort Worth businesses participated in the FitWorth Corporate Cup challenge. Employees competed in the month-long Eat 5 Servings of Fruits & Veggies Per Day Challenge. With the success of this pilot program, FitWorth rolled out a city-wide healthy eating challenges to 22,000 residents, sponsored by the mayor and the Navigation portion of Diet ID.

**RESULTS:**

  
Daily Fruits & Veggie Consumption Change:  
**+90.6%**

<b>4.95</b> Avg Serving of Fruits & Veggies eaten per day	<b>66.3%</b> Active Participant Avg Success	<b>16,239</b> Total Fruit & Veggie Servings Consumed
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\*Comparing active participant's daily average consumption to CDC's 2010 State Indicator Report on Fruit/Vegetable consumption, for Texas Adults.

**TESTIMONIALS:**

"On behalf of [our team] we applaud the [Diet ID] app! It was very simple to use and really kept our participants motivated and engaged. We've had several staff comment that 5 [servings of fruits and veggies] a day is something they look forward to sustaining. Kudos for hosting such a fun Challenge that helped us create a healthy daily habit!"  
-**Director of Organizational Development, Tarrant Area Food Bank**

"I lost 4.5 pounds and 5 inches (including 1.5 off my waist) in the two weeks since starting [the Eat 5 Servings of Fruits and Veggies] Challenge!  
- [Team Participant]

## Diet ID drove a 91% lift in fruit and vegetable intake

- Five employers enrolled, including a food bank, a school, and an office, demonstrating the flexibility of the tool
- Participants engaged 66.3% of the 30 day period, beating expectations
- We drove a 91% lift in fruits and vegetable intake, with most participants consuming 5 servings a day
- Several members self-reporting weight loss over the 30 day program

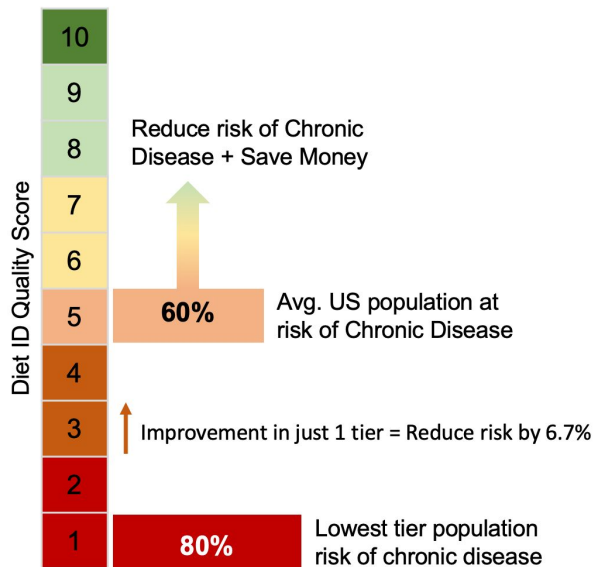
# Results: Impact from using Diet ID

Case Study: A large fitness chain conducted a pilot of Diet ID with their members between Thanksgiving and New Year's Eve. Based on the pilot success, they are plugging Diet ID into their app to power their coaching program.



- **64%**  
improved their diet quality
- **40%**  
lost weight, while most people gain weight at this time of year
- **8.8 pounds avg. weight loss**  
for those who lost weight
- **25 grams of sugar**  
on average cut per day

# The ROI of Using Diet ID: Save time and money while improving outcomes



- **>20 minutes**  
saved per patient just on the assessment
- **\$25-\$34**  
reimbursement for Medical Nutrition Therapy
- **Up to \$80**  
saved per formal dietary assessment tools
- **6.7% risk reduction**  
by improving diet quality just 1 tier
- **Clinical programs require diet assessments for reimbursement**  
Wellness Visits, DPPs, Cardiac Rehab, and other reimbursable engagements require assessments and/or personalized nutrition plans.



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Outline

Abstract

Introduction

The hypothesis

Evaluation of the hypothesis

Discussion

Conclusion

Declaration of Competing Interest

Acknowledgements

Funding

Contributorship

Ethical approval

References

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# Medical Hypotheses

Volume 140, July 2020, 109644



## Dietary assessment can be based on pattern recognition rather than recall

D.L. Katz <sup>a</sup> , L.Q. Rhee <sup>a</sup>, C.S. Katz <sup>a</sup>, D.L. Aronson <sup>a</sup>, G.C. Frank <sup>b</sup>, C.D. Gardner <sup>c</sup>, W.C. Willett <sup>d</sup>, M.L. Dansinger <sup>e</sup>

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<https://doi.org/10.1016/j.mehy.2020.109644>

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### Abstract





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# Comparison of the Diet ID Platform to the Automated Self-administered 24-hour (ASA24) Dietary Assessment Tool for Assessment of Dietary Intake

Gabrielle Turner-McGrievy  , Brent Hutto, John A. Bernhart & Mary J. Wilson

Received 20 Oct 2020, Accepted 05 Feb 2021, Published online: 11 Mar 2021

 Download citation

 <https://doi.org/10.1080/07315724.2021.1887775>



# Ongoing Research Studies

- **Kaiser Permanente** – In cardiac rehab and heart failure clinics – evaluating efficacy of Diet ID in virtual disease management programs
- **Boston Heart Diagnostics**– Phase 2 Validation (biomarkers)
- **UC Davis** – Validation against biomarkers and 24hr recalls
- **Fast Labs** – Study completed, currently doing a follow-up
- **Henry Ford x MSU** –pregnancy population
- **Advent Health**
- **Jefferson Health** – delivered meals intervention targeting ~600 participants
- **U of Washington** - Role of diet in traumatic brain injury (pilot)
- **U South Carolina** – accepted for publication. Turner-McGrievy GM, Hutto B, Bernhart JA, Wilson MJ. Comparison of the Diet ID platform to the Automated Self-Administered 24-Hour (ASA24) Dietary Assessment Tool for assessment of dietary intake. *Journal of the American College of Nutrition. In press.*

# Diet ID is available FREE through Emerson & Wellevate

Visit the Resources section under “Education” in your Emerson Ecologics or Wellevate account

The screenshot shows the website header with the Emerson Ecologics logo and a search bar. Below the header, there are navigation links for SHOP, BRANDS, EDUCATION, and QUALITY. The Wellevate logo is also present, along with icons for Online Dispensary, Notifications, Support, My Account, and Cart. The main content area features a large image of a hand holding a tablet, with the text "Educat Clinical and business exp". Below this, there are three columns of resources: Clinical Resources, Practice Management, and IGNITE Events. The Diet ID resource is highlighted in a blue circle.

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A trusted online database from Aisle 7 featuring research on active compounds and suggested dosages by condition.

This Aisle 7 database features research listed by active compound, nutrient, and botanical medicines.

Our Medical Education team is available for protocol consultations. Meet our team and submit your questions here.

**Clinical Articles and Updates** > **Educational Partners** > **Clinical Practice Tools** >

Read our latest research summaries, clinical articles and Emerson publications, including The Element.

Explore clinical and business content from our education partners.

Access our most used tools including dosing calculators, measurement & conversion charts, and more.

**Drug Depletion & Interactions** > **Diet ID** >

A powerful database that includes descriptions of potential interactions/depletions between pharmaceutical drugs and specific nutrients and herbs.

Diet quality is the single most important predictor variable for all-cause mortality and major health outcomes in the modern world. Finally, you can measure and manage it, at scale.

# Diet ID is available FREE through Emerson & Wellevate

## Getting Started is Easy

Share the link with patients and instruct them to complete their assessment. Be sure to include your email address for them to send their results back to you.

1

### Send The Link

Utilize one of the sample emails below, or craft your own. Email the Diet ID link to your patient database, inviting them to create an account, and get their nutrition assessment & custom plan.

2

### Review Your Patients' Results

Results will come to you by email directly from your patients and **never include protected health information**. Consider scheduling a 30-minute follow-up to review their results and discuss a nutrition & supplement plan based on the patient's current diet, goal diet, and the changes necessary to reach that goal.

3

### Follow-Up

Send a follow-up email to your patients that their results are in. Repeat the assessment in 3, 6 or 12 months to measure improvement or provide further support.



# Diet ID is available FREE through Emerson & Wellevate

We give you everything you need to get started

### Sample Emails

We've even created sample emails to promote Diet ID to your patients and manage the process—just cut and paste!



#### SAMPLE EMAIL TO INDIVIDUAL PATIENT

[Send Email Now](#)

Copy and Paste Email



#### SAMPLE EMAIL TO OFFER NUTRITION ASSESSMENT & CUSTOM PLAN TO ALL YOUR PATIENTS

[Send Email Now](#)

Copy and Paste Email



#### SAMPLE FOLLOW-UP EMAIL TO PATIENT THAT DIET ID RESULTS ARE IN

[Send Email Now](#)

Copy and Paste Email



# Diet ID™

DIET IS A VITAL SIGN

In partnership with

emerson<sup>®</sup>  
ecologics



Personalizing nutrition in the blink of an eye

---

# Thank you -

It's not what we don't know about diet that most threatens our health; it's the constant, wild misrepresentations of what we do know.



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[cs@emersonecologics.com](mailto:cs@emersonecologics.com)



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