

# The Impact of Clinical Nutrition on Type 2 Diabetes

Partnership between a large, state-based health plan and Season Health, leading clinical nutrition solution, demonstrates industry leading clinical results for members with type 2 diabetes.

## WHY CLINICAL NUTRITION?

117 million Americans are diagnosed with preventable chronic diseases.<sup>1</sup> Status quo efforts have done little to adequately curb rising prevalence of these diseases across a broad range of individuals, with the rate of diagnosed diabetes rising by over 46% from 1999–2018.<sup>2</sup> Management of nutrition and diet has been linked to improved outcomes for chronic diseases,<sup>3</sup> however, patients with chronic diseases are not often referred to a Registered Dietitian. In fact, in a claims analysis conducted across 630K members by the actuarial firm Accorded, fewer than 5% of members with type 2 diabetes saw a Registered Dietitian over the course of a year.

In the state where this study took place, diabetes is a pervasive challenge for patients, health plans and health systems. Managing diabetes is complex and time-consuming for patients and can lead to other health problems, including heart disease and chronic kidney disease.<sup>4</sup> The implications of diabetes are also costly, amounting to \$8 billion in direct and indirect medical costs per state in the US.<sup>5</sup>

This problem led a large, state-based health plan to take action. The health plan had an executive-level goal of significantly reducing the progression of diabetes in their population within two years. The effort focused on reducing hemoglobin A1c levels (HbA1c); increasing engagement for members living with diabetes; and increasing provider coordination and accessibility. The plan deployed various strategies to address this challenge, which included piloting a food-as-medicine program to evaluate the impact that healthy food and access to a Registered Dietitian had on diabetes outcomes.

## EXECUTIVE SUMMARY

The plan was seeking to understand the clinical outcomes and associated total cost of care reduction from a clinical nutrition program, paired with plan-sponsored healthy food. The plan selected Season Health as its partner to pilot this study.

This clinical study indicates that access to a comprehensive clinical nutrition intervention drives improved clinical outcomes for members with type 2 diabetes.

Clinical nutrition is underutilized in the healthcare system, particularly for members with chronic diseases. This study shows that clinical nutrition services offer a viable solution for treating members with chronic diseases. Specifically, giving members access to a Registered Dietitian that provides whole-person care and enabling consumer choice through a comprehensive food market drives sustained behavior change and clinical outcomes.

## Select Highlights of 6-Month Study Outcomes

Reduction in HbA1c with starting HbA1c greater than or equal to 8	1.6
Average # of clinical touchpoints per member	19.5
Engagement at month 6	86%
% of members that report being more likely to engage in their healthcare or other preventive services as a result of working with Season Health	97%
Increase in number of people who reported their health-related quality of life as 'good' or better at the end of 6 months	60%
Members who completed the 6-month program	480

STUDY OVERVIEW & STRUCTURE

Members were enrolled in the Season Health program, which consisted of regular engagement with a Registered Dietitian, in the form of monthly telehealth visits and regular messaging, access to a curated food market of grocery and meal vendors, and a monthly food credit ranging from \$50–\$100 per month.

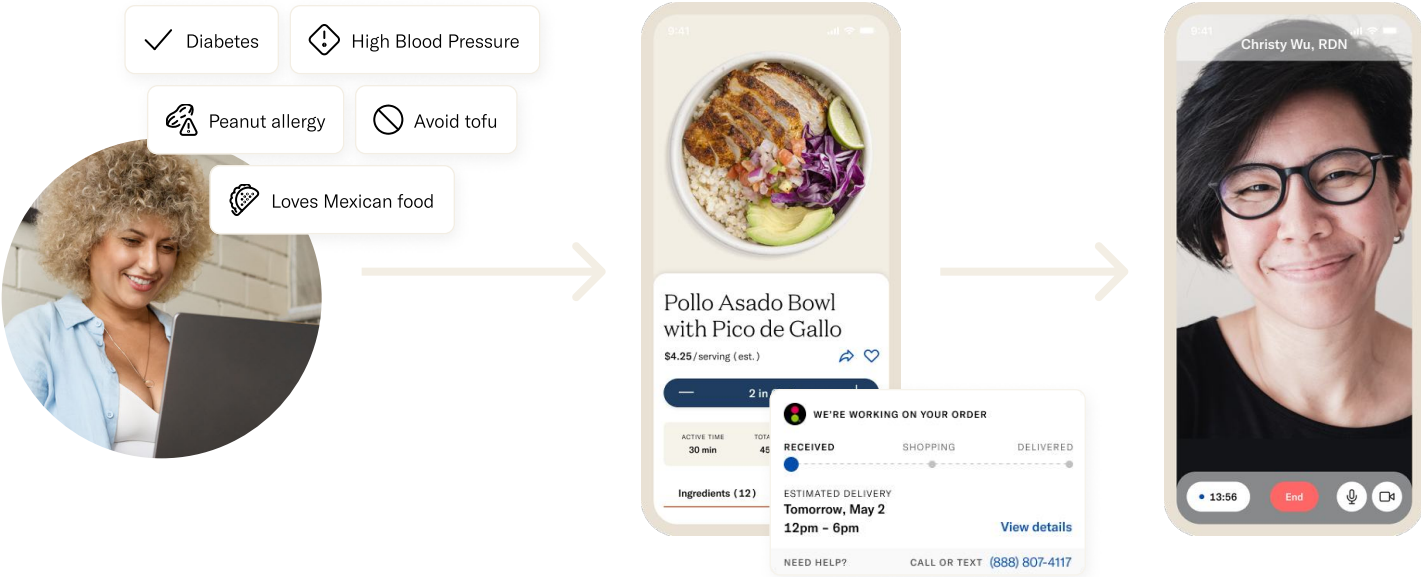
Population	Commercial fully insured members with type 2 diabetes
Clinical goals	Reduce total cost of care for this population through improved clinical outcomes, including: <ul style="list-style-type: none"><li>• Reduction in HbA1c</li><li>• Reduction in BMI for members with starting BMI greater than or equal to 30</li><li>• Blood pressure reduction for members with uncontrolled hypertension, where uncontrolled hypertension is defined as having a blood pressure reading &gt; 140/90 mmHg</li><li>• Improvement in health-related quality of life (HRQoL) results</li></ul>
Program overview	6 month clinical program where members receive: <ul style="list-style-type: none"><li>• 1:1 care with a Registered Dietitian</li><li>• Clinically appropriate, personalized nutrition prescription</li><li>• Access to Season's healthy food market, with thousands of recipes and pre-made meal options</li><li>• Monthly food credit to use towards healthy meals and groceries</li></ul>
Study groups	Two intervention groups, grouped by: <ul style="list-style-type: none"><li>• Monthly food credit amount (\$50 or \$100)</li></ul> One comparison group: <ul style="list-style-type: none"><li>• Did not receive access to care from Season Registered Dietitians or the Season platform</li></ul>
Member outreach	Direct member outreach, including direct mail, email and phone outreach

PATIENT JOURNEY

Season takes a comprehensive approach to serving members, ensuring they get access to the appropriate guidance and support that they need to succeed, while leveraging their existing food environment.

When members onboarded to the Season platform, they completed a detailed questionnaire on their conditions, goals, and preferences which informed a personalized nutrition prescription. Upon completing onboarding, members met with their dedicated Registered Dietitian to discuss program goals, their health status and their nutrition prescription. Members chose from thousands of recipes and meal options, and only saw options that fit their personalized nutrition prescription.

The member's nutrition prescription was reinforced over a 6-month intervention, through regular visits and messaging with a Registered Dietitian to check in on progress and deliver guidance in order to achieve sustainable habits and clinical results.



ENGAGEMENT OUTCOMES AND MEMBER SATISFACTION

At month 6, 86% of members were engaged with Season, where engagement is defined as participating in one or more value-add activity on the Season platform, such as completing an educational module, clinical lab measurement, interacting with our clinical team, or placing a food order.

The amount of food credits (\$50 vs. \$100) provided did not have a meaningful impact on a member’s engagement with the program, as both cohorts sustained 86% engagement at month 6.

In addition to being highly engaged, members expressed high rates of satisfaction with the Season program.

**“In all the years that I’ve had diabetes... I’ve learned more in the past week [using Season] than I have in all the other years.”**

- SEASON PATIENT

Members rated their clinical experience



Members rated Season meals



19.5

Average # of clinical touchpoints per member \*



14.6

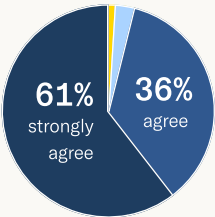
Average # of labs/surveys collected per member \*\*

\* RD visits, and messages sent to RD in 6 month period  
\*\* HbA1c, BMI, BP, HRQoL, food insecurity screeners, graduation surveys, etc

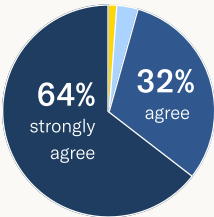
Members completed a survey at the end of the 6 month program. The results indicate positive clinical outcomes accompanied by sustainable behavior change. 97% of engaged members said Season makes them more likely to engage in preventive services.

Strongly agree   Agree   Neutral   Disagree   Strongly disagree

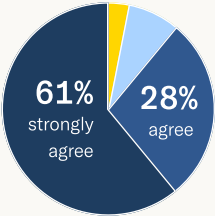
“Because of Season, I am more likely to engage in my healthcare or other preventative services, overall”



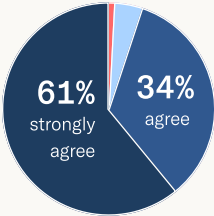
“Having Season as an available program is something I will tell or have told my friends and family about”



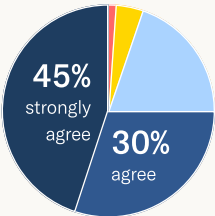
“Having access to food and groceries makes my employer-sponsored health plan more valuable to me”



“I plan to maintain the nutrition/ food changes I made during my participation in the Season program”



“Using Season makes me more likely to enroll with the plan”



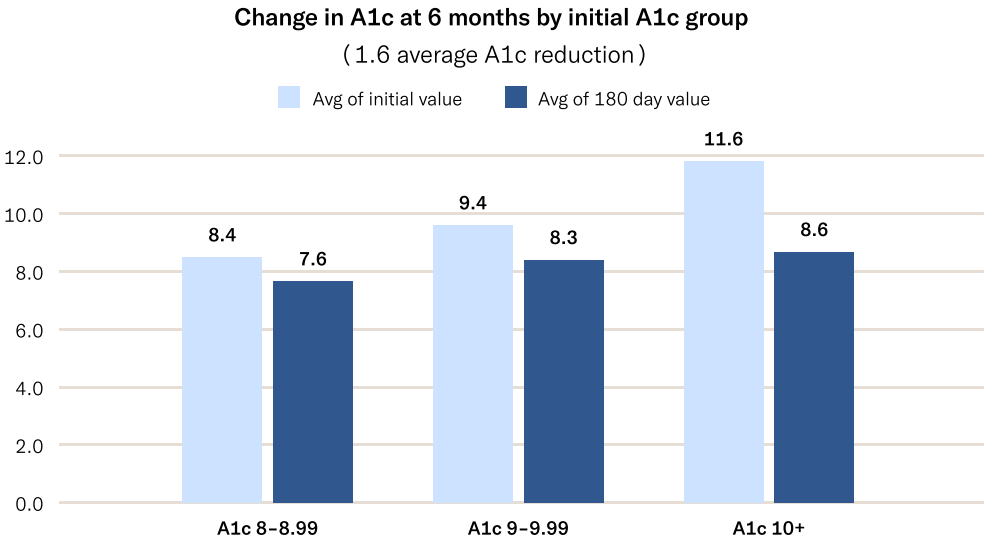
**“I feel confident, if I continue with this journey I know I will see the results... I'm not going to give up, I'm going to keep up my changes.”**

- SEASON PATIENT

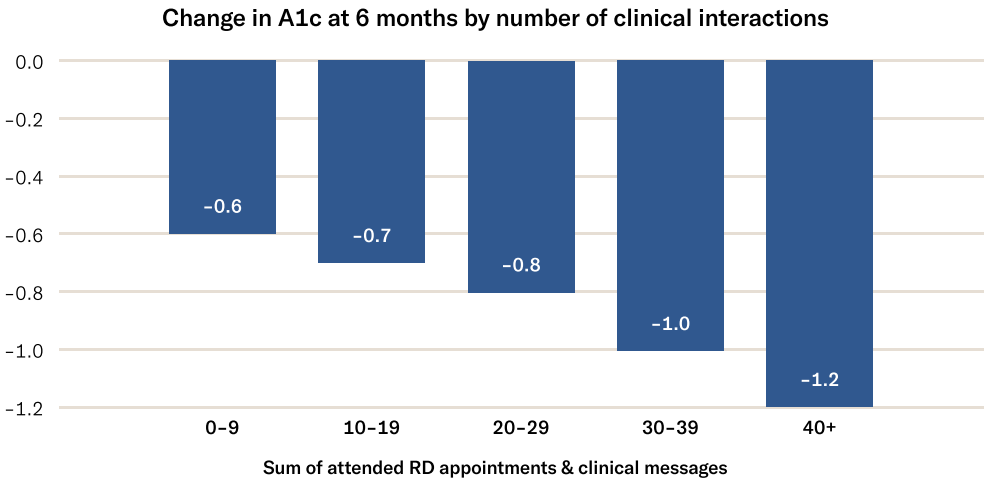
CLINICAL OUTCOMES

Season tracked the following clinical metrics by collecting regular labs over the course of the study, across the 480 engaged members: reduction in HbA1c, reduction in blood pressure, and reduction in BMI.

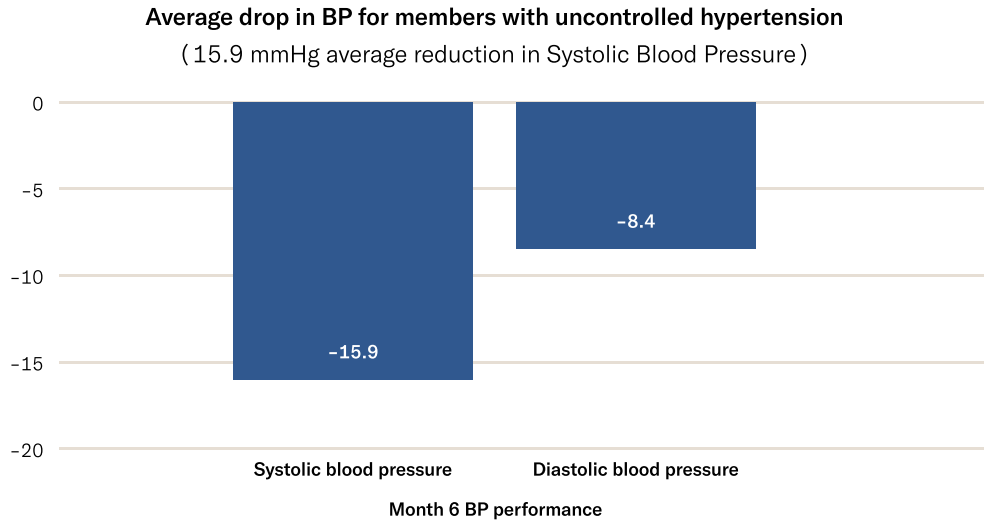
The key clinical metric of interest for this study was the reduction in HbA1c. On average, members with a starting HbA1c greater than or equal to 8 reduced their HbA1c by 1.6 points over the course of the program.



Members who interacted with Season's clinical team more frequently saw better HbA1c control.



Additionally, Season tracked reduction in blood pressure and reduction in BMI as part of the study: On average, members with uncontrolled hypertension reduced their Systolic Blood Pressure by 15.9 mmHg. On average, members with a BMI greater than or equal to 30 reduced their BMI by 3.1%.



CARE DELIVERY AND SOCIAL DETERMINANTS OF HEALTH (SDOH)

In addition to tracking clinical metrics, Season Health assessed food insecurity status for study participants, measured health related quality of life at the start and close of the study, ensured timely access to care for study participants, and supported patient referrals to other healthcare needs.

CARE DELIVERY

Access to Care

Season ensures access to care for members through its broad network of Registered Dietitians:



25+ conditions covered



15+ languages spoken



10+ avg years experience

Time to Care

Season gets patients into care with their Registered Dietitian quickly. On average, patients have three available appointment times within two days of scheduling.

Metric Collection

Season supported metric-capture over the course of the 6-month study. Season collected a baseline and 6-month HbA1c reading for 76% of members enrolled in the study.

Closed-Loop Referrals

Season's practice of Registered Dietitians sent referrals to case managers for various care needs (percent of total referrals):

- Mental Health (33.3%)
- Primary Care (28.4%)
- Medication Management (24.7%)
- Continuous Glucose Monitoring (8.6%)
- Financial Assistance (4.9%)

SOCIAL DETERMINANTS OF HEALTH

Hunger Vital Sign Food Insecurity Screen

As part of onboarding, Season screened members for food insecurity using the 2-question Hunger Vital Sign Survey.<sup>6</sup>

43% of members who responded to the survey identified as at-risk for food insecurity.

IN THE LAST 12 MONTHS, HOW OFTEN HAVE YOU EXPERIENCED THE FOLLOWING?

“The food I bought didn’t last, or I didn’t have money to get more”

28.8%  
responded “Sometimes True”

8.8%  
responded “Often True”

920 responses

IN THE LAST 12 MONTHS, HOW OFTEN HAVE YOU EXPERIENCED THE FOLLOWING?

“In the last 12 months, I worry that food will run out before I get money to buy more”

28.1%  
responded “Sometimes True”

10.0%  
responded “Often True”

923 responses

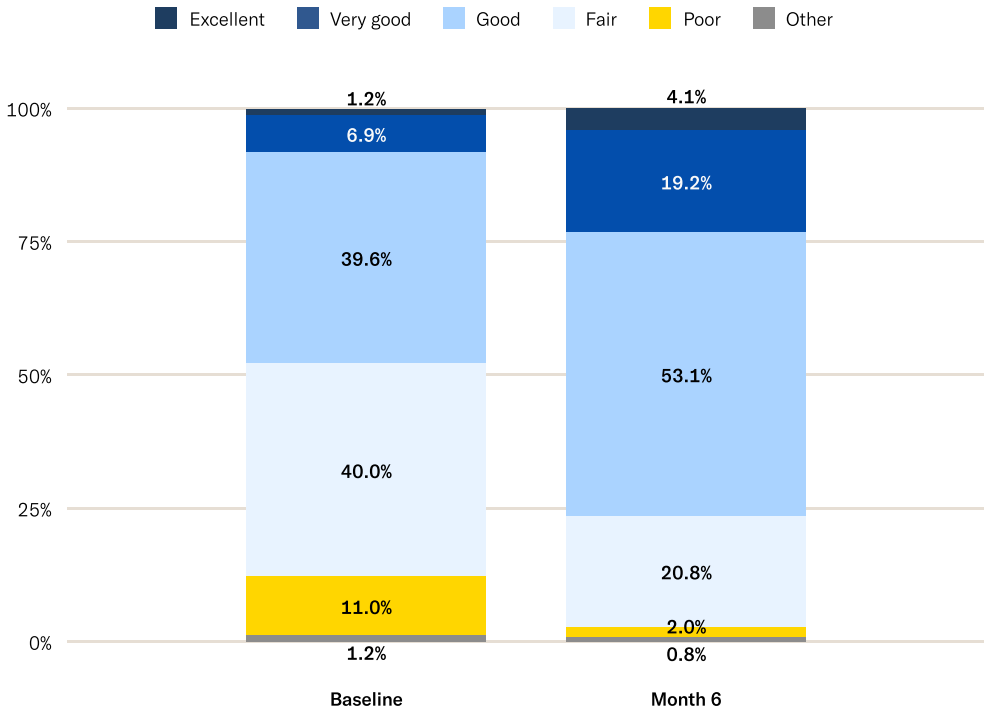
SOCIAL DETERMINANTS OF HEALTH  
(CONTINUED)

Quality of Life Survey

Members on Season were given a standard Health Satisfaction survey before and after the intervention. When asked, “How would you rate your current health status?” the number of members who reported ‘Good,’ ‘Very Good’ or ‘Excellent’ increased by 60% after completing the 6-month program.

For members with food insecurity, this quality of life improvement was even greater, with a 109% increase in the number of members who rated their health as ‘Good’ or ‘Very Good’ or ‘Excellent’ at the end of the 6-month program.

Change in self-reported health-related quality of life at baseline and 6 months



About Season Health

Season Health is the only integrated clinical nutrition solution that drives engagement, health outcomes and total cost of care reduction for individuals, health plans and employers across populations powered by its food-as-medicine platform. With one of the largest networks of Registered Dietitians and curated food market of national and local grocery and meal vendors, Season empowers individuals and their families to make informed, sustainable choices, measurably improving both health outcomes and quality of life.

Learn more at [www.seasonhealth.com](http://www.seasonhealth.com)

1. <https://health.gov/our-work/nutrition-physical-activity/food-medicine#:~:text=About%20half%20of%20all%20American,cancers%2C%20and%20poor%20bone%20health.>

2. <https://www.usda.gov/media/blog/2016/03/16/healthy-eating-index-how-america-doing>

3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9921002/>

4. <https://www.cdc.gov/diabetes/managing/problems.html#:~:text=Common%20diabetes%20health%20complications%20include,how%20to%20improve%20overall%20health>

5. <https://pubmed.ncbi.nlm.nih.gov/37909353/>

6. <https://childrenshealthwatch.org/public-policy/hunger-vital-sign/>