Reversing Type 2 Diabetes: Six Steps to Natural Cure

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Why Type 2 Diabetes Has Become a Lifelong Disease

Medical Profession has labeled Type 2 diabetes a progressive lifelong illness with no hope for a reversal or cure. The treatments offered in allopathic medicine have not focused on the cause of disease, which is unnatural foods and an unbalanced lifestyle. Instead, the focus mostly has been on lowering the blood sugar (glucose) levels via medications. The list of antidiabetic pills the patient gets prescribed keeps growing, with each succeeding year finally ending up with insulin and other injections. The unfortunate diabetic patients remain dependent on the expensive antidiabetic drugs for their entire living life. Reversing Type 2 diabetes is currently the new trend that is fast picking up the speed over the recent years.

The age-old wisdom in medicine states:

"In medicine, we ought to know the cause of disease to be able to find its effective prevention and cure." – Avicenna, Persian Physician (980-1037)

The cause of Type 2 diabetes is unhealthy commercial foods and an unbalanced lifestyle. These together cause a build-up of glucose in the body. The excessive glucose increases demand for the glucose utilization hormone insulin the body. Over time, high insulin levels create a dysfunction called insulin resistance. When insulin resistance sets in, body cells cannot use glucose properly. There is a build-up of excess glucose and fat in the entire body. The most effective way to prevent and reverse Type 2 diabetes, therefore, is to modify the food and lifestyle, so the build-up of glucose and insulin does not occur.

Most allopathic drugs for Type 2 diabetes aim at lowering blood glucose levels by further increasing insulin levels. The insulin does not eliminate glucose from the body but redistributes it in the body, some of it as unhealthy fat. Over time, this excess glucose and fat cause cell damage that is responsible for complications such as retinopathy (eye damage), nephropathy (kidney damage), neuropathy (nerve damage), heart disease, limb damage, and the list goes on. The problem gets exaggerated in the Indian diabetic patients who are prescribed antidiabetic drugs in the doses meant for white Caucasian patients with a larger body mass. The relatively higher drug doses increase the risk of low blood glucose (hypoglycemia episodes) for which patients get routine prescriptions of frequent meals, sugary snacks, and beverages. Therefore, the treatment in itself worsens the disease by increasing the glucose burden on the body.

Sensible Strategies for Reversing Type 2 Diabetes

Logically, reversal or cure is much more likely if treatment of Type 2 diabetes uses the following practical strategies:

1. Minimize the intake of excessive glucose in the diet via adopting low glycemic plant foods.
2. Adopt a balanced lifestyle to minimize blood glucose and enhance the utilization of stored glucose and fat.
3. Prescribe patient-specific antidiabetic drug dosages to minimize the risk of hypoglycemia. Every patient is unique in the way he/she responds to a drug. One fits all recipe does not work well, considering that Western doses of antidiabetic drugs would be too high for small mass Indian patients. Therefore, the hypoglycemia episode should serve as a vital signal to reduce the drug dose rather than a standing order for consuming sugary drinks and snacks.

Food and Lifestyle are personal choices, so Type 2 diabetes reversal requires that the patients take charge of the disease management. Taking charge requires that the patient has an excellent working knowledge about the Type 2 diabetes disease process.

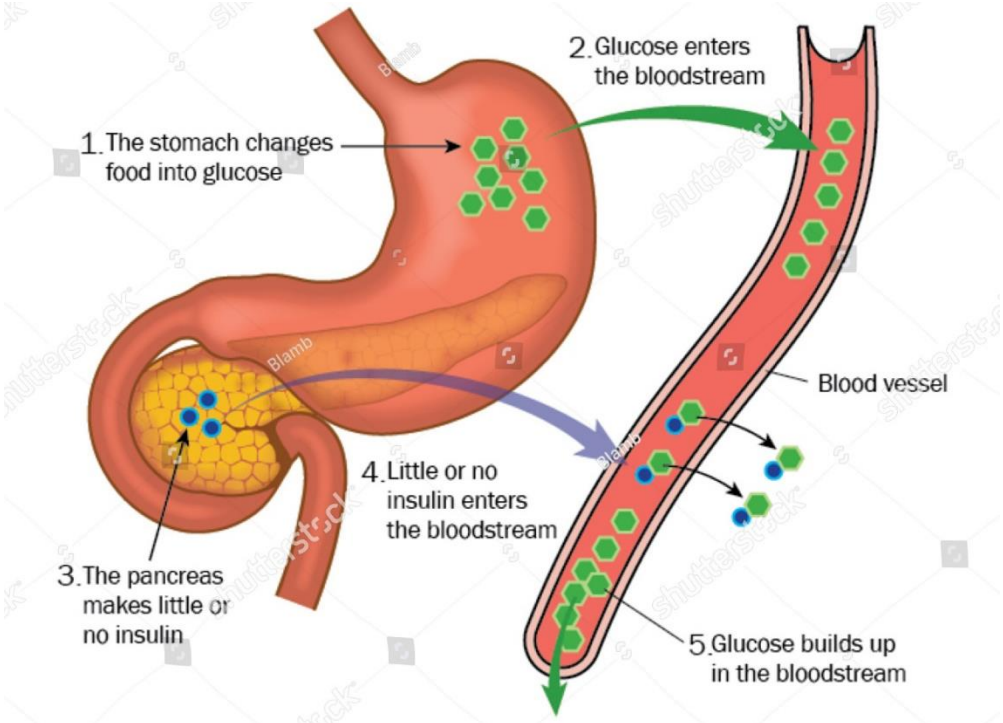
Understand Type 2 Diabetes to Manage and Reverse It

(For a detailed explanation, review the Type 2 diabetes book and pamphlet posted on the website www.foodlifestylebalance.com)

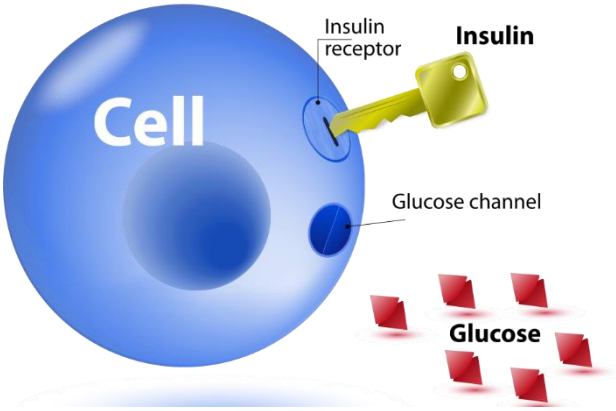
In most patients, Type 2 diabetes and Obesity occur together. Type 2 diabetic patients who are lean have smaller muscle mass and more fat. Insulin resistance from an excess of glucose and insulin in the body is the cause of excessive fat. To understand Type 2 diabetes, one has to get familiar with the following:

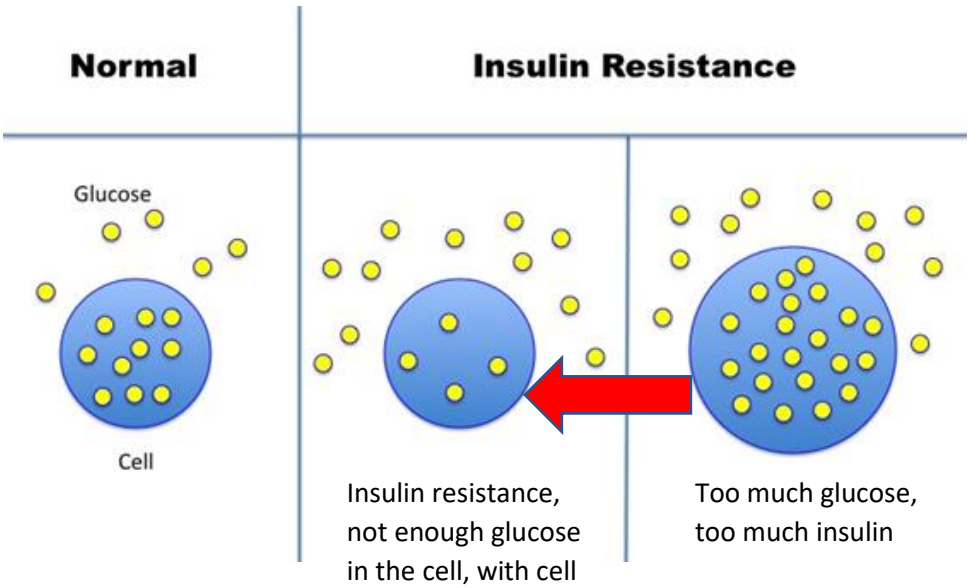
- **What is Glucose? What does it do in the body?**
- **What is Insulin? What does it do in the body?**
- **What is Insulin resistance?**

What is Glucose? There are trillions of cells in the body, each of which requires energy to survive. Glucose is a natural source of energy in the body. Insulin is an essential hormone that helps in transporting glucose into the cells. Insulin is produced by the specialized beta cells in the pancreas gland located in the abdomen behind the stomach. The glucose from the ingested food gets absorbed into the bloodstream. The rise in blood glucose releases insulin from the pancreas gland. The higher the blood glucose, the higher the amount of insulin gets released. High glycemic foods such as refined sugar foods and beverages lead to very high levels of glucose and insulin. Over time insulin-making capacity of the pancreas gets exhausted, and the patient requires insulin injections for disease control. High glycemic foods and drinks are the primary cause of Type 2 diabetes and Obesity in modern city dwellers.



What is Insulin Hormone and Insulin Resistance? Insulin is responsible for transporting glucose inside the cells. It works like a key that unlocks the door in the cell wall so the glucose can get in. When there is an excess of glucose and insulin, the cells get overfilled with glucose and fat. The cells create a protective shield to lock the glucose door so the excess glucose cannot enter. This protective mechanism is called Insulin resistance.





Insulin resistance protects body cells from glucose overdose. However, it has two undesirable effects that worsen the diabetes disease process in the body. These are:

- ***Food cravings and overeating***. The cells locked out of glucose get into starvation mode. That produces the signals to eat more food to bring in more glucose from the digestive tract.
- ***Higher insulin demand***. Starving cells demand more insulin from the pancreas gland to transport glucose to cells. Higher insulin levels mean more appetite and fat storage.

Insulin resistance, therefore, sets up a vicious cycle of abnormally high blood glucose and insulin levels. The mechanism of insulin resistance is at the root of many new food and lifestyle diseases such as

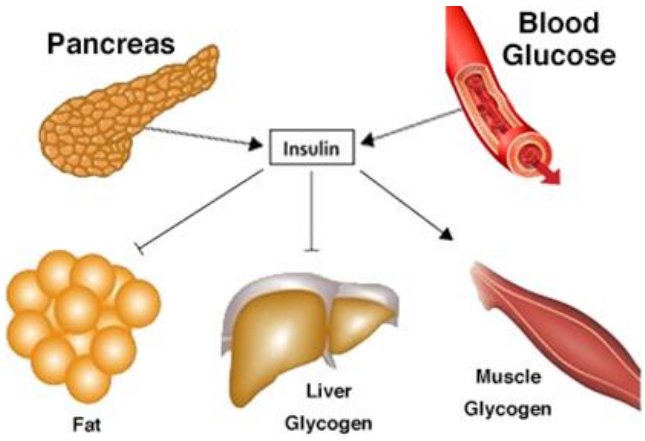
Type 2 Diabetes, Obesity, High Blood Pressure, Heart Disease, Metabolic Syndrome, PCOS (polycystic ovarian syndrome of young females), and more.

Insulin Hormone and the Body Energy

Insulin is the primary hormone for producing energy in the body cells from glucose. Without insulin hormone, a human cannot survive for more than a few days. Two types of energy get produced from glucose with the help of insulin:

1. ***Energy for immediate use by the cells***. Glucose from the ingested food provides glucose energy for the cells for a period of 1-3 hours based on the type of meal consumed.
2. ***Reserve Energy***. The glucose in the blood left over after immediate energy usage gets converted into reserve energy to be used later when there is no glucose coming from the digestive tract. There are two types of reserve energy:

Glucose and Fat energy reserves



Glycogen: short-term energy reserve (24-36 hours)

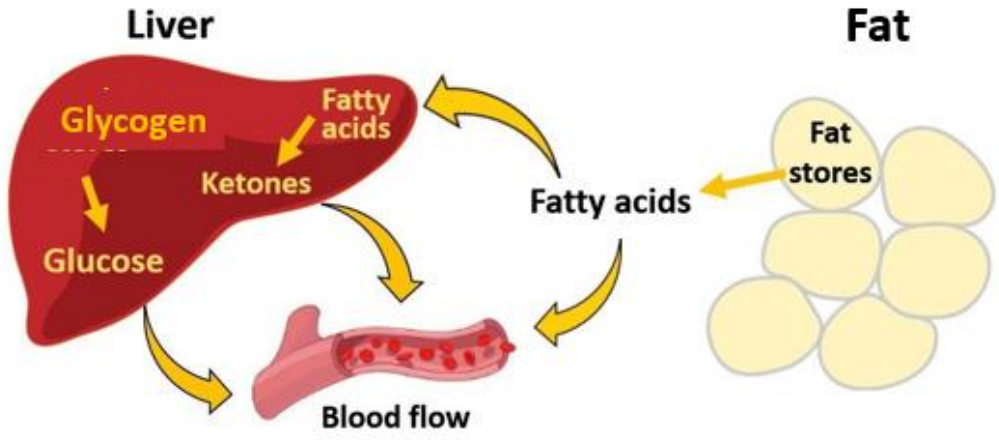
Fat: long-term energy reserve (2-3 weeks)

- ***Glycogen reserve energy***. It is a short-term energy reserve stored in the liver and muscles. Glycogen can be rapidly broken down into glucose for immediate supply, like a tap on the storage water tank. Glycogen reserves can provide energy for 18-36 hours, such as during overnight fasting period and between meals. Blood sugar is always high in the morning between 4-7 AM as the liver releases glucose to meet the demand for wake-up energy. The glucose for wake-up energy comes from glycogen stores in the liver. Muscle glycogen stores get used for physical exercise. The glycogen stores in the liver and muscles get depleted when someone fasts for 16-18 hours exercises.

- ***Fat reserve energy.*** After the glycogen reserves are filled up, extra glucose left over is converted to reserve energy fat. Fats get stored in the liver, abdominal cavity (abdominal obesity or potbelly), muscles, and under the skin. Body fat is a long-term energy reserve on which humans can survive for weeks of starvation. Unfortunately, the modern human has easy access to refined carbohydrates and sugary beverages which promote obesity by excessive fat synthesis. The capacity of the human body to store fat and get obese is unlimited. The only way to use up fat reserve energy is by fasting for greater than 16 hours.

Type 2 Diabetes Is a Disease of Excess Fat Reserves in the Body

About 80% of Type 2 diabetic patients are obese, and 20% who are not (called lean diabetics) have excess fat, their muscles, and abdomen (prominent belly or potbelly). The only way to get rid of fat reserves in the body is by fasting for 16 hours and longer. Using up of fat for energy in the body is called the ketogenic cycle. It reverses obesity as well as Type 2 diabetes and many other insulin resistance diseases outlined above.



Fat Reserve Energy: Ketogenic Path
(Fasting > 16 hours)

Necessary Facts to Know about Natural Type 2 Diabetes Reversal

1. Unnatural high-glycemic foods and unbalanced lifestyles create high levels of glucose, insulin hormone, and unhealthy fat in the body.

2. Excess of glucose and insulin in the body leads to insulin resistance.

3. Insulin resistance is at the root of the long list of food and lifestyle diseases outlined above in the picture. Reversing insulin resistance will reverse Type 2 diabetes as well as all the other insulin resistance conditions described in the above image.

4. Insulin resistance causes food cravings and overeating, which further increases sugar and fat accumulation in the body.

5. The natural way to eliminate the disease process of insulin resistance is to reduce the demand for insulin by minimizing glucose load via appropriate food and lifestyle changes.

6. The most effective natural way to eliminate excess fat in the body is by Intermittent Fasting (IF) or Time-Restricted Eating (TRE). A fasting duration of longer than 16 hours reduces insulin levels. It also allows the body to use up the fat reserves for making energy.

7. IF or TRE also decreases the insulin levels in the body and reverse the phenomenon of insulin resistance.

Six Management Steps to Reverse Type 2 Diabetes

As outlined above, the underlying abnormality in Type 2 diabetes is insulin resistance. There is no deficiency of insulin hormone until at a very advanced stage of Type 2 diabetes. In the advanced stage, the pancreas gland gets filled with fat, which chokes up insulin-producing beta cells. In contrast to Type 2 diabetes, Type 1 diabetes of young patients occurs from a total absence of insulin-producing capacity of the pancreas gland. These patients must receive insulin to survive.

The natural management of Type 2 diabetes focuses on lowering insulin demand to overcome insulin resistance via a six-step process:

1. Medical assessment to evaluate the severity of the disease and the social support system.
2. Establish a holistic meal plan.
3. Establish a Balanced Lifestyle Plan.
4. Adopt Time-Restricted Eating (TRE) or Intermittent Fasting (IF) schedule with close monitoring of antidiabetic drug dose and blood glucose levels
5. Plan on regular exposure to sunlight and normalize Vitamin D levels.
6. Stress management.

Management Step #1: Medical assessment to evaluate the severity of the disease and the social support system.

Prepare a baseline patient profile record based on medical assessment and laboratory testing. The baseline medical record is vital for periodic follow up on the adequacy of the reversal and management. The medical evaluation and testing must include the following:

- ***Medical history***. Duration of condition, age of onset, antidiabetic drugs, and insulin or other injections, blood glucose control, frequency of blood glucose monitoring, complications—retinopathy, nephropathy, heart disease, dental problems, neuropathy, infections, and frequency of hypoglycemia episodes. (Diabetologist or personal physician consultation)

- ***Lifestyle behaviors***. Prepare a minimum of a three-day realistic report on the number of meals, meal times, including late-night eating habits, the composition of meals concerning macro- and micronutrients, and snack consumption. Sleeping habits (time of wake up, alarm clock or no alarm clock), and activity exercise patterns.

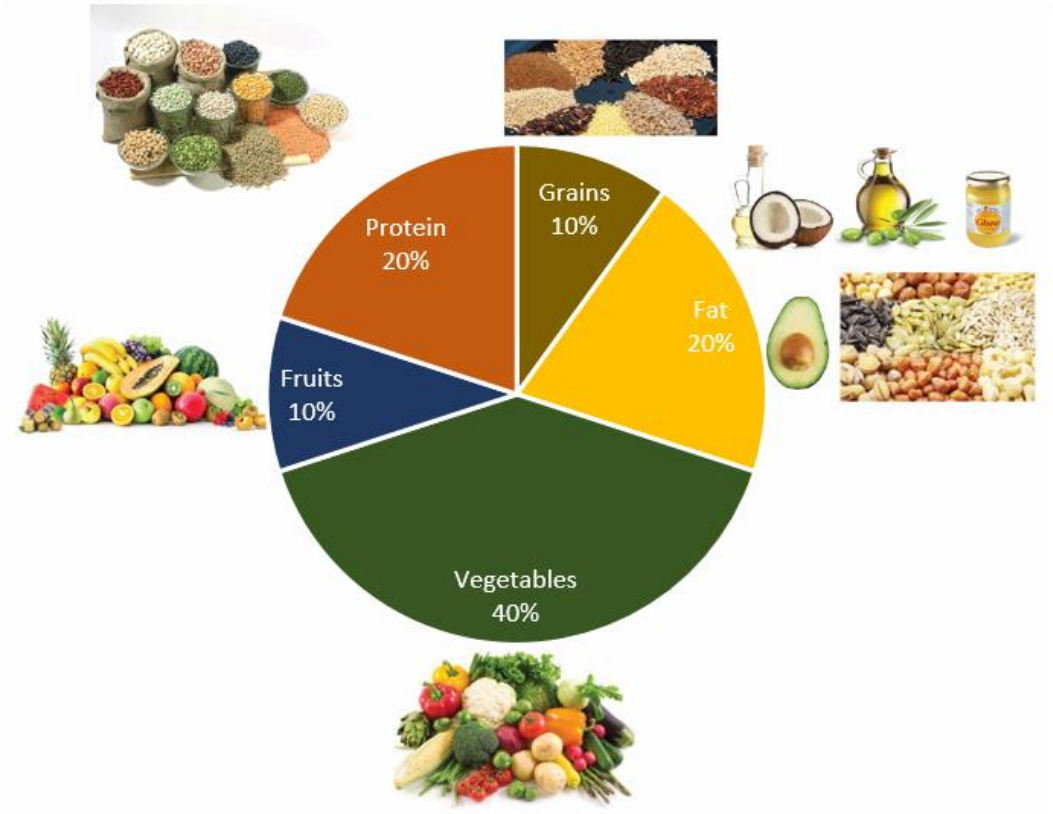
The Type2 diabetes Counselor compiles the patient chart, including the above information as well as the following:

1. Psychosocial status—assess the social support system, fear, anxiety, motivation, and ability to comply with the management plan.
2. Alcohol, smoking and other addictions
3. Physical evaluation: age, height, weight, and waist circumference
    i. Heart rate, blood pressure (sitting and supine)
    ii. Foot examination for neuropathy, circulation—the color of skin, capillary refill, and toenail.
4. Laboratory evaluation:
    - Fasting and 2-hour post-meal blood glucose level record of a week
    - Hemoglobin A1 C levels recent or within the past one month
    - C Peptide levels (patient's capacity to make insulin)
    - Lipid Profile—check total cholesterol, HDL, and LDL cholesterol and triglyceride levels.
    - Spot urine albumin and creatinine ratio and serum creatinine and GFR calculation
    - Thyroid screen for the presence of hypothyroidism
    - Vitamin D and B12 levels
    - Blood chemistry to check for sodium and potassium levels
    - Specialty consultation reports for retinopathy, heart disease, nephropathy as indicated

Management Step #2: Establishing a Holistic Meal Plan

(For details, refer to Holistic Meal and Balanced Lifestyle section on the website www.foodlifestylebalance.com)

Design the holistic meal plan using the following guidelines:



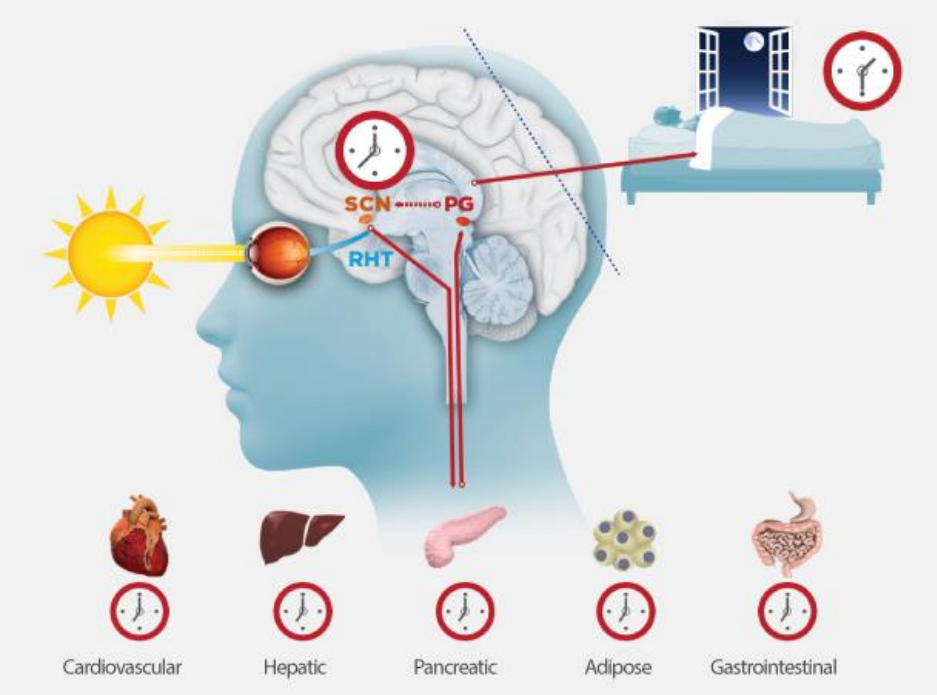
1. Eliminate refined high-glycemic carbohydrates in all forms—white sugar and refined wheat flour products, including sweets, bread, baked goods, pre-prepared packaged, and fast foods, including boxed cereals, snacks, and breakfast options in packages.
2. Eliminate refined oils in all form—only consume natural cold compressed oils such as coconut, mustard, sesame oils (25-30 gm or 5-6 teaspoons) with 2-3 teaspoons of ghee for digestive health.
3. Eliminate all sugary beverages, including fruit juices (freshly squeezed as well as boxed).
4. Eliminate milk products except for small amounts of curd as thin lassi. Milk has insulin-like growth hormone and lactose sugar, both of which aggravate insulin resistance.
5. Eliminate acidic foods; the body is naturally alkaline. Acidic foods cause swelling and inflammation in the body. See the list of acidic versus alkaline foods on the next page.
6. Minimize grain consumption. Eat whole coarsely ground grains, and eliminate grains ground into the form of refined flours.

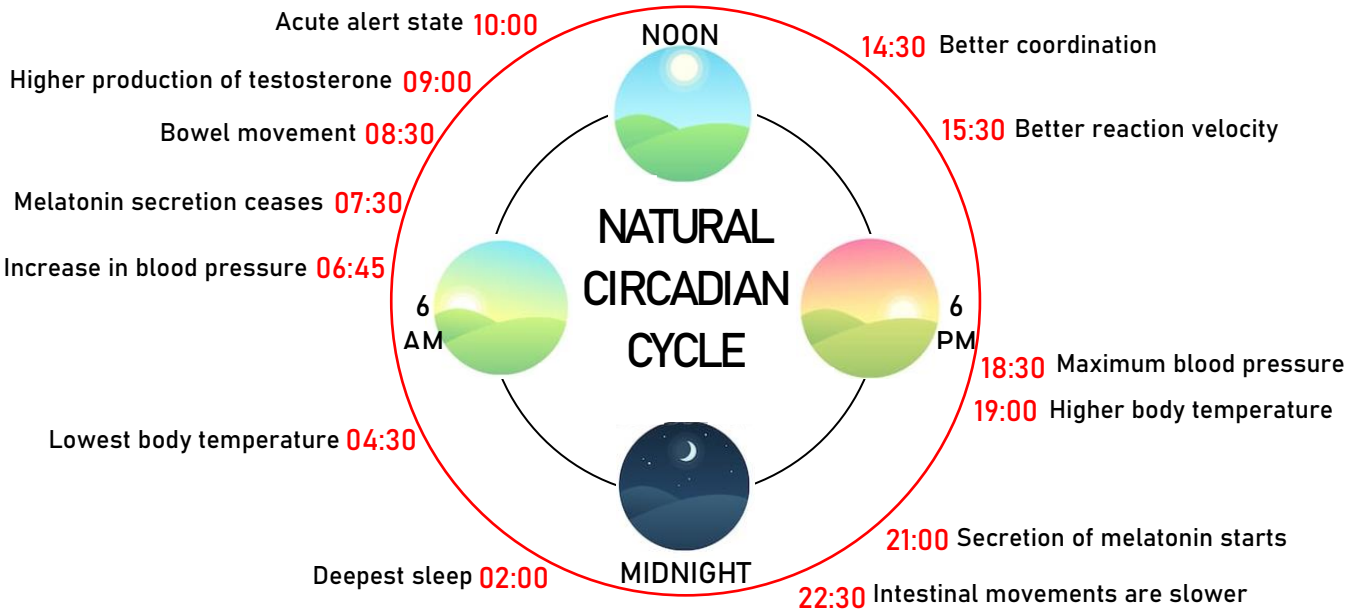
7. Vitamin and natural herbal supplements—include fenugreek seeds, cinnamon, ginger, and turmeric in the diet to reduce inflammation and lower blood sugar.

Management Step# 3: Establishing a Balanced Lifestyle Plan

Nature has established a well-tuned and precisely balanced lifestyle plan for all living beings, including humans. The essential survival behaviors of Fasting/Feeding, Sleep/Wake, and Activity/Rest are under the control of the biological brain clock located in a specialized area of the brain. The brain clock works in harmony with light and dark signals of the sun cycle. Every organ system in the body works in coordination with the brain clock system (see image below). The unique research into the biologic clock system and its 24-hour rhythms called circadian rhythm earned three medical

physiologists (Drs. Hall, Rosbash, and Young) a Nobel prize in October 2017. The brain clock controls all body functions and behaviors such as digestion, metabolism, hormonal balance, sleep-wake, fasting-feeding, and activity cycles. When humans lose harmony with natural circadian rhythms, they fall victim to disease and dysfunction. The lifestyle of humans in the past 50-60 years has changed at a fast pace leading to a disconnection with the natural harmony.





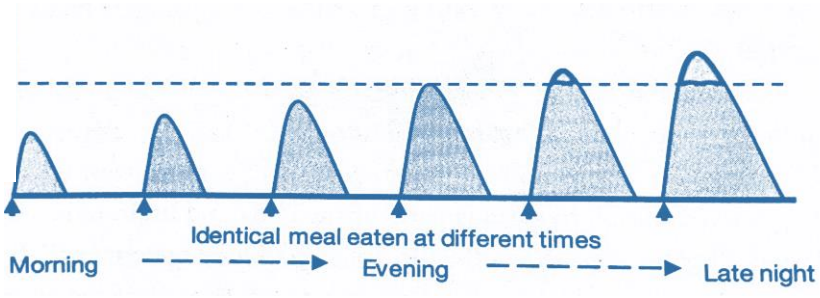
Natural Circadian Cycle versus Balanced Lifestyle

The balanced lifestyle is about keeping a disciplined approach to the following four essential behavior parameters controlled by circadian brain clock:

1. **When to eat.** Eating time influences the digestion of food, glucose utilization, and quality of sleep.

    - ***Digestion of food***. Absorption, digestion, and metabolism of the food are best during daylight hours. The intestinal movements and digestion slow down after 10 PM (see image natural circadian cycle). The food consumed after 8 PM will not move along the digestive tract at a healthy pace and not get digested properly. Late-night eating leads to indigestion, acid reflux, and bloating.

    - ***Glucose utilization.*** During the daytime hours, the demand for energy is high. The body is more sensitive to insulin during daylight hours. At night time energy needs are lower, so the body is more resistant to insulin. Even if one were to eat similar meals at different times of the day, the blood glucose levels would be lower in the morning hours and higher at night hours. Late-night eating after 8 PM invariably leads to high blood glucose levels, abnormal fat storage, obesity, and insulin resistance.



Glucose Blood Levels vs. Meal Times
(from "The Circadian Code" by Satchin Panda, 2018)

    - ***Sleep quality.*** Late-night eating after 8 PM is disruptive to deep rejuvenating sleep. When the food reaches the digestive tract, it increases blood flow, which raises the body's core temperature (*Jathar Agni* in Ayurveda). For deep rejuvenating sleep, the body's core temperature must come down. It takes the body 2-3 hours to cool down for deep sleep.

2. **How often to eat.** The frequency of meals influences glucose utilization. Before 1970, the traditional number of meals in a day was 2-3 amongst the populations around the world. Food and lifestyle diseases such as obesity and Type 2 diabetes were rare. Globally, eating frequency has multiplied amongst urban communities. Eating every 2-3 hours creates a vicious cycle of a consistent supply of glucose from the digestive tract with simultaneous insulin demand. A meal of any size, small or big, provides glucose supply for energy lasting 2-3 hours. After this time, the body must fall back on reserve energy of stored glycogen and fat. The habit of eating frequent meals prevents the body from using up the stored energy—glycogen and fat.

The best way to use up stored glycogen energy is to exercise, and the best way to use stored fat energy is prolonged overnight fasting of greater than 16 hours each day and to eat no more than two meals a day.

3. **When to wake up and sleep, Wake-U**p time in the morning resets the sleep time the following night. So the key to a healthy sleep routine is to get up early in the morning even if the bedtime changes. The early wake-up and going outdoors ensure exposure to the morning sun or bright morning light. Lack of exposure to sunlight or morning light reduces the synthesis of the sleep hormone melatonin in the brain. Additionally, exposure to bright artificial white light and blue light from cell phones and digital devices minimizes the release of stored melatonin. Both melatonin synthesis and release are critical to deep rejuvenating sleep. It is during the deep sleep that the body rests, repairs, and rejuvenates itself to keep itself disease-free. Lack of proper sleep elevates the level of the stress hormone cortisol, which contributes to insulin resistance and weight gain.

4. **Activity and Exercise.** Muscles use up 80% of glucose energy produced in the body. Physical inactivity and lack of exercise mean extra leftover glucose for making reserve energy fat. An exercise/activity routine to help reverse Type 2 diabetes and obesity is:

    a) Exercise first thing in the morning on an empty stomach, so the body uses up stored glycogen and fat energy. Walking is an activity; it is not an exercise to lose weight and get rid of stored fat. To make walking into an exercise routine, use a high-low impact walking routine. An easy way to accomplish this at no risk of fall is to walk for 5 minutes, followed by stationary jogging for 1-2 minutes. In a 30-minute walking, there can be six cycles of high-low impact routine.

    b) Start the day with breathing exercises or pranayama and yoga for 15-30 minutes. The easy to learn pranayama exercises are Om chanting and Kapalbhati. Yoga has become an international phenomenon because of its health benefits. The world has a designated international Yoga day, thanks to our Prime Minister, Narendra Modi.

    c) Climbing stairs is an aerobic exercise. Start with one flight of stairs and advance to your capacity. Individuals with knee arthritis typically have a problem coming down the stairs, but no difficulty climbing the stairs. Climbing stairs will build muscle strength and help minimize joint strain and pain.

    d) Bike riding, swimming when possible.

    e) Stay active the entire day, logging 7-10,000 steps a day (this amounts to 2-3 miles of walk in a day).

    f) Simple weight training using weights within the capacity to build arm muscles.

    g) Young adults and children must engage in vigorous exercise or sports at least 2-3 times a week.

Building muscles is the best way to utilize glucose energy and minimize insulin resistance as muscles can use up to 80% of glucose consumed.

70 – 80% body glucose used by muscles.

Management Step #4: Setting up Time-Restricted Eating (TRE) or Intermittent Fasting (IF) plan in conjunction with antidiabetic drug and blood glucose management.

(For details on TRE plan, review this section on the website www.foodlifestylebalance.com)

The TRE or IF programs simplify the science of keeping the body lean and disease-free. Instead of an elaborate routine of calorie counting or different kinds of diet plans, it shifts the focus to merely watching the clock for mealtimes.

"Watch the Clock and not the Calories."

The TRE/IF plans are gaining widespread popularity and receiving mainstream media attention for the management of Obesity and Type 2 diabetes. The campaigns on freedom from diabetes are using fasting methods as the primary treatment strategy. The significant advantage of TRE plans is that there is no restriction on the amount of food consumed at each mealtime. That prevents muscle loss and micronutrient deficiency. An essential requirement of TRE plans is strict adherence to holistic meals as per the guidelines outlined above. The TRE plan reverses Type 2 diabetes and obesity via three mechanisms:

1. TRE Plan steers the body towards the fat-burning ketogenic pathway. The body remains in a fat-burning ketogenic channel during overnight fasting hours. It reverts to the glycolytic pathway of glucose burning during the daytime feeding hours.

2. The plan normalizes blood glucose and insulin levels. The prolonged fasting duration of 16-18 hours or longer reduces the levels of glucose as well as insulin. Lower insulin levels also mean less fat synthesis and less appetite. High insulin levels are a trigger for fat storage.

3. The plan reverses insulin resistance because fasting is associated with reduced insulin levels. A significant advantage of the TRE plan is the reversal and control of all the diseases related to insulin resistance.

* Non-caloric beverages like water, green tea, and coffee are allowed during fast.

Intermittent Fasting Schedules

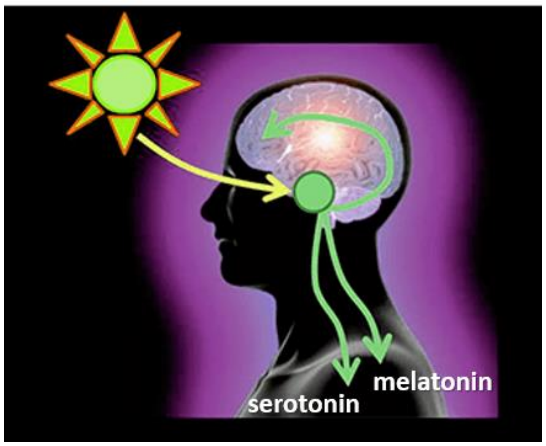
The plan terminology uses the fasting interval between the evening meal the previous day the next meal the following day. The total number of meals in a day may range from one to three, based on the duration of the overnight fasting period.

Management Step #5: Regular exposure to sunlight and normalization of vitamin D levels.

The energy of the sun impacts every aspect of human health directly or indirectly through vitamin D synthesis. The vitamin D is unique amongst all the vitamins in that it supports many physiological reactions in the body, working more like a hormone. Sunlight and vitamin D have several beneficial effects on health:

1. ***Hormonal balance***. The morning sunlight or bright light of the dawn enters via eyes to stimulate the hypothalamus area of the brain. The hypothalamus is the seat of managing several essential hormones such as growth hormone, insulin, thyroid hormone, cortisol, and the sleep hormone melatonin. Inadequate exposure to sunlight or bright daylight in the morning affects the secretion of these essential hormones vital to good health.

2. ***Improvement in mood and sleep***. Sunlight or bright daylight exposure in the morning enhances the synthesis of the sleep hormone melatonin and mood-elevating chemical serotonin in the brain. People living in the geographic areas of the world with weak sunlight have a higher incidence of depression.



3. Bioenergy of the sun boosts the immune system.

4. Ultraviolet rays of the sun enhance bone health via vitamin D synthesis in the skin.

5. ***Less hunger, less fat storage.*** During daylight hours, the body remains active and insulin-sensitive, so more glucose is used up for energy and less leftover for making reserve energy fat. At night hours, the body is inactive and insulin-resistant, so more glucose gets converted to fat. Late-night eating invariably leads to obesity even when one consumes holistic, healthy food.

6. Normalizing Vitamin D levels improves insulin sensitivity.

There are all kinds of light for the sight!!
For Health, there is only one light, and that is the SUNLIGHT.

Management Step #6: Stress management

Emotional stress, anxiety, and fear increase the level of cortisol hormone and adrenalin in the body. Cortisol and adrenalin increase blood sugar. It is a well-known fact that the stress of surgery or significant illness leads to very high blood glucose levels in a diabetic patient. Elevated cortisol levels over the long term from chronic stress lead to a persistent increase in blood glucose levels. Chronically elevated cortisol also leads to insulin resistance. Stress management is vital to effective diabetes management.

The cost of care and physical limitations imposed by Type 2 diabetes remains a significant cause of stress. However, the hope of disease reversal, becoming drug-free, and reclaiming health in itself is uplifting, reassuring, and inspiring. Nonetheless, the patient does require significant emotional support from family and caretakers to stay stress-free, motivated, and committed to the reversal plan.

Once signs of a reversal such as weight loss, feeling energetic, blood glucose control, and reduction in drug dose start showing, the motivational forces and enthusiasm take over. However, the medical team and family have to stay engaged to provide support and motivation for the entire reversal program and beyond.

The reversal programs conducted in a group or community setting with patients and families working together are more effective as the patient, and families get the feeling that they are not alone in the game.

Managing Antidiabetic Drugs with the Type 2 Diabetes Reversal Plan

The Type 2 diabetes reversal plan rapidly reduces blood levels of glucose, so the management requires close follow-up of two parameters:

1. ***Glucose blood levels via frequent blood glucose measurements.*** Monitor fasting morning level, two-hour post-meal levels, and spot blood sugar to check if suspecting low blood sugar—the feeling of weakness, anxiety, sweating, and rapid heart rate. Hypoglycemia episode is a crucial signal to reduce the dose of diabetic medication. The focus is to minimize diabetic drugs to control and prevent hypoglycemia. Sugar rescue for hypoglycemia pushes undesirable additional sugar into the body. Every effort should be made to reduce the hypoglycemic episodes by close monitoring of glucose levels and reducing diabetic drug dose.

2. ***Antidiabetic drug dosages.*** Progressive reduction of antidiabetic drug dosages requires close medical supervision. The first set of the drug to be gradually eliminated is insulin and other injectable medications. These are significant culprits in hypoglycemia episodes and weight gain. Most oral antidiabetic drugs, except for very few (metformin, a good example), increase the level of insulin in the body. Most antidiabetic medications raise insulin levels and require a steady dose reduction as the blood glucose levels start coming down.

A safe approach to the reversal plan is to proceed in a stepwise manner with close monitoring of blood glucose levels (per above guidelines):

- Start with Holistic Meal and Balanced lifestyle plan. Initiate an overnight fasting duration of 12 hours. Blood glucose levels will rapidly stabilize and start decreasing.
- Work with the physician to adjust and reduce insulin and oral medication dose progressively as the blood glucose levels start decreasing. The focus should be on eliminating Insulin and other injectable diabetic drugs first as these are culprits in fat storage and worsening the disease process. One can eradicate these within days to a few weeks, depending on the duration of Type 2 diabetes and the insulin-making capacity of the body, as shown by blood C peptide levels.
- If multiple meals are being consumed to minimize the risk of hypoglycemia, cut down the drug dose, and simultaneously reduce the number of meals to 3 meals a day with no snacking between meals. Any hypoglycemic episode is an important signal to reduce the drug dose. If on insulin preparations, decrease the drug dose by 2-4 units at a time based on blood glucose levels. It is safer to keep the blood glucose levels in a higher range, especially the fasting blood glucose levels in the morning. Fasting blood glucose levels up to 140mg/dl in the morning is a safer bargain over the hypoglycemia episodes during the night. Increasing the dose of insulin at night to aim for tight control of blood sugar in the morning does more harm than good.
- Once the blood hypoglycemia episodes are controlled, initiate the Intermittent Fasting plan progressing from the 12:12 hour routine.
- Advance the overnight fasting routine by one hour per week as tolerated.
- The number of meals will cut down to two meals a day when the overnight fasting hours reach the 16-hour mark.
- Advance up to an 18-hour fasting routine until hemoglobin A1C stabilizes at around 7 with no insulin and reduced doses of other antidiabetic drugs.
- Once hemoglobin A1C reaches seven or lower, metformin, or the antidiabetic drugs which do not increase insulin levels would be the drug to continue until complete reversal.

- Becoming drug-free does not mean discontinuing the reversal program. The reversal program of Holistic meal and Balanced lifestyle is a lifelong commitment. However, the overnight fasting duration can come down to 14 hours with two meals a day plan.

Type 2 Diabetes Reversal Program: Added Benefits

There are several benefits of Type2 diabetes reversal plan:

1. The food cravings get eliminated when one arrives at a 16-hour fasting duration mark.
2. A steady reduction in body weight occurs with a loss of up to 7-10 kg over six months.
3. The physical energy and vitality improve significantly.
4. Blood pressure normalizes.
5. Kidney function, retinopathy, and neuropathy improve.
6. The blood cholesterol rapidly normalizes within three months.
7. Fatty liver will reverse with the weight loss and normalization of blood glucose levels.
8. The heart function will improve, and the risk of heart attacks diminish.
9. The sleep quality will improve significantly.
10. Body immunity will improve with reduced risk of infections.

How to Know that the Type 2 Diabetes Reversal Plan Is Working

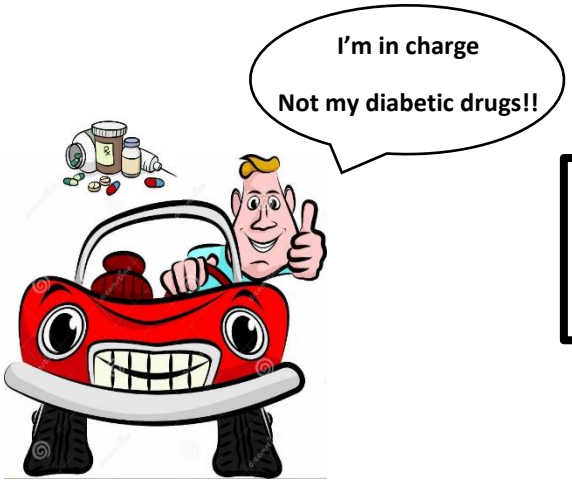
In addition to the above benefits, there are several parameters which indicate that the reversal program is proceeding as expected:

1. Blood glucose levels start decreasing within a few days of the initiation of the program.
2. As the dose of insulin and antidiabetic drugs decrease, food cravings get reduced.
3. Hypoglycemia episodes disappear as the drug doses come down. Every hypoglycemia episode is a signal to reduce diabetic drug dose further.
4. Weight loss occurs rapidly, up to 2-3 kg in the very first month of initiating the reversal program.
5. With appropriate exercise and weight training plan, the muscle mass improves; muscle fat diminishes with an improvement in muscle strength.
6. Pain in the joints and feeling of bloating in the body (swelling) diminishes with an overall sense of wellbeing and energy.
7. Thyroid hormone levels begin to normalize with a reduced requirement for thyroid hormone.
8. In males, testosterone levels normalize with improvement in libido. Fertility improves in both males and females.
9. Neuropathic pain diminishes.
10. Kidney function and retinopathy will stabilize and start getting better.

Attend to Infection and Illness without Any Delay

Keep in mind that any infection or medical emergency is a significant stress for the body. It can throw the reversal program out of balance with a temporary increase in the need for antidiabetic drugs.

However, once recovered, it is easy to go back to the reversal plan. The knowledge and experience keep you in the driver's seat, keeping the engine in the reverse gear and on its track.



Car photo from Dreamstime.com

"Knowledge empowers us to conquer a problem."