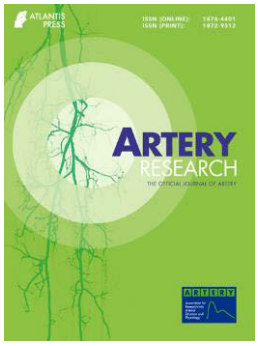

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P2.56: EFFECTS OF LEAN AND FAT MASS ON BONE MINERAL DENSITY AND ARTERIAL STIFFNESS IN ELDERLY MEN

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Parameter	C (n= 125)	MS (n= 138)	DBT (n= 29)	p
Age	54 ± 12	54 ± 11	51 ± 10	NS
Sex (% males)	70	64	52	NS
SBP (mmHg)	141 ± 18	141 ± 16	142 ± 10	NS
DBP (mmHg)	85 ± 11	86 ± 9	87 ± 10	NS
HR (bpm)	69 ± 9	71 ± 10	74 ± 10	NS
% abnormal IMT	19	33	41	.012
% Plaques	22	54	55	< 001
%Abnormal FMD	33	39	45	NS
%Abnormal PWV	30	38	65	.002
FS (mean)	10 ± 8	10 ± 6	25 ± 12	< 001
VS (mean)	2,1 ± 1,4	2,5 ± 1,4	3,0 ± 1,7	.004

Conclusions: 1- In a selected population of matched p. according to age, sex and BP, there seems to be an increase in the degree of VD when MS is present. 2- The pattern of VD in MS p. was close to that in DM p. consistent with the described increase in CV risk in MS.3-A VS may be useful in the clinical practice.

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P2.52
ASSOCIATION BETWEEN PWV AND DIFFERENT DEFINITIONS OF THE METABOLIC SYNDROME

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Objectives: To explore 1. the presence of arterial stiffness, as measured with pulse wave velocity (PWV) in subjects with the Metabolic Syndrome (MetS) and 2. the contribution of PWV and the MetS in the prediction of prevalent CVD in a 50-70-year-old Dutch population-based cohort.
Background: Inconsistent results have been published about 1. the relations between arterial stiffness and the MetS and 2. the role of both in the prediction of CVD. Most studies have been performed in selected high-risk populations.
Method: We measured arterial stiffness by PWV using tonometry in 1510 participants of the Nijmegen Biomedical Study and determined its associations with different definitions of the MetS (according to the NCEP, IDF and WHO). Multiple regression analysis was performed tot determine the role of PWV and MetS in CVD risk prediction.
Results: Both men and women with the MetS had a significantly higher PWV than those without the MetS, independent of the definition used (for IDF: men:+MetS:9.5(2.3)vs -MetS11.1(3.1)m/s, women:+MetS:9.1(2)vs -MetS 10.9(3)m/s). Age and gender were the main contributors to PWV, explaining 18.7% of the variance in PWV. Adding any definition of the MetS to the model increased the percentage explained variance of PWV to only 24% whereas adding all traditional CV risk factors predicted 43.1%. In regression analysis of prevalent CVD, the CV risk factors predicted 26.3% and adding PWV or the MetS did not improve the prediction of prevalent CVD.
Conclusion: Our results question the additive value of 1. using the definition of the MetS in the prediction of arterial stiffness and 2. measuring PWV and using the MetS in the prediction of prevalent CVD. Prospective studies have to determine the additive contribution of PWV and the MetS in CVD risk-prediction in general population.

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P2.54
INFLUENCE OF CENTRAL OBESITY ON EARLY CAROTID INTIMA-MEDIA THICKENING IS INDEPENDENT OF THAT FROM OTHER RISK FACTORS

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Its unknown if obesity or its associated risk factors influence early vascular change.
Methods: We investigated if anthropometric measurements, body mass index [BMI], waist/hip ratio [WHR], waist circumference [Wc] and Waist/height ratio WHTR, or metabolic parameters (glucose, insulin, lipid, uric acid and blood pressure {BP}) correlated more with Carotid intima-media thickness (IMT), vascular stiffness [Augmentation Index] and brachial artery reactivity). 100 Subjects (71F, 29M) without vascular events, BP <140/90, LDL < 4 mmol/l, glucose < 6.2 mmol/l participated.
Results: BMI, WHR, WC, WHTR correlated significantly with triglyceride, HDL, LDL, insulin, glucose, uric acid and BP levels ($p< 0.001$). IMT correlated with WHTR, BMI, WC, Glucose ($p<0.001$), Homeostasis Index (HOMA) and Cholesterol levels ($p<0.05$). Only Age, WHTR or BMI were significant correlates of IMT in a multivariate analysis (MVA) ($p<0.01$) including WHTR or BMI, with age, sex, SBP, HDLc and HOMA. Augmentation Index correlated with age ($p<0.0001$), WHTR and WC ($p<0.0005$) but with age only in a MVA. Vascular reactivity did not correlate with any anthropometric or metabolic parameters. Anthropometric cut off points, (BMI <25, WC <102cm M, <88cm F, WHR <0.9 M, <0.8 F, and WHTR < 0.5) significantly differenciated normal from abnormal metabolic and vascular measurements. The WHTR ratio < 0.5 was as reliable as the BMI cut-off < 25 in determining metabolic and vascular abnormalities. BMI and WHTR were strongly associated with 89% agreement ($p<0.0001$). These results demonstrated that anthropometric and metabolic parameters correlated, but anthropometric parameters were the significant correlates of vascular change. A waist/height ratio > 0.5 predicts both early vascular and metabolic changes. These data support a risk factor independent vasculotrophic effect of obesity.

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P2.55
CHANGES IN TRUNK FAT MASS AND PERIPHERAL LEAN MASS ARE ASSOCIATED WITH CHANGES IN CAROTID ARTERIAL STIFFNESS IN A HEALTHY POPULATION — A 6-YEAR FOLLOW-UP STUDY

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Introduction: In cross-sectional studies, total body fat mass and particularly central fat distribution are associated with greater arterial stiffness. How changes in body fat and body fat distribution impact on changes in large artery stiffness is unknown.
Methods: Data were derived from the Amsterdam Growth and Health Longitudinal Study (n=268; 126 male and 142 female). At age 36, body fat distribution was determined by dual-energy x-ray absorptiometry and arterial (carotid and femoral) properties were measured using ultrasound imaging. These measurements were repeated 6 years later. Data were analysed with multiple linear regression analyses.
Results: Increases in total body fat mass (standardized ß:-0.14, 95%CI:-0.37;0.08) and especially trunk fat mass (ß:-0.25, 95%CI:-0.49;-0.02) were associated with decreases in the carotid distensibility coefficient. In contrast, increases in peripheral lean mass were inversely associated with carotid Young's elastic modulus (ß:-0.27, 95%CI:-0.49;-0.05). These associations were independent of changes in other body composition compartments or riskfactors (i.e. gender, mean arterial pressure, total/HDL cholesterol ratio, triglycerides, glycated heamoglobin, heart rate). Changes in body fat distribution were not associated with changes in femoral artery stiffness.
Conclusion: Increases in trunk fat mass during adulthood have adverse effects on carotid stiffness, whereas increases in peripheral lean mass may counteract this.

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P2.56
EFFECTS OF LEAN AND FAT MASS ON BONE MINERAL DENSITY AND ARTERIAL STIFFNESS IN ELDERLY MEN

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Introduction: The aim of this study was to evaluate the influence of fat and lean mass on both arterial stiffness and bone mass density (BMD) in elderly men.
Methods: This study was performed in 169 French males over 60 years. Aortic stiffness was assessed by carotid/femoral pulse wave velocity (PWV) using a validated automated device (PulsePen®). BMD and body composition were determined with a dual-energy X- ray absorptiometry (DEXA) device in lumbar spine L1-L4, femoral neck and total body.

Results: Lean mass was positively correlated with the three T-scores accounting for 11.6%, 26.6% and 12.2 % of the variability in lumbar spine L1-L4, femoral neck and total body BMD T-scores respectively. Fat mass had no effect on BMD. However, fat mass was positively correlated with aortic PWV accounting for 9.8% of its variability. Lean mass was not a determinant of PWV. Hypertension, diabetes and dyslipidemia were associated with higher PWV but had no effect on BMD.
Conclusions: In males from a general population over 60 years of age, bone and arterial aging are differently influenced by lean and fat mass. Our results indicate that elderly men with high lean mass and low fat mass exhibit the best arterial and bone profile, with the lowest arterial stiffness and the highest BMD.

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P2.57

IMPAIRED ENDOTHELIAL FUNCTION MAY UNDERLIES INCREASED ARTERIAL STIFFNESS IN SOUTH ASIAN STROKE SURVIVORS COMPARED TO EUROPEAN CAUCASIANS COUNTERPARTS IN THE UNITED KINGDOM

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Background: The pathophysiology of excessive premature cerebrovascular disease mortality amongst South Asian stroke survivors (SA) living in Britain remains unclear. We hypothesised that South Asian stroke survivors with underline impaired endothelial function have increased indices of higher arterial stiffness compared to their European Caucasian (EC) counterparts and these structural and functional vessel wall abnormalities and would account for their excess disease burden
Methods: Endothelial dependent vessel dysfunction (RI) (post Salbutamol), independent (post Glyceryl Tri Nitrate) administration and arterial stiffness (SI) was measured by digital volume pulse photoplethysmography in 60 South Asian stroke survivors and compared to 60 age-gender matched European Caucasians in a temperature controlled environment using a direct, standardised approach.
Results: Both ethnic groups were comparable for CHD risk profiles , except diabetes mellitus (SA: 54.1% vs. EC: 10.3%; $P<0.001$). SA had increased arterial stiffness [11.1(0.2) vs. (10.4(0.3)];$P<0.008$) and impaired endothelial dependent vascular function mean (SE) (3.68(0.4) vs. 8.0(0.3); $P=0.007$).On univariate analysis fasting plasma glucose level negatively related with RI($R=-0.37$; $P<0.001$) and on multivariate analysis diabetes status (($\beta=-4.3$; $P=0.009$) independently associated with endothelial dysfunction.
Conclusion: South Asians stroke survivors have an impaired endothelial dependent vascular dysfunction and increased arterial stiffness compared to European Caucasians. There appears to be an adverse and disproportional impact of glycemic status on the vascular system in South Asians. Pathophysiological differences in vessel wall characteristics amongst South Asians may explain their increased susceptibility to cerebrovascular disease and related outcomes.