

Cardiovascular Risk Reduction in Patients with Diabetes Mellitus : Still a Dream

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Atherosclerosis in Singapore



Atherosclerosis in Singapore



Mak KH., et al. Ethnic differences in acute myocardial infarction in Singapore. *Eur Heart J* 2003;24:151-60

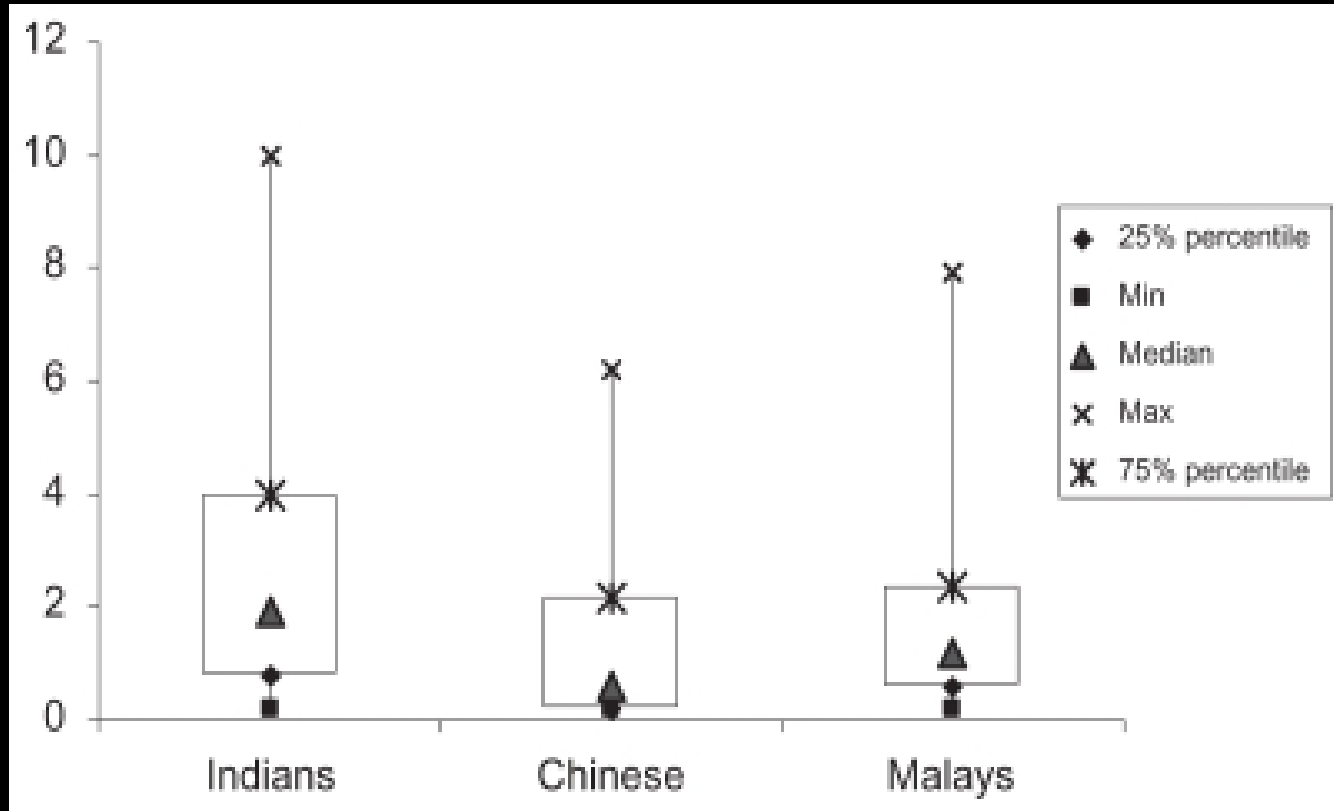
C-reactive Protein

hs-CRP Value	Cardiovascular Disease Risk Level*
< 1 mg/L	low risk
1-3 mg/L	average risk
> 3 mg/L	high risk

* Risk levels published in 2003. American Heart Association / Centers for Disease Control and Prevention Scientific Statement

CRENENCE-I Study

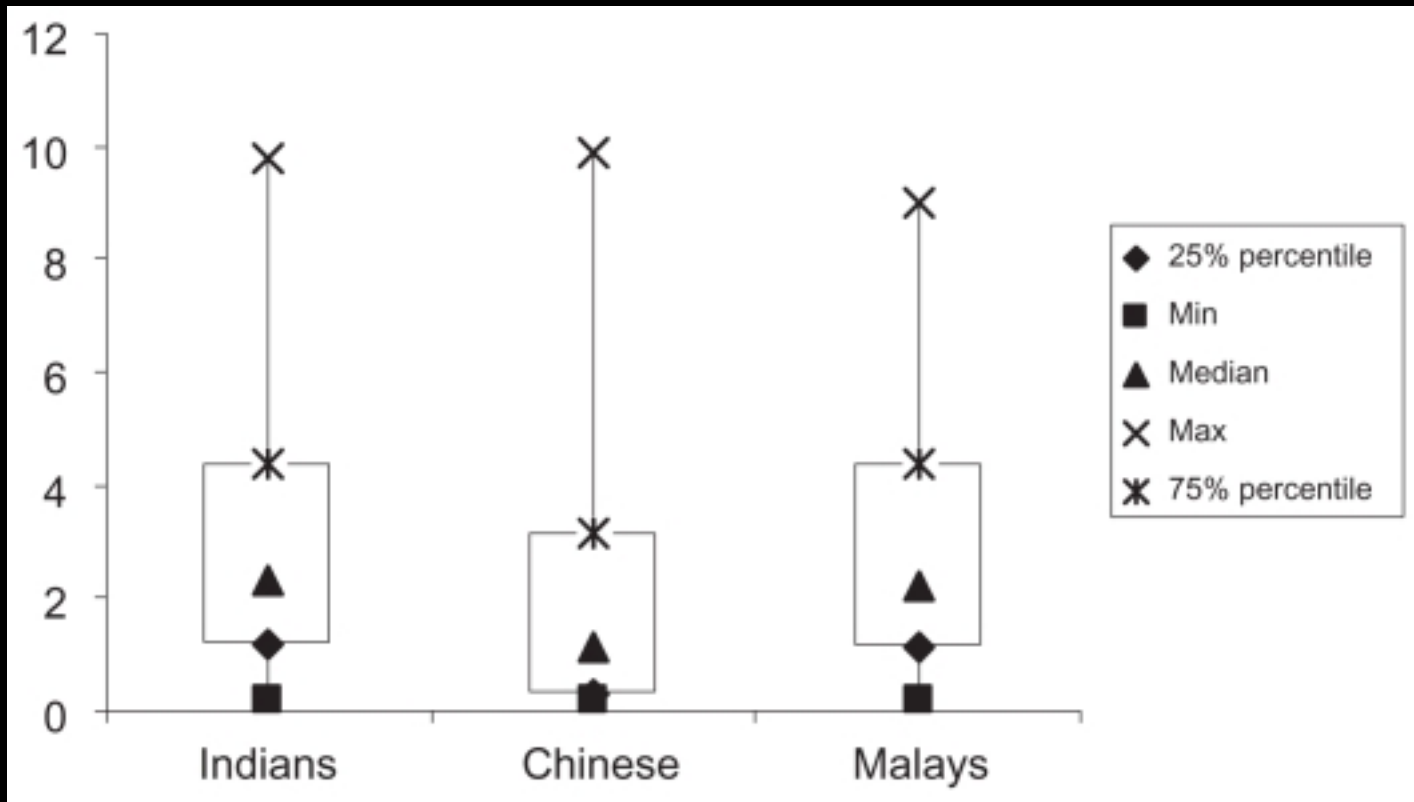
Healthy Volunteers



Dalan R, Jong M, Chan SP et al. High sensitivity C-reactive protein concentrations among patients with and without diabetes in a multiethnic population of Singapore: CRENENCE Study

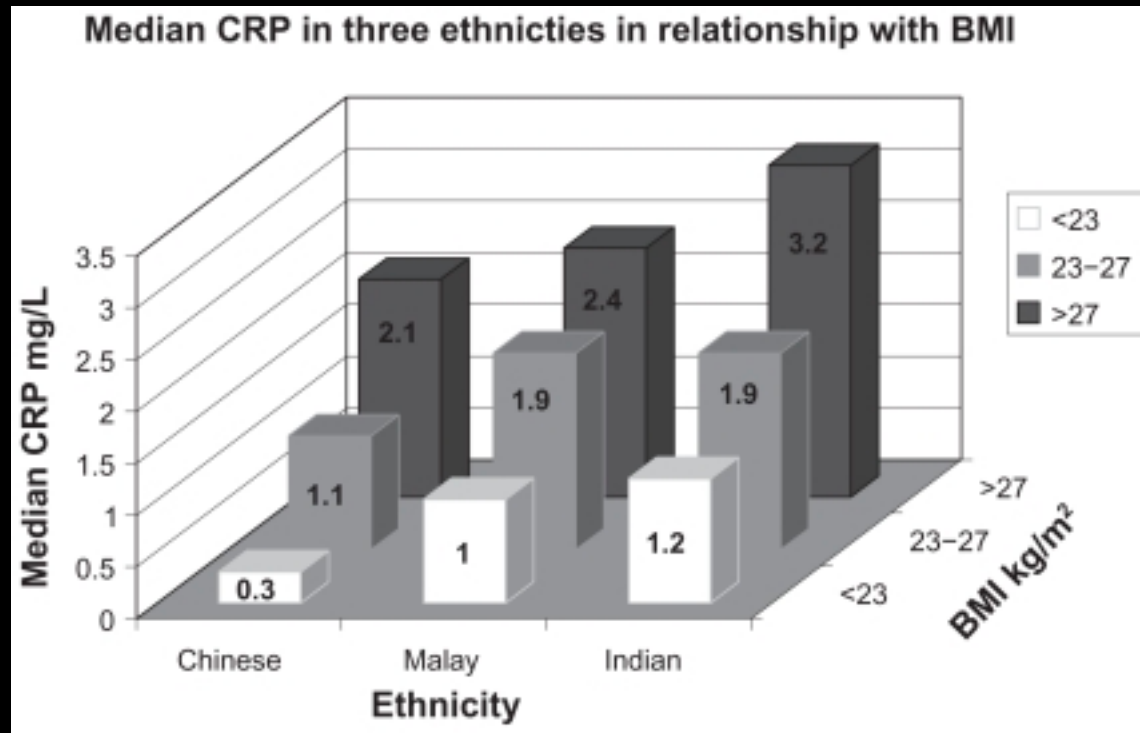
CRENENCE-I Study

Patients with Diabetes Mellitus type 2



Dalan R, Jong M, Chan SP et al. High sensitivity C-reactive protein concentrations among patients with and without diabetes in a multiethnic population of Singapore: CRENENCE Study

CREDENCE –I Study



Dalan R, Jong M, Chan SP et al. High sensitivity C-reactive protein concentrations among patients with and without diabetes in a multiethnic population of Singapore: CREDENCE Study

CREDENCE-II

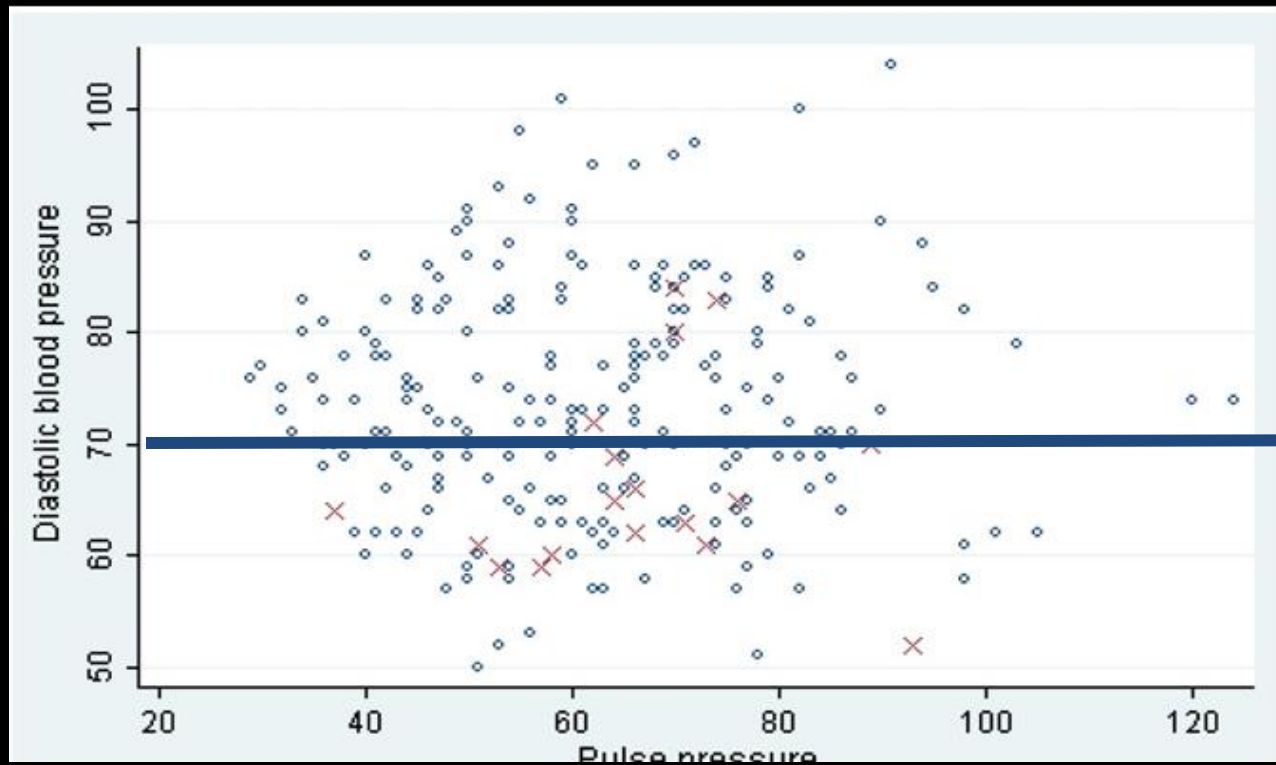
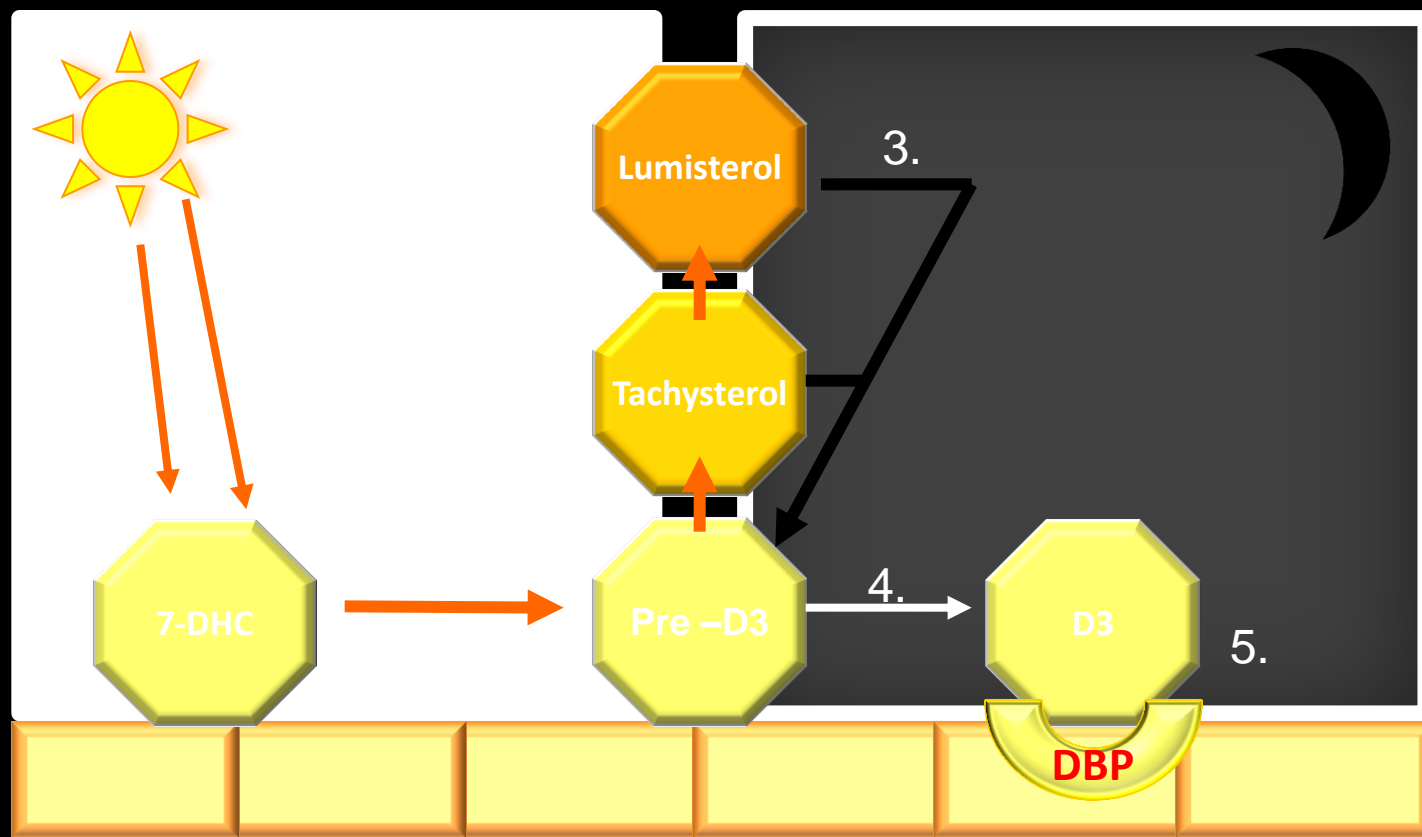


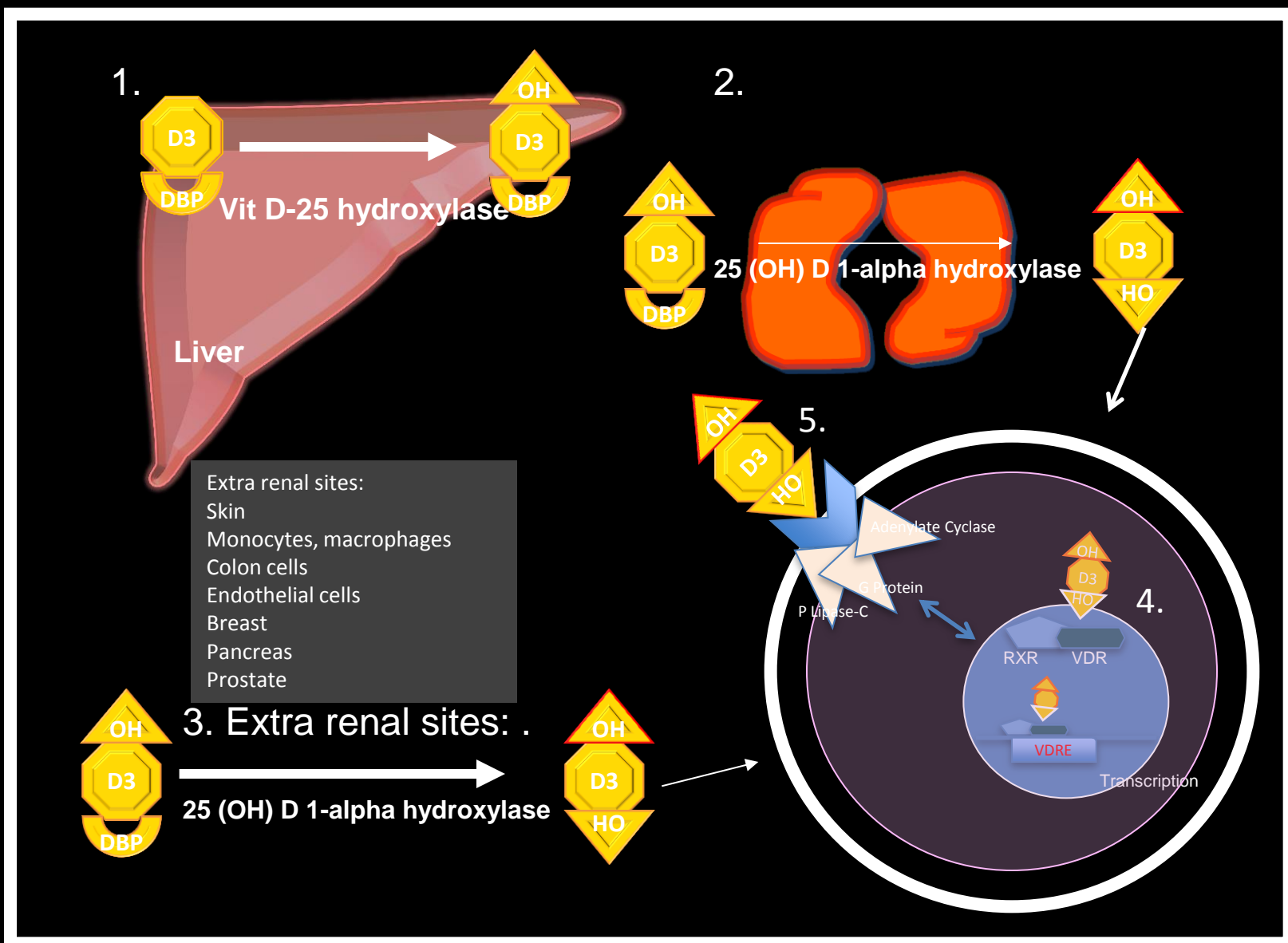
Fig. 1. Association of diastolic BP, pulse pressure and mortality in the entire cohort shows association of mortality with BP <70 mm Hg.

DIMENSION STUDY

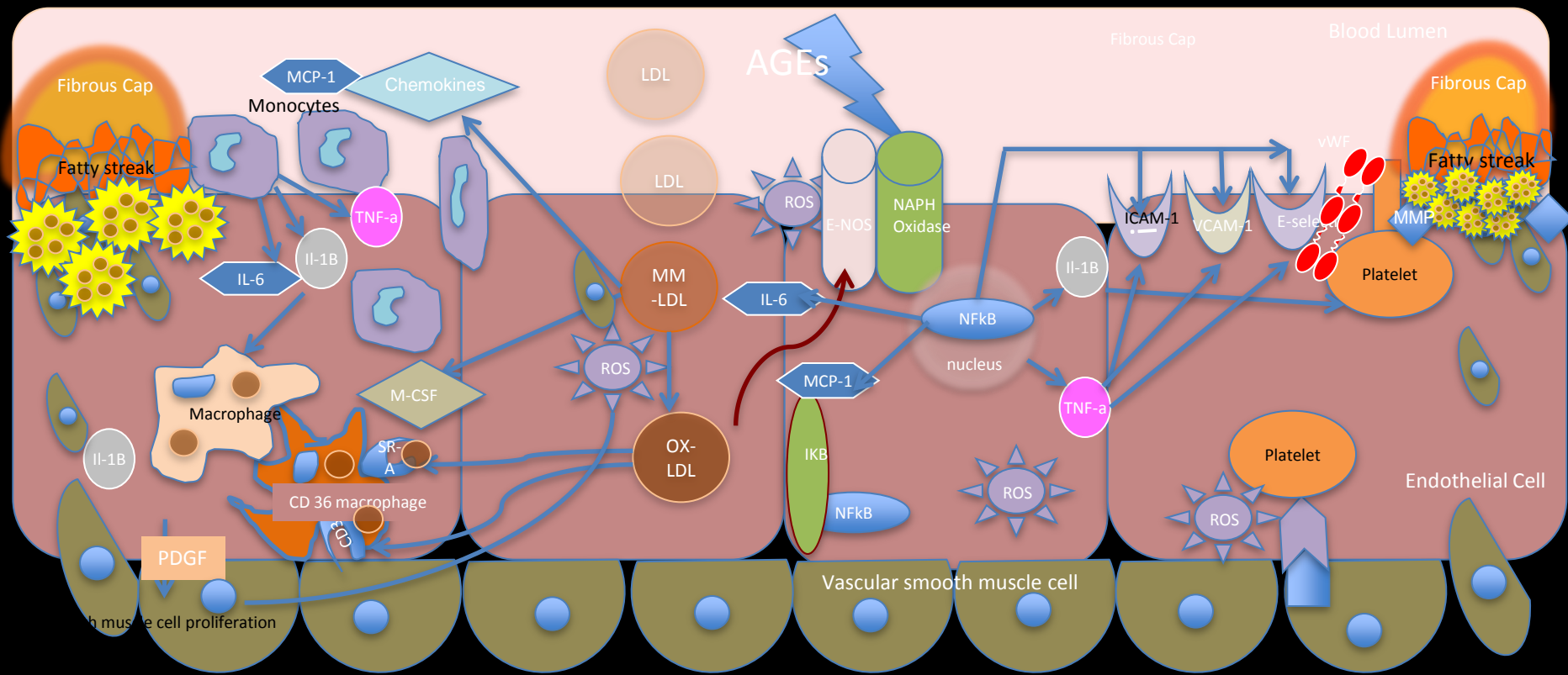


This study is jointly funded by the DUKE-NUS Tanoto Diabetes Initiative and Clinician Scientist scheme -NHG

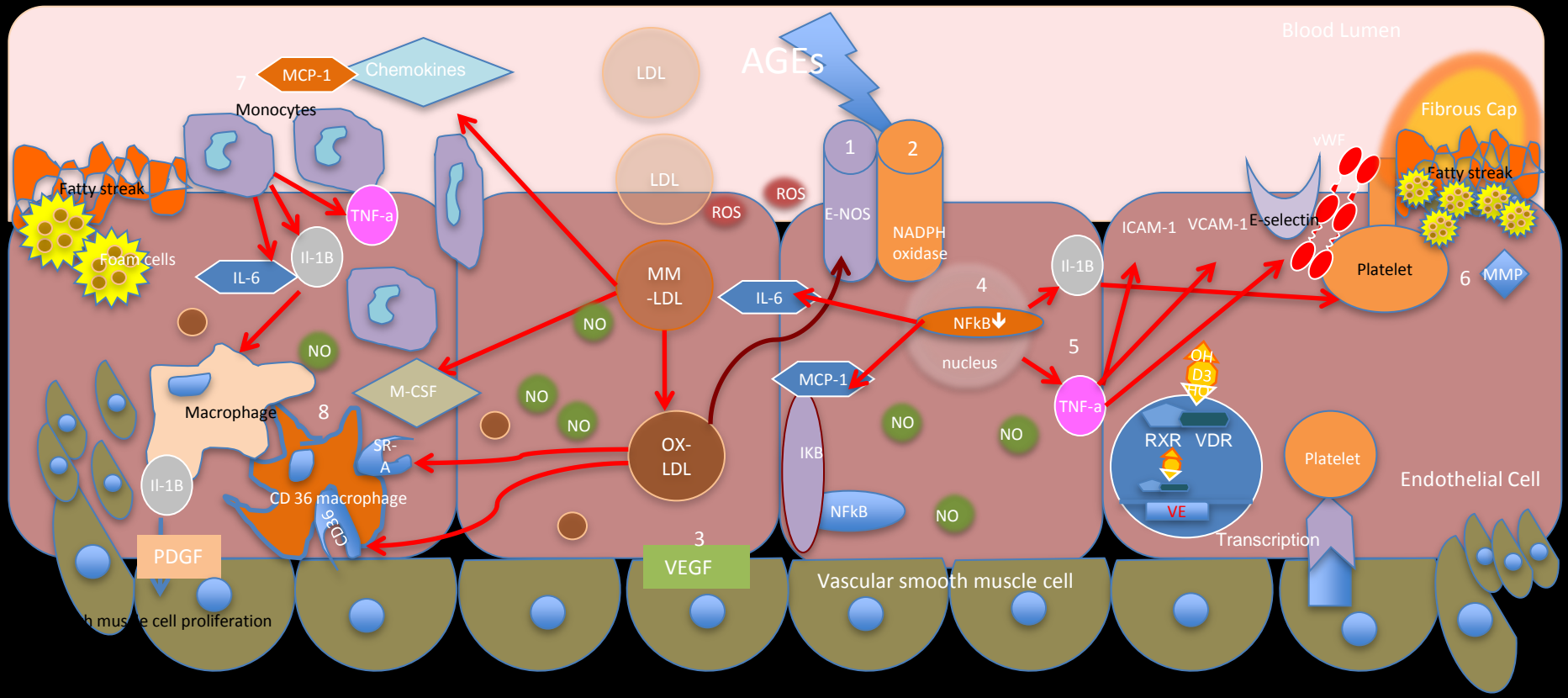




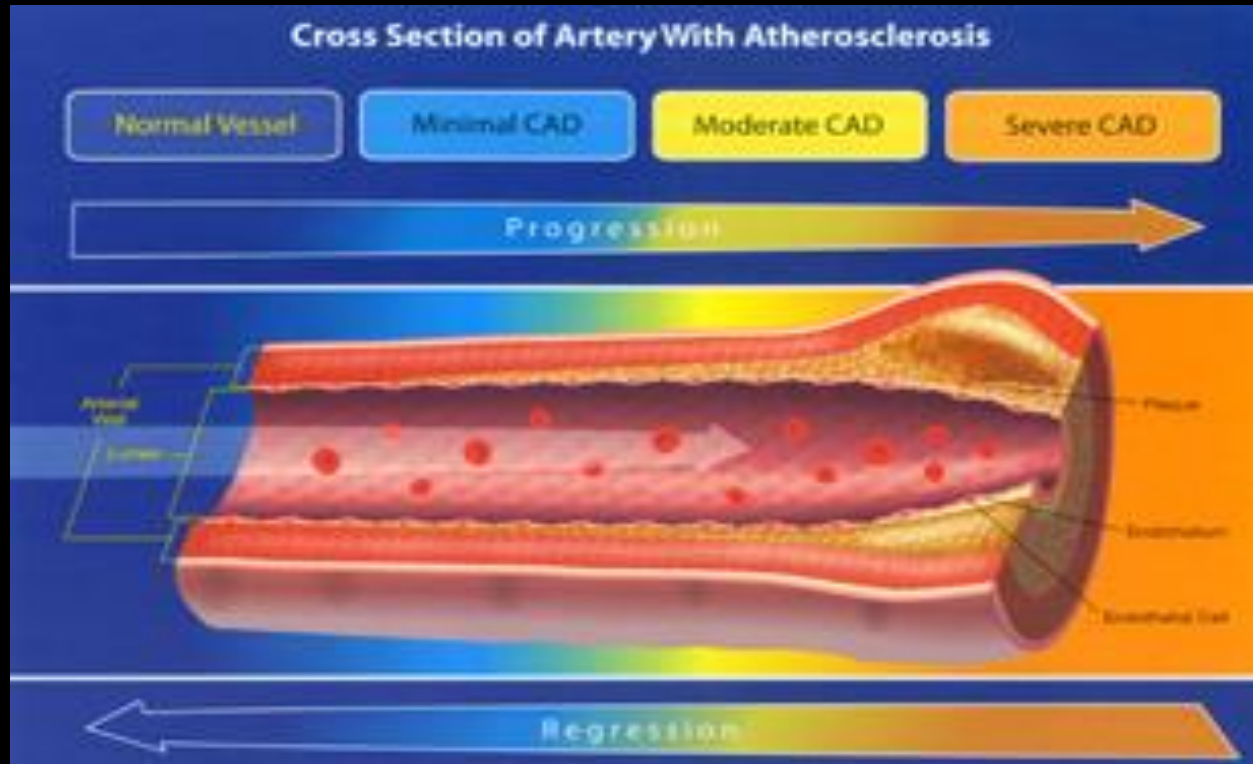
Schematic representation of AGEs (advanced glycation end products) associated increased oxidative stress induced endothelial activation and lipid peroxidation, formation of foam cells, smooth muscle migration, formation of fatty streak, thrombus and fibrous cap. The chain of cellular events linking up the vascular smooth muscle cells, endothelial cells and the monocytes and functional relationships are illustrated (these cells are not endocytosed into the endothelial cell).



Schematic representation of vitamin D associated effects on the activated endothelium through activation of the nuclear vitamin D receptor (VDR). The chain of cellular events linking up the vascular smooth muscle cells, endothelial cells and the monocytes and functional relationships are illustrated (these cells are not endocytosed into the endothelial cell).



Endothelial Function



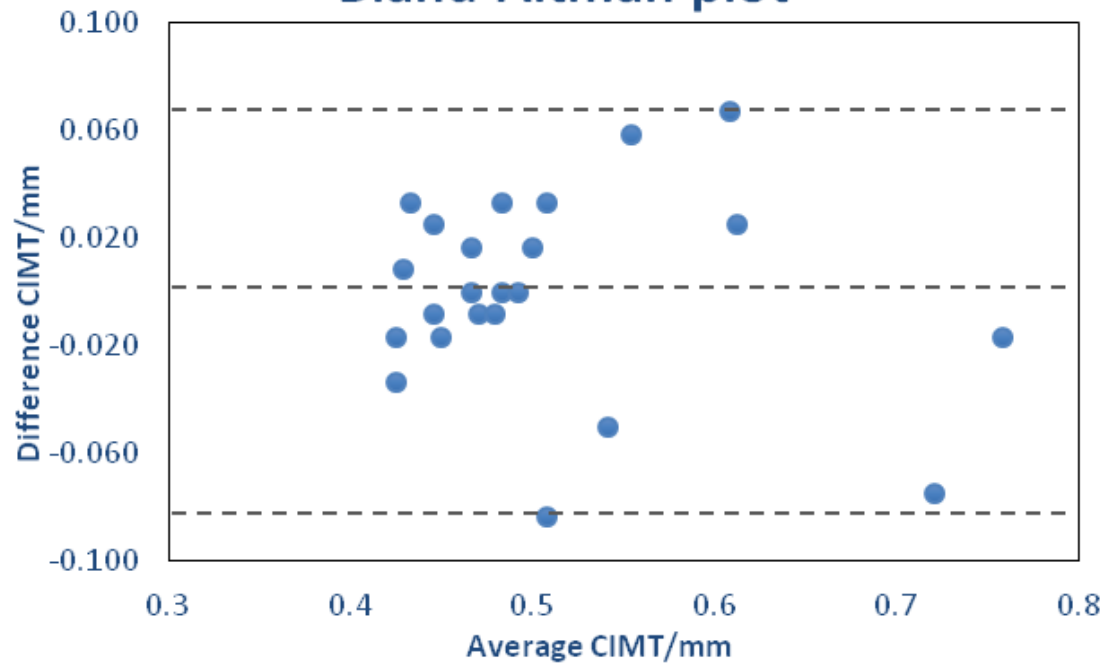
Reactive Hyperemia Index-EndoPAT



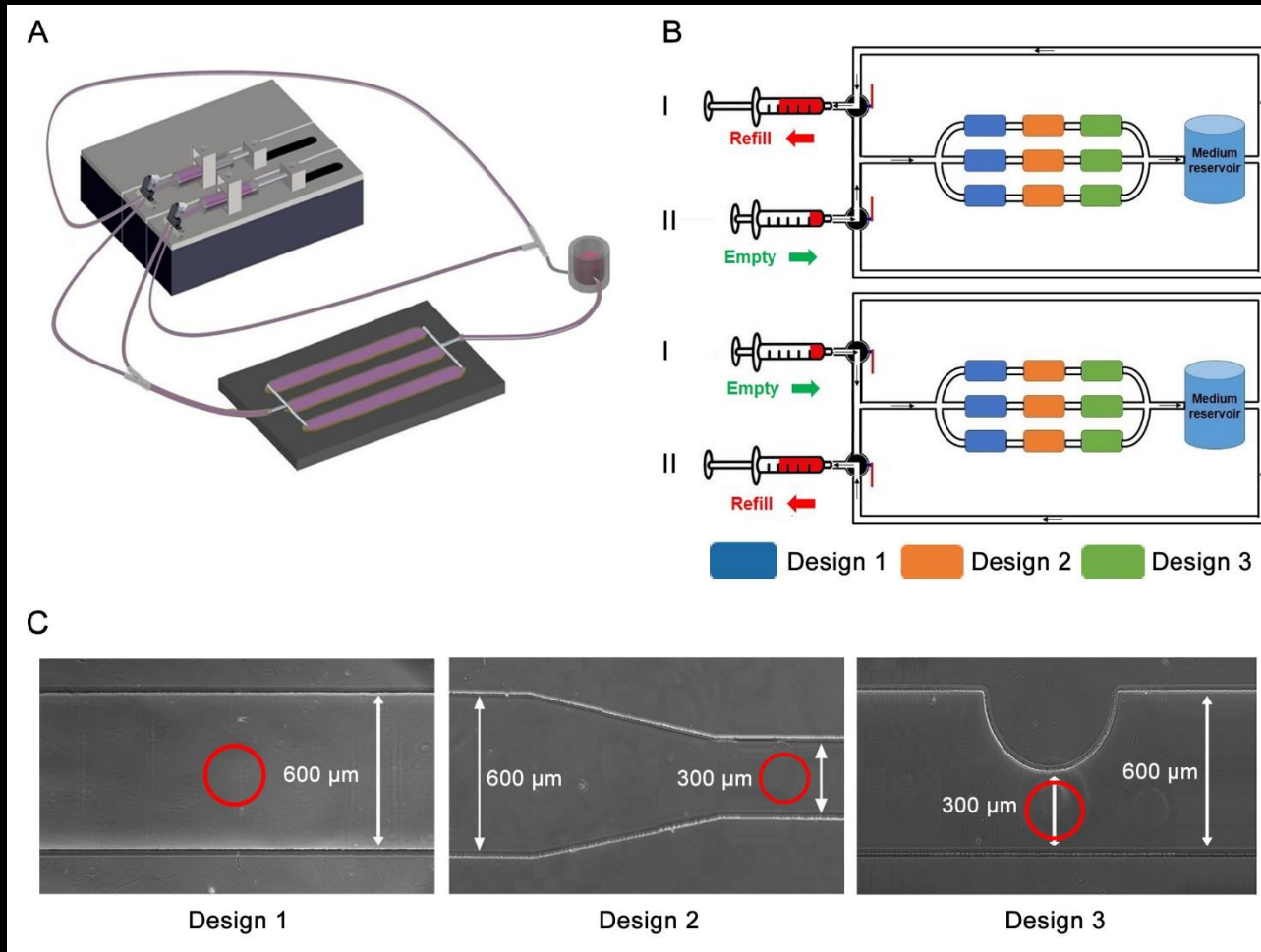
Carotid artery Intima Media Thickness



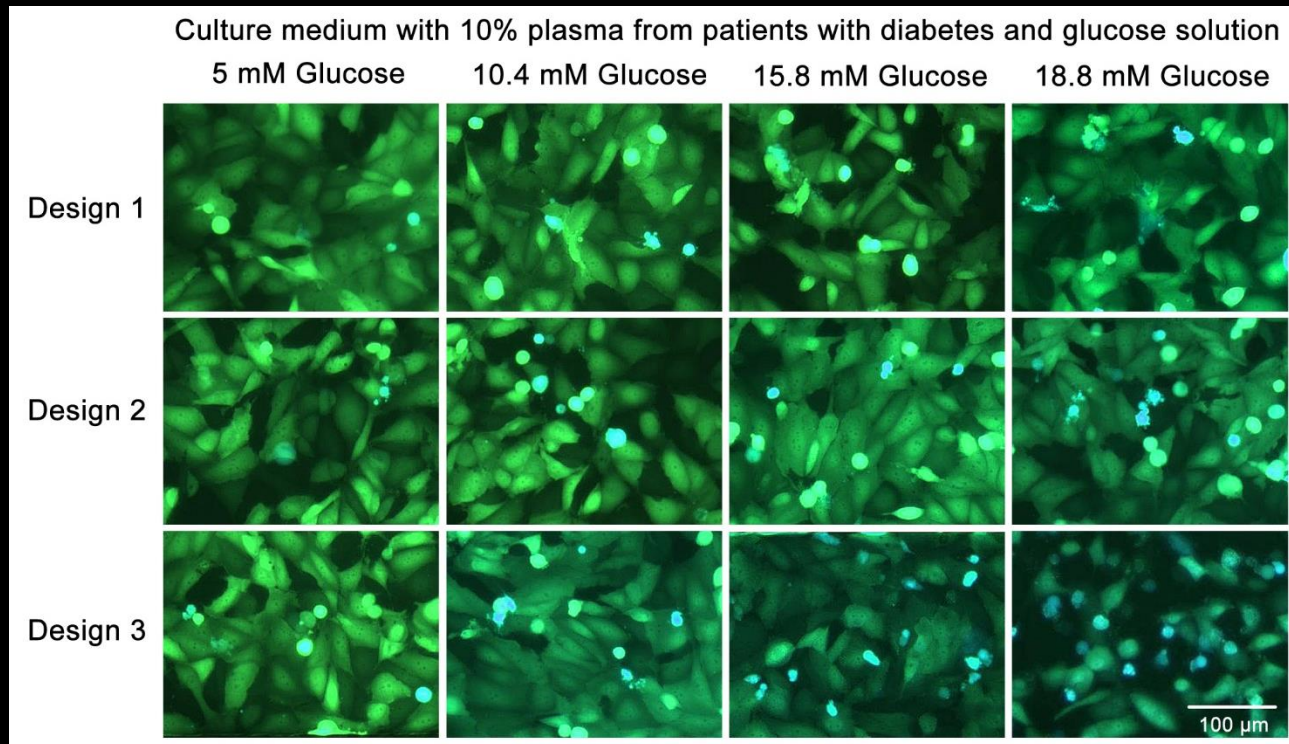
Bland-Altman plot



Endothelial Apoptosis

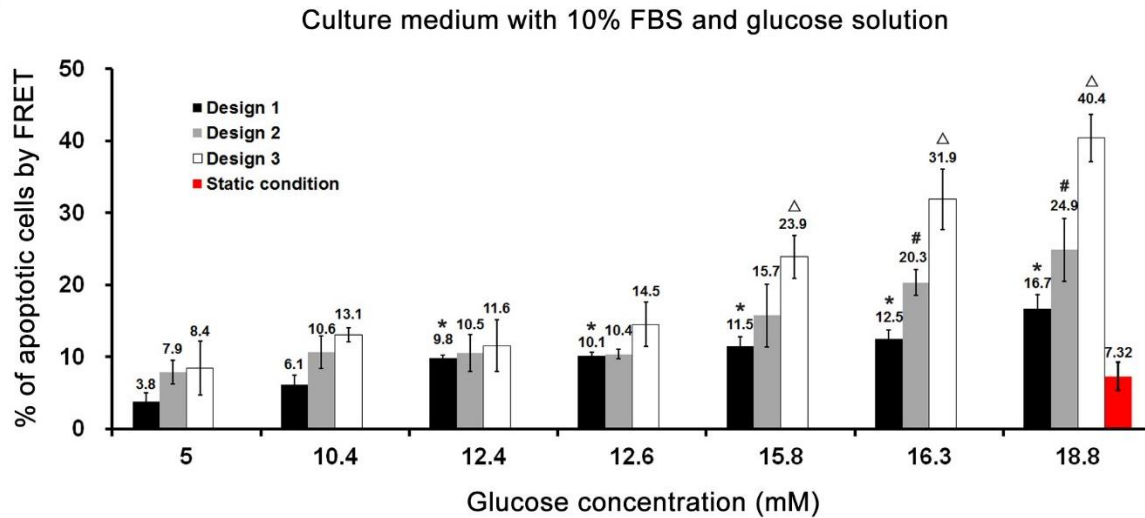


Liu X F, Yu J Q, Dalan R, Liu A Q, Luo K Q. Biological Factors in plasma from diabetes mellitus patients enhance hyperglycaemia and pulsatile shear stress induced endothelial cell apoptosis. Integr Biol 2014;In Press

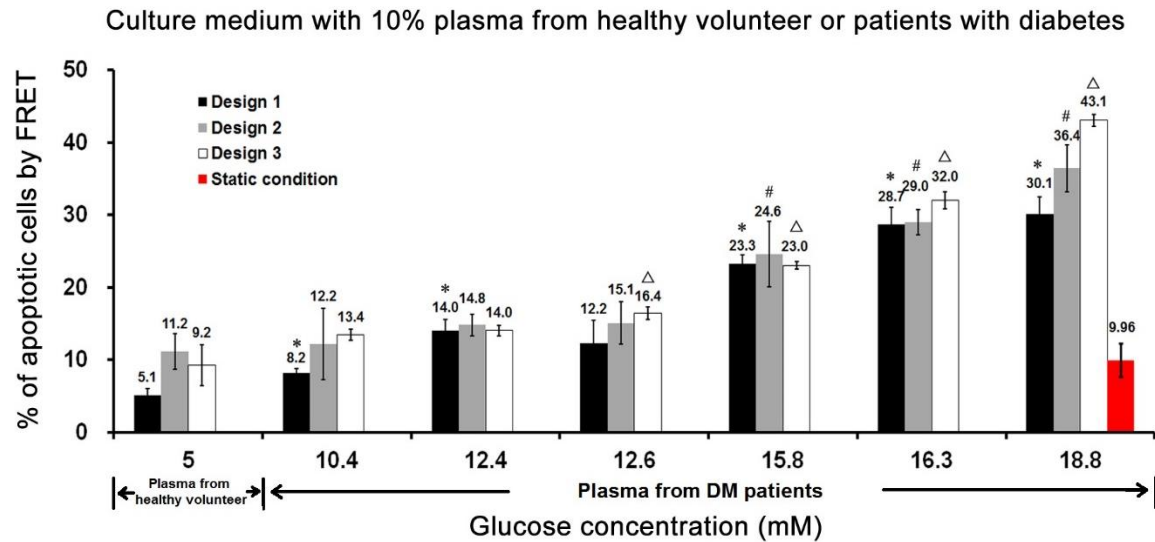


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A



B



Liu X F, Yu J Q, Dalan R, Liu A Q, Luo K Q. Biological Factors in plasma from diabetes mellitus patients enhance hyperglycaemia and pulsatile shear stress induced endothelial cell apoptosis. *Integr Biol* 2014;In Press

TTSH DM Study Group

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Amanda Tay : Project Manager

Coordinators: Hong Li, Siti

Collaborators:

NTU-SCBE: Prof Kathy

Luo, Prof Mayasari Lim

Thank You

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