

Accurate Blood Pressure Measurements

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Why ...!

Control of Hypertension *begins*

with ...
accurate BP

Measurement



Guidelines ..?! ---

JNC 7

Patients should be seated in a chair with their backs .^١
supported with their arms bared and supported at
heart level.

Measurement should begin after at least 5 minutes .^٢
of rest.

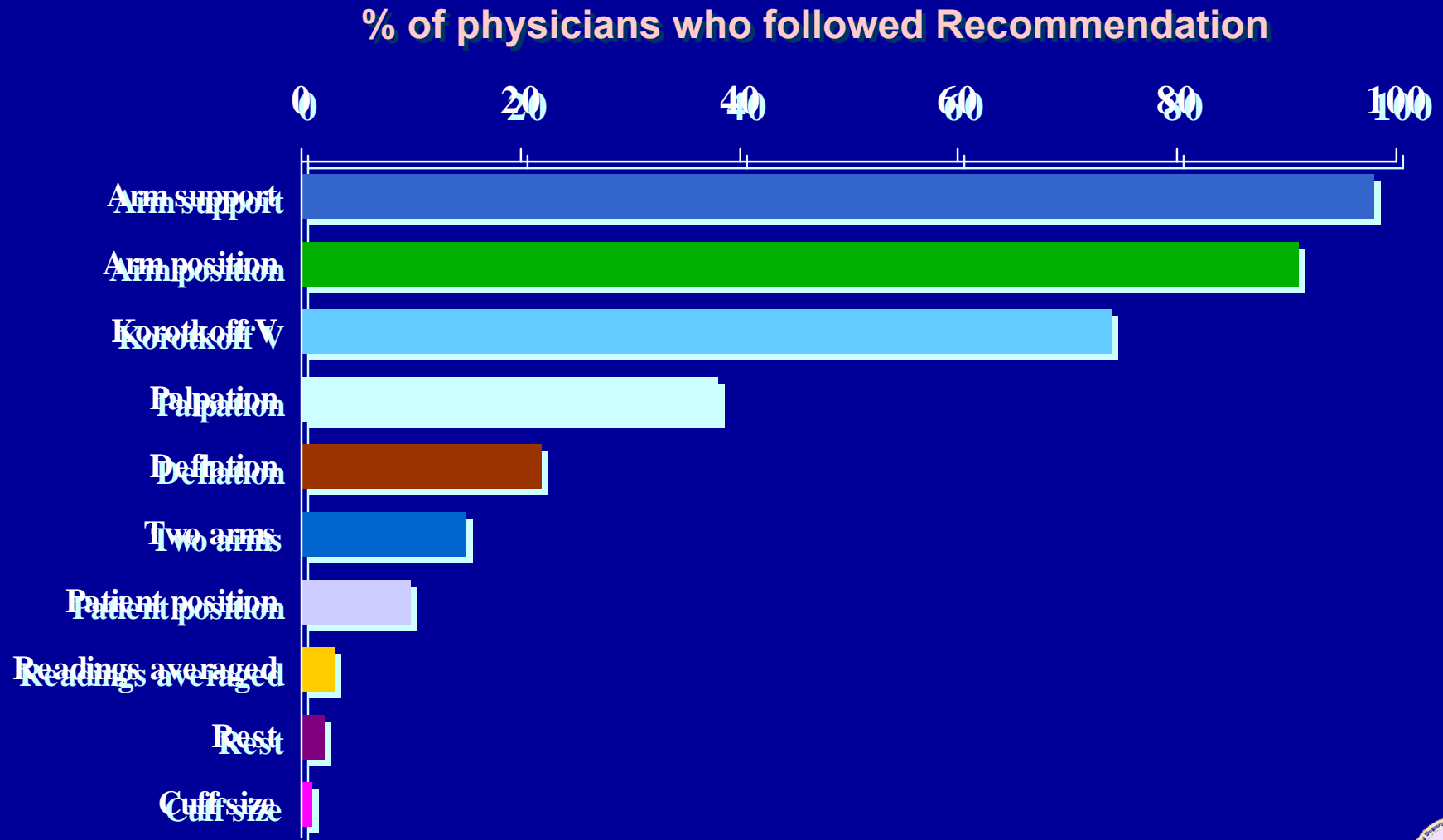
The appropriate cuff size should be used. .^٣

Measurement should be taken with a mercury .^٤
sphygmo-manometer, recently calibrated aneroid
manometer or a validated electronic device.

Both systolic and diastolic measurements should be .^٥



Physician's Compliance



McKay, et al. *J Hum Hypertens* 1990; 4:639-45



More Simple factors

Which of the following factors can lower blood pressure readings?

A) Obese extremities

B) Caffeine ingestion

C) Narrow BP cuff

D) Supporting the patient's back

relaxes the body,
lowering BP an average
of 8 mmHg SBP and DBP

<http://www.mco.edu/org/whl/images/belissi.jpg>



Shortcomings of Instrumentation:

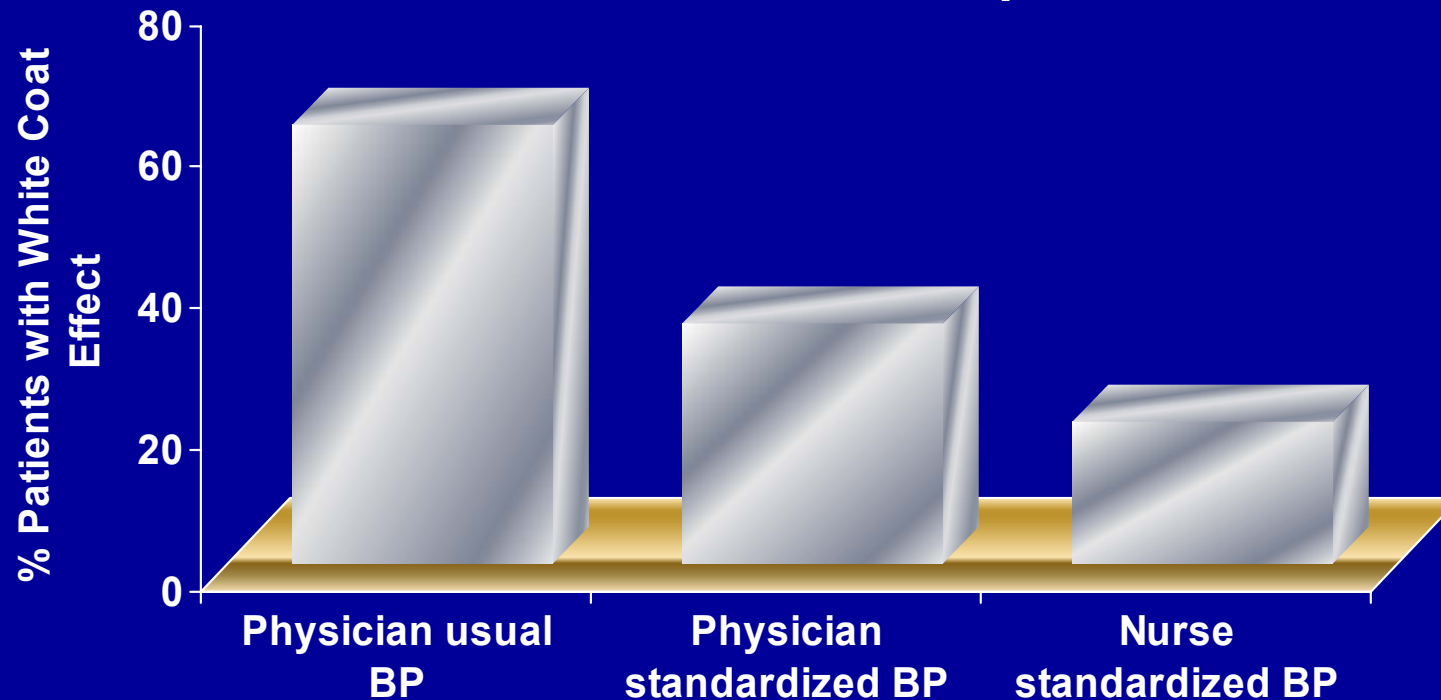
Aneroid devices

- **Frequently out of calibration**
- **58% of aneroids were out of calibration by >4 mmHg and 33% >7 mmHg**
- **Among general practices, none had a maintenance or calibration protocol**
- **Observer bias remains a problem**



Change in BP Diagnosis According to Technique and “Who” Takes the BP

Prevalence of white coat hypertension using different measurement techniques



- In another study, 57% of patients had a change in diagnosis when going from usual to standardized measurement



Significant ..?! ---

Consistently underestimating the DPB by 5 mmHg could result in **two-thirds** of patients with hypertension not receiving potentially lifesaving treatment •

Consistently overestimating DPB by 5 mmHg could **more than double** the number of hypertensive patients •

A diagnosis of hypertension affects patients •
for the rest of their lives



The Message ...

BP measurement should not be performed lightly. •

Use standardized protocol •

The measurement of blood pressure through auscultation remains the most widely accepted method in everyday practice. •

Reliance on automated devices may lead to inaccurate readings in the presence of arrhythmias. •

Mercury sphygm. are still considered the gold-standard measuring devices for indirect blood pressure determination •

