

## Symphysis-fundal height measurement

### *Background*

Symphysis-fundal height (SFH) measurement is currently used in the UK as a clinical screening test to assess fetal size and identify potential growth restriction/large for dates. Current national clinical guidance recommends that SFH is measured quantitatively and recorded at each antenatal appointment from 24 weeks' gestation (NICE 2008). It has now virtually superseded abdominal palpation in the assessment of fetal growth, the latter having been found to perform poorly in clinical practice (Neilson 1998). However, a Cochrane review found insufficient evidence to demonstrate that SFH measurement in pregnancy is more effective than abdominal palpation and recommends that further research is undertaken (Neilson 1998).

A review of the literature has found mixed results as regards the benefits of SFH measurement and these have been attributed to the significant variations in the methods used within clinical practice (Griffiths *et al* 2008, Morse *et al* 2009). However, a standardised protocol for serial SFH measurement using a tape measure and plotting the measurements on customised growth charts has proved to be more effective in the antenatal detection of both small and large babies for gestational age, as well as in the reduction of unnecessary obstetric referrals (Gardosi & Francis 1999, Morse *et al* 2009).

### *Definition*

Symphysis-fundal height (SFH) measurement refers to the distance (measured in centimetres) over the abdominal wall from the top of the uterus (fundus) to the upper border of the symphysis pubis. This measurement is taken along the longitudinal axis of the uterus without any correction of the tape measure to the midline of the abdomen, using a non-stretch tape measure which

remains in continuous contact with the skin surface of the abdomen. The fundal height measurement should, in general, correspond with the number of weeks' gestation, within an allowance of 1-3 cm (Johnson & Taylor 2006). Two measurements taken two weeks apart that show a measurement deviation of more than 2 cm can be suggestive of a fetus that is small/large for gestational age, multiple pregnancy, or an inaccurate estimated due date (EDD) (Mosby 2009). Towards the end of pregnancy, SFH measurement is known to become less accurate because of the descent of the fetal presenting part into the maternal pelvis.

### *Technique*

The woman should always be advised to empty her bladder before SFH measurement is taken, because fundal height at 17-20 weeks of pregnancy has been found to measure 3 cm higher in the presence of a full bladder (Cunningham *et al* 2005).

- Ensure that the woman has given her consent, is comfortable and lying in a semi-recumbent position.
- Prior to SFH measurement, the midwife should still palpate the woman's pregnant abdomen to check the baby's size, its position and presentation, the volume of amniotic fluid around the fetus, and to identify the uterine fundus.
- The (metric) measurement scale on the tape measure should always be placed face downwards against the woman's abdomen to prevent the practitioner from making a subjective/biased assessment (Jelks *et al* 2007).

### *Implications for practice*

Where the SFH measures *shorter* than gestation, this can be suggestive of:

- a healthy baby that is physically small (often reflecting the stature of its parents)
- engagement/descent of the fetal presenting part into the maternal pelvis
- inaccurate EDD
- a baby that is small for gestational age
- transverse/oblique lie
- oligohydramnios – insufficient volume of amniotic fluid.

the number of weeks' gestation, within an allowance of 1-3 cm (Johnson & Taylor 2006).

Where the SFH measures *longer* than gestation, this can be suggestive of:

- a healthy baby that is physically large (*as before*)
- multiple pregnancy
- inaccurate EDD
- a baby that is large for gestational age
- breech presentation (where the presenting part may not engage/engage as deeply as with a cephalic presentation)
- polyhydramnios (also called 'hydramnios') – excessive volume of amniotic fluid.

#### Key learning points

- SFH has now superseded abdominal palpation in the assessment of fetal growth, although the need for further research has been identified.
- Current national clinical guidance recommends that SFH is measured and recorded at each antenatal appointment from 24 weeks' gestation (NICE 2008).
- SFH measurement can be biased by individual practitioners and the range of techniques used.
- A standardised protocol for serial SFH measurement using a tape measure and plotting the measurements on customised growth charts has proved more effective.
- The fundal height measurement should, in general, correspond with

#### References

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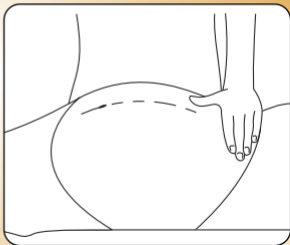
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# FUNDAL HEIGHT MEASUREMENT

**1.** Mother semi-recumbent, with bladder empty.



**2.** Palpate to determine fundus with two hands.



# FUNDAL HEIGHT MEASUREMENT

**3.** Secure tape with hand at top of fundus.



**4.** Measure to top of symphysis pubis.



**5.** Measure along longitudinal axis, note metric measurement.

