

PREDICTIVE VALUE AND RATE OF CHANGE  
OF BLOOD PRESSURE THROUGHOUT  
ADOLESCENCE : A BELGIAN PROSPECTIVE  
STUDY

Epidemiological prospected studies of blood pressure (BP) in juvenile aim to answer the question which concerns to what extent BP measurements in childhood or adolescence may contribute to an early identification of subjects at risk for chronic hypertension. Predictive value and rate of change of BP have been

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estimated on the basis of yearly BP measurements (follow-up = 4 years) in 240 Belgian adolescents whose mean initial age was 12.8 years. Looking at the *correlations* between successive examinations, it is obvious that BP already tracks in adolescence. The coefficients measured between the first and the fifth BP levels are respectively 0.43 for systolic BP (SBP) and 0.37 for diastolic BP (DBP). *Predictive values* defined by the proportion of those subjects in upper quartile of the SBP distribution at the initial visit who remain in that area 4 years later, indicates that (60%) keep that rank around the end of adolescence. Corresponding predictive value when cut-off point is set at the 90th P is 50%. Despite of these observations, the screening test for early detection of young subjects who will remain at high level of BP (> P90) at the end of the follow-up appears to be highly specific (96.7%) but lesser sensitive since 27% of subjects at risk of sustained elevation of BP could be correctly classified at the initial screening. Linear regression of the *rate of change on initial value* of BP produces negative but non significant coefficient equal to - 0.06 for SBP and - 0.04 for DBP. So, contrary to adult, initial BP recorded in early adolescence does not determine the rate of change of BP over time and suggests that a high BP level at age 12 is not related to a faster increase in BP until the beginning of adulthood.

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