

## Sweet path to hard vessels

India was already grappling with an epidemic of obesity and insulin resistance [1] before COVID-19 struck, particularly affecting the younger cohort, due to the confluence of a number of factors including, increased consumption of refined sugars and sedentary lifestyle among others. Increasing prevalence of insulin resistance, a condition characterized by a decrease in tissue responsiveness to insulin, in otherwise healthy youth is particularly concerning, as it predisposes affected individuals to early type 2 diabetes mellitus, and a spectrum of complications ranging from increased vascular stiffness, progressing to long term cardiovascular damage. Vascular stiffness is a well-known marker of cardiovascular health and increased stiffness of blood vessels will lead to an increased wall stress. This might lead to damage to the elastic elements of the blood vessel and hastening of the degeneration of the arteries that would otherwise occur due to ageing. In our recent study, the results of which under review, we studied the effect of insulin resistance (directly measured from blood samples) on the vascular stiffness (indirectly measured using ECG and finger PPG) changes in a variety of physiological and pathophysiological contexts in young adults. Quite interestingly, we found increased glucose levels in the blood post intake of glucose led to increased vascular stiffness. With increased insulin resistance, there was a faster rise in vascular stiffness and delayed the fall of stiffness to pre-glucose intake levels. Abnormal increases in vascular stiffness could potentially lead to higher cyclical stress on the vasculature following the meal and have the potential to speed up the vessel damage. Left untreated, insulin resistance could

lead to serious health risks to the younger populace and which could eventually lead to great economic costs to the country.

### References:

- [1] Yajnik CS (2007) The Insulin Resistance Epidemic in India: Fetal Origins, Later Lifestyle, or Both 59:3–9. Authors
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