PROJECT RESUME

Ketogenic diets consist of four parts fat (long chain triglycerides) to one part combined protein and carbohydrate ratio, supplemented with vitamins and minerals. Due to their perceived benefits in disease and well-being, such diets have gained in popularity in recent decades. While the physiological basis of how ketones affect the functioning brain is being elucidated, the neurological consequences of a maternal ketogenic diet on the developing foetus remain largely unknown. Using the neuroepithelial cell line NE-4C and a murine model of maternal ketosis the goals of this proposal are to identify structural, cellular and functional alterations that may lead to functional deficits, at key stages of neural stem cell proliferation, gliogenesis, neurogenesis, cell migration and differentiation. The goals are to test the effects of the ketone bodies beta-hydroxybutyrate and acetoacetate on the development and maturation of neuroepithelial cells, placing a spotlight on the stem and phenotypic characteristics. Based on existing research, it is anticipated that the growth and differentiation of neural stem cells will be affected by the ketogenic diet.

*File: USVRS Project Resume 201819 BARRY*