

Cambridge English for Nursing

MEDICAL TECHNOLOGY

UNIT 1

Blood pressure monitors

- a** Read about the sphygmomanometer and the digital monitor and then mark the following statements True (T) or False (F).

The sphygmomanometer

- 1 has a mercury-filled glass column which is entirely safe to use.
- 2 has a cuff which is placed around the upper arm.
- 3 is a device which does not enter the body.
- 4 requires an external power source to operate it.
- 5 measures all vital signs.

The digital monitor

- 6 measures a range of patient observations.
- 7 has an inflatable cuff which is usually placed around the upper arm.
- 8 is manually operated.
- 9 needs a stethoscope to listen to the sounds of blood flowing through the artery.
- 10 has a pulse oximeter lead that can be attached to the nail bed.

The sphygmomanometer /sfɪgmomənɒmɪtə/, often abbreviated to *sphyg* /sfɪg/, is the most common device used for measuring blood pressure. It consists of a hand bulb pump, an inflatable cuff and a glass column containing mercury. The inflatable cuff is placed over the brachial artery above the cubital fossa – the front side of the elbow joint. A stethoscope is placed over the cubital fossa so that the Korotkoff sounds – that is, the noises made by blood as it vibrates against the artery walls – can be heard. The advantage of the sphygmomanometer is that it is non-invasive. It does not require batteries or a power supply as it is completely manual. The disadvantages include the risk of mercury contamination if the glass column breaks, and the possibility of incorrect readings if blood pressure sounds are muffled or unclear.

The digital monitor is an all-in-one mobile device which measures blood pressure, pulse, oxygen saturation and oral temperature. A rubber cuff is wrapped around the upper arm and inflated. The unit automatically inflates and deflates the cuff until the correct reading is displayed. The pulse is shown at the same time – no stethoscope is required. A separate oximeter lead is attached to a finger, making sure that the red sensor light is shining on the side of the nail bed, and the oxygen saturation reading can be read on the LCD display. Finally, a thermometry probe located at the back of the digital monitor can be used to take the patient's oral temperature. The temperature reading is shown on the LCD display after four seconds.

- b** Click on the links below and find the following parts of the equipment.

<http://homepage.ntliworld.com/gobfm/sphyg.jpg>

<http://www.davidgregory.org/bloodpressuremonitors.htm>

digital display temperature reading thermometer probe pulse reading
oxygen saturation stethoscope glass display tube cuff hand bulb pump

- c** In pairs, take turns to describe one of the pieces of equipment without looking at the text. What are the pros and cons of the sphygmomanometer and the digital monitor?