



# Randle Cycle

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## The Randle Cycle

Traditional wisdom for weight management has left the overweight population defeated, shamed and chronically obese. Yet, doctors continue to echo the failure perpetuated by the calorie theory... “*Eat less, Exercise more.*” This philosophy is antiquated at best, and a horrendous hormonal trap at its worst.

**In fact, for the first time in U.S. history, the current generation of children are not predicted to outlive their parents. Why?**

Those on the leading edge of preventative medicine, such as *Life Extension Foundation*, point to the cluster of diseased conditions stemming from **Insulin Resistance** (chronically high insulin), the pre-cursor to type II diabetes.

### FILL THE GAP!

Elementary schools are filled with obesity, pre-diabetes and type II diabetes; 25 years ago, these conditions rarely touched children. Our nation is physically degenerating beginning with the young!

Unfortunately, as many of the most articulate advocates of preventative health have addressed, the science to stop diabetes is there; it's just locked up in research journals, inaccessible and impractical to the mass population.

*Most practicing physicians aren't applying this basic science to combat insulin resistance because clinician's Continuing Ed hours are taught by reactionary drug manufacturers, not preventative health scientists.* History tells us, it may take 30+ years to silence the echo of the calorie theory before the biology of Insulin Resistance is mainstreamed to the public. This substantial gap between clinical theory and practical application is why our nation is physically degenerating from hyperinsulinemia.

*How many will die, degenerate, battle with obesity and eventually lose hope in those 30 years?*

### REVISITING RANDLE

We all know the calorie theory doesn't work; yet, alternatives in weight management/preventative health are difficult to find. **Fads will continue to run their course, but sound body biology must be the anchor in defeating Insulin Resistance and its cluster of conditions: obesity, high blood sugar, type II diabetes, elevated cholesterol, high blood pressure and heart disease.**

In the state of Minnesota alone, millions of dollars are allocated toward a cure for diabetes. Money ill spent when the science of a cure has already been documented, yet not delivered to the mass population. Bristlecone's 6 week course entitled, “**BART & BOB,**” is dedicated to filling this gap between research and application by delivering the science. The foundational teaching of the series is the science of the **Randle Cycle.**

### Here's why...

The cells of the body are primed to either oxidize immediate sugar or fat for energy. This “*priming*” of the cells is very similar to preparing a wall for new paint; the cells are chemically prepared, or primed, at the receptor site to utilize a specific source of energy.



## WHO FLIPPED THE SWITCH?

It's an innate survival mechanism, primary in the stabilization of blood sugar. During a time of feeding, the cells accept immediate sugars, and while fasting the cells receive energy from burned fat in the form of free fatty acids.

This tightly controlled system provides a delicate challenge of oxidation between fat and immediate sugar. ***Thus, in a healthy situation, an individual will cyclically store and burn fat as the cells are “switched” from one energy source to another. This creates homeostasis and tightly controlled blood glucose which is the hallmark of health and wellness.***

However, the problem arises when this “switch” gets stuck in one position. Much like a key on the computer sticking, it sets in motion a cascade of hormonal irregularities resulting in the loss of homeostasis and glucose control. **A stuck cellular “switch” is at the hormonal core of both Type I and Type II Diabetes.**

So, what controls the “switch” which primes the cell to accept either immediate sugar or stored fat?

*It's our old friend, INSULIN!*

## FEEDING OR FASTING?

*Hormones speak to the brain, not glucose. As much as we try to focus on blood sugar levels, glucose cannot be controlled unless we understand the hormones that manipulate it... insulin & glucagon.*

Insulin primes the cells for “feeding” and the reception of immediate sugar for energy. When insulin is high, we are in a sugar-based metabolism; the cells are feeding from the immediate sugar in the blood; any excess sugar is stored as fat by insulin.

As insulin drops, as it should between meals, the cells are primed to use fat for energy. ***The “switch” is flipped!*** Glucagon is then released in response to the falling insulin; glucagon is the axis hormone that facilitates the breakdown of stored fat for energy! **Glucagon stimulates a fat burning metabolism. Fat burning satisfies all hunger!**

## FAT CELLS HAVE VACANCY

*Thus, at the orchestration of either insulin or glucagon, blood glucose levels are kept in a narrow physiological band.* But, let's go back to the “switch” getting stuck... In Type I diabetes the pancreas does not produce insulin; glucagon works overtime burning fat, with no challenge from insulin to flip the switch back. A Type I diabetic burns fat too fast, but will have very high blood sugar due to the lack of insulin. *Remember, insulin job is to deliver the sugar to the cells. **Let's look at Type II Diabetes...***

In Type II, there is an *overproduction of insulin*; the blood is flooded with the hormone until the cellular receptors *get resistant* and shut their doors. It's much like a drain in a sink slowly twisting shut; sugar (escorted by insulin) gets a *NO VACANCY* message from the cell.

**The high insulin has primed the cells to utilize immediate sugar, yet the sugar is rejected at the door due to the excessive insulin; THIS IS INSULIN RESISTANCE.**

Insulin gives the brain the message of “feeding”, but the cells are actually malnourished. Most of the rejected sugar gets stored as fat; fat cells keep *VACANCY* until the very end. In Type II diabetes, insulin doesn't drop low enough to flip the “switch” back to fat burning. *Glucagon is repressed, and the body is stuck in fat storage mode. This repression perpetuates continual eating to maintain glucose levels, thus obesity and disease.*

The “switch” can be reset, but it starts with a proper understanding of the insulin/glucagon axis.

***High blood sugar? Yes, but the only solution is hidden inside the deliberate control of insulin!***