

## Abstract View

### THE DEVELOPMENTAL AND DIET EFFECTS ON DOPAMINE D2R LEVELS IN A RODENT MODEL OF OBESITY: AN AUTORADIOGRAPHY (ARG) AND MICROPET ( $\mu$ PET) STUDY

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Obesity is an epidemic affecting one-third of all American adults (NIH, 2003) and about 15 percent of children and adolescents are now overweight (CDC, 2004). The involvement of dopamine (DA) in pathological eating and obesity is poorly understood and has not been directly assessed. DA plays a major role in regulating food intake (Balcioglu et al, 1998) by modulating food reward via the mesolimbic circuitry of the brain (Martel et al, 1996) and there is a lot of evidence to suggest that DA may be one of the target neurotransmitters linking the genetic and environmental factors that cause obesity (Blum, 2000). DA is involved in the regulation of food intake, and obese persons have decreased D2R availability in the striatum (Chen et. al. 2004). In this study, we used male young (4weeks old) Zucker Obese (which have a leptin deficiency that make them more prone to becoming obese) and Lean (Le) rats, divided into unrestricted and restricted diet groups (20 g/day) diet. The objective of the study was to understand the developmental and diet effects on D2R levels in obese and lean Zucker rats. D2R levels were examined by both ARG ([<sup>3</sup>H] spiperone) and  $\mu$ PET ([<sup>11</sup>C] raclopride) at 4, 18 and 52 weeks. Data was analyzed using a 1-way ANOVA at 4, 18 and 52 weeks and consisted of the following: 1) D2R levels within each group as well as between groups.

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