An evaluation of the Metabolic Syndrome cut-offs for waist circumference and blood pressure: why we should be more cautious

S.N. Slagter, R.P. van Waateringe, A.P. van Beek, M.M. van der Klauw, J.V. van Vliet-Oostapchouk, B.H.R. Wollenbuttel
Dept. of Endocrinology, University of Groningen, University Medical Center Groningen, The Netherlands

Objective
In this study we evaluated the prevalence of metabolic syndrome (MetS) and its individual components, according to the Joint Interim Statement (JIS) definition using different cut-off values for waist circumference (WC) and in addition age-specific BP values, within sex-, body mass index (BMI)- and age combined clusters of a representative population sample.

Methods
Cross-sectional data of 74,531 western European participants, aged 18–79 years, were used from the Dutch Lifelines Cohort study. MetS was defined according to the JIS definition with the low- and high threshold, respectively ≥94 (men)/80 (women) cm and ≥102/88 cm. Furthermore MetS was defined, using either the JIS cut-off values for elevated BP (≥130/85 mmHg) or age-specific values as recommended by the eight report of the Joint National Committee (JNC 8) (≥140/90 mmHg for those aged <60 yrs, and ≥150/90 mmHg for those aged ≥60 yrs).

Major findings
We observed a gender disparity with age and BMI for the prevalence of MetS and the WC and BP component. According to the JIS-94/80 and JIS-102/88 definition, respectively 26.0% and 19.2% men, and 14.1% and 12.1% women fulfilled the criteria for MetS. The prevalence of abdominal obesity and elevated BP was particularly high in this population (figure 1), which is related to the inappropriate cut-off values used to define these risk factors. Applying age-specific BP cut-offs resulted in a 0.6-11.9% drop in the prevalence of MetS and a 6.0-36.3% drop in elevated BP (figure 2).

Our data contribute to the discussion to revise the WC cut-offs for identifying abdominal obesity in Europeans, and support the need to establish BP cut-offs appropriate for age.