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COMPRESSION TANK SPHYGMOMANOMETER INFLATER

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A TECHNIQUE HAS BEEN devised using a compression tank for inflation of sphygmomanometers which facilitates multiple, rapid blood pressure recordings. We have found this adaption helpful in doing diagnostic blood pressure tests. This is especially true for inflation of cuffs around large arms or thighs, which previously was difficult. Inflation of a cuff by compressed gas is done rapidly with ease.

Since the rate of inflation of the blood pressure cuff is rapid and constant, the inflation time is standardized. This makes it easier to maintain standardized recording intervals when determination at every 20-30 second interval is desirable. We have used this method routinely to measure basal blood pressure, cold pressor, postural blood pressure, provocative histamine and regitine tests for over six months.

The nurses and technicians have quickly mastered the method and are enthusiastic about its use. (Figure 1).

Our technique uses a large oxygen tank containing 244 cubic feet at 2,200 lbs./sq. inch for compression source. We use oxygen in preference to compressed air because it is less expensive in our hospital. A flow meter is attached to the tank with rubber tubing running from the outlet to the testing area. A Y-joint connects the end of the tubing with the sphygmomanometer valve in close proximity to make handling easier. Oxygen flow rate is set at about 6 liters/minute with continuous flow during the testing interval. The cuff is inflated to the desired pressure, by occluding the open end of the Y-joint with a finger, then released. Blood pressure is then taken in the standard manner by adjusting the sphygmomanometer valve. (Figure 2). When the blood pressure cuff is not being inflated, the oxygen flows out the open branch of the Y-joint. The first tank we used served for about 150 multiple recording tests. Use of a compression tank costs less than a penny for each multiple recording test.

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Figure 1

The technician is inflating the blood pressure cuff by occluding open end of Y-connector with third fingertip. Pressure release is controlled by the usual method of adjustment of escape valve.

SPHYGMOMANOMETER INFLATER

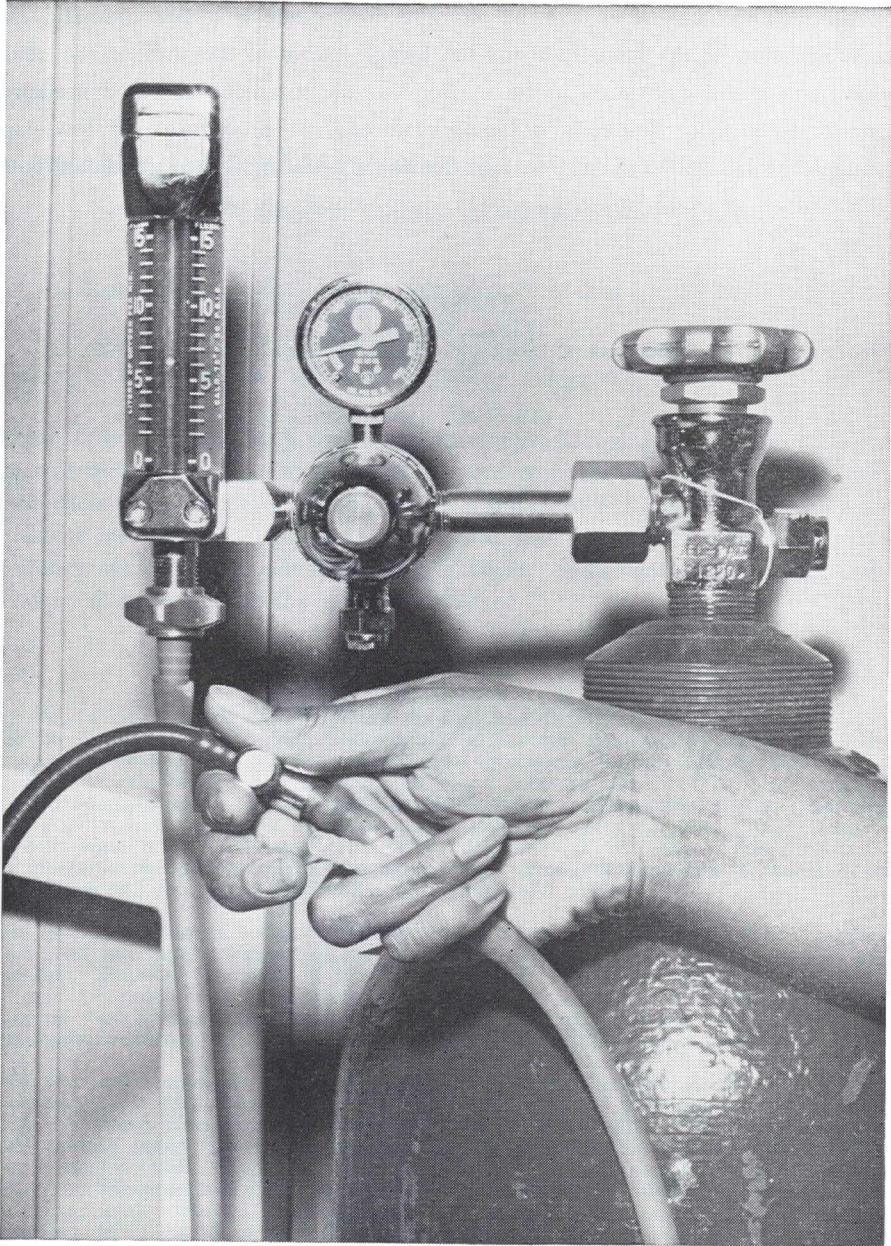


Figure 2

Compression tank, flow-meter, tubing, and operative position are shown.

SUMMARY

Although the use of an external compression source is a less dramatic change than substitution of the hand bulb for the bicycle pump at the turn of the century,¹ we have found the innovation useful in frequent measurement of blood pressure for diagnostic tests. The simplicity of equipment, ease of procedure and low expense recommend this adaption for use in hypertension studies and other situations requiring frequent blood pressure measurements in rapid succession.

REFERENCE

1. Gandevia, B.: The development of the sphygmomanometer, *Med. J. Aust.* 1:752, 1961.