

## **EXPOSURE OF YOUNG ANIMALS TO NUTRITIVE AND NON- NUTRITIVE SWEETENERS AND THEIR METABOLIC EFFECTS IN ADULTHOOD**

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Sucralose (SCL) is one of the most widely used edulcorants in the world, including by children and adolescents, but its effects on metabolic programming are not sufficient and conclusive. In this study we evaluated whether ingestion of SCL or sucrose (SUC) by young rats interferes with metabolic parameters in the adult rat. We used 21-day-old male wistar rats, which received pure water (control) or water added SUC or SCL, until 60 days of age. When they reached 90 days of age, half of the animals were fed a high fat diet (HFD). The animals were euthanized at 120 days of age. When fed only the standard diet, SUC intake in the young phase caused significant ( $p < 0,05$ ; ANOVA) increase in body weight (11%), adiposity (48%), insulinemia (53%) and insulin resistance (56%) and reduced lipolytic response to adrenergic stimulation (53%) in the adult animal. When fed the HFD diet, both sweeteners causing significant ( $p < 0,05$ ; ANOVA) increases in adiposity (SUC=32%; SCL=36%) and liver fat (SUC=34%; SCL=41%), with increased insulinemia (75%) only in the SLC group. We conclude that adding SUC and SCL to the diet during youth may increase the risks of obesity, insulin resistance and hepatic steatosis in adulthood and accentuate the metabolic disturbances caused by HFD diets.

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