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Association of sleep habits and risk factors for metabolic disorders in children

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INTRODUCTION

Sleep is a complex and essential biological process that is required on a daily basis for all humans, playing a vital role in the maintenance of the homeostasis in short and long term.

The lack of sufficient amounts of sleep is a hallmark of *modern living*, and it is commonly perceived that in the long run it has serious effects on our health [1].

OBJECTIVE

The aim of this is to investigate the role of sleep hours in correlation with risk factors for metabolic disorders in a children population.

METHODS

- The program was implemented in 949 children (5-12 years old) living in Sparta-Greece.
- The lifestyle was determined by using specially designed questionnaires.
- Anthropometric measurements were made.
- In 480 of them a determination of the hematological and biochemical profile was conducted.
- Our research was conducted with the permission from the Greek Ministry of Education and Religious Affairs, Culture and Sports & the consent of the individuals as well as the parents of children.

**DEAR SLEEP,
I KNOW WE HAD PROBLEMS
WHEN I WAS YOUNGER,
BUT I LOVE YOU NOW.**

RESULTS

After correlating all the measurements with sleep habits with statistical significance ($p \leq 0.05$), we arrived at the following findings:

❖ Children tend to sleep earlier when:

- having breakfast ($p < 0.001$)
- consuming more fruits ($p < 0.001$), vegetables ($p = 0.005$), dairy products ($p < 0.001$)/week

❖ The earlier a child goes to bed in the night the less:

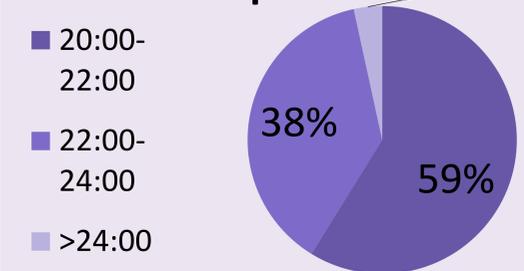
- tired it feels when it wakes up in the morning ($p < 0.001$)
- anxiety or stress it feels ($p < 0.001$)

Children who eat non-homemade food sleep late in the night ($p < 0.001$)
Prematurely born children start their night sleep later ($p = 0.047$)

Children who sleep late (after 10:00 p.m.) exhibited higher:

- blood pressure ($p = 0.006$)
- hip circumference ($p = 0.007$)
- BMI% ($p = 0.005$)
- WC% ($p = 0.04$)
- glucose ($p = 0.013$)
- urea levels ($p = 0.030$)

Time to sleep



Children who sleep after midnight have decreased plateletcrit ($p = 0.041$) and tends to decreased platelets ($p = 0.071$)

CONCLUSIONS

It is perceived that in an effort to maintain body weight and to prevent the metabolic [2], hematological and immunological complications of obesity [3,4], it is necessary not only to preserve an appropriate diet and exercise program but also to keep adequate sleep hours.

REFERENCES

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- [4] Stephen C. Woods. The American Journal of Medicine, Vol 120 (3A), March 2007

