innovations

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TITLE: MANIPULATION OF NITRIC OXIDE SYNTHASE TO PROMOTE WEIGHT LOSS OR WEIGHT GAIN

INVENTOR: Richard Galbraith, MD, Ph.D.

DESCRIPTION: Obesity is an overwhelming health problem, with numerous strategies that have had marginal results in reducing the overall problem being overweight, which affects 60% of the US population. The inhibition of nitric oxide synthase (NOS) activity in the hypothalamus promotes weight loss. Targeting of NOS activity to the hypothalamus circumvents the side effects of systematic NOS modulation. The foundation of the invention is based on the understanding that the administration of cobalt protoporphyrin IX (CoPP) into the brain results in prolonged weight loss (in rodents). It is anticipated that the compound would be administered intracranially to the hypothalamus. Existing stereotactic imaging and delivery devices would make this a lower risk treatment than current gastric bypass surgery for weight loss, which currently has an 11% morbidity rate requiring surgical intervention for correction. This same targeting could be altered to induce the opposite affect, namely weight gain for those suffering anorexia. This form of administration would obviate the temptation for a patient to decrease caloric intake inappropriately.

ADVANTAGES: Targeting of hypothalamic NOS activity circumvents the side effects of systemic NOS inhibition. By targeting administration of CoPP to the hypothalamus, the dose of CoPP required is substantially less than the dose needed when administered systemically in order to effectively promote weight loss or weight gain.

PATENT STATUS: Patent pending

LICENSING STATUS: Worldwide rights available

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