

Paul McGlothlin

Calorie Restriction – What it is and how to do it



Today is your lucky day! You will find out how one of the healthiest and happiest lifestyles on our planet can change your life. Some call it “calorie restriction (CR)” from the work of Dr. Clive McCay (1), the scientist who discovered that the lives of mice could be greatly extended by limiting their calories. But thoughts of restriction lead some people astray from what CR is really about: an enormously satisfying way to live healthier, better, and – most likely – longer.

While that is reason enough to start CR, discerning people pursue a CR lifestyle for many other reasons:

➤ **Achieving their full potential**

Many of life’s challenges – from pursuing a career to enjoying leisure activities – get easier with calorie restriction. As your cells learn to function with fewer calories, you’ll notice that your energy surges. You’ll feel like doing more. Meanwhile, CR – properly practiced – can increase your cognitive capabilities and protect against age-related decline of many systems.

➤ **Healthful Weight Loss**

The world is full of fly-by-night diets that promise rapid, easy weight-loss. Indeed, some plans may help you lose a few pounds in a hurry, but you might also lose your life. Too many diets recommend foods that increase risk of disease and activate life-shortening physiological pathways. In most people, CR produces healthful weight loss that leads to a state of health that you will want to maintain for the rest of your life.

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➤ Protection from disease

CR provides highly effective, natural protection against many diseases – including cardiovascular disease, arthritis, diabetes, and cancer.(2) Both research and clinical observations show calorie restriction and moderate exercise, combined with a low GI diet, can be effective against osteoporosis, migraine headaches, hearing loss, macular degeneration, and sarcopenia (muscle weakness) (3), but choose your CR foods carefully. High GI foods can ruin calorie restriction benefits:

High Glucose Levels Negate Low-Calorie Benefits		
Disease State	Low calorie, Low-GI ^a Diet: Benefits -	High-GI ^a diet Post-meal Glucose > 144 mg/dL: Risks -
Heart attack ^b	Decrease	Increase
Atherosclerosis ^b	Decrease	Increase
High blood pressure ^b	Decrease	Increase
Retina damage ^b	Decrease	Increase
Hearing Loss ^c	Decrease	Increase
Memory loss ^c	Decrease	Increase
Alzheimer's disease ^c	Decrease	Increase
Kidney disease ^c	Decrease	Increase
Diabetes ^b	Decrease	Increase
Longevity ^c	Increase	Decrease

^a GI = Glycemic Index, detailed at GlycemicIndex.com, accessed Nov. 11, 2011

^b Guideline for Management of Postmeal Glucose. International Diabetes Federation. 2007, available at www.idf.org

^c Protection from Disease. McGlothlin P, Averill M. Multiple references, as cited on LivingTheCRWay.com, accessed, Nov. 1, 2011

from: ***THE CR WAY TO GREAT GLUCOSE CONTROL*** (4). McGlothlin P and Averill M

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➤ **Reaching Escape Velocity**

Many here at LongeCity hope to achieve biological immortality, a worthy goal pursued by sensitive folks who love life. A likely first step is to reach escape velocity – that is, to live long enough so that science can extend your life faster than the rate at which you are aging. That's a lot to hope for. But don't kid yourself: It's the best chance any of us has to make it to that golden point when death is no longer a certainty.

So, clearly, you don't want to speculate: You must consider calorie restriction, the only scientifically proven way to extend life. This is your best chance to avoid being among the last in history to succumb to the inevitable end of life that we all now face. And if escape velocity does become a reality, you want to reach that point with the youngest body possible, for another issue is that it may be some time before biological damage caused by bad diets and lifestyles can be reversed.

What is Calorie Restriction?

Now that you have good reasons for starting CR, the first question to ask is "Exactly what does calorie restriction really mean?" The right answer used to be "Eating fewer calories than would be normal for your sex, height, age, and activity level." However, research by leading CR scientists has made that definition somewhat obsolete. **(5,6)** Limiting calories is still very important, but it is not enough to go on just any low calorie diet. You need a CR diet that accomplishes two things: 1) shifting your body's metabolism from energy usage (supplied by calories) for growth to energy production for maintenance and 2) turning down the growth activity in your cells.

Sound complicated? It's not.

Think about this: Cells need the energy supplied by calories to perform vital functions that keep you alive, such as breathing and the beating of your heart. They also need the energy supplied by calories for many other things like tissue repair and countering immune system challenges. Many cells, like fast growing skin cells, include cell division in their basic functions, so a constant process of cell death and rebirth is part of your biology that needs energy.

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Yet, if you supply your cells with excessive energy, they become lazy: The process of cell division may become sloppy, and mutations may be more likely. Disease often results.

What then happens when cells are denied the energy they need? Well, if you carry it too far, your cells will break down every tissue in your body in a desperate attempt to get energy to fuel their functions. Eventually, your muscles – including your heart muscle – will grow weak. This is one way people can die from anorexia, a very serious psychological problem that requires professional counseling.

If, instead, you are smart about limiting calories, you won't take it to extremes. Rather, by following a sensible, low-calorie, nutrient-dense diet – magic can happen. You will awaken an ancient defense system within you that evolved out of necessity from the very first time organisms had to go without food. In fact, your *fat stores* will become fair game for your cells to burn for energy. So if you need to lose weight, it will be easier.

Energy-sensitive organs like your heart **(7)** and brain **(8)** will undergo hugely beneficial changes. Your heart will function better than ever and your brain will adapt: Observational data indicate that preserving your memory and learning new information will be easier.

Bottom line – The current definition of **CR**: a low-calorie lifestyle that produces a metabolic shift away from anabolic activities, downregulating energy usage and growth.

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HOW TO GET STARTED WITH CR

➤ Use the available Resources

- Take advantage of the active **Calorie Restriction forum** right here on LongeCity.org. Make sure to read the many questions and comments. Do the same on CRSociety.com, which maintains a free email exchange. And become a member of LivingTheCRWay.com, where you will find multiple forums, a blog, and valuable content in the Science Behind the Benefits pages.
- Look at the YouTube **videos** on calorie restriction, for example:
<http://www.youtube.com/watch?v=fWPr58UWmOc>
- Buy the current **books** on CR and read them. Currently, the most popular are the *Longevity Diet* by my friends Brian Delaney, the President of the CR Society, and Lisa Walford and *The CR Way*, by Meredith Averill, Chairman of the Board of the CR Society, and myself.

Books by the “father of calorie restriction for humans,” Dr. Roy Walford, are still available. The latest publication (1994) is *The Anti-Aging Plan: The Nutrient-Rich, Low-Calorie Way of Eating for a Longer Life – The Only Diet Scientifically Proven to Extend Your Healthy Years*, co-authored by Lisa Walford, his daughter.

For more advanced readers, *Caloric Restriction: A Key to Understanding and Modulating Aging (Research Profiles in Aging, 2002)* by Ed Masoro is worth having in every CR library.

➤ Form a close relationship with a doctor

Have a complete physical before you start CR to give you your baseline and repeat it after six months into your program to see the effects. *The CR Way* has a list of the biomarkers to be tested, along with suggested goal results.

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➤ Avoid CR Myths

The CR world is full of bad, sometimes dangerous, advice.

Here are some CR myths to avoid:

Myth: A CR practitioner must limit calories by 30%.

As cited in the video introduction above – Dr. Craig Wilcox and his colleagues, who have made a life-long career of studying longevity in the long-lived elders of Okinawa, found that, yes, they limited calories but by only 11 percent and achieved record-making results.

You can start by limiting calories by 5, 10 percent and gain excellent benefits. (9)

Myth: The more weight that's lost the better.

When some CR practitioners notice how good they feel at lower weights, they let their weight drop lower and lower. Don't fall into that trap. An excessively low BMI risks serious bone loss. In fact, many people who begin CR should not lose even 1 pound. Some of the world's most successful CR practitioners have had higher BMIs than one might expect:

CR Way All Stars

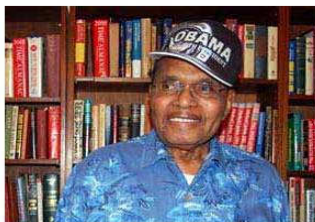
Similar Regimens - 20-30% calorie reduction plus Daily Limited Fasting

Ralph Cornell, 104
CR 50 years



BMI 22.5

Bernando LaPallo, 109
CR 104 years



BMI 23
(estimate)

Walter Breuning, 114
CR 36 years



BMI 19

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Myth: A CR follower must eat more protein.

Not true. In fact, too much protein intake raises IGF-I (Insulin-like Growth Factor-1), a growth-driving hormone – just the opposite of what a CR diet should accomplish.

Myth: CR dieters can't eat much food.

They certainly can. They can fill a whole table full of luscious, low calorie foods that are so much more filling than high calorie meals that may feature burgers, fries, or pizza.



Recipes from: *THE CR WAY TO GREAT GLUCOSE CONTROL* McGlothlin P and Averill M (10)

Myth: CR practitioners can never eat fast food.

No one-size-fits-all CR diet is available. Some successful CR practitioners eat fast food occasionally, but most read labels and ingredient lists carefully and then pick the healthful offerings.

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Myth: If I practice CR, I won't be able to eat with my friends.

On the contrary, go ahead enjoy meals with your friends of course. If they are true friends, what you eat won't matter. And besides, if you practice CR most of the time and go off it occasionally, this won't matter either: It's what you do most of the time that makes the difference.

Myth: People who follow CR sleep less.

Sheer fantasy! CR prevents age-related decline of melatonin and many CR practitioners sleep longer than ad lib folks of the same age. On the other hand, people can keep themselves awake at night by eating a lot of protein close to bedtime – whether they practice CR or not.

Now that you know more about CR, go ahead: get started and enjoy it! Find out more about how to follow a CR life that fits your temperament and needs. Your CR life should be fun, energetic – even joyous. A full, productive, happy life awaits you!

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