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# IMPACT OF PERINATAL OVERFEEDING ON BODY MASS OF FEMALE WISTAR RATS

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Childhood obesity is an important independent risk factor for later metabolic diseases, such as type 2 diabetes, dyslipidemia, and arterial hypertension. However, males and females respond differently to this nutritional challenge. Here, we propose an experimental study of the effects of early obesity, using the litter reduction model, in the body mass of female adult Wistar rats. The litters were delivered on postnatal day 0 - PN0. In PN2, the offspring of Wistar rats was standardized in 9 (normal litter – NL) and 3 (reduced litter – SL) pups. Animals were weaned at PN21 and kept at 3 per cage for both groups until PN120. In PN120, the rats were weighed and euthanized, and then the tissues were collected, according to the approval of the Ethics in Animal Use Committee n° 4831020822. Our data points to a body weight difference in PN21 between the groups, where the SL group was overweight compared to the NL group ($p<0.0001$). In PN120, the SL group continued with a higher weight than the NL group ($p <0.01$). SL rats showed increased weight in periovarian, periuterine, retroperitoneal, mesenteric and brown fat ($p=0.002$, $p<0.0001$, $p=0.001$, $p=0.002$ and $p=0.0001$, respectively) compared to NL animals. Taken together, the present data shows that females Wistar rats are vulnerable to the effects of early in life obesity on body mass, leading to a greater predisposition to later risk factors associated with obesity.

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