## New Definition of Hypertension Proposed

#### **Disclosures**

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Following announcement of the results of the <u>Antihypertensive</u> and <u>Lipid-Lowering</u> Treatment to Prevent <u>Heart Attack Trial</u> (ALLHAT),<sup>[1]</sup> the largest hypertension trial ever conducted, at the end of 2002, the National Heart, Lung, and Blood Institute (NHLBI) followed with a revision of the US national hypertension guidelines. Published as the Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7),<sup>[2]</sup> this update of the US guidelines was quickly followed by updates of nearly all other national guidelines.

Now, just 2 years after publication of JNC-7, the American Society of Hypertension (ASH) has realized a need to revise their definition of hypertension and recommendations for its recognition and treatment. To accomplish this, the Society established the Writing Group of the American Society of Hypertension (WG-ASH), chaired by Dr. Giles.<sup>[3]</sup> The other WG-ASH members are Bradford Berk, MD, PhD; Henry R. Black, MD; Jay N. Cohn, MD; Joseph L. Izzo, Jr, MD; John B. Kostis, MD; and Michael A. Weber, MD.

The proposed definition, which at the time of the annual ASH meeting in San Francisco, California, had not yet been published, is based on the view of hypertension as a complex cardiovascular disorder rather than as just blood pressure values. It characterizes the disease as a progressive cardiovascular syndrome with many causes that result in both functional and structural changes to the heart and vascular system. And the authors note that the early stages of hypertension can begin before an individual develops sustained elevated blood pressure, and can progress to damage in the heart, kidneys, brain, vasculature, and other organs, often leading to premature morbidity and death.

The new definition incorporates the presence or absence of risk factors, early disease markers, and target-organ damage (Table 1), and more accurately represents the different physiologic abnormalities in the cardiovascular system and other organs caused by hypertension, according to the WG-ASH group. The goal of this risk-based approach is to identify individuals at any blood pressure level who have a reasonable likelihood of future cardiovascular events.

Classification	Blood Pressure Elevations		Cardiovascular Disease*	Cardiovascular Risk Factors	Early Disease Markers	Target Organ Disease
Normal	Normal or rare	or	None	None or few	None	None
Hypertension:						
Stage 1	Occasional or intermittent	or	Early	Several	Usually present	None
Stage 2	Sustained	or	Progressive	Many	Overtly present	Early signs present
Stage 3	Marked and sustained	or	Advanced	Many	Overtly present with progression	Overtly present with or without cardiovascular disease

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\*Determined by constellation of risk factors, early disease markers, and target organ disease.

The WG-ASH members hope that their new definition will improve the way physicians conceptualize, diagnose, and treat hypertension by encouraging them to think about the disease earlier than they often do now, with the ultimate goal of reducing the risk of cardiovascular disease linked to high blood pressure, such as heart attack and stroke. "As a physician, responding to a patient's elevated blood pressure in isolation represents only a partial understanding of hypertension. We now know that hypertension is associated with many measurable cardiovascular indicators beyond blood pressure measurements," Dr. Giles said.

#### WG-ASH vs JNC 7

Probably the most remarked upon change in this new definition is that the blood pressure category "prehypertension," which was introduced for the first time in the JNC 7, is not included in the WG-ASH classification (Table 2). Rather, the new classification scheme aims to identify some people with low blood pressure levels as having Stage 1 hypertension if they also exhibit early signs of vascular damage, thus prompting healthcare providers to offer treatment to this at-risk group. Other individuals with low blood pressure levels and no signs of vascular abnormalities are classified as normal, with a risk for cardiovascular disease that is no different from that of the general population. This avoids any stigma of being classified as having cardiovascular disease, which was previously a cause of concern with regard to official medical examinations and health insurance.

JNC VI	JNC 7	WG-ASH	SBP (mmHg)		DBP (mmHg)
Optimal	Normal	Normal	< 120	and	< 80
	Prehypertension	or Hypertension	120-139	or	80-89
Normal		Stage 1	< 130	and	< 85
High-normal			130-139	or	85-89
Hypertension	Hypertension				
Stage 1	Stage 1	Stage 1 or	140-159	or	90-99
	Stage 2	Stage 2	>/= 160	or	>/= 100
Stage 2		Stage 3	160-179	or	100-109
Stage 3			>/= 180	or	>/= 110

#### Table 2. WG-ASH Blood Pressure Categories Compared With JNC VI and JNC 7

Examination of Table 2 reveals that the new WG-ASH Stage 2 blood pressure category corresponds to JNC 7 Stage 1, and WG-ASH Stage 3 to JNC 7 Stage 2, with the blood pressure threshold "cut points" basically remaining the same.

#### Similarities With European guidelines

According to Dr. Giles, members of the European Society of Hypertension (ESH) have welcomed the new WG-ASH definition. In fact, in moving away from the 2003 JNC 7 scheme, the WG-ASH definition appears to have moved toward the definition and classification published by the ESH in 2003.<sup>[4]</sup> The ESH version, which itself was based on the 1999 World Health Organization/International Society of Hypertension guidelines,<sup>[5]</sup> emphasizes the continuous relationship between blood pressure level and cardiovascular risk and includes a classification

based on total cardiovascular risk. Like a number of ASH members, the ESH guideline authors believe that use of the term "hypertension" should really be discontinued (although ESH retains it in its guidelines, it says, to avoid confusion).

#### **Future US Hypertension Guidelines**

The WG-ASH definition of hypertension has yet to be adopted as an official ASH guideline. The Writing Group proposes expanding the definition and classification by incorporated the presence of absence of risk factors, early disease markers, and target organ damage in addition to blood pressure levels. The members predict that expanding the definition will lead to new approaches to hypertension research, especially the early stages of the disease, and perhaps to new ways to treat the disease.

Dr. Giles believes that there is little likelihood of an updated national US hypertension guideline -- a "JNC 8" -- in the near future. The new WG-ASH definition is currently under review by the NHLBI, which produced JNC 7, and Dr. Giles does not rule out the possibility that ASH could take on the responsibility for devising the next national guidelines for the prevention, diagnosis, and treatment of hypertension. Two WG-ASH members, Drs. Black and Izzo, were also members of the executive committee that produced JNC 7.

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