

Online Supplementary Material

Dynamic prediction of high blood pressure in childhood in a population-based birth cohort: a model development study

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Supplemental Table S1 List of potential candidate predictors, with references to relevant literature

Candidate predictors

Maternal, paternal and family characteristics

Age mother at pregnancy (1)
Maternal smoking during pregnancy (1, 2)
Gestational weight gain (3, 4)
Maternal hypertensive disease in pregnancy (5-8)
Parity (9)
Maternal educational level (10-12)
Paternal educational level (10-12)
Maternal pre-pregnancy BMI (1, 3, 4, 13)
Maternal BMI at later age of child (14)
Partner BMI at baseline (1, 13, 14)
Paternal smoking (before pregnancy) (8)
Maternal smoking (after pregnancy) (8)
Hypertension in biological mother (7, 8, 11, 15-17)
Hypertension in biological father (7, 8, 11, 15-17)
CVD in first degree relatives of biological mother (11, 16)
CVD in first degree relatives of biological father (11, 16)

Child characteristics

Gender (18, 19)
Singleton or not (20)
Gestational age at birth (7, 8)
Birth weight SDS (8, 21-24)
Head circumference at first visit to child health care center (25)
Ethnicity (26, 27)
Being breastfed or not (1)
Exposure to tobacco smoke in the home environment (12)
BMI SDS (1, 7, 8, 11, 17, 19, 23, 24)

BMI, body mass index; CVD, cardiovascular disease; SDS, standard deviation score

Supplemental Table S2 Logistic regression models for predicting, at different ages between 6 months and the age of 6 years, the risk of high blood pressure at the age of 9-10 years

| Predictors | Coefficients from the logistic regression models per age | | | | | |
|-------------------------------------------------|-----------------------------------------------------------------|------------------|------------------|------------------|------------------|------------------------|
| | 6 months | 1 year | 2 years | 3 years | 4 years | 5-6 years ^a |
| Maternal hypertensive disease in pregnancy | 1.00 | 0.99 | 0.98 | 0.98 | 0.99 | 0.99 |
| Maternal educational level | | | | | | |
| No/primary education | <i>reference</i> | <i>reference</i> | <i>reference</i> | <i>reference</i> | <i>reference</i> | <i>reference</i> |
| Secondary education | -0.16 | -0.14 | -0.13 | -0.14 | -0.07 | -0.06 |
| Higher education | -0.80 | -0.78 | -0.79 | -0.79 | -0.69 | -0.62 |
| Maternal pre-pregnancy BMI (kg/m ²) | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0.01 |
| Child ethnicity | | | | | | |
| Western | <i>reference</i> | <i>reference</i> | <i>reference</i> | <i>reference</i> | <i>reference</i> | <i>reference</i> |
| Turkish | 0.92 | 0.96 | 0.92 | 0.89 | 0.88 | 0.69 |
| Moroccan | -0.34 | -0.33 | -0.36 | -0.34 | -0.36 | -0.43 |
| Surinamese | -0.31 | -0.28 | -0.25 | -0.22 | -0.22 | -0.35 |
| Other non-western | 0.43 | 0.46 | 0.46 | 0.45 | 0.43 | 0.32 |
| Birth weight SDS | -0.20 | -0.22 | -0.23 | -0.23 | -0.25 | -0.26 |
| Child BMI SDS | 0.13 | 0.19 | 0.19 | 0.24 | 0.35 | 0.56 |

BMI, body mass index; SDS, standard deviation score

^a Maternal pre-pregnancy BMI was not selected in the backward selection procedure at this age, but because it was selected at all other ages and therefore included in the dynamic prediction model, here we show the multivariable logistic regression model including maternal pre-pregnancy BMI.

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