

SEPTEMBER 14, 2003

## Solution for obesity nearer

Obesity and all it includes is the major cause of illness and death in the developed world. In the United States alone, almost 300,000 deaths occur annually and in the next few years will surpass smoking as the primary cause of preventible death. Despite the recognition that even moderate weight loss increases health benefits, there have been few if any effective treatments for this epidemic. Over the years, I have noted that 95% of folks who significantly reduce their weight are again obese 3 years later. The only effective way to reduce weight for good is surgery. In the past, I have discussed the Roux-en-Y/stomach banding, which is a bypass of the upper part of the intestine and a small pouch made in the top of the stomach.

In a mid-September article in *The New England Journal of Medicine*, a primary mechanism of weight loss with this procedure has been delineated and may help to achieve success without surgery. We have long known that hormones from our pancreas (insulin), fat cells (leptin), gallbladder (cholecystokinin) play a role in weight control. We have identified two new hormones, Ghrelin and now, PYY. This comes from the lining of the small intestine and colon. The stimulation of this hormone occurs much before food even touches this area and acts as a gastrointestinal break that discourages more food ingestion. Like most of the weight controlling substances, these inform a specific receptor in our

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brain (MCR4 in the hypothalamus) to eat more or less. The investigators found that a single infusion of the PYY compared to placebo not only reduced appetite and food consumption by 30% at an all you can eat buffet provided for 2 hours, but caused substantial weight loss over time. Also in obese subjects, the PYY was more diminished compared to thin individuals. However, both thin and obese folks had reduced hunger and food intake during this study.

This is such an attractive therapeutic option for obesity, it should stimulate an intense research program for drug companies to find a synthetic PYY or other substances that will increase the sensitivity of the MCR4 receptor in the hypothalamus. Although obesity (other than surgery) is a matter of will power, plus some help from neurotransmitters and other appetite suppressants, within the next 20 years there will be a real breakthrough and just like tuberculosis and rheumatic fever, obesity will be a disease of the past.