



Conference Abstract

# YI 1.2 Ideal Cardiovascular Health Score Declines from Adolescence to Emerging Adulthood

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**Keywords**

Adolescents  
 cardiovascular-aging  
 birth-cohort  
 sex-differences

**ABSTRACT**

**Purpose:** To define and compare cardiovascular (CV) health scores (CHS) from adolescence (17 yrs) to emerging adulthood (24 yrs) using longitudinal data from a large British birth cohort.

**Methods:** 3142 participants from the Avon Longitudinal Study of Parents and Children (ALSPAC) study attended clinical investigations at 17.8 ± 0.4 yrs and 24.0 ± 0.8 yrs (38% male). CV health was assessed using smoking status, body mass index (BMI), plasma glucose, cholesterol, sitting brachial blood pressure, left ventricle (LV) hypertrophy, arterial stiffness (carotid-to-femoral pulse wave velocity) and atherosclerosis (carotid intima-media thickness) metrics. Prevalence was stratified into poor (0\_points), intermediate (1\_point) and ideal (2\_points) health categories and a composite, individual-level CHS for all 8 metrics was calculated (total range, 0–16 points). Prevalence of ideal health was assessed using ANOVA and linear mixed modelling assessed age##sex modifications.

**Results:** Overall CHS was high at 17 yrs but from 17–24 yrs the proportion of ideal scores decreased for all metrics, in both sexes (Table). The average overall CHS decreased from 14.97 ± 1.1 to 13.99 ± 1.4 in males ( $p < 0.0001$ ) and 14.82 ± 1.2 to 14.28 ± 1.4 in females ( $p < 0.0001$ , age##sex  $p = 0.0001$ ). Significant sex differences were observed in the proportion of individuals with ideal health at both ages, with males having a higher CHS than females at 17 yrs but a lower CHS at 24 yrs.

**Conclusions:** Despite being relatively early in the life-course, CV health declines from 17 yrs to 24 yrs in both sexes, and more substantially in males. Emerging adulthood is a distinct period of lifestyle change and an important time to control CV risk factors to improve future CV health.

**Table**

Age	Male							Female							Sex differences				
	17 yrs			24 yrs				p	17 yrs			24 yrs				p	p	Age##sex p	
Score	0	1	2	0	1	2	0		1	2	0	1	2	0	1				2
Smoking	22.6	19.3	58.1	27.8	35.6	36.6	<0.0001	27.8	24.3	47.9	25.7	36.5	37.8	<0.0001	<0.0001	0.29	<0.0001		
BMI	4.9	13.3	82.1	10.4	30.0	59.6	<0.0001	6.7	15.4	77.9	14.6	21.5	63.8	<0.0001	0.006	0.97	0.02		
Glucose	0.4	9.1	90.5	0.6	34.7	64.7	<0.0001	0.3	2.6	97.1	0.4	16.1	83.5	<0.0001	<0.0001	<0.0001	<0.0001		
Cholesterol	0.0	1.5	98.5	2.1	11.7	86.2	<0.0001	0.1	4.5	95.4	3.0	13.6	83.3	<0.0001	0.002	0.07	0.14		
Blood pressure	0.2	0.5	99.3	0.6	5.4	94.0	<0.0002	0.3	1.7	98.0	0.7	4.1	95.2	<0.0001	0.001	0.3	0.0001		
LV hypertrophy	0.6	0.6	98.9	1.4	3.7	94.8	<0.0001	0.5	1.6	97.8	1.1	3.8	95.1	<0.0001	0.43	0.75	0.2		
Arterial stiffness	0.5	0.9	98.6	4.8	6.7	88.5	<0.0001	0.0	0.4	99.6	1.8	2.9	95.4	<0.0001	0.01	<0.0001	<0.0001		
Atherosclerosis	0.0	0.9	99.1	0.0	1.2	98.8	0.0005	0.0	0.3	99.7	0.0	0.4	99.6	0.9	0.07	0.04	0.6		
Average CHS	14.97 ± 1.1			13.99 ± 1.4				<0.0001	14.82 ± 1.2			14.28 ± 1.4				<0.0001	0.01	<0.0001	<0.0001

Data are % of participants in each category for each risk factor. 0 = poor, 1 = intermediate and 2 = ideal. Age##sex p value for modification.

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