

Reference values of IL-6 and TNF α in Mexican adolescents by BMI

R. V. Pardo-Morales¹, M. G. Zúñiga-Torres², B. E. Martínez-Carrillo², S. Gómez-Martínez³,
A. Marcos³ and R. Valdés-Ramos²

¹Hospital of Gynecology and Obstetrics, Instituto Materno Infantil del Estado de México, Mexico, ²Center for Research and Graduate Studies in Health Sciences, Faculty of Medicine, Universidad Autónoma del Estado de México, Mexico and ³Instituto de Ciencia y Tecnología de los Alimentos y Nutrición (ICTAN-CSIC), Madrid, Spain

IL-6 is a cytokine mediator in inflammation and stress, produced by different cell groups, including adipocytes, it has been found associated with BMI⁽¹⁾. TNF α is a cytokine produced by monocytes, lymphocytes, adipose tissue and muscle⁽²⁾, it is able to increase production of IL-6, the adipose tissue of obese individuals have an over-expression of mRNA for TNF α receptor 2 in relation to BMI⁽³⁾.

The aim of the present study was to provide reference values of some cytokines in Mexican adolescents by BMI status. A cross-sectional sample of 115 adolescents aged 12–18 years, from the city of Toluca, Mexico, was measured for weight and height for BMI calculation, they were divided into non-overweight, risk of overweight/overweight according to Centers for Disease Control (CDC) paediatric criteria. IL-6 and TNF α from stimulated supernatant were analysed with Human Th1–Th2 cytokine Cytometric Bead Array II kit (BD Biosciences Pharmingen, San Diego, CA, USA), and detected by flow cytometry (Facs Diva, BD[®])⁽⁴⁾.

	Male				Female			
	Non-overweight		Risk of overweight and overweight		Non-overweight		Risk of overweight and overweight	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
IL-6 (pg/ml)	576	750	112	67.1	740	1070	621	859
TNF α (pg/ml)	58.9	39.0	45.0	6.3	89.8	116	56.9	35.0

As we show, in subjects with risk of overweight or overweight values of both IL-6 and TNF α are lower in comparison with non-overweight adolescents; however, statistical differences were not found. This information may be used in the future as both, reference values and comparison points by gender, BMI status, ethnic and technique of determination.

- Hotamisligil GS, Arner P, Atkinson RL *et al.* (1997) *Diabetes* **46**, 451–5.
- Recasens M, Ricart W & Fernández-Real JM (2004) Obesidad e Inflamación. *Rev Med Univ Navarra* **48**, 49–54.
- Fried SK, Bunkin DA & Greenberg AS (1998) *J Clin Endocrinol Metab* **83**, 1313–1316.
- Rodríguez-Caballero A, García-Montero AC, Bueno C *et al.* (2004) *Lab Invest* **84**, 1387–1398.