

New version with 5 step plan to transfer intervention to your country

**Lifestyle
treatment**

Reverse Diabetes2 Now

**Evidence based and reimbursed
Dutch treatment for diabetes
type 2**

Introduction





Voeding Leeft develops and exploits lifestyle programs since 2011

Goal of Voeding Leeft

Developing and implementing lifestyle programs for people with chronic diseases in order to **improve patient health outcomes, quality of life and reduce health care costs.**

- Market leader in The Netherlands
- Based on scientific evidence and common sense
- Independent from big pharma and food industry
- Non-profit
- Supported by many experts and institutions in the field
- Lifestyle treatments for diseases like rheumatism, IBD and diabetes



Impact of Diabetes



- 1 in 11 adults have diabetes
- 1 in 2 adults with diabetes are undiagnosed
- 10% of global health expenditure is spent on diabetes
- In Europe 59.000.000 people have type 2 diabetes (2019)
- In 2030 this will be 66.000.000
- Diabetes is in the top 10 leading causes of death globally

Diabetes is rising in Europe and one of the fastest growing health challenges

Source: WHO, IDF

Challenges current society

stress



poor nutrition and obesity



lack of exercise



pollution



Smoking



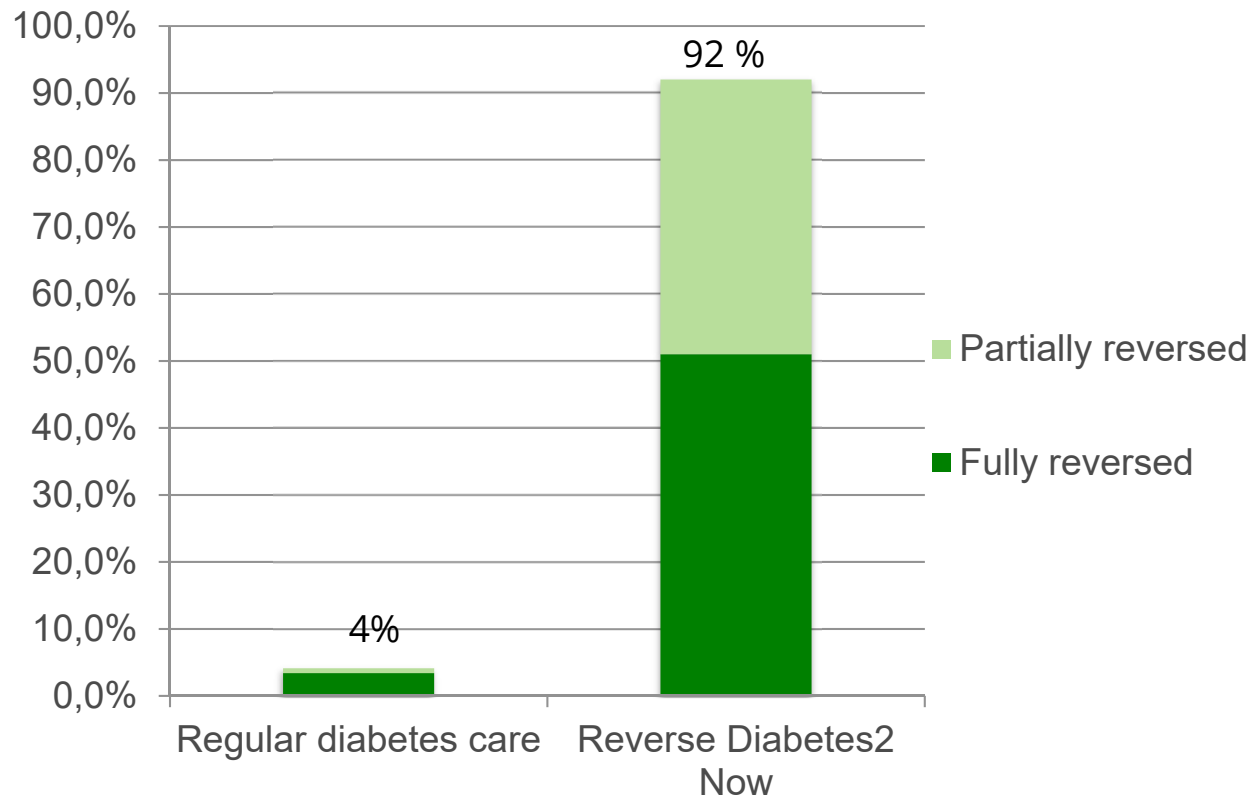
Sleep deprivation



Paradigm shift

- Current treatment of type 2 diabetes is focussed on the prevention and treatment of complications of diabetes type 2 such as cardiovascular diseases with bloodglucose lowering medications (treatment of symptoms)
- Bloodglucose lowering medication can not reverse diabetes type 2
- Scientific evidence proves that with effective lifestyle treatment type 2 diabetes can be brought into reversion or remission (treatment of cause)
- Effective and evidence based lifestyle treatments should get an important place in the treatment of type 2 diabetes

Reverse Diabetes2 Now vs regular care



- 12 months after start 92% of the participants of RD2N are fully or partially reversed
- In regular diabetes care this is 4%

Source: The Netherlands - Synchroon database and 4^e interim report Louis Bolk Instituut 2019

Han Seijger

Before (2015)

- Diagnosed with type 2 diabetes in 2005
- Diabetes medication: Gliclazide and Insulin



- Married, 2 kids and 3 grandchildren
 - Retired forensic detective

2016 – now

- Participant Reverse Diabetes2 Now 2016
- Improve his health to be there for his grandchildren and see them grow old
- More energy
- No diabetes medication
- Reduced medications: Cholesterol medication
- Ceased medications: Nitroglycerin, Beta-blocker

Because better health outcomes matter.....



Reverse Diabetes2 Now

- Intensive treatment focused to cure/reverse diabetes type 2
- Objectives: healthy blood glucose levels, less medication and more quality of life
- Treatment team: Diabetes Nurse, Diabetes Coach, Diabetes Dietitian and a Program coordinator (supported by a general practitioner and internist)



Delicious food



Excercise



Better Sleep



Relaxation



Reduce medication

Multidisciplinary lifestyle treatment



Self-care



Knowledge



Experience



Doing



Delicious food



Exercise



Better sleep



Relaxation



Reduce medication

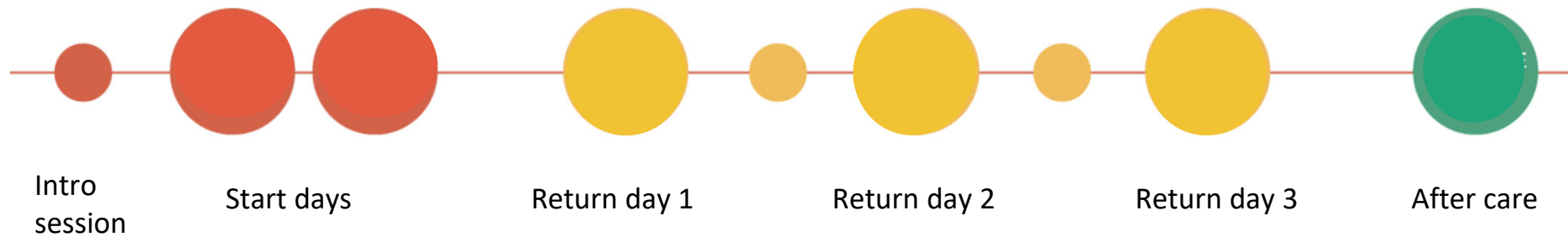
Program

- Intensive treatment phase of 6 months
- Relapse prevention program of 18 months
- Groups of 20 persons
- 9 treatment locations in The Netherlands
- Fully digital treatment as of summer of 2020
- 2.500 + people treated
- High customer satisfaction



Timeline of the Dutch programme

In-person programme



Online programme



Program first 6 months

- 2 day kick off with overnight stay
- 3 program days after 1, 3 and 6 months
- Tracking health outcomes
- Online community for information, sharing experiences and guidance
- Personal goals and coaching on durable change of lifestyle

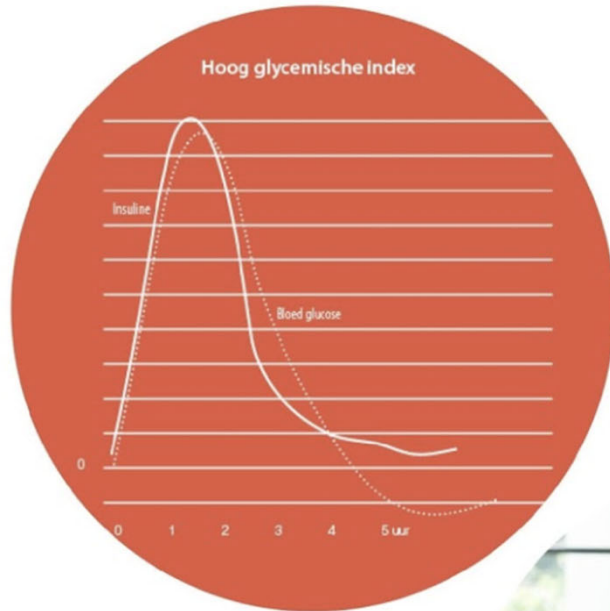


Patient safety and diabetes reversal

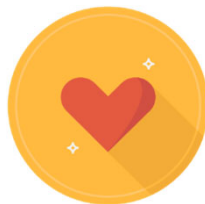
- Before the start of the treatment our medical team discusses the medication decrease protocol with the patients own GP or internist
- Our medical team: 1 Internist, 1 GP, 3 diabetes nurses
- During the treatment we inform the patients own GP/Internist about the progress and results
- During the treatment blood glucose levels are measured frequently and medication is adjusted in line with blood glucose/HbA1c levels
- We have an education program for healthcare professionals to support patients after the program has stopped



Knowledge



Experiencing



Doing



Coaching



Online platform 'My Voeding Liefert'

- 24/7 access
- Ask questions to the team
- Share experiences
- Keep track of goals
- Background information
- Recipes

My Voeding Leeft platform

The screenshot displays the 'My Voeding Leeft' platform interface. On the left is a sidebar with navigation options: Dashboard, Community (highlighted), Bibliotheek, Agenda, Inbox, Voortgang, and Classroom. At the bottom of the sidebar are 'Profiel' and 'Uitloggen' buttons. The main content area features a user profile for 'Wat wil je met ons delen?' with a 'Plaatsen' button. Below this is a post by 'Elsa Smit' from 1 month ago, with the text 'Ik ben de natuur om ons heen aan het herontdekken. Wat een rijkdom! Hebben jullie ook nuchter gewandeld? Groetjes van Elsa' and a landscape photo of a lake at sunset. On the right, there is a 'Privébericht sturen' button, a 'Deelnemers' section with profile pictures of Elsa, Johan, Sara, Casper, and Nikki, and a green filter panel with options for 'Reset filter', a search bar, 'Berichten tonen van:' (set to 'Het totale programma'), and 'Filteren op groep:' (set to 'Iedereen').

My Voeding Leeft platform

Voeding Leeft

Voortgang

Kies periode Afgelopen 7 dagen Afgelopen maand Custom

Mijn metingen Curve Data

Line chart showing measurements for Gevoelsmeter (red), Nachtrust (yellow), and Ontspanning (green) from 2021-05-03 to 2021-06-02. The y-axis ranges from 0 to 10.

Date	Gevoelsmeter	Nachtrust	Ontspanning
2021-05-03	6	7	7
2021-05-05	8	6	7
2021-06-02	8	8	8

Laatste meting

Gevoelsmeter Score: 8/10

Nachtrust Score: 8/10

Ontspanning Score: 8/10

Beweging




Vandaag: 0 minuten | Deze week: 0 minuten












Beweging chart showing activity levels from 0:45 to 1:00.

Community
Bibliotheek
Agenda
Deelnemers
Inbox
Voortgang
Programma groepen
Berichten
Categorieën
Classroom
Programma Builder


Profiel **Uitloggen**

My Voeding Leeft platform

 Voeding Leeft®  

-  Community
-  Bibliotheek
-  Agenda
-  Deelnemers
-  Inbox
-  Voortgang
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-  Berichten
-  Categorieën
-  Classroom
-  Programma Builder

Indiase kip met paprika, sperzieboontjes en bloemkoolrijst



Diner

Ingrediënten

- 1 kleine ui
- 1 el roomboter
- 250 gram kippendijfilet
- 1 rode paprika
- 1 el verse gember

Aftercare - 6-24 months

Goal: make lifestyle change durable and offer help for patients that need it

- facultative
- Monthly tracking progress of participants, support if required

Components

- monthly session on physiology
- monthly session on coaching and behaviour change
- monthly session to repeat the principles
- monthly webinar creating recipes
- continuous online community

Which patients are eligible?

Inclusion criteria

- Diagnosis of type 2 diabetes
- Using blood glucose lowering medications
- < 80 years old
- BMI between 25-40 kg/m²
- Able to find their way online
- Motivated for lifestyle change
- No severe comorbidities

Exclusion criteria

- Type 1 diabetes
- Severe COPD
- Bariatric surgery
- Eating disorder
- Kidney failure



Publications

- 6 month results
- 24 month results

Both in *British Medical Journal, Nutrition, Prevention & Health*

The screenshot shows the front page of a research article in the journal *BMJ Nutrition, Prevention & Health*. The article title is "Nutrition and lifestyle intervention in type 2 diabetes: pilot study in the Netherlands showing improved glucose control and reduction in glucose lowering medication". The authors listed are Gerda K Pot, Marieke CE Battjes-Fries, Olga N Patijn, Hanno Pijl, Renger F Witkamp, Marianne de Visser, Nynke van der Zijl, Maaike de Vries, and Peter J Voshol. The article is marked as "Open access" and "Original research".

Key sections visible in the screenshot include:

- ABSTRACT:** Introduction: Prevalence of type 2 diabetes (T2D) is increasing rapidly and lifestyle interventions to reverse diabetes are seen as a possible solution to stop this trend. New practice-based evidence is needed to gain more insight in the actual, and above all scientific, basis for these claims. Methods: This observational study with a pretest-posttest design aimed to pilot a 6-month multicomponent outpatient group-based nutrition and lifestyle intervention programme on glycaemic control and use of glucose lowering medication in motivated T2D patients with a body mass index (BMI) >25 kg/m² in the Netherlands (February 2015–March 2016). Results: 74 T2D patients (56% female) aged 57.4±8.0 years with mean BMI 31.2±4.2 kg/m² and mean waist circumference 105.4±10.2 cm were included in the study. Compared with baseline, mean HbA1c levels at 6 months were 5 mmol/mol lower (SD=10, p<0.001) and the number of participants with HbA1c levels <53 mmol/mol after intervention had increased (from 38% (n=26/72) to 60% (n=43/72)). At baseline, 90% of participants were taking at least one type of glucose lowering medication. At 6 months, 49% (n=35/72) of the participants had reduced their medication or eliminated it completely (13%). Secondary outcomes were significantly lower fasting glucose levels (-1.2±2.6 mmol/L), body weight (-4.9±5.1 kg), BMI (-1.70±1.69 kg/m²) and waist circumference (-9.4±5.0 cm). Plasma lipids remained unchanged except for a decrease in triglyceride levels. Furthermore, self-reported quality of life was significantly higher while experienced fatigue and sleep problems were significantly lower. Conclusion: This pilot study showed that a 6-month multicomponent group-based program in a routine care setting could improve glycaemic control and reduce the use of glucose lowering medication in motivated T2D diabetics. A fully scaled study is needed to confirm these results.
- INTRODUCTION:** The prevalence of type 2 diabetes (T2D) has seen an exponential rise during the last decades. It is probable that lifestyle-related factors are the dominant cause, together with the ageing of the population and a genetic predisposition. Among lifestyle factors, metabolically unhealthy eating habits play a key role in the aetiology and progression of T2D. Therefore, it would be logical to give nutrition and lifestyle a prominent place in T2D prevention and treatment. T2D is potentially reversible, as reflected by normalised HbA1c levels and a reduction and/or elimination of T2D medication. The latter could also be called drug-free remission of T2D. Sustained remission of T2D comes with improved physical health and well-being of the patient, fewer comorbidities and a considerable reduction in medical costs. Interventions to reverse T2D so far were based on (1) bariatric surgery, (2) very low-calorie diets¹⁰ or (3) nutritional ketosis.^{11–13} A major limitation of the latter two options is that they are based on data from studies with a number of shortcomings, for example, being relatively short in duration,^{14–16} performed in relatively small populations,^{17,18} not leading to long-term changes or reversal of T2D,^{19–26} and/or that long term
- What this paper adds:**
 - ▶ While lifestyle interventions are seen as possible solutions to stop the increasing trend in type 2 diabetes, studies lacking this up are rare.
 - ▶ This pilot study of a 6-month lifestyle programme (n=74) showed that participants used less glucose-lowering medication and HbA1c levels dropped significantly.
 - ▶ "Reverse Diabetes2" focuses on lifelong changes in nutrition (improved food, no calorie counting), stress management and physical activity.

Pot, G. K., Battjes-Fries, M. C., Patijn, O. N., Pijl, H., Witkamp, R. F., de Visser, M., ... & Voshol, P. J. (2019). Nutrition and lifestyle intervention in type 2 diabetes: pilot study in the Netherlands showing improved glucose control and reduction in glucose lowering medication. *BMJ nutrition, prevention & health*, 2(1), 43.

Pot, G. K., Battjes-Fries, M. C., Patijn, O. N., van der Zijl, N., Pijl, H., & Voshol, P. (2020). Lifestyle medicine for type 2 diabetes: practice-based evidence for long-term efficacy of a multicomponent lifestyle intervention (Reverse Diabetes2 Now). *BMJ Nutrition, Prevention & Health*, bmjnp-2020.

BMJ Nutrition, Prevention & Health – 24 month data

Key findings

- 44% use less or no medication **and** have a lower HbA1c
- 42% uses less medication **or** have a lower HbA1c
- 71% of responders who started on insuline medication ceased this medication
- Responders lost an average of 7 kilogram
- Quality of life improved

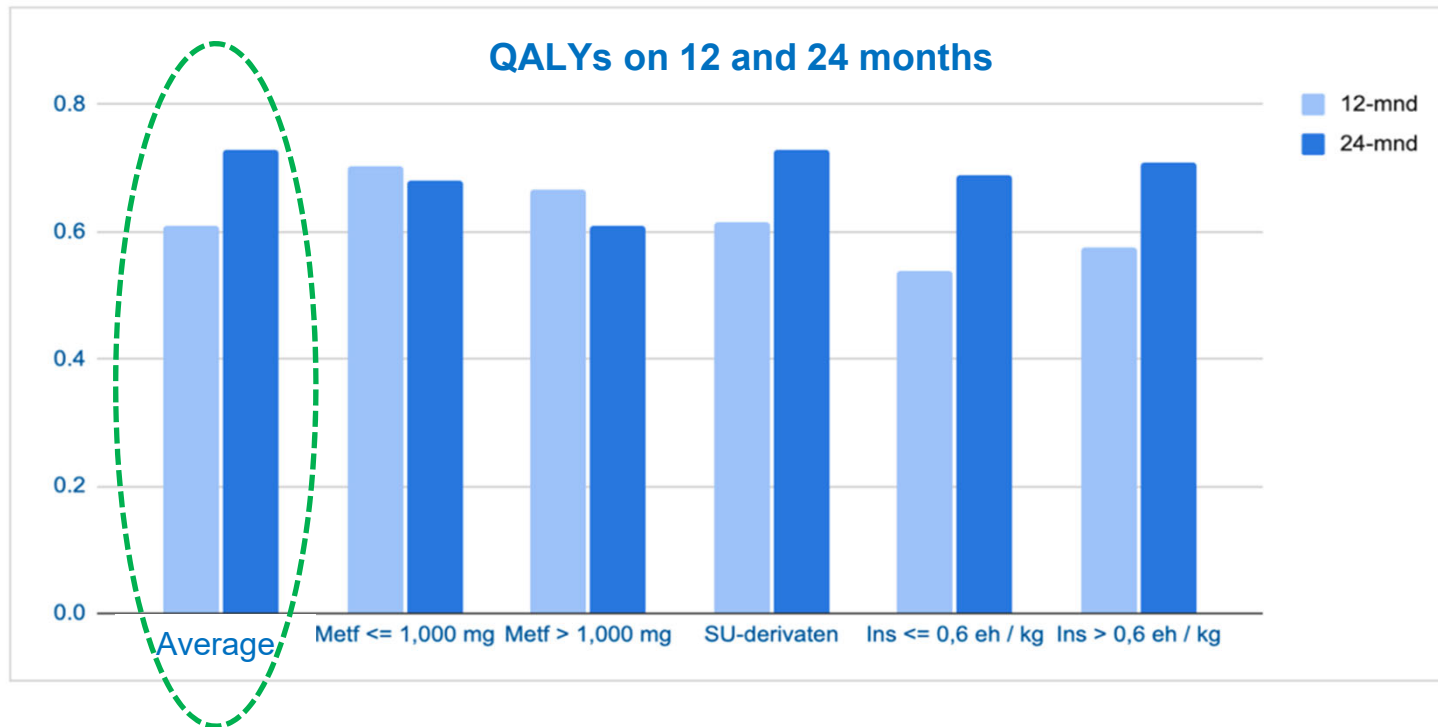
Results patients related to education level

- 27% of participants have a lower education
- 29% of participants have a middle education
- 42% of participants have a higher education

- % of people who were able to lower or cease their GI medication at 24 months was the highest for the subgroup with a low education (49% lowered medication and 30% ceased medication)



Health economics study

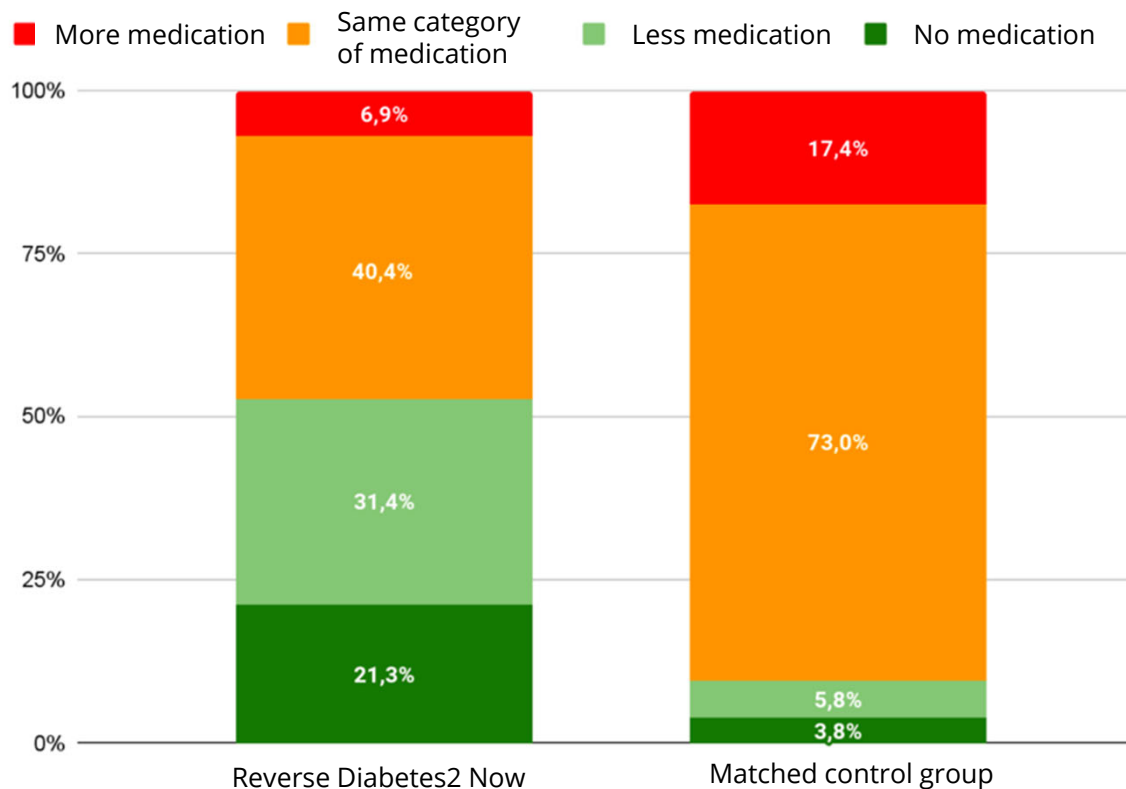


- At 24 months the health gains in QALYs average is 0,7 QALY
- Reference value for 1 QALY is € 20.000 (Netherlands)

Source: Health economics model based on review Hua et al (2016) in collaboration with Erasmus University Rotterdam

Reduction diabetes medication

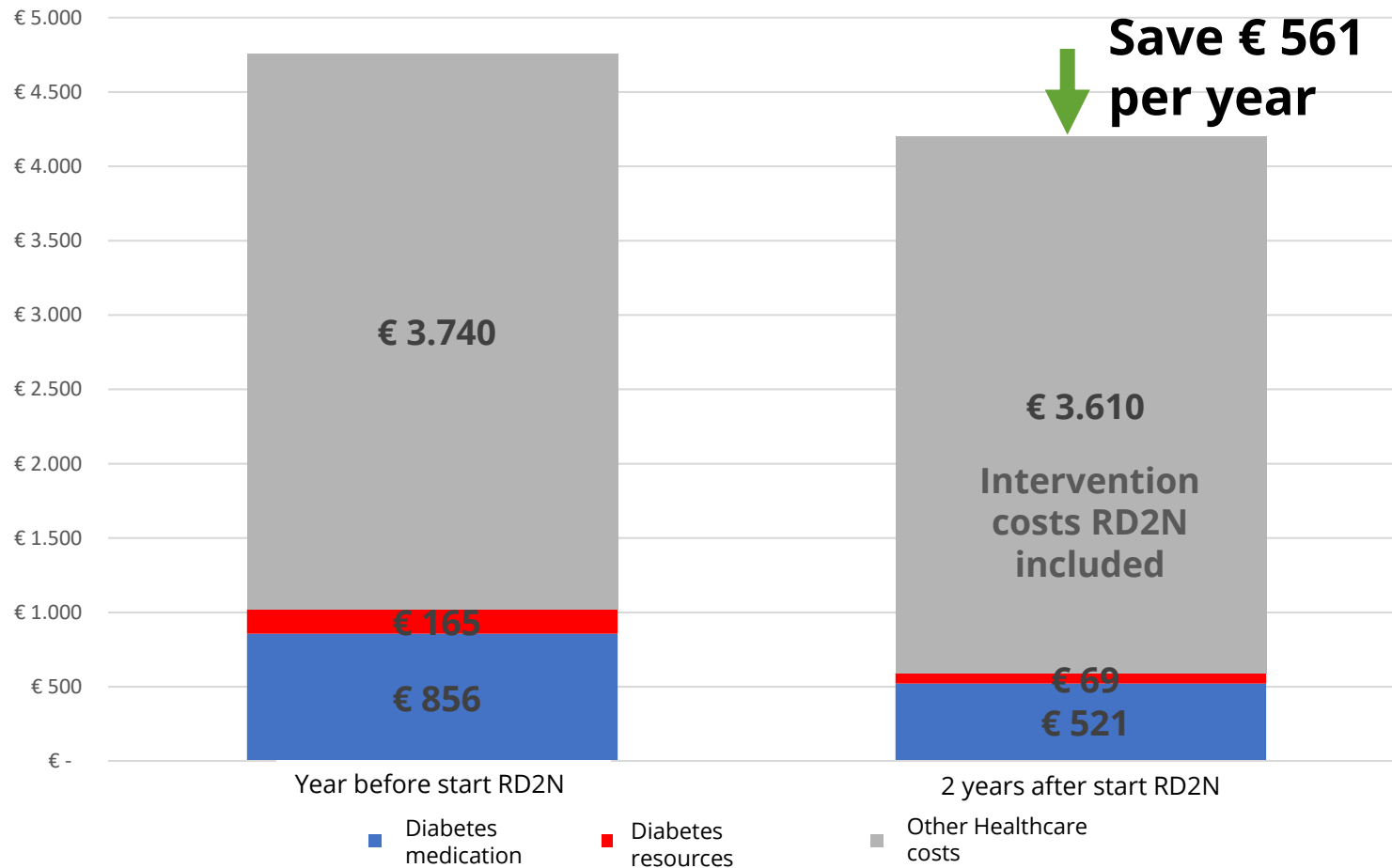
Declaration of diabetes medication 24 months after start



- 24 months after start treatment 53% of the participants use less or no diabetes medication (n=554)

Source: Declaration data health insurer VGZ

Reduction healthcare costs first 2 year



Average healthcare costs of participants started on insuline medication decreased from € 4.761 (year before start) to € 4.200 average in the first 2 years after the start of the treatment.

Source: declaration data health insurer VGZ

Reverse Diabetes2 Now Netherlands

- Reimbursed by health insurers



- Approved by the Dutch Health authorities



Zorginstituut Nederland



Rijksinstituut voor Volksgezondheid
en Milieu
Ministerie van Volksgezondheid,
Welzijn en Sport

International

- Voeding Leflt has a team in place to support and educate teams in other countries
- Experience in starting the intervention in other countries:
 - Pilot in Hong Kong
 - Collaboration in India (with local hospitals)
 - Germany: collaboration with a German partner company Optimedis
 - Belgium (Vlaanderen): collaboration with leading internist, Diabetes Liga and group of local healthcare specialist
- Program is easy transferable to other countries by different models. In the coming pages we explain two possible models. We are open to discuss about this and realise the best model for your local situation (see next 2 pages).
- More information: www.reverseddiabetes2now.com

Transfer RD2N to your country in 5 steps

Model A: We train your Health Care Professionals

1. Choose on the program format: 100% online (easy for a quick scale up in large countries), 80% physical and 20% online or both.
2. Select a group of Healthcare professionals/organisation that will execute the program.
3. Customize the program to your local situation and preferences (language, nutrition, financing, laws and regulations etc.) guided by our team and your key stakeholders (doctors, patients, government/health insurers, health authorities).
4. Pilot team will be trained by and get support from our team (including patient safety protocols, working methods etc.) and start executing the program. Results will be monitored continuously and program will be optimized.
5. Scaling the team and number of patients treated.

Investment in support from RD2N dependent from time and costs invested in the project. Indicative investment range in support from RD2N: €150.000 - € 450.000.

Transfer RD2N to your country in 5 steps

Model B: Durable involvement of RD2N

1. Partner organisation of RD2N will have active and durable involvement of the implementation and scaling of RD2N in your country and support you to find the right partner organisation in your country for a joint implementation of the program.
2. Choose on the program format: 100% online (easy for a quick scale up in large countries), 80% physical and 20% online or both.
3. Customize the program to your local situation and preferences (language, nutrition, financing, laws and regulations etc.).
4. Pilot team will be trained and start executing the program. Program, systems and (safety) protocols from RD2N will be used. New insights on treatment/guidelines and other matters from RD2N Netherlands will be shared and incorporated in the program. Results will be monitored continuously and program format will be optimized.
5. Scaling the team and number of patients treated.

Investments are based on time and costs invested and local conditions.

Costs of intervention

- Costs of the intervention are dependent from the program form (online/physical) and the program selected (intense program for people with complications and heavy diabetes medication like insulin or lighter program for people with prediabetes or diabetes without complication in the early stage and metformin medication). The program cost range is between € 1.500 and € 2.200 per patient when the program is scaled and based on the Dutch situation (Dutch wages for healthcare professionals). The main investments are in the wages for the healthcare professional team that executes the program.
- The above investments can be compared with other costs related on the diabetes treatment in The Netherlands for instance:
 - Diabetes life time costs: € 130.000 (healthcare costs & loss of labour productivity and disability)
 - Bloodglucose monitoring with Free style Libre: € 1.600 per year
 - Blood glucose lowering medication for patients on insulin: € 850 per year

Thank you for your attention!

Please feel free to contact us for
questions: info@voedingleeft.nl