



The Royal College of
Midwives

Evidence Based Guidelines *for* *Midwifery-Led Care in Labour*

Assessing Progress in Labour



Practice Points

Monitoring the progress of labour requires more than the assessment of cervical changes and fetal descent (Enkin et al. 2000). Midwives should give weight to their other skills, such as abdominal palpation and a knowledge of women's changing behaviour (Gross et al. 2003; Burvill 2002; Stuart 2000; Baker and Kenner 1993; McKay and Roberts 1990).

Midwives must give consideration to the emotional and psychosexual aspects of any procedure (Devane 1996). Many women find vaginal examinations painful and distressing (Lewin et al. 2005; Menage 1996).

Vaginal examinations are only one method of measuring progress in labour. These examinations should be carried out only after discussion with the woman, when the practitioner can justify that she believes the findings will add important information to the decision-making process (NICE 2007).

Vaginal examinations are an imprecise measure of the progress of labour when performed by different examiners (Buchmann and Libhaber 2007; Clement 1994; Robson 1991; Tufnell et al. 1989). Where possible, therefore, they should be carried out by the same midwife.

There is no research-based information on which to make recommendations for the timing and frequency of vaginal examinations.

When vaginal examinations are used, there are six ways to determine progress in labour (Simkin and Ancheta 2000):

- the cervix moves from a posterior to an anterior position;
- the cervix ripens or softens;
- the cervix effaces;
- the cervix dilates;
- the fetal head rotates, flexes and moulds;
- the fetus descends.

NICE (2007) recommends that progress in the first stage of labour should include:

- cervical dilatation of 2 cm in 4 hours;
- descent and rotation of the fetal head;
- changes in strength, duration and frequency of contractions.

Assessing Progress in Labour

Statistical norms for the length of labour were established by Freidman in the 1950s, influenced by O' Driscoll in the 1970s, and continue to be widely used today despite several methodological problems with the data from which they were constructed (Albers, Schiff et al. 1996). Measurement of the length of labour is inherently imprecise for many reasons.

Albers et al. (1996) and Zhang et al. (2002), suggest that the pattern of labour progress in contemporary populations differs significantly from what was observed in the 1950s (Freidman 1954). A recent review (Zhang et al. 2010), using data from the National Collaborative Perinatal Project with a cohort of 26,838 women from 1955 to 1960 and re-examining the labour records accounting for multiple confounding variables, concluded that the active phase of labour does not begin until 5cm in multiparas and even later with primiparas. They suggest that using this older data offers a clearer understanding of the pattern of normal labour, as more recent prospective studies have incorporated and normalised multiple obstetric interventions. Neil et al.'s (2010) review of papers from 1950 to 2008, focusing on cervical dilatation and labour duration of low risk nulliparous women, found that the slowest yet normal dilatation rate for this group of women with spontaneous onset was 0.5 cm per hour. They also found, as others (Zhang et al. 2010), that cervical dilatation is not linear. Inappropriate dilatation expectation (eg 1 cm per hour), as common in some units, can easily contribute to the over use of interventions aimed at accelerating labour with potential iatrogenic consequences.

Labour onset is self-diagnosed and women vary in their response to assessing painful contractions. Gross et al.'s (2003) study found that women reported a great diversity of signs and symptoms heralding their onset of labour, but that it was a concrete event for most women who were reasonably precise about when the transition occurred. They suggest that a woman's own recognition of the onset of labour may well be as solid as any surrogate measure such as time of presentation in hospital. They suggest that the right question to ask is not, "When did your contractions start?" but "When did your labour start?" and "How did you know?". Eri et al. (2010) advise that midwives should allow women the opportunity to 'tell their story' rather than focussing on objective questions, such as enquiring about contraction frequency, before offering advice to women about when to attend hospital. Spiby et al. (2006) agree, suggesting that midwives take their time on telephone assessments. Burvill's (2002) study of expert midwifery opinion found that midwifery knowledge can work outside the biomedical paradigm that uses cervical dilatation and abdominal palpation of contractions alone, and seeks to recognise the clues that are found in movements, breathing, conversation and emotional states.

The vaginal examination uses two objective criteria in order to assess the progress of labour: cervical dilatation and descent of the fetal presenting part. However, the examination is inherently imprecise because of the potential for inter-observer variability. The assessment of the cervix is considered to be "the cornerstone of the management of labour" (Tufnell et al. 1989) and remains the most accepted method of measuring progress (Enkin et al. 2000). There is, however, a dearth of research into the accuracy of the examination (Enkin et al. 2000). Tufnell et al. (1989) used cervical simulators with a sample of experienced labour ward midwives (n 36) and obstetricians (n 24), and found no examiner correct in all six cases. Robson's (1991) study of 52 practitioners (doctors, midwives and students) using simulation models also found significant variation in estimations of effacement and dilatation. Buchman and Libhaber's (2007) cross-sectional study of a group of 508 women found that clinicians differed in dilatation measurements by 2 cm or more in 11% of occasions. These inconsistent findings can be disturbing for women and cause them to lose confidence in the practitioners (Shepherd et al. 2010). Because of the possibility of inter-observer variation and inaccuracy (Clement 1994), vaginal examinations should be carried out by the same midwife where possible.

Simkin and Ancheta (2000) suggest there are six ways to progress in labour. The cervix moves from a posterior to an anterior position; the cervix ripens or softens; the cervix effaces; the cervix dilates; the fetal head rotates flexes and moulds; the fetus descends. Monitoring the progress of labour requires more than the assessment of cervical dilatation and uterine contractions. NICE (2007) recommends that progress in the first stage of labour should include cervical dilatation of 2 cm in 4 hours, descent and rotation of the fetal head changes in strength, duration and frequency of contractions. Progress must be considered in the context of the woman's total well-being. Enkin et al. (2000 p 285) point out that "A dilatation rate of 1cm/hour in a woman who is having strong contractions and is in severe distress is far more worrying than a rate of 0.3cm/hour in a woman who is comfortable, walking around, drinking cups of tea and chatting with her companions". Midwives should give weight to their other skills in determining the progress of labour, such as abdominal palpation (Stuart 2000) and their knowledge of women's behaviour at different stages of labour (Baker and Kenner 1993; McKay and Roberts 1990). Frequent vaginal examinations in the second stage may also "reinforce cultural messages about women's powerlessness" and imply that "the woman's body cannot be trusted to work right" (Bergstrom et al. 1992).

The process of care in labour usually demands a focus on the woman's genitalia, with exposure to people that are strangers (Devane 1996). Midwives have sometimes responded to the embarrassment of this situation by adopting ritualistic semi-sterile procedures, and by using language which infantilises the woman. Such behaviour can now easily be recognised as inappropriate. Midwives should give consideration to the emotional and psychosexual aspects of any procedure, and talk about these issues in a respectful way.

Many women experience vaginal examinations as painful (Bergstrom et al. 1992), distressing and embarrassing (Devane 1996) and invasive (Stuart 2000). They bring up issues of sexual intimacy, invasion of privacy and vulnerability (Warren 1999). They also carry a risk of infection (Seaward et al. 1997).

Menage (1996) suggests that the physical pain, feelings of powerlessness, lack of information and an unsympathetic attitude by the midwife or the doctor may contribute to psychological trauma; she also points out that this may have medico-legal implications. The GMC has received many complaints about improper or rough behaviour during intimate examinations (RCOG 1997). Lewin et al.'s (2005) survey of 104 primiparas' experience of vaginal examinations found that the practice needed to be more sensitive to pain and distress, improve on information giving about possible alternative options and obtaining informed consent.

Vaginal examinations must be considered within the context of the woman's individual experience of labour. Examinations carried out with sensitivity, in privacy by one midwife with whom the woman has a good relationship will be experienced as very different from brusque examinations from different professionals whom the woman hardly knows (Clement 1994).

Consent should be obtained for each vaginal examination: it should not be assumed for repeated assessments.

Responding to the need to find less intrusive methods of assessing progress of labour, Shepherd et al. (2010) undertook a longitudinal observational study to assess in what percentage of women the presence or absence of a red/purple line (seen to rise from the anal margin and extend between the buttocks as labour progresses) was present, clear and measurable. This line had been documented in one small study (Byrne and Edmonds 1990) and some midwifery text books. The appearance of the line has been attributed to vasocongestion, brought on by intrapelvic pressure as the fetal head descending. Shepherd et al's study of 144 women confirmed the existence of the purple line and found a medium positive correlation between its length and cervical dilatation and station of the fetal head. Research is needed to evaluate further the value of this measurement and whether it is acceptable to women and clinicians.

There is no research-based information on which to make recommendations for the timing and frequency of vaginal examinations. It seems appropriate, therefore, to abandon arbitrary predetermined timing (Devane 1996) and to make sure that women are involved in decision making about timing and frequency. Warren (1999) recommends asking the question "How can I justify this invasive interference?" before carrying out a vaginal examination. Potential change in care, resulting from examination findings, should also be discussed at this point (RCOG 1997; Bergstrom et al. 1992).

References

- Albers L, Schiff M, Gorwoda J (1996) The Length of Active Labour in Normal Pregnancies. *American Journal of Obstetrics and Gynecology* **87**: 355-359
- Baker A, Kenner AN (1993) Communication of pain: vocalization as an indicator of the stage of labour. *Australian and New Zealand Journal of Obstetrics and Gynaecology* **33**: 384-385
- Bergstrom L, Roberts J, Skillman L, Seidel J (1992) "You'll Feel Me Touching You, Sweetie": Vaginal Examinations During the Second Stage of Labour. *Birth* **19**:10-18
- Buchmann E, Libhaber E (2007) Accuracy of cervical assessment in the active phase of labour. *British Journal of Obstetrics and Gynaecology* **114**(7): 833-7
- Burvill S (2002) Midwifery diagnosis of labour onset. *British Journal of Midwifery* **10**: 600-605
- Byrne D and Edmonds D (1990) Clinical method for evaluating the progress in first stage of labour. *The Lancet* **335**:122
- Clement S (1994) Unwanted vaginal examinations. *British Journal of Midwifery* **2**: 368-370
- Devane D (1996) Sexuality and Midwifery. *British Journal of Midwifery* **4**: 413-416
- Enkin M, Keirse MJNC, Neilson J et al. (2000) *A Guide to Effective Care in Childbirth*. Oxford: Oxford University Press
- Enkin M (1992) Commentary: Do I do that? Do I really do that? Like that? *Birth* **19**: 19-20
- Eri TS, Blystad A, Gjengedal E et al. (2010) Negotiating credibility: first-time mothers' experiences of contact with the labour ward before hospitalisation. *Midwifery* **26**: e25-e30.
- Freidman EA (1954) The Graphic Analysis of Labour. *American Journal of Obstetrics and Gynecology* **68**: 1568-1575
- Gross M, Haunschild T, Stoexen T, Methner V, Guentner H (2003) Women's recognition of the Spontaneous Onset of Labour. *Birth* **30**: 267-271
- Lewin D, Fearon B, Hemmings V, Johnson G (2005) Women's experiences of vaginal examinations in labour. *Midwifery* **21**: 267-277
- McKay S, Roberts J (1990) Obstetrics by Ear: Maternal and Caregivers' Perceptions of the Meaning of Maternal Sounds During Second Stage of Labour. *Journal of Nurse Midwifery* **35**: 266-273
- Menage J (1996) Post-traumatic stress disorder following obstetric/gynaecological procedures. *British Journal of Midwifery* **4**: 532-533
- Neil J, Lowe N, Patrick T, Cabbage L, Corwin E (2010) What is the slowest-yet-normal cervical dilatation rate among nulliparous women with spontaneous labor onset. *The Journal of Obstetric, Gynecologic, & Neonatal Nursing* **39**(4): 361-369
- NICE (2007) *Intrapartum Care; care of healthy women and their babies during childbirth*. London: RCOG
- Royal College of Obstetricians and Gynecologists (RCOG) (1997) *Intimate Examinations*. London: RCOG Press
- Robson S (1991) Variation of cervical dilatation estimation by midwives, doctors, student midwives and medical students in 1985 – a small study using cervical simulation models. *Research and the Midwife Conference Proceedings Manchester*: University of Manchester

Seaward P, Hannah M, Myhr T, et al. (1997) International Multicentre Term Prelabor Rupture of Membranes Study: evaluation of predictors of clinical chorioamnionitis and post partum fever in patients with prelabor rupture of membranes at term. *American Journal of Obstetrics and Gynecology* **177**: 1024-1029

Shepherd A, Cheyne H, Kennedy S, et al. (2010) The purple line as a measure of labour progress: a longitudinal study *BMC Pregnancy and Childbirth* **10**: 54

Simkin P, Ancheta R (2000) *The Labor Progress Handbook*. Oxford: Blackwell Science

Spiby H, Green JM, Hucknall C, et al. (2006) Labouring to better effect: studies of services for women in early labour. The OPAL study. Report for the National Co-ordinating Centre for the NHS Service Delivery and Organisation London: NCCSDO

Stuart C (2000) Invasive actions in labour. *Practising Midwife* **3**: 30-33

Tufnell D, Bryce F, Johnson N, et al. (1989) Simulation of cervical changes in labour: reproducibility of expert assessment. *The Lancet* **8671**: 1089-90

Warren C (1999) Why should I do vaginal examinations? *Practising Midwife* **2**: 12-13

Zhang J, Troendel J, Yancey M (2002) Reassessing the labor curve in nulliparous women. *American Journal of Obstetrics and Gynecology* **187**: 824-28

Zhang J, Troendle J, et al. (2010) "The natural history of the normal first stage of labor." *American Journal of Obstetrics and Gynecology* **115**(4): 705-710.

This updated guideline was authored by:

Jane Munro, Quality and Audit Development Advisor, RCM, Mervi Jokinen, Practice and Standards Development Advisor, RCM

And peer reviewed by:

Dr Tracey Cooper, Consultant Midwife – Normal Midwifery, Lancashire Teaching Hospitals NHS Foundation Trust.

Dr Fiona Fairlie, Consultant Obstetrician and Gynaecologist, Sheffield Teaching Hospitals NHS Foundation Trust.

Anne-Marie Henshaw, Lecturer (Midwifery and Women's Health)/ Supervisor of Midwives, University of Leeds

Helen Shallow, Consultant Midwife & Head of Midwifery, Calderdale & Huddersfield NHS Foundation Trust.

The guidelines have been developed under the auspices of the RCM Guideline Advisory Group with final approval by the Director of Learning Research and Practice Development, Professional Midwifery Lead.

The guideline review process will commence in 2016 unless evidence requires earlier review.

© The Royal College of Midwives Trust 2012

Appendix A

Sources

The following electronic databases were searched: The Cochrane Database of Systematic Reviews, MEDLINE, Embase and MIDIRS. As this document is an update of research previously carried out, the publication time period was restricted to 2008 to March 2011. The search was undertaken by Mary Dharmachandran, Project Librarian (RCM Collection), The Royal College of Obstetricians and Gynaecologists.

Search Terms

Separate search strategies were developed for each section of the review. Initial search terms for each discrete area were identified by the authors. For each search, a combination of MeSH and keyword (free text) terms was used.

Journals hand-searched by the authors were as follows:

- Birth
- British Journal of Midwifery
- Midwifery
- Practising Midwife
- Evidence-based Midwifery