Can You Actually Reverse Type II Diabetes? The Truth Nobody Explains Transcript

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Introduction: Can Type 2 Diabetes Be Reversed?

Can type 2 diabetes really be cured? Short type 2 diabetes really be cured? Short answer: yes, for answer: yes, for some, but not for some, but not for all. And if someone all. And if someone tells you that any tells you that any case of diabetes case of diabetes can be cured with can be cured with cinnamon, cinnamon, cinnamon, fasting, fasting, fasting, supplements, or some supplements, or some special diet, special diet, they are not telling you the they are not telling you the whole truth. If whole truth. If they are talking about they are talking about parasites, then the parasite parasites, then the parasite is definitely in their brain, is definitely in their brain, not in their not in their pancreas. In this video, pancreas.

What Remission Means and How Diabetes Develops

In this video, I'll explain what diabetes reversal really means, what diabetes reversal really means, what happens happens happens inside your inside your liver, muscles, liver, muscles, pancreas, pancreas, pancreas, and fat cells, and fat cells, who has the best who has the best chance of remission, who doesn't, and provide a, and provide a step-by-step strategy step-by-step strategy for for for success. I will also success. I will also explain how medications, explain how medications, intermittent intermittent intermittent fasting, strength fasting, strength training, sleep, and training, sleep, and supplements including supplements including berberine, Sugar MD super berberine, Sugar MD super berberine, Gluxion, etc.

berberine, Gluxion, etc. can fit into can fit into this plan. This will be this plan. This will be comprehensive information, comprehensive information, but it will not be but it will not be complicated. So complicated. So stay with me stay with me because once you because once you understand understand understand the physiology, diabetes the physiology, diabetes becomes much easier becomes much easier to understand and to understand and overcome. I am Dr.

overcome. I am Dr. Ahmet Ergin. I am Ahmet Ergin. I am an endocrinologist in Port St. Lucie, Lucie, Lucie, Florida, the owner of Florida, the owner of sugarmds.com, and I have dedicated sugarmds.com, and I have dedicated my career my career to treating diabetes, to treating diabetes, insulin resistance insulin resistance, obesity,, obesity, thyroid disease, thyroid disease, and hormonal and hormonal disorders. So, disorders. So, let's start with the let's start with the most important most important most important difference.

difference. Reversal is not the same as is not the same as full recovery. full recovery. The preferred medical The preferred medical term is remission.

term is remission. According to international According to international consensus, type 2 diabetes consensus, type 2 diabetes is considered in is considered in remission when the remission when the glycated glycated glycated hemoglobin A1C level hemoglobin A1C level remains below 6.5% for at least 3 at least 3 months. Without months. Without the use of the use of the use of drugs that drugs that lower lower lower glucose levels. This glucose levels. This definition is very definition is very important. If your important. If your A1C is A1C is 6.2% due to taking 6.2% due to taking metformin, insulin, metformin, insulin, semaglutide, semaglutide, semaglutide, tirzepatide, or other tirzepatide, or other diabetes medications, diabetes medications, your diabetes may be your diabetes may be perfectly perfectly perfectly controlled, but controlled, but you are not technically in you are not technically in remission. And there is nothing wrong with that. Excellent wrong with that. Excellent control with control with medication is medication is much better than much better than uncontrolled uncontrolled uncontrolled diabetes without medication.

diabetes without medication. The goal is not to The goal is not to prove that prove that you can live without you can live without medication. The goal is to prevent blindness, to prevent blindness, kidney kidney kidney failure, failure, failure, neuropathy, heart neuropathy, heart attacks, strokes, attacks, strokes, amputations, and amputations, and premature death.

If remission is possible If remission is possible and safe—that's great. If you still need. If you still need medication, it's not a defeat. medication, it's not a defeat.

Now let me Now let me explain what type 2 diabetes actually is. type 2 diabetes actually is. Imagine that insulin is the key. Its is the key. Its job is to help job is to help glucose get from glucose get from the bloodstream into certain the bloodstream into certain cells, especially cells, especially muscle and fat cells.

muscle and fat cells. When insulin When insulin attaches to attaches to its receptor, it its receptor, it sends a signal to sends a signal to the cell. Glucose is the cell. Glucose is available, and the cell available, and the cell must respond. In the early stages of type 2 diabetes, type 2 diabetes, insulin is usually not insulin is usually not absent. In fact, absent. In fact, many people with many people with prediabetes prediabetes prediabetes initially produce initially produce too much insulin.

too much insulin. The problem is that the The problem is that the body stops body stops responding to it responding to it properly. This is properly. This is insulin resistance insulin resistance. The key is there, but the lock. The key is there, but the lock has become tight and it is has become tight and it is difficult to turn. The difficult to turn. The pancreas pancreas pancreas responds by producing responds by producing more insulin.

more insulin. For years, such For years, such compensation can compensation can maintain maintain maintain glucose levels within normal limits. Your glucose levels within normal limits. Your fasting glucose fasting glucose may be 95. Your may be 95. Your glycated glycated glycated hemoglobin (A1C) level may hemoglobin (A1C) level may be 5.6%. The doctor may be 5.6%. The doctor may say that everything say that everything looks fine. But looks fine. But despite normal despite normal glucose levels, the glucose levels, the pancreas pancreas pancreas works overtime, works overtime, producing twice or producing twice or three times more three times more insulin than before.

insulin than before. This is why diabetes This is why diabetes usually doesn't usually doesn't start the day your start the day your A1C reaches 6.5%.

Insulin Resistance in the Liver, Muscles, and Fat

The process of The process of disease development could disease development could go unnoticed for go unnoticed for many years. First, First, insulin levels increase.

insulin levels increase. Then glucose levels Then glucose levels begin to rise begin to rise after eating. Then fasting glucose levels rise. fasting glucose levels rise.

Then the A1C falls into the Then the A1C falls into the prediabetes range, and if the prediabetes range, and if the pancreas pancreas pancreas can no longer can no longer produce enough produce enough insulin to insulin to overcome overcome overcome the resistance, type 2 diabetes occurs. So, type 2 diabetes type 2 diabetes occurs. So, type 2 diabetes has two main has two main components.

components. Insulin resistance Insulin resistance and insufficient and insufficient insulin production insulin production relative to the relative to the body's needs. You body's needs. You can still produce can still produce insulin, but it is insulin, but it is no longer enough to no longer enough to overcome the overcome the overcome the resistance. To resistance. To understand how to achieve understand how to achieve remission, you need to remission, you need to consider four consider four main organs.

Liver, muscles, adipose Liver, muscles, adipose tissue and tissue and pancreas. pancreas. Let's start with the liver. Let's start with the liver. Your liver is a Your liver is a storehouse of glucose. When storehouse of glucose. When you eat, it you eat, it stores some of the stores some of the glucose as glucose as glycogen. Between glycogen. Between meals and meals and at night, it releases at night, it releases glucose to glucose to support support support brain and body function.

brain and body function. Normally, insulin gives Normally, insulin gives the liver a signal: “ the liver a signal: “ We

have enough We have enough glucose. "Stop glucose. "Stop releasing her." But when releasing her." But when the liver becomes the liver becomes insulin resistant insulin resistant, it doesn't respond, it doesn't respond properly. The properly. The pancreas pancreas pancreas secretes insulin.

secretes insulin. The signal is sent, but The signal is sent, but the liver still the liver still continues to release continues to release glucose. This is one of the glucose. This is one of the main reasons for main reasons for increased increased increased fasting glucose levels.

fasting glucose levels. You can go to bed without eating anything and without eating anything and wake up with a wake up with a glucose reading of 140. Patients often. Patients often ask: “Doctor, I have ask: “Doctor, I have n’t eaten anything. "Where n’t eaten anything. "Where did sugar come from?" It did sugar come from?" It came from your came from your liver. Food is not the liver. Food is not the only source of only source of glucose in the blood.

The liver can The liver can create glucose create glucose through through through gluconeogenesis and gluconeogenesis and release release release stored glucose stored glucose through glycogenolysis.

In type 2 diabetes, In type 2 diabetes, glucose production glucose production often becomes excessive. Now let's look at Now let's look at skeletal muscles. Muscles skeletal muscles. Muscles are one of the main are one of the main consumers of glucose consumers of glucose after a meal. When muscles are after a meal. When muscles are active and sensitive to active and sensitive to insulin, they act insulin, they act as a large reservoir as a large reservoir for glucose. But when for glucose. But when you lose muscle you lose muscle mass, lead a mass, lead a sedentary sedentary sedentary lifestyle, or lifestyle, or develop develop develop muscle muscle muscle insulin resistance insulin resistance, this reservoir becomes, this reservoir becomes smaller and less smaller and less sensitive. Glucose sensitive. Glucose stays in the blood stays in the blood longer. The longer. The pancreas is forced pancreas is forced to produce more to produce more insulin, and the insulin, and the metabolic problem metabolic problem worsens. That's worsens. That's why muscles aren't just why muscles aren't just about looking good about looking good. Muscles are. Muscles are part of your glucose control system.

glucose control system. It is impossible to fully It is impossible to fully talk about talk about overcoming type 2 diabetes overcoming type 2 diabetes without mentioning without mentioning building and building and maintaining muscle. The third organ is third organ is adipose tissue.

adipose tissue. Adipose tissue is not Adipose tissue is not just a passive just a passive storage site. It is storage site. It is hormonally active. hormonally active.

Healthy fat Healthy fat tissue can tissue can safely safely safely store store store excess energy, but excess energy, but each person has a each person has a different ability to different ability to safely safely safely store fat. When store fat. When this ability this ability is exhausted, fat is exhausted, fat begins begins begins to accumulate where to accumulate where it it it shouldn't be: around shouldn't be: around internal organs, in internal organs, in the liver, in muscles, and the liver, in muscles, and around the around the pancreas. This pancreas. This is called is called is called ectopic fat. You ectopic fat. You don't have to be don't have to be severely obese to severely obese to have ectopic fat.

have ectopic fat. Some people develop Some people develop type 2 diabetes at a type 2 diabetes at a relatively normal relatively normal weight because their weight because their individual individual individual ability to safely ability to safely store fat is store fat is lower. Others may weigh significantly more before weigh significantly more before their glucose levels start their glucose levels start to rise. This is why to rise. This is why diabetes cannot be diabetes cannot be diagnosed or diagnosed or understood by understood by appearance alone.

When excess fat When excess fat accumulates in accumulates in the liver, the liver, hepatic insulin resistance increases. hepatic insulin resistance increases.

The liver produces The liver produces more glucose and more glucose and can produce can produce more more triglyceride-rich particles. triglyceride-rich particles.

The fat can then be The fat can then be transported to the transported to the pancreas pancreas pancreas and other tissues. and other tissues. In and around the In and around the pancreas, pancreas, pancreas, this abnormal fatty this abnormal fatty environment can environment can interfere with the function of beta cells. Beta cells are cells that are cells that produce insulin.

produce insulin. For years, beta cells For years, beta cells compensate for this by compensate for this by working in an working in an enhanced mode. enhanced mode.

But over time, vulnerable But over time, vulnerable beta cells beta cells begin to lose begin to lose their function. Some of their function. Some of them are exhausted.

them are exhausted. Some lose their Some lose their usual usual usual identity. Some identity. Some may die. And the may die. And the pancreas can pancreas can no longer cope.

no longer cope. Now the person has both insulin resistance and decreased and decreased insulin secretion. This insulin secretion. This combination combination combination leads to leads to type 2 diabetes. But type 2 diabetes. But that's where the that's where the hope lies. At least hope lies.

Who Can Achieve Remission and Who May Not

At least partially, this partially, this dysfunction can be dysfunction can be corrected. When corrected. When a person loses a a person loses a significant amount of significant amount of excess fat, excess fat, the amount of fat in the amount of fat in the liver decreases.

the liver decreases. The liver may become more The liver may become more sensitive to sensitive to insulin. Excessive insulin. Excessive glucose production glucose production may decrease.

may decrease. Fat deposits Fat deposits around the around the pancreas may pancreas may decrease. In some decrease. In some people, especially in the people, especially in the early stages of early stages of the disease, beta cells the disease, beta cells recover enough recover enough function to function to maintain maintain maintain normal normal normal glucose levels without medication. This glucose levels without medication. This is the biological basis of is the biological basis of remission. You don't just remission. You don't just make the glucose make the glucose disappear. You disappear. You reduce the reduce the reduce the metabolic pressure metabolic pressure that caused the glucose levels to rise. This is why glucose levels to rise. This is why significant fat loss significant fat loss can be so can be so effective. In the effective. In the DIRECT study, an intensive weight management program achieved weight management program achieved diabetes remission in diabetes remission in almost half of the almost half of the participants after 1 year.

participants after 1 year. The likelihood of remission The likelihood of remission was closely related was closely related to the amount of to the amount of weight lost. People weight lost. People who lost who lost the most weight had the the most weight had the highest highest highest remission rates. The lesson is remission rates. The lesson is not that everyone not that everyone should follow should follow one specific one specific liquid diet. The lesson is liquid diet. The lesson is that significant and that significant and sustained loss of sustained loss of excess fat excess fat can fundamentally can fundamentally change the physiology of change the physiology of type 2 diabetes. But there is a type 2 diabetes. But there is a second lesson. Remission second lesson. Remission may disappear if the may disappear if the weight returns.

weight returns. Type 2 diabetes has a Type 2 diabetes has a memory. If you memory. If you regain the regain the regain the visceral and visceral and ectopic fat that ectopic fat that contributed to the disease, contributed to the disease, insulin resistance insulin resistance insulin resistance may return.

may return. Beta cell stress Beta cell stress may return and may return and glucose levels may rise again. That's rise again. That's why I why I prefer the term " remission" rather than " cure." The fire cure." The fire may go out, but may go out, but the conditions that created the conditions that created it may it may return. So, return. So, who has the best who has the best chance of achieving chance of achieving remission? The first group is people who

were is people who were diagnosed diagnosed diagnosed relatively recently.

relatively recently. If you were If you were diagnosed 6 months, 2 years, or even, 2 years, or even several years ago, several years ago, your beta cells your beta cells may still have a may still have a significant reserve. The significant reserve. The earlier you intervene, earlier you intervene, the more the more opportunities there are opportunities there are opportunities there are to restore function to restore function before before before too too too many beta cells are lost.

many beta cells are lost. The second group are people The second group are people who still produce who still produce enough insulin. enough insulin. We can sometimes We can sometimes assess this by assess this by C-peptide levels. C-peptide C-peptide levels. C-peptide is released when the is released when the pancreas pancreas pancreas produces insulin. A produces insulin. A preserved level of C- peptide indicates peptide indicates that your that your pancreas is pancreas is still able to produce still able to produce insulin. But C-peptide insulin. But C-peptide should be interpreted should be interpreted taking into account taking into account glucose levels, glucose levels, kidney function, time, and kidney function, time, and whether the person is fasting.

whether the person is fasting. This is not a simple This is not a simple "pass" or " "pass" or " fail" test. The third group are people whose diabetes is are people whose diabetes is largely largely largely caused by excess caused by excess visceral and visceral and ectopic fat.

ectopic fat. If weight gain If weight gain was followed by worsening was followed by worsening glucose levels, and glucose levels, and significant fat loss significant fat loss results in rapid results in rapid improvement, remission improvement, remission may be achievable.

may be achievable. The fourth group are The fourth group are people who can people who can lose enough lose enough weight and maintain weight and maintain that loss. For one that loss. For one person, losing 7% of person, losing 7% of body weight can lead body weight can lead to significant to significant improvement. Another improvement. Another may need 10%, 15 %, 20%, or more to %, 20%, or more to achieve remission. There achieve remission. There is no universal is no universal magic number. Your magic number. Your body has its own body has its own personal personal personal fat threshold. The goal is to get below to get below the threshold at which the threshold at which the liver and the liver and pancreas pancreas pancreas can function can function more normally. The more normally. The fifth group are people who are fifth group are people who are ready to change their ready to change their environment, not environment, not just complete a just complete a temporary diet. A 90- day challenge can day challenge can improve your improve your performance, but performance, but long-term long-term long-term remission requires remission requires a system that you a system that you can can can stick to stick to stick to consistently. Now, who consistently. Now, who might not be able to might not be able to completely get rid of completely get rid of diabetes? People with diabetes? People with type 1 diabetes type 1 diabetes cannot cure cannot cure the disease through the disease through weight loss, weight loss, fasting, supplements, fasting, supplements, or or or carbohydrate restriction. Type 1 diabetes carbohydrate restriction. Type 1 diabetes is an autoimmune is an autoimmune disease in disease in which the immune system which the immune system destroys the beta cells of the destroys the beta cells of the pancreas.

pancreas. pancreas. A person with type 1 diabetes A person with type 1 diabetes needs needs needs insulin. A insulin. A low- low- low- carbohydrate diet may carbohydrate diet may reduce reduce reduce glucose fluctuations and glucose fluctuations and insulin requirements in insulin requirements in some patients, but some patients, but does not eliminate the does not eliminate the need for need for need for insulin. Stopping insulin. Stopping insulin in insulin in type 1 diabetes can type 1 diabetes can cause cause cause diabetic diabetic diabetic ketoacidosis and death.

ketoacidosis and death.

Nutrition, Meal Timing, and Exercise Strategies

This same warning This same warning applies to many applies to many people with LADA, or people with LADA, or latent latent latent autoimmune diabetes autoimmune diabetes in adults. LADA in adults. LADA may initially may

initially look like type 2 diabetes look like type 2 diabetes. The patient may. The patient may be an adult, may be an adult, may not need not need insulin immediately, and insulin immediately, and may may may respond temporarily to respond temporarily to pills. But the main pills. But the main problem is the problem is the autoimmune autoimmune autoimmune destruction of beta cells. Tests for cells. Tests for antibodies GAD65, IA2, ZnT8, and antibodies GAD65, IA2, ZnT8, and C-peptide can C-peptide can help clarify help clarify the diagnosis. If you have LADA, lifestyle still matters, lifestyle still matters a lot a lot. But the disease. But the disease cannot simply be "cured" be "cured" by fasting. People with late-stage type 2 diabetes late-stage type 2 diabetes may also have a lower may also have a lower chance of achieving complete chance of achieving complete remission. If you remission. If you have had diabetes for 20 have had diabetes for 20 or 30 years, have very or 30 years, have very low C- peptide levels, and peptide levels, and require significant require significant doses of insulin, a significant doses of insulin, a significant amount of beta cell function may have been cell function may have been lost. You lost. You can still significantly can still significantly improve your improve your glucose levels. You can glucose levels. You can reduce your reduce your need for insulin.

need for insulin. You can lose weight, You can lose weight, improve fatty improve fatty liver disease, liver disease, lower lower lower triglyceride levels, and triglyceride levels, and reduce your risk of reduce your risk of complications. But complete complications. But complete remission without medication remission without medication may be may be unrealistic. And unrealistic. And again, this is not a again, this is not a failure. Some people failure. Some people diagnosed with diagnosed with type 2 diabetes type 2 diabetes actually have other actually have other forms of diabetes.

Pancreatic surgery, Pancreatic surgery, chronic pancreatitis, cystic fibrosis,, cystic fibrosis, hemochromatosis, hemochromatosis, hemochromatosis, pancreatic cancer, pancreatic cancer, certain medications, certain medications, Cushing's syndrome, acromegaly, Cushing's syndrome, acromegaly, and genetic forms of and genetic forms of diabetes can diabetes can cause cause cause abnormal abnormal abnormal glucose levels. There is also glucose levels. There is also monogenic diabetes, monogenic diabetes, including MODY, in including MODY, in which a single which a single genetic abnormality genetic abnormality affects affects affects glucose regulation. These glucose regulation. These conditions require conditions require different approaches. If different approaches. If the diagnosis is wrong, the the diagnosis is wrong, the treatment strategy treatment strategy may also be may also be wrong. Now wrong. Now let's make a let's make a practical plan for practical plan for remission. The first target is not glucose. The first not glucose. The first target is the cause of target is the cause of the increase in the increase in glucose levels. For many glucose levels. For many people with type 2 diabetes, people with type 2 diabetes, this means this means reducing reducing reducing visceral and visceral and ectopic fat while ectopic fat while preserving muscle. Don't just preserving muscle. Don't just chase a chase a lower number on the lower number on the scale. If you scale. If you lose 30 pounds lose 30 pounds but lose a lot of but lose a lot of muscle, you muscle, you may become lighter may become lighter but not as but not as metabolically metabolically metabolically healthy as you could be healthy as you could be. You want to. You want to lose fat. You lose fat. You want to maintain or want to maintain or build muscle.

build muscle. Remember this phrase : lose fat, : lose fat, protect muscle. Let's start with nutrition. There Let's start with nutrition. There is no single diet that every every person with diabetes should follow.

person with diabetes should follow. Low-carb Low-carb Low-carb diets can be diets can be effective. effective. effective. Mediterranean Mediterranean Mediterranean diets can be diets can be effective.

effective. effective. Plant-based diets Plant-based diets can be can be effective. effective. effective. High- High-High- protein diets can be protein diets can be effective.

effective. effective. Structured Structured meal replacement programs can meal replacement programs can be effective. be effective. Intermittent Intermittent Intermittent fasting can fasting can be effective.

be effective. The general requirement The general requirement is that the is that the eating plan eating plan reduces excessive reduces excessive energy intake, energy intake, improves improves improves food quality, provides food quality, provides sufficient sufficient sufficient protein and protein and nutrients, and is nutrients, and is sustainable enough sustainable enough to achieve to achieve long-term results. The best diet is. The best diet is

n't the one that gives you n't the one that gives you the most exciting the most exciting the most exciting first week. This is one first week. This is one that delivers that delivers meaningful improvements meaningful improvements that you can that you can sustain.

sustain. sustain. Start by eliminating the Start by eliminating the most obvious most obvious factors that factors that disrupt disrupt disrupt glucose levels. In first glucose levels. In first place are sweet drinks.

place are sweet drinks. Carbonated drinks, Carbonated drinks, sweet tea, coffee with sweet tea, coffee with sugar, fruit juices, energy drinks, and, energy drinks, and many smoothies quickly many smoothies quickly raise raise raise glucose levels without glucose levels without providing providing providing sufficient sufficient sufficient satiety. Consuming satiety. Consuming liquid sugar is one liquid sugar is one of the easiest of the easiest ways ways ways to overload your glucose control system. Water, glucose control system. Water, unsweetened tea, unsweetened tea, plain coffee, and other plain coffee, and other non-caloric beverages non-caloric beverages should be your should be your primary choices.

Next, reduce your Next, reduce your intake of intake of intake of refined refined refined carbohydrates. White carbohydrates. White bread, pastries, cookies, bread, pastries, cookies, candy, sugary breakfast cereals candy, sugary breakfast cereals, chips, and, chips, and many packaged many packaged snacks are quickly snacks are quickly digested and digested and easy to overeat.

This doesn't mean that This doesn't mean that every person with every person with diabetes should diabetes should completely give up completely give up carbohydrates. This carbohydrates. This means that carbohydrates means that carbohydrates must “earn” must “earn” their place on your their place on your plate. Choose plate. Choose foods that provide foods that provide fiber, fiber, fiber, nutrients, and satiety, nutrients, and satiety, not just starches not just starches and sugars. Legumes, and sugars. Legumes, lentils, minimally lentils, minimally processed whole processed whole grains in appropriate grains in appropriate portions, vegetables, and portions, vegetables, and whole fruits whole fruits usually work usually work differently than flour differently than flour snacks and sugary snacks and sugary drinks. But portions drinks. But portions still matter.

still matter. Healthy carbohydrates Healthy carbohydrates can still can still raise raise raise glucose levels, especially glucose levels, especially if the portion is larger if the portion is larger than your current than your current metabolic metabolic metabolic capacity can capacity can absorb. This is where absorb. This is where glucose monitoring glucose monitoring becomes an educational becomes an educational tool.

tool. tool. Measure levels Measure levels before meals and before meals and approximately 1–2 approximately 1–2 hours after, or hours after, or use a use a use a continuous continuous monitoring system when monitoring system when appropriate. Don't be afraid of appropriate. Don't be afraid of every small every small jump in performance.

jump in performance. Glucose levels should Glucose levels should increase after increase after eating. eating. eating. Instead, look for Instead, look for certain patterns. What meal. What meal consistently gives consistently gives you a big and you a big and lasting spike?

lasting spike? Was it bread, rice, breakfast Was it bread, rice, breakfast cereal, too much cereal, too much portion, not enough protein, portion, not enough protein, or dessert along with or dessert along with everything else? Your everything else? Your blood glucose meter should be a blood glucose meter should be a feedback tool, feedback tool, not a tool for not a tool for lynching. Protein is the lynching. Protein is the next pillar.

next pillar. Getting enough Getting enough protein helps protein helps control appetite control appetite and preserve muscle and preserve muscle while losing weight.

while losing weight. Include a significant Include a significant source of protein in each source of protein in each main meal. These can be eggs, These can be eggs, fish, poultry, Greek fish, poultry, Greek yogurt, yogurt, yogurt, cottage cheese, cottage cheese, lean meat, tofu, lean meat, tofu, tempeh, legumes, or a tempeh, legumes, or a carefully selected carefully selected protein supplement. Your protein supplement. Your exact protein needs exact protein needs depend on your age, depend on your age, body type, body type, activity level, activity level, kidney

function, and kidney function, and health status. People with health status. People with chronic chronic chronic kidney disease need kidney disease need individualized advice, but for many, but for many adults who want adults who want to lose to lose weight, a lack of protein is a bigger problem than bigger problem than too much.

too much. Fiber is also Fiber is also important. Fiber important. Fiber can slow can slow digestion, digestion, digestion, improve feelings of improve feelings of fullness, fullness, fullness, support support support gut health, gut health, and reduce and reduce the rate of the rate of glucose absorption. Vegetables, beans, glucose absorption. Vegetables, beans, lentils, seeds, lentils, seeds, nuts, berries, and nuts, berries, and appropriate whole appropriate whole carbohydrates can carbohydrates can help with this. Here is a help with this. Here is a simple structure for simple structure for your plate.

your plate. Half of the plate Half of the plate should be should be non-starchy vegetables. non-starchy vegetables. About a quarter should be About a quarter should be protein.

protein. protein. The rest of the serving can The rest of the serving can contain contain contain high- high- high-fiber carbohydrates, fiber carbohydrates, additional vegetables, or additional vegetables, or healthy fats, depending healthy fats, depending on your on your glucose response and goals. This is glucose response and goals. This is not the law. This is the not the law. This is the initial structure.

initial structure. Now let's talk about Now let's talk about meal times. If meal times. If you eat from the moment you you eat from the moment you wake up until you wake up until you go to bed, your go to bed, your insulin has almost no insulin has almost no chance of dropping.

Some people find it helpful to Some people find it helpful to give up give up unnecessary snacking and unnecessary snacking and create a consistent create a consistent overnight overnight overnight fasting window. Start fasting window. Start simple. Have dinner simple. Have dinner at 7:00 PM and breakfast at 7:00 at 7:00 PM and breakfast at 7:00 AM. This will create a 12- hour overnight hour overnight fast without fast without extreme extreme extreme measures. If you measures. If you tolerate it well, you tolerate it well, you can later can later try a 14- or 16- hour hour hour fasting window. But fasting window. But longer doesn't automatically longer doesn't automatically mean better.

mean better. Intermittent Intermittent Intermittent fasting is a fasting is a tool, not a tool, not a religion. If religion. If fasting fasting fasting leads to leads to overeating, overeating, overeating, muscle loss, hypoglycemia, muscle loss, hypoglycemia, or nutrient deficiencies or nutrient deficiencies, it is not, it is not helping you. If you helping you. If you take insulin take insulin or a or a or a sulfonylurea, sulfonylurea, sulfonylurea, such as glipizide, such as glipizide, glimepiride, or glimepiride, or glibenclamide, glibenclamide, glibenclamide, fasting can fasting can cause cause cause dangerous dangerous dangerous hypoglycemia unless your medication doses are adjusted. Do not medication doses are adjusted. Do not combine intensive combine intensive fasting with fasting with blood sugar-lowering blood sugar-lowering blood sugar-lowering medications without a medications without a plan from your plan from your doctor. Now doctor. Now let's move on to the movement.

let's move on to the movement. Muscle contractions Muscle contractions help help help direct glucose into the direct glucose into the muscles through pathways that are muscles through pathways that are partially independent partially independent of insulin. This of insulin. This means that your muscles means that your muscles can absorb can absorb more glucose more glucose during exercise, even during exercise, even if if if insulin sensitivity is reduced.

insulin sensitivity is reduced. One of the easiest One of the easiest ways is to take a walk ways is to take a walk after eating. You don't after eating. You don't need a grueling need a grueling workout. A 10–20 minute walk minute walk after your largest after your largest meal will help meal will help reduce the reduce the post-meal glucose spike.

post-meal glucose spike. The message is simple. Don't The message is simple. Don't eat and immediately eat and immediately become "furniture." become "furniture." Eat and move.

Strength training is no Strength training is no less important. Your less important. Your muscles are the largest glucose utilization system. Building glucose utilization system. Building and maintaining muscle and maintaining muscle gives glucose a place to gives glucose a place to be absorbed. Perform be absorbed. Perform strength exercises two to three strength exercises two to three times a week, times a week, involving the major involving the major muscle groups. You muscle groups. You can can can use use use dumbbells, exercise machines, dumbbells, exercise machines, resistance bands, or resistance bands, or bodyweight exercises. The type of bodyweight exercises. The type of equipment is less equipment is less important than important than gradually putting safe gradually putting safe strain on the muscles. Walking improves. Walking improves glucose levels glucose levels today.

today. today. Building muscle Building muscle improves your improves your ability ability ability to control your to control your glucose levels tomorrow. You glucose levels tomorrow. You also need also need aerobic exercise.

Brisk walking, Brisk walking, cycling, cycling, cycling, swimming, dancing or swimming, dancing or other other other cardio activities cardio activities cardio activities improve fitness improve fitness,,, insulin sensitivity, blood pressure and insulin sensitivity, blood pressure and heart health. A combination of aerobic combination of aerobic and strength training is and strength training is usually more effective than either than either alone. But alone. But remember: remember: remember: exercise cannot exercise cannot compensate for compensate for compensate for excessive excessive excessive food consumption. Use food consumption. Use nutrition to nutrition to reduce excess reduce excess fat. Use fat.

Medications, Surgery, and Supplements

Use strength training strength training to preserve muscle. Use movement. Use movement to improve to improve glucose utilization. glucose utilization.

This is the combination. Sleep is the next pillar, is the next pillar, and it is often and it is often ignored. One night of ignored. One night of poor sleep can poor sleep can impair impair impair insulin sensitivity and insulin sensitivity and appetite control appetite control the next day.

the next day. Chronic sleep deprivation Chronic sleep deprivation can increase hunger, can increase hunger, food cravings, food cravings, cortisol levels, fatigue, and cortisol levels, fatigue, and emotional overeating.

emotional overeating. If you If you snore heavily, stop snore heavily, stop breathing during sleep, breathing during sleep, wake up with a wake up with a headache, or headache, or remain remain remain exhausted despite spending a exhausted despite spending a good amount of good amount of time in bed, you time in bed, you may have sleep apnea. When may have sleep apnea. When apnea is left untreated, it apnea is left untreated, it becomes more difficult becomes more difficult to control to control glucose levels and glucose levels and blood pressure. You blood pressure. You can't can't can't optimize your optimize your optimize your metabolism if you're metabolism if you're constantly gasping for breath constantly gasping for breath while you sleep.

while you sleep. Try Try Try to stick to a to stick to a to stick to a consistent consistent consistent sleep schedule, getting sleep schedule, getting about 7–9 hours about 7–9 hours for most for most adults. Stress also adults. Stress also matters.

matters. matters. Stress hormones such as Stress hormones such as cortisol and cortisol and adrenaline can adrenaline can increase increase increase glucose levels because glucose levels because the body perceives the body perceives stress as a need for stress as a need for immediate energy. You immediate energy. You don't need to eliminate don't need to eliminate every stressful every stressful situation. It's situation. It's not impossible, but you not impossible, but you need a reliable need a reliable recovery method.

Walking, prayer, Walking, prayer, breathing exercises, time breathing exercises, time outdoors, outdoors, outdoors, social social social interaction, therapy, interaction, therapy, and adequate sleep and adequate sleep help help help regulate the regulate the stress response. Now stress response. Now let's discuss let's discuss let's discuss drug drug drug treatment. Some treatment. Some believe that taking believe that taking medication means medication

means failing to failing to failing to cure diabetes cure diabetes naturally. This naturally. This belief can belief can be dangerous.

be dangerous. Severe hyperglycemia Severe hyperglycemia causes causes causes glucotoxicity. glucotoxicity. glucotoxicity. High High High glucose levels themselves glucose levels themselves damage damage damage beta cell function and increase insulin resistance. Sometimes medication insulin resistance. Sometimes medication or insulin is needed or insulin is needed initially initially initially to quickly and to quickly and safely lower safely lower glucose. When glucose. When glucotoxicity glucotoxicity glucotoxicity decreases and weight decreases and weight decreases, the decreases, the medication medication medication load can be load can be reduced. Medication can reduced. Medication can be a bridge to be a bridge to remission. Metformin remission. Metformin reduces excessive reduces excessive glucose production glucose production by the liver and improves insulin sensitivity. It is insulin sensitivity. It is inexpensive and widely inexpensive and widely used.

used. GLP-1 receptor agonists and dual GLP-1 receptor agonists and dual GIP/GLP-1 drugs, GIP/GLP-1 drugs, such as semaglutide and such as semaglutide and tirzepatide, can tirzepatide, can significantly reduce significantly reduce appetite, body weight, and appetite, body weight, and glucose levels. For the glucose levels. For the appropriate appropriate appropriate patient, these medications patient, these medications can help can help provide the provide the fat loss necessary for fat loss necessary for remission. But they should be remission. But they should be combined with combined with adequate adequate adequate protein and strength protein and strength training to training to minimize minimize minimize unnecessary unnecessary unnecessary muscle loss. SGLT2 inhibitors muscle loss. SGLT2 inhibitors lower lower lower glucose levels by allowing glucose levels by allowing the kidneys to excrete the kidneys to excrete more glucose in more glucose in the urine. They the urine. They can also provide can also provide important important important heart and kidney protection in heart and kidney protection in appropriate appropriate appropriate patients. These patients. These benefits may benefits may justify their justify their continuation even when the HbA1c reading looks great.

HbA1c reading looks great. This is another reason This is another reason why going off why going off medication for the sake of remission should medication for the sake of remission should n't n't n't turn into an turn into an obsession. Sometimes obsession. Sometimes medications medications medications are used not are used not only to control only to control glucose but also to glucose but also to protect the heart or protect the heart or kidneys. Metabolic kidneys. Metabolic surgery is another surgery is another powerful option. For powerful option. For people with significant people with significant obesity and obesity and type 2 diabetes, procedures such type 2 diabetes, procedures such as gastric bypass as gastric bypass or gastric resection or gastric resection can result in can result in significant weight loss significant weight loss and high rates of and high rates of improvement or improvement or remission of diabetes.

Surgery is not a Surgery is not a scam. It scam. It changes appetite, changes appetite, gut hormones, gut hormones, food intake, food intake, body weight, and metabolism.

It also carries It also carries risks and requires risks and requires lifelong lifelong lifelong dietary dietary dietary supervision, so it should be supervision, so it should be chosen carefully.

Now let's talk about Now let's talk about supplements. I want to be supplements. I want to be very clear. No very clear. No supplement cures supplement cures diabetes on its own.

Dietary supplements are not Dietary supplements are not a substitute for a substitute for fat loss, fat loss, muscle building, proper muscle building, proper nutrition, sleep, nutrition, sleep, monitoring, or monitoring, or prescribed medications. If prescribed medications. If a supplement modestly a supplement modestly lowers lowers lowers glucose levels while you glucose levels while you continue to drink continue to drink soda and soda and lose muscle, it lose muscle, it does not cure the disease.

Supplements should be at Supplements should be at the top of the pyramid, the top of the pyramid, not at its base. The basis is The basis is lifestyle and proper lifestyle and proper medical care.

medical care. Berberine is one of the Berberine is one of the most researched most researched supplements for

supplements for metabolic metabolic metabolic health. It is a health. It is a plant- plant- plant- derived compound that may derived compound that may affect several affect several pathways pathways pathways involved in involved in glucose and lipid metabolism, glucose and lipid metabolism, including including including AMPK signaling, intestinal glucose uptake, the microbiome, intestinal glucose uptake, the microbiome, and and and hepatic glucose production.

Clinical trials Clinical trials and meta-analyses and meta-analyses suggest that berberine suggest that berberine may lead to may lead to modest improvements in fasting glucose, fasting glucose, A1C, insulin A1C, insulin resistance resistance, triglycerides, and, triglycerides, and cholesterol in some cholesterol in some people. However, people. However, studies studies studies vary in quality, vary in quality, composition, dosage, composition, dosage, and duration.

Berberine is not a Berberine is not a natural "Ozempic" natural "Ozempic" and is not a guaranteed and is not a guaranteed replacement for metformin. Traditional berberine Traditional berberine also has relatively also has relatively low absorption when low absorption when taken orally taken orally and may cause and may cause nausea, constipation, diarrhea, nausea, constipation, diarrhea, cramps, or cramps, or stomach discomfort.

It can interact It can interact with medications through with medications through transport proteins and transport proteins and liver enzymes. liver enzymes.

It may also It may also enhance enhance enhance the blood sugar-lowering the blood sugar-lowering the blood sugar-lowering effect of diabetic effect of diabetic medications. Pregnant medications. Pregnant or breastfeeding women should generally avoid should generally avoid it, and it it, and it should not be given to should not be given to newborns or newborns or infants. Sugar MD Super infants. Sugar MD Super Berberine contains Berberine contains dihydroberberine, dihydroberberine, dihydroberberine, also known as DHB, also known as DHB, along with Ceylon along with Ceylon cinnamon.

cinnamon. Dihydroberberine Dihydroberberine is designed to is designed to provide better provide better bioavailability of bioavailability of bioavailability of berberine in smaller berberine in smaller amounts and may amounts and may be gentler on be gentler on digestion for some digestion for some people. Ceylon people. Ceylon cinnamon is added to cinnamon is added to provide provide provide additional additional additional metabolic and metabolic and antioxidant antioxidant antioxidant support. Super Berberine support. Super Berberine can be considered as an can be considered as an adjunct for adjunct for eligible adults who require who require additional additional additional glucose support. But glucose support. But the rules remain the rules remain the same. Monitor the same. Monitor your glucose levels.

your glucose levels. Discuss this with Discuss this with your doctor. Monitor the effects Monitor the effects on the gastrointestinal on the gastrointestinal tract and do not tract and do not recklessly combine several recklessly combine several sugar-lowering sugar-lowering sugar-lowering agents and medications without agents and medications without knowing how your knowing how your body reacts. Gluxion is Sugar MD's broader herbal formula for glucose support. It includes glucose support. It includes ingredients such as ingredients such as bitter melon, gymnema, bitter melon, gymnema, fenugreek, holy fenugreek, holy basil, turmeric, basil, turmeric, Indian gooseberry, and Indian gooseberry, and other traditional other traditional herbal extracts herbal extracts designed to designed to support healthy support healthy glucose metabolism.

Tracking Progress and Building a Long-Term Plan

Some individual Some individual ingredients have ingredients have preliminary or preliminary or moderate evidence of moderate evidence of effects on effects on glucose uptake, glucose uptake, insulin signaling, insulin signaling, appetite, appetite, appetite, oxidative stress, oxidative stress, or postprandial glucose levels or postprandial glucose levels. But the. But the multi-ingredient multi-ingredient multi-ingredient herbal formula herbal formula should be considered should be considered supportive, not supportive, not curative. The curative. The more more more sugar-lowering sugar-lowering sugar-lowering ingredients you ingredients you combine, the more combine, the more closely you closely you need to monitor your need to monitor your sugar levels, sugar levels, especially if you especially if you also use also use insulin, insulin, insulin, sulfonylureas, or sulfonylureas, or other

medications. If you other medications. If you use Gluxion use Gluxion or Super Berberine, or Super Berberine, follow follow follow the directions on the label the directions on the label and review your and review your complete list of medications and complete list of medications and supplements with a supplements with a competent doctor competent doctor or pharmacist. Don't or pharmacist. Don't start taking start taking five new supplements five new supplements at once. If your at once. If your glucose levels glucose levels improve or you improve or you experience side experience side effects, you won't effects, you won't know which know which product caused them.

product caused them. Add supplements Add supplements by weight. Evaluate by weight. Evaluate your reaction and your reaction and remember the remember the hierarchy. Food before hierarchy. Food before supplements, muscles before supplements, sleep before supplements, before supplements, medical safety before supplements. Other before supplements. Other nutrients may nutrients may be important if there is a be important if there is a deficiency.

deficiency. deficiency. Magnesium deficiency may Magnesium deficiency may be linked to be linked to insulin resistance insulin resistance. But taking magnesium is. But taking magnesium is most appropriate when most appropriate when consumption is consumption is consumption is insufficient or there is a insufficient or there is a deficiency.

deficiency. deficiency. Vitamin D deficiency should be Vitamin D deficiency should be corrected for corrected for bone health and bone health and overall well-being. But overall well-being. But taking very high taking very high doses of vitamin D does not doses of vitamin D does not guarantee overcoming guarantee overcoming diabetes. Vitamin B12 diabetes. Vitamin B12 needs attention in needs attention in people who take metformin for a long time people who take metformin for a long time.

.. Because metformin Because metformin may reduce may reduce B12 absorption in some B12 absorption in some patients. Omega-3 patients. Omega-3 fatty acids can fatty acids can lower lower lower triglyceride levels. But they triglyceride levels. But they should not be advertised should not be advertised as a remedy for as a remedy for hyperglycemia.

hyperglycemia. Psyllium and other Psyllium and other soluble fibers soluble fibers may help with may help with post-meal glucose levels post-meal glucose levels, cholesterol,, cholesterol, satiety, and satiety, and bowel function.

I repeat: supplements I repeat: supplements can support a can support a good plan. They can't good plan. They can't save a save a bad plan. Now, bad plan. Now, how do you know if how do you know if your plan is working?

your plan is working? Monitor more than just your fasting glucose levels. fasting glucose levels. Fasting glucose shows Fasting glucose shows what was happening at one what was happening at one specific moment.

specific moment. Glycated Glycated Glycated hemoglobin (A1C) estimates hemoglobin (A1C) estimates average average average glucose levels over 2–3 months, glucose levels over 2–3 months, although anemia, although anemia, kidney disease, kidney disease, hemoglobin variants, hemoglobin variants, blood loss, blood loss, transfusions, and other transfusions, and other factors can factors can affect accuracy.

Glucose levels after a Glucose levels after a meal show how the meal show how the body body body copes with a copes with a particular meal. particular meal. Continuous Continuous Continuous glucose monitoring glucose monitoring can reveal can reveal patterns that patterns that aren't visible with aren't visible with meter testing, but don't meter testing, but don't become obsessed with a become obsessed with a perfectly flat perfectly flat line. A healthy line. A healthy pancreas pancreas pancreas does not create a perfectly does not create a perfectly smooth smooth smooth glucose schedule. The goal is to improve control, to improve control, not to worry about not to worry about indicators. Keep an eye on your indicators. Keep an eye on your waist circumference, waist circumference, as as as visceral fat visceral fat matters.

matters. matters. Track Track Track body composition whenever possible. body composition whenever possible. Watch your strength, because muscles, because muscles matter.

matter. Monitor Monitor blood pressure, blood pressure, triglycerides, HDL, triglycerides, HDL, liver enzymes, liver enzymes, kidney function, kidney function, urine albumin, and urine albumin, and eye exams. Diabetes is not just a is not just a glucose disease, it is a cardiovascular, renal, cardiovascular, renal, nervous, ocular, nervous, ocular, hepatic, and hepatic, and metabolic metabolic metabolic disease. Even disease. Even if you achieve if you achieve remission, continue remission, continue medical supervision.

medical supervision. Previous experience with Previous experience with diabetes may still diabetes may still carry risks. You carry risks. You still need still need periodic A1C tests, periodic A1C tests, blood pressure monitoring, blood pressure monitoring, cholesterol evaluation, cholesterol evaluation, kidney checkups, kidney checkups, foot care, and foot care, and eye exams depending eye exams depending on your situation.

Remission does not erase Remission does not erase your history. Now your history. Now let me let me let me offer a offer a offer a practical plan to get practical plan to get started. First, started. First, confirm exactly what confirm exactly what type of diabetes type of diabetes you have. Second, you have. Second, determine if you determine if you still have significant still have significant insulin production, if insulin production, if clinically appropriate.

Third, identify the Third, identify the main main main influencing factors: excess influencing factors: excess visceral fat, visceral fat, poor food quality, poor food quality, lack of lack of lack of activity, sleep apnea activity, sleep apnea, medication effects,, medication effects, severe stress, or severe stress, or another endocrine another endocrine disorder. Fourth, disorder. Fourth, eliminate sugary eliminate sugary drinks. Fifth: build your drinks. Fifth: build your diet around diet around proteins, vegetables, proteins, vegetables, fiber, and fiber, and minimally minimally minimally processed foods. Sixth: Reduce. Sixth: Reduce refined refined carbohydrates and carbohydrates and adjust your total adjust your total carbohydrate intake carbohydrate intake according to according to your your your glucose response. Seventh: glucose response. Seventh: Create a sustainable Create a sustainable calorie deficit if calorie deficit if you have excess you have excess body fat.

Eighth: Stop

Eighth: Stop aimless aimless aimless snacking and snacking and consider an acceptable consider an acceptable overnight overnight overnight fasting window if it is fasting window if it is safe for you.

Ninth: take a walk

Ninth: take a walk after eating. Tenth: after eating. Tenth: Do strength Do strength training two to three training two to three times a week.

Eleventh: take care of

Eleventh: take care of your sleep and your sleep and get checked for get checked for apnea. apnea.

Twelfth:

Twelfth: Use medication Use medication strategically, don't strategically, don't view it as a view it as a defeat. Thirteenth: defeat. Thirteenth: choose supplements choose supplements carefully and only carefully and only after the base has been laid after the base has been laid. And finally,. And finally, measure the result.

measure the result. Don't guess. Don't guess. Check your glucose. Check your glucose. Check Check Check glycated glycated glycated hemoglobin. hemoglobin.

hemoglobin. Check your Check your waist circumference. Check the waist circumference. Check the strength. Check your strength. Check your body composition. Then body composition. Then adjust the plan. Can type 2 diabetes be reversed? For many people, yes. Especially if yes. Especially if it is detected in time.

it is detected in time. When When When insulin production remains insulin production remains adequate. And when adequate. And when you manage to get rid of you manage to get rid of excess fat and not excess fat and not gain

it back.

gain it back. For others, complete For others, complete remission may remission may not be possible. But not be possible. But improvement improvement improvement is almost always valuable.

is almost always valuable. Reducing Reducing Reducing glycated glycated glycated hemoglobin levels from 10% to 7% is important. important. important. Reducing Reducing Reducing insulin dose from 100 insulin dose from 100 units per day to 30 units per day to 30 makes a difference. Losing makes a difference. Losing visceral fat visceral fat matters.

matters. matters. Building muscle Building muscle matters. matters. matters. Improving Improving Improving liver health is important. liver health is important.

Preventing kidney Preventing kidney failure is failure is important. You don't important. You don't need a perfect need a perfect result to result to change your life. The change your life. The biggest mistake is procrastination. People have is procrastination. People have been debating for years whether to been debating for years whether to try a try a low-carb low-carb low-carb diet, diet, diet, the Mediterranean diet, the Mediterranean diet, fasting, fasting, fasting, metformin, GLP-1 metformin, GLP-1 therapy, strength therapy, strength training, or training, or supplements. Meanwhile, the supplements. Meanwhile, the beta cells beta cells remain under remain under pressure. Don't wait for the pressure. Don't wait for the perfect plan.

perfect plan. Start with the basics. Start with the basics. Remove the liquid Remove the liquid sugar. Eat real sugar. Eat real food. food. food. Prioritize protein and Prioritize protein and fiber.

fiber. fiber. Get rid of excess Get rid of excess fat. Protect your fat. Protect your muscles. muscles. muscles. Move more after eating. Move more after eating.

Sleep normally. Sleep normally. Take the necessary Take the necessary medications. Use medications. Use supplements wisely, not supplements wisely, not emotionally. And emotionally. And monitor monitor monitor the results. Here is the the results. Here is the last message I want you to I want you to remember. Type 2 diabetes is not just about is not just about too much sugar in the too much sugar in the blood. This is a failure of the entire blood. This is a failure of the entire energy energy management system. The liver management system. The liver secretes too much secretes too much glucose. Muscles do not glucose. Muscles do not absorb glucose absorb glucose efficiently. Fat efficiently. Fat tissue exceeds tissue exceeds its safe its safe capacity. The capacity. The pancreas pancreas pancreas works to exhaustion works to exhaustion and eventually fails.

To stop the disease, To stop the disease, you must eliminate you must eliminate as many of these as many of these disorders as possible. Reduce disorders as possible. Reduce liver fat liver fat and visceral fat.

and visceral fat. Improve Improve Improve muscle sensitivity to insulin. muscle sensitivity to insulin. Give glucose somewhere Give glucose somewhere to spend it.

to spend it. Reduce Reduce Reduce the load on the the load on the pancreas. And pancreas. And intervene before intervene before beta cell function is completely lost. This is how completely lost. This is how you go beyond you go beyond simply controlling simply controlling numbers. This is how you numbers. This is how you begin to treat begin to treat the disease from its roots.

the disease from its roots. Remission is not Remission is not guaranteed. It is not guaranteed. It is not permanent unless permanent unless metabolic metabolic improvements are maintained. And this is not a improvements are maintained. And this is not a reason to stop reason to stop medical supervision. But medical supervision. But it is real. It is it is real. It is possible. And for the possible. And for the right person with the right person with the right plan, right plan, started on time, it started on time, it can completely can completely change the future. Don't change the future. Don't just monitor your just monitor your glucose levels.

glucose levels. Understand why it is Understand why it is elevated. Don't just elevated. Don't just lose weight. Lose

lose weight. Lose visceral fat and visceral fat and preserve muscle. Don't preserve muscle. Don't just collect just collect supplements.

supplements. Build Build the foundation first and don't the foundation first and don't let anyone let anyone tell you that tell you that type 2 diabetes always has to type 2 diabetes always has to progress in only progress in only one direction. For one direction. For many people, this many people, this process can be process can be interrupted. It can be interrupted. It can be improved, and sometimes remission can be achieved. Good luck, and remission can be achieved. Good luck, and see you in the see you in the