Reversing Age-Related Decline

We are often seen in media reports, showing people how to start a healthy low-calorie diet, which we welcome as part of our mission. But for those who want the best chance to be part of a utopian future, we have some important news: The opportunity to reverse or slow many age-related declines that are considered inevitable is here now.

From the nano level of nutrition and exercise effects on molecules to the holistic results of meditation – we can affect how we live, how well we live, and probably how long we live in our current human form. This can be achieved with The CR Way™, a human-friendly mode of calorie restriction, which has been proven to extend life, prevent disease, and improve functionality.

When we began our CR quest in 1994, in our mid-forties, there were many opinions on optimal practice of calorie restriction: Debates raged in CR circles: High protein – low protein? Which supplements? How much exercise? How many calories? – Confusion reigned.

Physical Transformation

At first, we just wanted to apply basic CR research to our lives. As our health improved more and more, though, we wanted other great effects: to slow, prevent, and even reverse age-related decline. That was asking a lot, because no humans had ever proven that that was possible.

Lucky for us, ground-breaking science helped us find the way. New research has revealed that CR activates an ancient biological defense system that shifts the emphasis from cell proliferation to cell maintenance by more effective cellular function. Activating this system became an important tenet of The CR Way™.

Applying the new science to diet and lifestyle required clinical results for every important choice we made. So we committed to regular checks of every aspect of our health by a superb team of physicians – specialists in every discipline: endocrinology, immunology, and gastroenterology, for example. Leading the way was our internist, a calorie restrictor himself, and an extraordinary physician.

We also needed CR scientists to get involved and so did all the other people who were attempting CR – for hardly any human calorie restriction research was available for guidance. We were lucky to find Luigi Fontana and John Holloszy at the School of Medicine of Washington University in St. Louis. Dr. Holloszy had been studying exercise physiology for decades and had designed and equipped the "perfect" lab for testing humans. Dr. Fontana had explored metabolism in his Ph.D. research and was especially interested in nutrition. Both physicians preferred to study human subjects than other lab animals. They wanted to test whether people would get the same benefits from CR as the research mammals. This matched our interests exactly. Thus, the first longitudinal research project on human beings was born: http://www.calorierestriction.org/ResearchOnAging

Much has been achieved. Fontana and Holloszy first honed in, for example, on key markers of cardiovascular aging, reporting in the peer-reviewed literature that the hearts and arteries of the CR cohort functioned like those of much younger people.

Now, with expert guidance, we were able to set our own personal standards for "aging" health that may seem like science fiction:

- Heart function – age-related loss of cells slows, blood pressure is 98/62 or lower.
- Arterial plaque accumulation remains static or reverses.
- Muscle strength maintains or increases with no lasting soreness or pain from exertion – age-related cell loss slows.
- Cellular energy production increases.
- Immune function increases – quick reaction to immune challenges; inflammation markers at low ends of the reference ranges.
- Risk of heart disease, cancer, diabetes, and Alzheimer's disease lowers.
- Youthful hormone secretion ability preserved.
- Stronger skeletal system – bone density increases gradually with likely stronger matrix.

Cognitive Transformation

When in our fifties, we were happy that the physiological transformation of our bodies was on track. But perhaps the most difficult goal to achieve was elusive: Increase in cognitive capabilities was still not happening. We wondered if we had mined caloric restriction for all that it is worth.

To everyone's great good fortune, Mark Mattson, Chief of the NIH Laboratory of Neurosciences came to the rescue with an astounding new study: Time away from food (fasting) proved to be better than caloric restriction for increasing neurogenesis in the hippocampus.

A key biochemical difference between caloric restriction and fasting: production of ketones! When glucose drops – the brain, which relies heavily on glucose for function, switches to using ketones, byproducts of carbohydrate, fat, and protein breakdown. Yet, standard ketogenic diets, consisting of high fat and protein, are heart-attack garbage: You might die early, while trying to improve your brain.

Undaunted, we developed a new, heretical ketogenic diet – based on heart-friendly fats and complex carbohydrates and better utilization of insulin. And we cut our daily number of meals from three to two, dubbing our new method of CR *daily limited fasting*. Further, we used our knowledge of physiology to develop a glucose-lowering protocol that could quickly produce the biochemistry seen in Mattson's study. Rather than rely solely on time away from food, we chose to limit calories as well – taking advantage of the best of both regimens. Now, a daily influx of brain-building biochemistry was possible.

Within weeks, as if by magic, profound changes began to take place. Mental powers thought permanently diminished, began to get better: short- and long-term memory, conceptual abilities, multitasking, and exact calculation. And it showed up everywhere: Conceptual writing, developing a successful Internet business, leading genetic testing and research, winning chess tournaments – so many things we wanted to do became possible.

And the new ketogenic emphasis seemed to potentiate CR effects throughout our bodies with better measures on every parameter than our standard CR practice had produced.

Psychological Transformation

A much longer, healthier life isn't worthwhile unless it is happy and fulfilling. What is not generally known about happiness is that it can be greatly affected by food and lifestyle choices – So much so that the focus of *The CR Way to Happy Dieting* (http://www.livingthecrway.com/home.aspx) the companion to *The CR Way*, is orchestration of diet and lifestyle for happiness. In a subsequent article we will discuss how incorporating happiness biochemistry makes low-calorie living easy and fulfilling.

May *The CR Way* help you join a Utopian future and perhaps begin to live it right now!