



## Lifestyle habits and arterial hypertension in children and adolescents

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The frequency of the appearance of hypertension in children and teenagers is increasing. The increased blood pressure (BP) in childhood and teenage life usually evolves into hypertension, cardiovascular and kidney complications in adult life.

### Aim

To investigate the effect of anthropometric characteristics and lifestyle habits in children's and adolescents' Blood Pressure



### Methodology

The sample included :

**children** (< 12 years old) from kindergartens and primary schools of Lakonia (949), **teenagers** (12-18 years old) from secondary schools of Attica (178) and Kalamata (372) in Greece from 2011-2014. The **nutritional habits**, the **sleep habits** and the **physical activities** were evaluated with the use of a standardized questionnaire. **Anthropometric measurements** were taken and the blood pressure was determined. A written consent was given by the parents to the participation in the project. The statistical significance was set at  $p < 0,05$ .

## Results

### Lakonia (< 12 years old)

- ❖ 39% of the boys and 29% of the girls had increased blood pressure (BP).
- ❖ There was found a positive connection between BP, Body Mass Index (BMI%) ( $p=0,001$ ) and waist circumference (WC%) ( $p=0,001$ ).
- ❖ **The consumption of cereal** ( $p=0,001$ ), **olive oil** ( $p=0,004$ ), **fast food** ( $p=0,019$ ) increases the BP.
- ❖ **The consumption of vegetables** ( $p=0,001$ ) reduces the BP.
- ❖ **The later they sleep** (after 22:00) ( $p=0,006$ ) the more the BP increases.
- ❖ **The afternoon nap** ( $p=0,001$ ) and the satisfactory duration of night sleep, reduce the BP.

### Attica (16-18 years old)

- ❖ 35% of the boys and 59% of the girls had increased BP.
- ❖ The increase of the WC% ( $p=0,025$ ) and the BMI% ( $p=0,02$ ) increases the BP especially in boys.
- ❖ **The absence of breakfast** increases the BP ( $p=0,032$ ) in girls.
- ❖ **The consumption of pulse** ( $p=0,043$ ), **fruit** ( $p=0,02$ ) and **fish** ( $p=0,022$ ) reduces the BP.
- ❖ **The consumption of rice** ( $p=0,022$ ), **cereal** ( $p=0,044$ ), **dairy products** ( $p=0,0036$ ), and **sweets** ( $p=0,025$ ) increases the BP.
- ❖ For overweight and obese teenagers the **reduced duration of sleep** ( $p=0,05$ ) increases the BP.
- ❖ **The later they sleep** (after 22:00) ( $p=0,03$ ) the more the BP increases.
- ❖ 57,86% **watch TV** during their meals which is positively correlated with WC% ( $p=0,035$ ) and BP ( $p=0,002$ ).



### Kalamata (16-18 years old)

- ❖ 23% of the boys and 12,1 % of the girls had increased Blood Pressure (BP).
- ❖ A positive correlation between **BP**, **BMI%** ( $p=0,001$ ) and **WC%** ( $p=0,006$ ) was found
- ❖ **The absence of breakfast** increases the BP ( $p=0,024$ ).
- ❖ **The consumption of pulse** ( $p=0,031$ ) and **fruit** ( $p=0,028$ ) reduces the BP.
- ❖ **The consumption of rice** ( $p=0,002$ ), **cereal** ( $p=0,017$ ) and **sweets** ( $p=0,001$ ) increases the BP.
- ❖ **The consumption of fish** ( $p=0,018$ ) reduces the BP.

For the children and teenagers as a whole, in all areas, it was found that the family history of cardiovascular diseases and diabetes, is connected to high BP.



## Conclusion

- A high percentage of children and teenagers have an increased BP for their age.
- This is due to the increasing child and teenage obesity, the lack of exercise and sedentary life, the lack of sleep and the time children spend in front of screens.
- For prevention and dealing with the problem a balanced diet, physical activity and adequate sleep are suggested.

