

The Self-Reg View on Series.

by Dr. Stuart Shanker

The Self-Reg View on: Obesity

I don't want to write a blog about statistics. We all know that the obesity problem in children is very serious and that the number of obese youth is positively alarming. I want to talk instead about the suffering that is so often caused by the Self-Control paradigm, and what the science of Self-Reg can do to relieve this.

It was Carmen who brought home the importance of this point. She was 15 years old, pretty, bright, sweet, and battling anxiety and obesity. At a time when life should be full of wonder and excitement, hers was full of anguish.

Mom was desperate to do something, anything to help her daughter. She told me how Carmen had struggled with her weight for years, but it wasn't until puberty that the problem had gotten out of control. It was also at this time that she began to experience severe anxiety, to the point where she was unable to go to school or even meet her friends at the mall. She was taking powerful anxiolytics but the medication wasn't helping much. She still had crippling bouts of despair and over-powering rages and still found it impossible to get involved in any sort of social activity.

In mom's mind, the weight was the heart of the issue. She told me: "You have no idea what it's like for a teenager to be so overweight: to be ashamed all the time of how you look; to find clothes-shopping an ordeal; to be constantly uncomfortable in the chairs at school; to find it exhausting to go up stairs and dizzying to go down them; to have food cravings so strong that you almost faint; what it's like to have

your mom take you through the drive-through because you can't stand the looks you get when people see how much you've ordered." She was convinced that if Carmen could just get down to a size 8 everything would be better. So she hounded her daughter to go on diets, but these rarely worked, and on more than one occasion Carmen actually gained weight from them. Part of the problem was that she would have panic attacks, sometimes so severe that she would lie huddled under her bedclothes weeping or uttering suicidal threats. Mom would become so distraught that she would rush and fetch a "special treat," which helped her daughter to calm down, but often set off a fresh cycle of over-eating.

This inconsistency was, of course, dysregulating, but by no means the cause of the problem. The real cause was that Carmen was in the grip of a stress cycle. Indeed, that is exactly what obesity is: a dysregulation in the stress system. And this applies as much to her relationship with her mom as to what was going on inside her; for their Interbrain was also caught in a stress cycle.

In this scary situation, dieting is one of the few things that seems to offer a possible escape. After all, we are constantly bombarded with the message that obesity is the result of an imbalance between caloric intake and energy expenditure. But if that's the case, then all that's needed is the willpower, right? Over and over the dieter is bombarded with the message: "You just need to harness the power of self-control to eat less and exercise

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more.” But it turns out that constantly berating yourself for eating too much and not exercising enough only pushes the goal of self-control that much further out of reach.

The Baumeister lab has been showing this for years, with experiments that demonstrate how junk food consumption goes up when the stress load is increased. And last year Silvia Maier showed that acute stress increases reward signaling in the amygdala and striatum and reduces appraisal and inhibition functions in the PFC.

In fact, recent advances in neuroscience and endocrinology are telling us that looking at obesity through the lens of self-control not only blinds us to the real heart of the issue, but actually makes the underlying problem considerably worse. For this adds immeasurably to the stress load, both in terms of personal recrimination and the constant reminders that you are seen as “weak” and “over-indulgent.” Yet the issue here doesn’t concern lack of effort: it is the consequence of a prolonged and excessive stress load, coupled with a maladaptive coping strategy. “Maladaptive” not just because over-eating only provides temporary relief from stress and has harmful side-effects; but as we’ll see, also because this method of “self-medicating” actually aggravates the dysregulation of the stress system.

Of all the remarkable findings made in Sir Michael Marmot’s monumental “Whitehall studies,” one of the most striking is that those with chronic work stress have more than double the odds of contracting the “deadly quartet” of symptoms that constitute Metabolic Syndrome: obesity, insulin resistance, dyslipidemia, and hypertension. It is chronic stress that leads to Metabolic Syndrome and not the other way round. That is because chronic stress changes the body’s natural homeostatic range to a higher set point—the “allostatic state”—in order to deal with

the stress load, and in the process, disrupts a number of receptors that regulate our appetite and food cravings.

Think here in terms of your body’s optimal “idling speed,” at which your “metabolic engine” generates enough power (by producing cortisol to break down the energy stored in fat cells) to deal with the demands of cellular repair and growth without breaking down the protein in muscles. The effect of chronic stress is that hyperactivity in the HPA pathway triggers the release of too much cortisol to deal with this heightened stress load. Too much cortisol in the blood stream—a state of hypercortisolism—inhibits the anabolic process, leading to the disruption of cellular repair and growth, the accumulation of abdominal fat, and in the worst-case scenario, insulin resistance. It is hypercortisolism that that leads to Metabolic Syndrome; and it is hypercortisolism that is the underlying issue in obesity.

This may seem like a fairly technical explanation of a point that is obvious enough: we all know that stress causes us to over-eat in order to quell feelings of anxiety, and that simple carbohydrates are particularly effective in this regard. Clearly there are strong personal associations operating here (i.e., resorting to Ben & Jerry’s is a learned behaviour). What’s more, eating channels our impulse to act—to do something—into what seems like a relatively safe action. The problem is that cortisol lingers in the blood stream long after the stressor that caused a fight-or-flight reaction has disappeared. This has the effect of increasing appetite and food-seeking so as to replenish (theoretically) spent energy reserves and store up energy for what the paleo—mammalian and reptilian brains expect will be a prolonged period of deprivation. So we are driven to consume more than we can burn: not just by the glucocorticoids flooding our system, but even by our fat!

It is that last comment that is particularly

The Self-Reg View on: Obesity

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arresting. One of the most significant of the recent discoveries by endocrinologists is that adipose tissue is more than simply an energy storage system. We've long known that adipose tissue plays an important role in protecting internal organs and in the retention of body heat. But it turns out that adipose tissue is itself an endocrine gland, and one of the most important hormones that it produces is leptin. Leptin, the so-called "satiety hormone," signals when we have enough energy in the bloodstream and when we need more. But hypercortisolism disrupts the production of leptin and the sensitivity of the leptin receptors.

In fact, obesity is now seen as a low-grade inflammatory state that is caused by chronic stress. Changes occur in the adipose tissue, including the shift from distributed to abdominal concentration of fat, which is the result of inflammation. We looked in my last blog at how depression represents a dysregulated stress system, and the same type of vicious cycle occurs in obesity, with chronic stress leading to inflammation in the adipose tissue, which in turn results in the over-production of cytokines and the under-production of leptin, which in turns exacerbates the chronic stress, and so on. Furthermore, going into fight-or-flight not only leaves us vigilantly scanning the environment for potential threats, but also keeps our attention focused on a potential source of relief (the ice cream). In addition, we see a cognitive shift from working memory to stored relief-based memories ("The last time I felt this way the ice cream made me feel way better"); and a reduction in dopamine, which reduces both the pleasure we receive from "non-supercharged" food and the desire to engage in physical activity.

In other words, chronic stress can lead to hormonal changes that result in the behavioural pattern of too much junk food/ too little physical inactivity that maintains the

high stress level. This is a large part of what is meant by describing obesity as a dysregulated stress system. The fact that weight had always been a problem for Carmen told us that stress had always been a problem for Carmen. And the very fact that the weight problem started so early was a further clue that we needed to be looking at biological and not just social and emotional stressors. In fact, we discovered that Carmen could find social interaction very demanding, and in addition to this hyper-sensitivity, she had a number of hypo-sensitivities, especially in regards to her "internal" body sensors. This is why she had trouble going up and down stairs or sitting on hard chairs. These were important signs that she wasn't picking up the sorts of proprioceptive signals that enable us to perform such actions effortlessly. This meant that, e.g., being surrounded by kids or sitting in the chairs or going up and down the stairs at school made her anxious, and her hyper—and hypo—sensitivities were significantly intensified by anxiety, leaving her in a chronic stress cycle.

As we learned last week, junk food has been engineered to target this low-energy/high-tension state, and Carmen was constantly in that state. She was fascinated to learn the "bliss point" and read both Michael Moss' *Salt, Sugar, Fat* and David Kessler's *The End of Overeating*. But what shocked her most was to learn that the excessive amounts of salt, sugar and fat that she was ingesting were a major factor in keeping her stress levels elevated. We quite literally helped her to see her cravings differently: not by lecturing her on the dangers of fast food or stress-eating, but by reducing her stressors to zero.

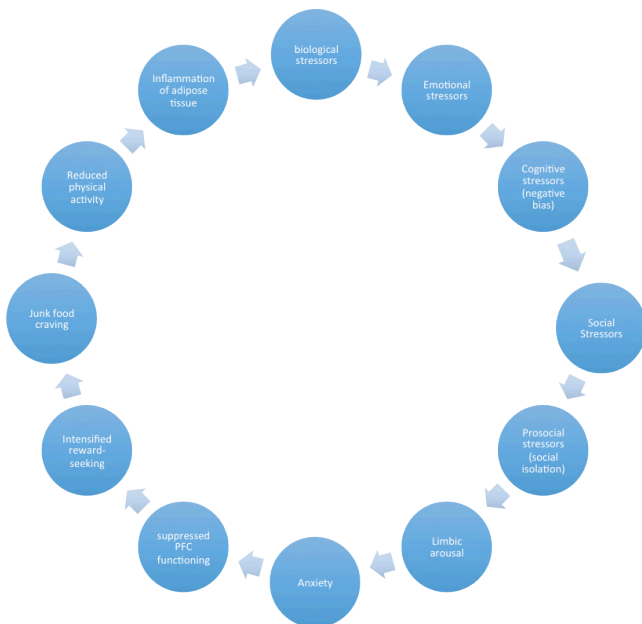
What Carmen needed to understand—truly understand—is that glucose, sodium and lipids are toxic when consumed in excess, forcing her body into overdrive in order to maintain homeostasis. The food itself was a key factor in her chronic "stress overload."

The Self-Reg View on: Obesity

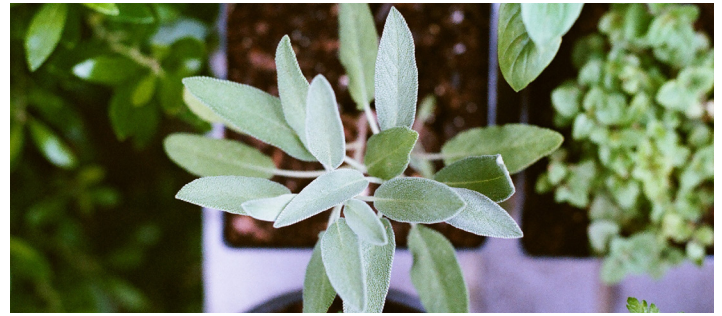
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Carmen had to do Self-Reg for some time in order to identify the various stressors that were setting off a wave of anxiety and food-craving (usually at the same time). She needed to learn how to satisfy her need for stimulation in ways that were calming and energizing rather than anaesthetizing and enervating. She actually needed to learn what it felt like to be calm, and just how different this is from being sedated. But the real turning-point was when Carmen realized that her worst bouts of anxiety and food craving were occurring a couple of hours after a binge. It was this awareness that completely changed how she saw “foods” that hitherto she had found irresistible. It wasn’t an act of will or self-control: it was that she saw the item with completely different eyes, and, as a result of this aspect-shift, the craving simply withered on the vine.

In place of the simplistic and damaging self-control view of obesity, then, we get a much more complex view of the dysregulated stress cycle operating here:



We know that children and youth are living today in an “obesogenic environment,” marked by decreased activity and increased



fast food consumption. But the “obesogenic environment” needs to be recast as a “high-stress environment”: i.e., physical inactivity and excessive junk food consumption are hidden stressors. And the “obesogenic environment” starts at home, with a dysregulated Interbrain. So it was every bit as important that Carmen’s mom understood all this, so that she could remain calm when Carmen became anxious, would stop searching the internet for the latest miracle diet, and would start doing Self-Reg herself, as well as with her daughter. And Carmen herself needed to learn how to stay calm when her mom was anxious. But what was maybe most important was how both of them needed to reframe Carmen’s cravings: to see them, not as impulses that had to be resisted or subdued, but invaluable signs for when the stress was too high and it was time to do some Self-Reg.

As a result of doing Self-Reg, Carmen was able to start meeting regularly with a therapist, which helped enormously in how she dealt with her anxiety. The self-loathing became a thing of the past, although, like all teenagers, she still had frequent moments of abysmally low self-esteem. But she rediscovered the joy of being with her friends and, what’s more, was not just able to but actually enjoyed going to school, and now, college.

Carmen is still on the heavy side, but no longer obese. But it’s truly not the weight that matters. What matters is that when I look at Carmen today what I see is a happy and active young adult. That is all I see. All that I would hope to see.