

Research Project Proposal
Academic year 2015-2016

Project Nº 51
Title: Impact of an integral intervention in children with risk of diabetes in Navarra: genetic and epigenetic markers study.
Department/ Laboratory Dpto. Ciencias de la Alimentación y Fisiología, Facultad de Farmacia Unidad de Endocrinología Pediátrica, Clínica Universidad de Navarra
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Summary <i>Objectives:</i> 1) To implement a comprehensive therapeutic intervention program, based on Mediterranean Diet (MD) and increased physical activity, in children with central obesity, and 2) To measure the effectiveness of this program by assessing changes in lifestyle factors and evaluating biological and molecular parameters (genetic and epigenetic markers). <i>Methodology:</i> Randomized, controlled, two-year intervention in a sample of 220 subjects (7 to 16 years) with central obesity, to evaluate the effect of two interventions: a) an intensive lifestyle based on DM, increased physical activity and behavioural therapy, b) non-intensive with healthy diet recommendations following standard paediatric advice. At 3, 10, 17 and 24 months after the intervention the following changes will be assessed: a) HOMA, body adiposity, and cardiovascular risk factors, b) diet, and physical activity, c) quality of life. Genetic and epigenetic markers will be evaluated by genotyping SNPs in RI related genes, and the analysis of: a) DNA methylation in genes related to RI; b) expression of microRNAs; c) telomere length.



References

- Moleres A, et al. Obesity susceptibility loci on body mass index and weight loss in Spanish adolescents after a lifestyle intervention. *J Pediatr.* 2012; 161:466-470.
- Marti A, Ordovas J. Epigenetic light up the obesity field. *Obesity Facts*, 2011; 4:187-90.
- Moleres et al. Differential DNA methylation patterns between high and low responders to a weight loss intervention in overweight or obese adolescents: the EVASYON study. *FASEB J.* 2013; 27:2504-12

POSSIBILITY OF PhD

YES * (PhD grant required)