Lifestyle and T-helper 1 and 2 Related Cytokines in Healthy Volunteers

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ABSTRACT. Background: Allergic and immunological disorders are often caused by environmental substances.

Methods: To determine whether lifestyle affects the Th1/Th2 cytokine balance, a total of 318 healthy volunteers were subjected to a questionnaire for lifestyle grouping and serum analysis for levels of Th1/Th2-related cytokines. Interferon (IFN)-γ, interleukin (IL)-2, IL-4 and IL-10 were analyzed by flow-cytometry.

Results: Serum levels of the four cytokines studied were not measurable in approximately 60% of volunteers (IFN-γ 56.3%, IL-2 61.6%, IL-10 50.9%, IL-4 61.6%). Among volunteers for whom cytokine levels were measured, there were no correlations between cytokine levels and lifestyle. However, factor analysis demonstrated that a better lifestyle was strongly linked with higher levels of Th1 cytokines such as IFN-γ and IL-2.

Conclusions: These results suggest that a better lifestyle may prevent allergic diseases.

Key words ① **lifestyle** ② **cytokine** ③ **Th1/2** ④ **questionnaire** ⑤ **immunology**

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