



The Association between Obesity and Asthma in Children



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Introduction

- ❖ The simultaneous increase in asthma and obesity prevalence has been widely discussed in past twenty worldwide
- ❖ The prevalence for children asthma and obesity has been increased concurrently in Taiwan these years.
- ❖ The research finding related to the association between children asthma and obesity is still inconsistent and scanty in Taiwan

Results

- ❖ 94 children with asthma were recruited. Higher BMI was correlated with a worse C-ACT score (OR 1.15, 95% CI 0.99 to 1.37)
- ❖ A more frequent intake of hamburger, oily snacks, sweetened drinks and chocolate or candies was associated with the worse asthma control (OR 1.85, 95% CI 0.89 to 3.99)
- ❖ Children from lower SES (OR 4.66, 95% CI 1.43 to 16.22), and born with mothers in older ages (OR 1.14, 95% CI 1.03 to 1.31).
- ❖ Children had better asthma control if their parents reported that the doctor had ever encouraged their children to engage in more physical activities (OR 0.21, 95% CI 0.05 to 0.80; $p < 0.02$).

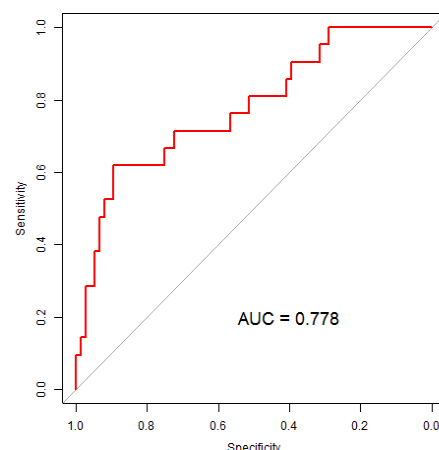
Conclusion

- ❖ Higher BMI is correlated with a worse asthma control among children with asthma in Taiwan
- ❖ A more intake of unhealthy food may also contribute to their asthma severity
- ❖ Children with both epidemics form a unique group and should receive specific care
- ❖ The role of diet pattern, maternal age at delivery, family social-economical status and physician's encouragement to children's exercise between the association of obesity and asthma in children need future investigations.

Methods

- ❖ A cross-sectional study was conducted in National Taiwan University Hospital in Taiwan from December 2009 till December 2011
- ❖ Children with diagnosed asthma were recruited
- ❖ Demographic data, asthma history, diet pattern and daily activity were recorded through questionnaires
- ❖ Each child's current weight and height were measured to acquire their age- and gender-adjusted BMI values
- ❖ Asthma control level was defined by a summary score from the Children Asthma Control Test (C-ACT)
- ❖ Food frequency questionnaire (FFQ) was adopted to evaluate children diet pattern

Variables	N(%)	Mean (±SD)	Minimum	Maximum
Age				
Boys	62(66)	8.7(±2.4)	4.7	14.8
Girls	32(34)	10.3(±3.1)	5.8	15.9
BMI(-th)				
Boys		57.39 (±33.09)	2	98
Girls		49.17 (±31.01)	1	99
Variables		Variables		N(%)
Obesity		Asthma Control Test		
Normal	75 (79.8)	Well controlled	75(79.8)	
Obese	19 (20.2)	Not well controlled	19(20.2)	



	Odds Ratio	5%	95%
Higher BMI	1.16	0.99	1.37
Unhealthy food	1.85	0.89	3.99
Lower SES	4.66	1.44	16.22
Older maternal age	1.15	1.03	1.31
Doctor's Education	0.21	0.05	0.80

References

- ❑ Ahmad, N., Biswas, S., Bae, S., Meador, K. E., Huang, R., & Singh, K. P. (2009) Association between obesity and asthma in US children and adolescents. *Journal of Asthma* **46**(7), 642-646.
- ❑ Gilliland, F. D., Berhane, K., Islam, T., McConnell, R., Gauderman, W. J., Gilliland, S. S., . . . Peters, J. M. (2003) Obesity and the risk of newly diagnosed asthma in school-age children. *American Journal of Epidemiology* **158**(5), 406-415.
- ❑ Liu, P. C., Kieckhefer, G. M., & Gau, B. S. (2013). A systematic review of the association between obesity and asthma in children. *Journal of Advanced Nursing*, doi: 10.1111/jan.12129

The Ratio of Obesity in Each Age Group

