ASSOCIATION OF CARDIOVASCULAR RISK FACTORS AND EARLY VASCULAR AGEING IN TYROLEAN ADOLESCENTS – EVA TYROL STUDY

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Background and Aim Atherosclerosis is the most common cause of cardiovascular disease (CVD) and is well known to start early in life. The prevalence of classic CVD risk factors like smoking, overweight, hypertension and unfavorable blood lipids increases in childhood and adolescence. There is evidence that especially overweight and obesity in the young is associated with an increased risk for CVD in adulthood. **Therefore this study aims to assess the prevalence of cardiovascular risk factors and their association with early vascular ageing (EVA) in a large cohort of healthy Tyrolean adolescents.**

Methods

Results

	Total (n=1573)	male (n=691)	female (n=882)	p-value ^a
Age (years)	16.0 (0.9)	16,1 (1,0)	15,9 (0,9)	0.002
BMI (kg/m ²)	21.8 (3.6)	21,8 (3,7)	21,7 (3,5)	0.721
Systolic BP (mmHg)	122.6 (11.2)	127,7 (10,6)	118,6 (9,9)	<0.001
Diastolic BP (mmHg)	71.4 (7.5)	71,0 (7,5)	71,7 (7,6)	<0.001
Activity (min/day)	54.1 (41.4)	64.8 (43.1)	45.7 (38.0)	<0.001
cIMT max (mm)	0.44 (0.06)	0,45 (0,01)	0,43 (0,01)	<0.001
cIMT mean (mm)	0.39 (0.05)	0,40 (0,01)	0,38 (0,01)	<0.001

Table 1 Characteristics of the study population, values presented as mean $\pm$ SD.

^a Man-Whitney U Test

Graph 1 Distribution of max cIMT (mm) in different age groups

	mean cIMT			max cIMT		
Variable	B (95% CI)	β	p-value	B (95% CI)	β	p-value
Male sex	0.41 (0.52 – 0.31)	0.20	<0.001	0.39 (0.49-0.29)	0.20	< 0.001
BMI z-score	0.08(0.03-0.13)	0.08	0.003	0.07 (0.02-0.12)	0.07	0.006
Daily activity	0.03 (0.00-0.06)	0.58	0.027			
SBP z-score	0.06 (0.01-0.11)	0.06	0.032	0.07 (0.02-0.12)	0.07	0.006

Table 2 Association of CVD risk factors and cIMT, stepwise linear regression analysis

Conclusion Risk factors for atherosclerosis are present in Tyrolean adolescents and are already associated with early vascular ageing. An adequate health intervention programme suitable for the young is necessarily needed.

¹ Knoflach M. et al. Cardiovascular risk factors and atherosclerosis in young males: Atherosclerosis Risk Factors in Male Youngsters (ARMY study). Circulation. 2003 Sep 2;108(9):1064-9.

² Knoflach M. et al. Cardiovascular risk factors and atherosclerosis in young women: Atherosclerosis Risk Factors in Female Youngsters (ARFY study). Stroke. 2009 Apr;40(4):1063-9.

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