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## Effects of in Utero BPA Exposure and Postnatal Trans Fat Diet on Childhood Obesity in Sprague Dawley Rats

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Bisphenol A (BPA), which can be passed from mother to fetus Trans placental, has been linked to obesity. BPA levels are correlated with increase in body mass index (BMI) and waist circumference (WC) in both children and adults. Similar findings were observed with Tran's fat diet (TFD) intake. Thus in this study we aimed to investigate whether in utero BPA exposure and postnatal TFD worsen obesity parameters. Eight pregnant Sprague Dawley rats were divided into two groups: control group (CTL) and no-observed-adverse-effect level (NOAEL) dosage BPA-exposed group (BPA; 5000 µg/kg/day). BPA treatment was stopped at the end of gestation and off springs was delivered normally. From postnatal day (PND) 22 onwards, off springs were fed with 25% kcal TFD, forming CTL-TFD and BPA-TFD groups. BPA mothers showed significant increase in body weight (BW) ( $305.9 \pm 18.0$  g;  $p < 0.05$ ), WC ( $17.2 \pm 0.8$  cm;  $p < 0.05$ ) and water intake ( $45.4 \pm 4.0$  ml;  $p < 0.05$ ) from gestational day (GD) 2 to GD14, as compared to CTL mothers ( $275.4 \pm 11.0$  g,  $16.4 \pm 0.3$  cm and  $40.8 \pm 5.6$  ml, respectively). Nevertheless, food intake, systolic, diastolic and mean arterial blood pressure between CTL and BPA groups were not significantly different, including the number of male and female newborns delivered. All off springs exhibited incline in BW and WC from PND22 to PND35 (adolescence), but no significant differences were observed between CTL-TFD and BPA-TFD. Similar patterns were observed with their water and food intake, except for BPA-TFD which demonstrated significant increase in food intake from PND28 to PND35, as compared to CTL-TFD (68.4% and 18.8%, respectively). These data suggest that prenatal NOAEL dosage of BPA and postnatal TFD may not lead to childhood obesity. However, further investigation is required to discover the prolonged effects of these exposures into adulthood.

### Biography:

Sarah Zulkifli is a postgraduate student pursuing MSc in Medicine at University Technology MARA (UiTM), Malaysia. Her current research involves the usage of environmental pollutant bisphenol A (BPA) and Tran's fat diet to induce obesity in Sprague Dawley rats. She is passionate in conducting research activities and has experience in blotting, DNA cloning, zebra fish microinjections well as immunostaining. Sarah graduated from University College London with a BSc in Neuroscience. Her final year project for degree was about the association between GABAergic deficits and Rett syndrome, an autism-like disorder which occurs mostly in girls.