

## UPDATE FROM THE CUTTING EDGE

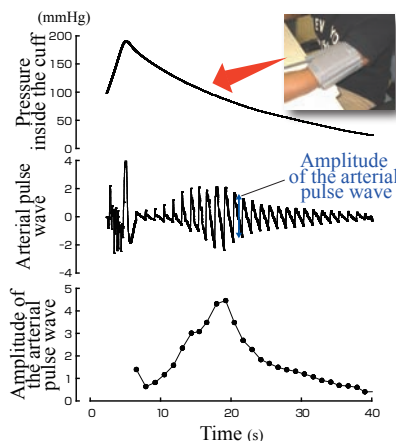
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The abstracts of the recent research information appearing in Vol.8 No.4-6 of "AIST TODAY" are introduced here, classified by research area. For inquiry about the full article, please contact the author via e-mail.

Life Science & Technology

### Non-invasive evaluation of arterial stiffness using conventional oscillometric blood pressure measurement A simple method for evaluating arterial stiffness

We have developed a simple and non-invasive method for evaluating arterial stiffness using oscillometric blood pressure measurement. The arterial pulse waves of the brachial artery were derived from a cuff wrapped around the upper arm during inflation and deflation of the cuff. The peak-to-peak amplitudes of the individual pulse waves were plotted. The pattern of pulse amplitude changes was different between compliant and stiff arteries: a compliant artery showed a clear peak whereas a stiff artery showed an unclear or no peak. Based on these findings, we developed indices and algorithms to distinguish the patterns of pulse amplitude changes and then applied these novel indices to arterial stiffness measurement. Using these indices, arterial stiffness can be evaluated through conventional oscillometric blood pressure measurement.



#### Arterial pulse wave derived from a cuff wrapped around the upper arm.

Top panel: a pressure inside the cuff during inflation and deflation of the cuff.

Middle panel: Arterial pulse wave obtained by filtering the pressure inside the cuff.

Bottom panel: Peak-to-peak amplitude of the arterial pulse wave.

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