

Ultrasound Dating Criteria

Background

Determining the first day of the LMP traditionally is the first step in establishing the estimated date of delivery (EDD). By convention, the EDD is 280 days after the first day of the LMP. Because this practice assumes a regular menstrual cycle of 28 days, with ovulation occurring on the 14th day after the beginning of the menstrual cycle, this practice does not account for inaccurate recall of the LMP, irregularities in cycle length, or variability in the timing of ovulation. It has been reported that approximately one half of women accurately recall their LMP. In one study, 40% of the women randomized to receive first-trimester ultrasonography had their EDDs adjusted because of a discrepancy of more than 5 days between ultrasound dating and LMP dating. Estimated due dates were adjusted in only 10% of the women in the control group who had second-trimester ultrasonography, suggesting that first-trimester ultrasound examination can improve the accuracy of the EDD, even when the first day of the LMP is known.

Accurate determination of gestational age can positively affect pregnancy outcomes. For instance, one study found a reduction in the need for postterm inductions in a group of women randomized to receive routine first-trimester ultrasonography compared with women who received only second-trimester ultrasonography. A Cochrane review concluded that ultrasonography can reduce the need for postterm induction and lead to earlier detection of multiple gestations. Because decisions to change the EDD significantly affect pregnancy management, their implications should be discussed with patients and recorded in the medical record

Artificial Reproductive Technology

If pregnancy resulted from ART, the ART-derived gestational age should be used to assign the EDD. For instance, the EDD for pregnancy resulting from in vitro fertilization should be assigned using the age of the embryo and the date of transfer. For example, for a day-5 embryo, the EDD would be 261 days from the embryo replacement date. Likewise, the EDD for a day-3 embryo would be 263 days from the embryo replacement date.

Second trimester

With rare exception, if a first trimester ultrasound examination was performed, especially one consistent with LMP dating, gestational age should not be adjusted based on a second-trimester ultrasound examination.

For anatomic detail we suggest an US from 20-22 wks, rather than at 18 wks. Timing the ultrasound will improve evaluation of fetal anatomy, as well as biometry (growth), placenta, and fluid.

Third trimester

Gestational age assessment by ultrasonography in the third trimester (28 0/7 weeks of gestation and beyond) is the least reliable method, with an accuracy of ± 21 –30 days. Because of the risk of redating a small fetus that may be growth restricted, management decisions based on third-trimester ultrasonography alone are especially problematic; they need to be guided by careful consideration of the

entire clinical picture and may require closer surveillance, including repeat ultrasonography to ensure appropriate interval growth.

The following criteria are recommended be used in adjusting EDD's:

Table 1. Guidelines for Redating Based on Ultrasonography		
Gestational Age Range*	Method of Measurement	Discrepancy Between Ultrasound Dating and LMP Dating That Supports Redating
$\leq 8\ 6/7$ wk $9\ 0/7$ wk to $13\ 6/7$ wk	CRL	More than 5 d More than 7 d
$14\ 0/7$ wk to $15\ 6/7$ wk	BPD, HC, AC, FL	More than 7 d
$16\ 0/7$ wk to $21\ 6/7$ wk	BPD, HC, AC, FL	More than 10 d
$22\ 0/7$ wk to $27\ 6/7$ wk	BPD, HC, AC, FL	More than 14 d
$\dagger 28\ 0/7$ wk and beyond	BPD, HC, AC, FL	More than 21 d
Abbreviations: AC, abdominal circumference; BPD, biparietal diameter; CRL, crown-rump length; FL, femur length; HC, head circumference; LMP, last menstrual period. *Based on LMP †Because of the risk of redating a small fetus that may be growth restricted, management decisions based on third-trimester ultrasonography alone are especially problematic and need to be guided by careful consideration of the entire clinical picture and close surveillance.		

Management of Suboptimally Dated Pregnancies

Pregnancies without an ultrasonographic examination confirming or revising the estimated due date before $22\ 0/7$ weeks of gestation should be considered suboptimally dated.

The timing of indicated delivery in a woman with a suboptimally dated pregnancy should be based on the best clinical estimate of gestational age.

There is no role for elective delivery in a woman with a suboptimally dated pregnancy.

Amniocentesis for fetal lung maturity is not recommended as a routine component of decision making when considering delivery in a woman with a suboptimally dated pregnancy.

During the antenatal care of a woman with a suboptimally dated pregnancy, please repeat an interval ultrasonographic assessment of fetal weight and gestational age 3–4 weeks after the initial ultrasonographic study. Although this follow-up examination is intended to support the working gestational age, interval fetal growth assessment potentially may detect cases of fetal growth restriction.

Given concern that a full-term or late-term suboptimally dated pregnancy could actually be weeks further along than it is believed to be, initiate biweekly NSTs with a weekly fluid determination at 39 weeks of gestation.

Late-term delivery is indicated at 41 weeks of gestation when gestational age is uncertain, using the best clinical estimate of gestational age.

In a patient with a suboptimally dated pregnancy and a prior low-transverse cesarean delivery who requests a repeat cesarean delivery, delivery is advised at 39 weeks of gestation using best clinical estimate of gestational age.

References

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