

Symphyseal Fundal (S-F) Height Measurement

Guidelines	Level of Evidence	References
Early in pregnancy all women should receive appropriate written information concerning measurement of fetal growth and be given an opportunity to discuss the procedure with their midwife or doctor.	IV	4
Evidence supports either palpation or S-F measurement at every antenatal visit to monitor fetal growth over no measurement. There is no conclusive evidence to support S-F measurement over abdominal palpation for accurate detection of IUGR and macrosomia.	II	1
Measurement of the fundus should start at the variable point (the fundus) and continue to the fixed point (the symphysis pubis) using a non-elastic tape measure. The centimetre side of the tape should be face down.	III	2,3
Symphyseal fundal measurement, if taken, should be recorded in a consistent manner.	III	2,3
Good Practice Notes		
In less experienced hands, and situations involving multiple midwives or doctors, S-F measurement may provide a degree of reliability and consistency not given by palpation.		

Aim

The aim of these guidelines is to assist midwives and doctors in accurate measurement of uterine size in order to identify fetuses that are either small or large for gestational age so as to improve outcomes for those fetuses.

Evidence

The measurement of symphyseal-fundal height is an assessment of uterine size used as an indirect measure of fetal growth. If the fetus appears either small or large for gestational age then ultrasound is generally required to determine macrosomia and intrauterine growth restriction (IUGR). The practice of measuring, whether by S-F height measurement or palpation, is also thought to have value in reassuring mothers about fetal growth. However, there was no evidence identified to support this.

During the 1980s a tape measure was used in conjunction with palpation in Australian obstetrics and midwifery training, as it was considered to improve reliability when assessing fetal growth and size, especially for inexperienced graduates. Consequently some midwives and doctors at the Three Centres use both methods depending on their training and experience. In later pregnancy abdominal palpation is used in conjunction with symphyseal fundal height measurement to detect fetuses in abnormal lie and presentation.

Current evidence does not conclusively support symphyseal fundal height measurement over palpation in detecting macrosomia and IUGR, though use of either method appears better than no measurement at all. A Cochrane review contains only one randomised controlled trial (Level II evidence) which failed to demonstrate any increase in the detection of small or large for gestational age fetuses. Accurate detection of small for gestational age was less in the study group. The review concluded that there is insufficient evidence to draw reliable conclusions about this test, and recommended that further evaluation is needed prior to abandoning use of a tape measure¹. A prospective, non-randomised controlled population based study (Level III-2 evidence) indicated better detection rates of IUGR and lower rates of referral for pregnancy assessment when serial symphyseal fundal measurement is employed by trained personnel using a consistent technique and combined with comprehensive maternal assessment². A review of customised fetal growth assessment concluded there is no evidence to support the routine use of symphyseal fundal measurement outside the context of employing rigorous and systematic measurement techniques³. Customised growth charts³ were recommended, but considered by the Three Centres steering group as impractical for use in busy clinical settings.

Methods of Search and Appraisal

The following strategy was used to search and appraise evidence on symphyseal fundal height measurement in pregnancy:

I. Search on Defined Questions (November 2000)

A research team from the Department of Perinatal Medicine at the Royal Women's Hospital used the OVID interface to search Medline (October 2000 to January 1974), CINAHL (October 2000 to April 1982), Best Evidence (October 2000 to January 1991) and The Cochrane Database (-2000 Issue 3) to address:

1. Does measuring symphyseal fundal height using a tape measure detect IUGR, macrosomia, and multiple pregnancies and reassure mothers better than clinical abdominal palpation, or no measurement at all?

These search terms were used: symphyseal fundal height, fundal symphyseal height, fundal height, antenatal abdominal palpation, symphysis fundal height, maternal anxiety, uterine growth, intrauterine growth retardation, macrosomia, growth and multiple pregnancy, maternal perception, maternal attitudes, and antenatal screening.

The search retrieved 80 citations. Ten key citations were then identified for appraisal, including one systematic review of direct relevance to the search questions. Other citations included a prospective randomised controlled trial (Level II), a prospective, non-randomised, controlled population study (Level III-2), one Level III-3 study, five Level IV articles/documents and a letter. The coordinator searched grey literature and journals for additional evidence published between December 2000 and August 2001.

References

1. Neilson JP, Symphysis-fundal height measurement in pregnancy (Cochrane Review). *The Cochrane Library*, Issue 3, 2000. Oxford: Updated Software. Level II Evidence
2. Gardosi J, Francis A. Controlled trial of fundal height measurement plotted on customised antenatal growth charts. *BJOG* 1999;106(4):309-17. Level III-2 evidence
3. Leeson S, Aziz N. Customised fetal growth assessment [Review] [38 refs] *BJOG*. 1997;104(6):648-5. Level IV evidence
4. Lumley J. *What do women really want? Satisfaction with care in pregnancy, birth and the postnatal hospital stay. A summary of current evidence to April 2000*. Unpublished report commissioned by The Royal Women's Hospital, Melbourne from the Centre for Studies on Mother's and Children's Health, La Trobe University, Melbourne 2000. Level IV evidence