virta

Reversal, Not Management

New Expectations for Best-in-Class Type 2 Diabetes Care

Summary

Type 2 diabetes is one of the biggest health crises of the 21st century.[1] The CDC reports that more than 114 million adults *(46% of the population)* in the US alone are now living with diabetes or prediabetes.[2] This is important for more than just public health reasons—it has a massive impact on the US economy.

Diabetes is one of the most expensive illnesses to treat—on average, individuals with diabetes have health care costs that are 2.3 times greater than those without, and a majority of those costs are passed along to employers.[3]

With Virta, we can lower HbA1c to sub-diabetic levels in 60% of patients while *eliminating* medications—including reducing or eliminating the need for insulin in 94% of users.[5]

Much like how cancer used to be considered terminal, with only management and palliative care as an option, type 2 diabetes used to be a lifelong disease state with no hope of reversal or remission. Treatment options for type 2 diabetes focused on management of the condition—patients might get marginally

$10K
Estimated cost savings per patient over two years based on modeling analysis[6]

60%
of patients achieve diabetes reversal

83%
patient retention at one year

Healthcare for diabetes costs US employers more than $49 billion annually. Among full-time workers, the prevalence of type 2 diabetes is 6.3% percent, resulting in an extra 5.5 days of missed work per person per year, which adds up to an additional cost to employers of $20.4 billion.[4]

Virta Health delivers a clinically proven treatment to *reverse* type 2 diabetes without the risks, costs and side effects of medication or surgery. This life altering intervention could save employers the cost of standard treatment, complications and medications, and save employees from the adverse and debilitating life impact of disease. **Virta is the new paradigm in diabetes care—reversal instead of management.**

'better', but they are still burdened with symptoms and medication. Just as cancer treatment has evolved to achieve successful remission outcomes, type 2 diabetes care can now claim similar advances. Patients who once needed active diabetes treatment can now reverse the course of their disease and live without its adverse effects.

This means more than just better health outcomes, it also amounts to massive cost savings on behalf of employers nationwide.

Cost of Care

Of the 20 diseases and conditions that account for more than 50% of all health care spending, type 2 diabetes is number one[3]

The Centers for Disease Control *(CDC)* reported that in 2017, 30 million Americans had diabetes and another 84.1 million Americans had prediabetes.[2] Traditionally, type 2 diabetes has been considered a chronic and irreversible condition except with interventions such as bariatric surgery, which results in remission rates as high as 80% in the early years following surgery, but includes adverse events associated with surgery as well as high rates of recidivism.[7]

More common than bariatric surgery, patients may be put on insulin and/or expensive oral medications. When combined with the cost of additional healthcare expenses like hospital admissions for disease-related complications, incremental diabetes-specific medical costs will balloon to an average of $7,900 per year. This leads to overall per-patient annual medical costs of $13,700 for patients living with type 2 diabetes.[3] Beyond direct costs associated with diabetes treatment, the disease can be costly for employers in terms of workplace safety and workers' compensation. Employees with type 2 diabetes and obesity are more likely to underperform and to be involved in accidents on the job, as there is a relationship between BMI and rate of compensation claims.[8] Employees suffering from obesity have more claims, more lost workdays, higher medical claim costs and higher indemnity claims costs.

General healthiness and maintaining healthy weight is important not only to workers' quality of life, but should also be a high priority for their employers given the strong effect of BMI on workers' injuries and associated costs.

5.5 days
Extra Missed Work Days Per Year *(Per Person)*

$16.0B
Annual Cost To U.s. Employers

$13,700
Annual Medical Costs Per Patient

Reducing diabetes-related medical, pharmacy, and workplace costs has become a business imperative for employers seeking to be competitive in their markets. Unfortunately, the most common tactic used to achieve this, shifting costs through plan design changes *(e.g. higher deductibles, coinsurance over copays)*, has failed to keep costs from growing faster than inflation.[9]

To reduce insurance costs, many companies have started utilizing disease management services for chronic conditions such as diabetes.[9] However, these programs have only demonstrated moderate results, and the cost of diabetes to employers continues to rise faster than corporate budgets can sustain. These rising costs are partially driven by the practice of simply managing a chronic progressive disease where as the health of the patient declines, healthcare costs increase proportionally.

On the other hand, new approaches that aim to reverse type 2 diabetes can provide substantial cost savings while dramatically improving quality of life

The Current Standard of Diabetes Management

At the initial diagnosis of type 2 diabetes, the current standard of care, diabetes management, recommends that patients make lifestyle changes *(e.g., exercise more, eat less)* and begin a pharmacologic regimen of metformin.[10]

Achieving high patient adherence with lifestyle modifications is challenging, since the average patient only sees their physician for sixteen minutes.[11] Quarterly physician visits are simply not sufficient to give patients the education, support and accountability that is necessary to achieve and sustain significant behavioral change.[12]

Eventually, the patient may be put on insulin or other diabetes specific oral medications. Unfortunately, type 2 diabetes is a disease which cannot simply be "prescribed away". The common practice of raising medication dosages or adding additional medications to combat disease progression results in a 'vicious cycle' with continued weight gain, neither of which is beneficial to the patient.[13]

Type 2 diabetes is a disease which cannot simply be "prescribed away"

A New Diabetes Treatment Paradigm, the Virta Health Difference

There are several prediabetes and diabetes management programs for enterprise employers available in the market today as an employee benefit. Unfortunately, their focus on management merely maintains the status quo of patient disease —maintaining a 'slowly rising plateau' of illness. Conventional care is failing diabetes patients and their employers, with high costs and poor outcomes.

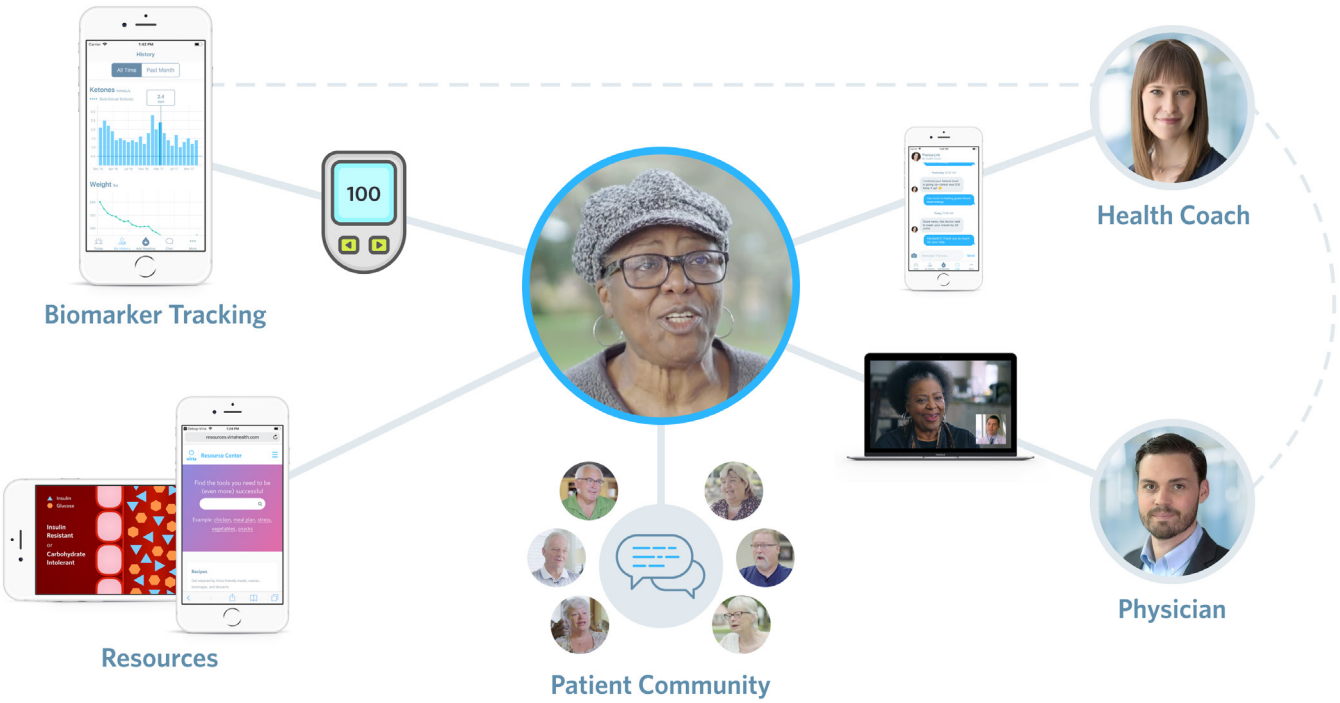
There is a better way to treat diabetes that both reduces medical costs while also creating lasting health improvements. Diabetes treatment can now mean reversal, not management. Put simply, the status quo of care focuses on diabetes management. **Virta shifts the paradigm to diabetes reversal.**

Virta's Model for Diabetes Reversal

Virta Health provides the leading clinically proven treatment to reverse type 2 diabetes without the risks, costs and side effects of medication or surgery

Our full-service virtual specialty medical clinic uses the combination of highly-individualized and evidence-based nutritional interventions, medical supervision, and innovative technologies to improve the metabolic health of patients who have been diagnosed with type 2 diabetes and prediabetes.

Virta can reduce high blood sugar to sub-diabetic levels—while freeing patients from costly medications used to control blood sugar, like insulin. Virta's peer-reviewed clinical trial results prove that our continuous remote care model, enabled by technology and combined with the right treatment protocol, can change chronic disease care from management to reversal.[14, 15] Part of Virta's success in overcoming type 2 diabetes is through the use of intensive, highly individualized and sustainable nutritional interventions delivered remotely in an outpatient setting. Virta's treatment is based on decades of research on low-carbohydrate, high-fat nutritionally-induced ketosis, which can directly lower blood sugar and reverse insulin resistance. Treatment is delivered via around-the-clock medical supervision, biomarker tracking, as well as physician and health coach support—all provided by Virta through an app accessible via computer, tablet, or smartphone.



Nutrition

Insulin regulates glucose levels in the blood. Patients with type 2 diabetes are "insulin resistant," meaning they need more insulin to lower blood glucose to normal levels than a person who is insulin sensitive. While insulin injections, a common treatment for type 2 diabetes, can help lower blood sugar, it is not the optimal solution given its cost and risks.

The Virta Treatment uses nutritional ketosis, transitioning the body from being a "sugar burner" to a "fat burner". Burning fat creates ketones, which can replace glucose as a primary fuel source for brain cells, and as recent evidence demonstrates, also contribute to improved health by reducing inflammation.[15] Nutritional ketosis is accomplished by significantly reducing consumption of carbohydrates and consuming an adequate amount of protein to meet the body's needs, while consuming fat to satiety.

The primary action of insulin is to allow cells to take up glucose from the blood, most of which comes from dietary carbohydrate intake. It then makes sense that eating fewer carbohydrates reduces blood glucose and insulin. Benefits from reduced levels of blood glucose and insulin along with elevated levels of ketones allows for improved glycemic control and reversal of type 2 diabetes.

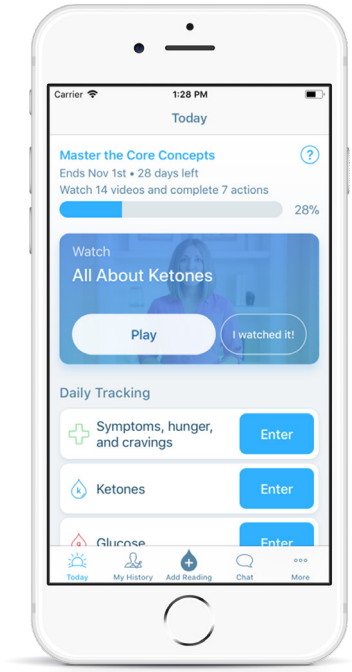
The Virta Treatment uses nutritional ketosis, transitioning the body from being a "sugar burner" to a "fat burner"

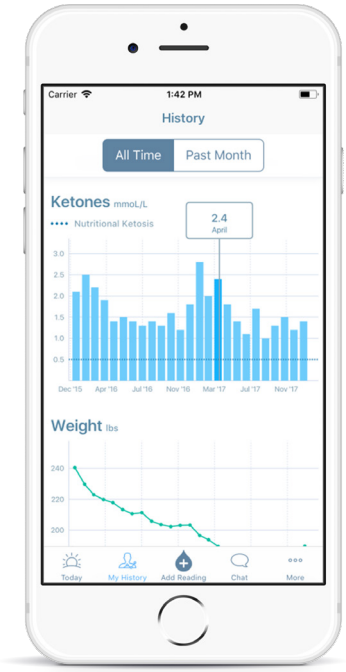
Medical Supervision

Our physicians and health coaches provide expert care via the technology-enabled Virta Clinic. Virta physicians become patients' metabolic health specialist and provide continuous remote care, including safely adjusting or eliminating medications. Virta health coaches work in concert with our physicians, providing one-on-one guidance to help patients navigate their unique circumstances—answering questions, offering feedback, and providing support and accountability. Our coaches help personalize the Virta Treatment to each patient's lifestyle and metabolic needs.

Technology

Technology *(including the Virta mobile app and the use of machine learning)* is critical to the delivery of the Virta Treatment. Virta's easy and intuitive online experience gives the patient continuous access to your care team, a step-by-step care plan, and real-time biomarker feedback on glucose, ketones, and weight. Virta's data science team works side by side with our clinical staff to build machine learning algorithms that help us treat patients at scale, while simultaneously delivering better outcomes.





Disruptive Outcomes - Diabetes Reversal and More

Treatment Outcomes[5]

60%
Diabetes Reversal

72% A1C under diabetic threshold of 6.5%

94% of insulin users reduced or eliminated usage

83% Retention at one year

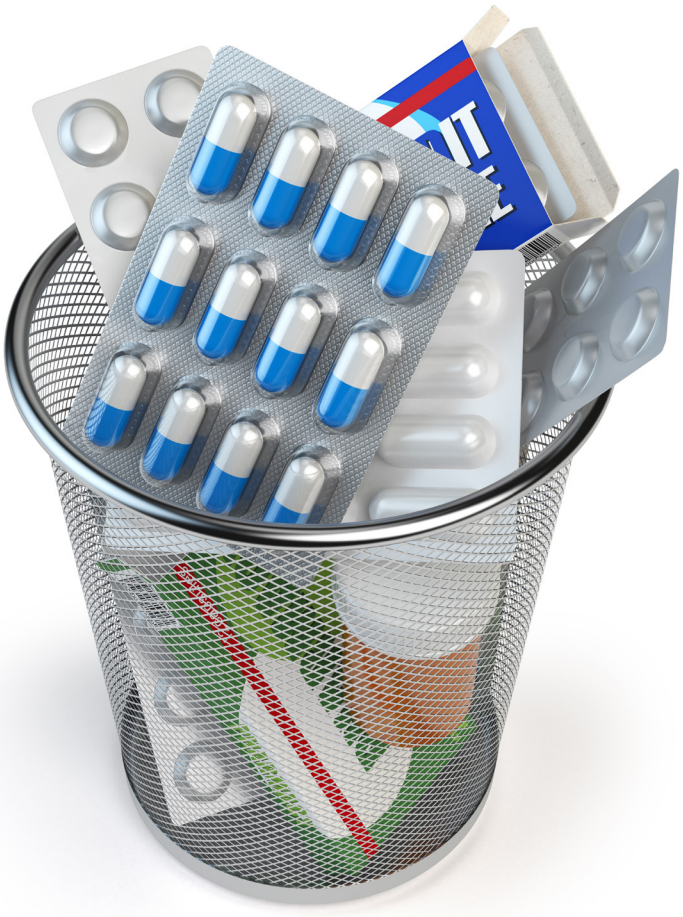
-12% Average weight loss at one year

In a matter of weeks or months, most patients make dramatic improvements in blood sugar control while also reducing or eliminating the very diabetes medications previously used to control their blood sugar. A peer-reviewed publication in *Diabetes Therapy* demonstrated that 60% of patients receiving the Virta Treatment had reversed type 2 diabetes one year after beginning the Virta Treatment, by achieving an HbA1c under 6.5% while taking no glycemic control medications aside from metformin.[5]

Notably, **94% of insulin users reduced or eliminated usage altogether. The average patient lost 12% of their body weight, or 30 pounds on average, and reported less hunger**.[14] Moreover, the Virta Treatment can improve risk factors of cardiovascular disease, including triglycerides, HDL-C, blood pressure, and inflammation.[5] Commercial contracts with enterprise employers have achieved comparable health outcomes in patients nationwide, and retention is even better.

Virta patients not only see results, but stay engaged. **At one year, 83% of participants were still enrolled in the clinical trial.**[5] Patients love how Virta makes them feel: more energized, in control of their health, and hopeful for their future.

Save an average of $10,000 per patient over the course of two years[5]



Virta achieves better outcomes than the 'usual care' available to individuals living with type 2 diabetes[5]

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Outcomes at a Glance:
Effectiveness and Safety in the Virta Clinical Trial at One Year

	Virta	Usual Care
HbA1c	▼ -1.3%	▲ +0.2%
Diabetes Medication Usage Rate (excluding metformin)	▼ -48%	▲ +9%
Body Weight	▼ -12%	▬ 0%
Insulin Resistance (HOMA-IR)	▼ -55%	▲ +16%
High Sensitivity C-Reactive Protein	▼ -39%	▲ +15%
Triglycerides	▼ -24%	▲ +10%
HDL-C	▲ +18%	▼ -3%
LDL-C	▲ +10%	▼ -11%

In sum, Virta has reinvented the diabetes care model, with a focus on reversal delivered through cutting-edge continuous clinical care. People with chronic disease *(and specifically type 2 diabetes)* don't have to think of their illness as a life sentence.

Virta's peer-reviewed clinical trial results demonstrate we can reverse type 2 diabetes, and prove that a continuous remote care model, enabled by technology and combined with the right treatment protocol, can revolutionize chronic disease care.

Learn more about bringing Virta to your workforce—contact **sales@virtahealth.com**.

"I have tried everything to get my sugar and weight under control, and nothing worked. I was concerned about losing time with my family due to this disease. I can confidently say that Virta has saved my life."

KIM
VIRTA PATIENT

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