

RESULTS OF DOPPLER INVESTIGATION OF BLOOD FLOW VELOCITY
IN REDUCED INFLOW OR INCREASED RESISTANCE IN THE BRACHIAL
ARTERY

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Two hundred recordings of the blood velocity in the brachial artery were done in healthy persons during the past fourteen months by means of Doppler ultrasound, ECG and phonocardiography methods. The blood inflow to the brachial artery was reduced at first by mechanical occluding of the axillary artery, whst simulated conditions similar to the aortic stenosis, low cardiac output and obstructive cardiomyopathy. In the second stage peripheral resistance was increased by compression of the forearm, clenching fist or elevation of the upper extremity. In the last stage respiration influence of arterial and venous flows was evaluated.

The results indicated to a high theoretical and practical usefulness of the investigation. The reduction of the inflow caused disappearance of the diastolic flow, progressive decrease of the systolic flow towards a zero level and a nearly linear increase of the conduction time similarly to sphygmographic investigations. The increase of the peripheral resistance caused an instanteneus disappearance of the diastolic flow, a reduction of the systolic flow duration and short-lived blood regurgitation into the heart, immediately after the systolic pulse. Respiration tests showed an influence on the venous flow. The arterial flow was mainly depended on the variability of the left atrium filling.