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In their well done case-control study with highly selected patients, Salim Yusuf and colleagues¹ find that waist-to-hip ratio is a better indicator of myocardial infarction than BMI

| | Odds ratio (95% CI) for fifth quintile* |
|--------------------------------|--|
| Coronary artery disease | |
| BMI | 1.98 (1.77–2.22) |
| WHR | 1.42 (1.26–1.61) |
| WHTR | 2.02 (1.76–2.31) |
| WC | 1.86 (1.63–2.13) |
| HC | 1.52 (1.36–1.70) |
| Type 2 diabetes | |
| BMI | 6.85 (6.09–7.71) |
| WHR | 3.57 (3.18–4.01) |
| WHTR | 8.20 (7.07–9.50) |
| WC | 7.69 (6.69–8.83) |
| HC | 4.32 (3.89–4.81) |
| Dyslipidaemia | |
| BMI | 2.86 (2.67–3.07) |
| WHR | 2.01 (1.87–2.17) |
| WHTR | 3.09 (2.87–3.33) |
| WC | 2.85 (2.64–3.07) |
| HC | 2.19 (2.05–2.34) |
| Hypertension | |
| BMI | 7.33 (6.80–7.91) |
| WHR | 2.47 (2.29–2.67) |
| WHTR | 6.60 (6.11–7.14) |
| WC | 6.80 (6.29–7.36) |
| HC | 4.98 (4.64–5.35) |

WHR=waist-to-hip ratio. WHTR=waist-to-height ratio.
WC=waist circumference. HC=hip circumference.
*Compared with first quintile; adjusted for age and sex.

Table: Association between anthropometric variables and cardiovascular risk factors

and stress the importance of large-scale studies in this field. We agree that indicators of abdominal obesity probably predict cardiovascular risk better than BMI; however, we believe that it is too early to recommend waist-to-hip ratio as a general measure of obesity and indicator of cardiovascular risk.

We have examined the association between several anthropometric variables and coronary artery disease, type 2 diabetes, dyslipidaemia, and hypertension in 48 353 primary-care patients (28 737 women) from the DETECT study,² using the same approach as Yusuf and colleagues. Waist and hip circumferences were measured with a tape between the lowest rib and the iliac crest and at the widest circumference around the pelvis, respectively. Blood pressure was measured according to the guidelines of the German Hypertension League and height and weight were measured. All measurements were done according to written instructions. Coronary artery disease, type 2 diabetes, and dyslipidaemia were recorded from physicians' diagnoses, intake of respective medications, or abnormal laboratory values from patients' records, and hypertension was diagnosed if blood pressure was higher than 140/90 mm Hg or if patients took antihypertensive drugs. We analysed the odds ratios for the respective disorders in quintiles of different anthropometric variables.

In our analysis, waist-to-hip ratio was a weaker predictor of these disorders than BMI. These findings became mainly insignificant for coronary artery disease after adjustment for other cardiovascular risk factors and anthropometric variables (table). Apart from hypertension, which was best predicted by BMI, waist-to-hip ratio predicted all other disorders slightly better than BMI.

We can only speculate on the reasons for these different findings. The design of the studies might play a part. Our

study was based on an unselected, nationally representative, primary-care sample,² as opposed to the case-control design by Yusuf and colleagues. In their study, controls were recruited mainly from other hospital wards. We cannot rule out that other diseases might have affected the anthropometric measures in controls, leading to potential bias. A prospective study over 7 years showed a parallel increase in waist and hip circumferences and only a weak association between changes in waist-to-hip ratio and visceral adipose tissue,³ and another study showed that waist-to-hip ratio and BMI, by contrast with waist circumference, were not related to mortality.⁴ These studies, in line with our observations, discourage the use of waist-to-hip ratio. The study by Yusuf and colleagues emphasises the importance of abdominal obesity for the prediction of cardiovascular risk, but the debate on how to measure it correctly goes on and is far from being decided.

We declare that we have no conflict of interest.

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