

Ultrasound: Dating Criteria and Worksheet

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 post term 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 could reduce the need for post term 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	CRL	More than 5 d
9 0/7 wk to 13 6/7 wk	CRL	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
†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 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.

ANMC Radiology/MFM/OB Worksheet: 2019

1. Pyelectasis: Please see full text Urinary Dilation Guideline

AP diameter

4 mm or more at < 28 weeks

7 mm or more at > 28 weeks

	Second trimester ultrasound (<28 weeks)	Third trimester ultrasound (\geq 28 weeks)
Mild UTD	4-6 mm	7-9 mm
Moderate UTD	7-10 mm	10-15 mm
Severe UTD	>10 mm	>15 mm

-If UTD identified in Radiology, refer to MFM for ultrasound and consultation.

-If Mild, MFM will perform follow-up imaging at 32 weeks

-If Moderate or Severe, MFM will perform follow-up imaging sooner to evaluate for other elements of high-risk disease

2. OB transvaginal US:

MFM Recommendations:

Use TVUS at 16-245 weeks only (perform with provider order or tech can add on TVUS assessment per protocol if concern identified on abdominal US or views not adequate). A cervical length is not accurate unless obtained transvaginally.

TVUS should be used after 24 weeks only for a symptomatic patient with specific provider order.

If patient is asymptomatic, do not need to add TVUS beyond 24 weeks.

Tech can still look trans-abdominally but then should not add TVUS if you can't see it well.

CLEAR standardization for how cervical lengths when available.

OB exams follow up exams What is included? No cervix evaluation is included in required elements of an OB follow up exam (see below #5)

3. **Amniotic fluid:**

Use standard definitions of oligo and poly from SMFM

MVP < 2 or AFI < 5 for oligo

Mild Poly is deepest vertical pocket of ≥ 8 cm or an amniotic fluid index of ≥ 24 cm

Oligo = phone call to OB provider because patient may need to receive additional clinical assessment

Poly = no need to call provider - ok to just document in report

Only document the actual numbers for AFI/MVP, radiology should not make interpretive statements that affect clinical care such as "borderline"

4. **Dopplers:**

IUGR fetal growth < 10% Dopplers 3 measurements (2-3 all similar)

US tech can add Dopplers per a protocol when EFW < 10 % 28 weeks and up in radiology

MFM determines when Dopplers indicated between 24-28 weeks

Dopplers should not be used prior to 24 weeks

5. **Details on OB follow up ultrasounds**

- The "US OB Limited" for a specific image not acquired on a previous scan (*just* 4ch hrt, or, *just spine, or *cranial contents, etc) due to poor visualization or other.
- The "US OB Follow Up" – primarily the standard "growth" ultrasound, to include:

- BPD/HC, AC, FL, FHT
- 4CH Hrt, Stomach, Bladder, Kidneys
- Placenta, Plac position to CVX, CVX, AFI (if after 26wks), fetal position
- Can also include specific f/u items (ie lt vent of heart, ankles, CPC, diaphragm, etc)

References

1. Ultrasound in pregnancy. Practice Bulletin No. 175. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2016;128:e241–56. (Reaffirmed 2020)
2. Management of suboptimally dated pregnancies. Committee Opinion No. 688. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2017;129:e29–32 (Reaffirmed 2021)
3. Methods for estimating the due date. Committee Opinion No. 700. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2017;129:e150–4.
4. Definition of term pregnancy. Committee Opinion No. 579. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2013;122:1139–40. (Re-affirmed 2017)
5. Whitworth M, Bricker L, Mullan C. Ultrasound for fetal assessment in early pregnancy. *Cochrane Database Syst Rev*. 2015 Jul 14;(7):CD007058. (Accessed 11/20/21)
6. Morin L, Cargill YM, Glanc P. Ultrasound Evaluation of First Trimester Complications of Pregnancy. *Journal of Obstetrics and Gynaecology Canada* , 2016 (October) Vol. 38, Issue 10, p982–988
7. Reddy UM, Abuhamad AZ, Levine D, Saade GR. Fetal imaging: executive summary of a joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, American Institute of Ultrasound in Medicine, American College of Obstetricians and Gynecologists, American College of Radiology, Society for Pediatric Radiology, and Society of Radiologists in Ultrasound Fetal Imaging workshop. Fetal Imaging Workshop Invited Participants. *Obstet Gynecol* 2014;123:1070–82.

Reviewed 11/20/21 njm
 Revised 11/8/19njm
 Revised 2/23/19njm
 Revised 4/30/17njm
 Reviewed 10/28/16 njm
 Revised 10/20/14 njm
 Revised 4/23/13 njm
 Revised 7/15/2010 gjg

