# Product Note: UA-E

## Utilization of the UA-E with the UA-1745 Blood Pressure cuff from Technicuff

The UA-1745 Blood Pressure cuff was designed with a 360 degree bladder allowing it to be used on adults with arm circumferences between 17cm to 45cm. The need to index the UA-1745 bladder to the brachial artery was eliminated due to the unique design that allows the bladder to completely surround the patient's arm. This design allowed extended range, (**small to obese adults),** without the need to inventory multiple cuffs. Studies have concluded that bladders that completely surround the arm $360^0$ improve the consistency of blood pressure measurement while providing data that is closer to direct intra-arterial readings . [1,2]

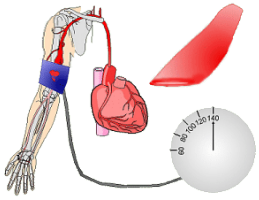
When recommendations for blood pressure cuffs were first being developed in 1939, the epidemic of obesity in the United States was in its infancy. Unfortunately, few manufacturers of blood pressures cuffs have recognized this problem, failing to design cuffs to fill the gap between large adult and thigh cuffs. This forces healthcare professionals to use thigh cuffs in an attempt to take pressures on short obese patients. The use of a thigh cuff on this type of patient typically results in underestimation of systolic and diastolic pressure with poor consistency between tests.

Technicuff recognized this problem early in its development and made changes to address the needs of short obese patients. The design of the UA-1745 blood pressure cuff specifically allowed the use of an extender that would increase the range from 45cm to 55cm without the requirement of healthcare facilities inventorying a new size of blood pressure cuff.

The American National Standard for blood pressure cuffs recommends that the bladder cover a minimum of 80% of the circumference of the arm. The UA-1745 bladder covers 100% of the circumference of the arm at its largest circumference, 45cm. When the extender is added, it covers 80% pursuant to the American National Standard.[2,3]

If the UA-E extender is used on short obese patients, it is **no longer a full 360º cuff and requires indexing**. This is accomplished by placing the extender on the opposite side of the brachial artery. The extender is clearly labeled to not place directly over the brachial artery. Failing to index the extender will cause the same types of errors created by not indexing conventional blood pressure cuffs.

The extender allows maximum flexibility of the UA-1745 blood pressure cuff with minimal compromise of blood pressure cuff transducing. It provides superior performance when compared to the use of a oversize thigh cuff.



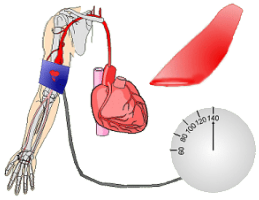
**Technicuff Corp.**
*The purple blood pressure cuff company*
2525 Industrial Street, Leesburg, Florida 34748
(800) 276-2833 (352) 326-2833 (352) 326-2027 F
www.technicuff.com

***Clinical staff should understand that taking pressure from the arm of an obese patient where the cuff diameter is larger than 45cm will routinely reduce the accuracy of blood pressure measurements, regardless of cuff manufacturer***. Imagine placing a winter jacket on a healthy patient's arm and then trying to take a pressure using the Gold Standard, a sphygmomanometer and stethoscope. The jacket would attenuate the Korotkoff sounds. The result would be the underestimation of systolic and overestimation of diastolic systemic pressures. The differential pressure (systolic minus diastolic) would become smaller. Obese patient's greater mass of tissue between the brachial artery and cuff has the same effect of attenuation of signal.

***If a high degree of accuracy is an issue on obese patients whose arm circumference is greater than 45cm, it is time to consider direct blood pressure measurement.***

Clinical staff members using the UA-E extender with the UA-1745 blood pressure cuff should expect to see reasonably close blood pressure measurements that allow the establishment of norms for the obese patient. From these norms, clinical staff members will be able to accurately track (trend) changes of blood pressure values.

1. Recommendation for Human Blood Pressure Determination by Sphygmomanometers, American Heart Association, 1987
2. Journal of Clinical Engineering, May-June 1996
3. Non-automated sphygmomanometers, Association for the Advancement of Medical Instrumentation
4. Electronic or automated sphygmomanometers, Association for the Advancement of Medical Instrumentation



**Technicuff Corp.**
*The purple blood pressure cuff company*
**2525 Industrial Street, Leesburg, Florida 34748**
**(800) 276-2833 (352) 326-2833 (352) 326-2027 F**
**www.technicuff.com**