

7 Reasons for blood pressure measurement without cuff

1. The inflation of the cuff leads to Arousals respectively awakenings during sleep in 70% of recordings. Dependent on the blood pressure behaviour (DIPPER/NON-DIPPER), the systolic blood pressure is over- or underestimated by up to 40 mmHg.
2. Previous cuff based blood pressure recording devices don't collect the body position. A measurement error caused by the hydrostatic pressure could occur due to position changes.
3. Cuff based methods don't deliver a continuous blood pressure recording – the real maxima and minima are not detected (REM, supine position).
4. Cuff based methods don't allow conclusions regarding the course of the blood pressure during data points. Fluctuative increases of blood pressure due to apnoe/hypopnoea, snore, PLM or desaturation are not detected. A causal classification and correlation to the reasons is missing.
5. The "Superposition-Effect" of blood pressure (= increase of the basal blood pressure after repeated fluctuations), a main risk factor for cardiac infarction and stroke, cannot be identified.
6. 6. Cuff based methods don't allow sleep/wake determination. One third of the German population suffer from any kind of insomnia. A clear assignment of the recorded values to either sleep or wake period is not possible. Wake stages during time in bed are not recognized.
7. Cuff based methods don't take physical activity into account as a reason for high blood pressure values during a day. A differentiation between psychogenic and physically caused hypertension is not securely possible.

