Prenatal care in twin pregnancy

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EARLY ULTRASOUND EXAMINATION

- Definitive diagnosis
- Accurate estimation of gestational age
- **Chorionicity** and amnionicity

Gestational weight gain

- Body mass index (BMI) <18.5 kg/m2 (underweight) – no recommendation due to insufficient data

BMI 18.5 to 24.9 kg/m2 (normal weight) – weight gain 37 to 54 lbs (16.8 to 24.5 kg)

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BMI 25.0 to 29.9 kg/m2 (overweight) – weight gain 31 to 50 lbs (14.1 to 22.7 kg)

- BMI ≥30.0 kg/m2 (obese) – weight gain 25 to 42 lbs (11.4 to 19.1 kg)

Recommended Gestational weight gain in twin pregnancy

BMI (kg/m2)	*Recommended Gestational weight gain*
<18.5 kg/m2 (underweight)	no recommendation due to insufficient data
18.5 to 24.9 (normal weight)	16.8 to 24.5 kg
25.0 to 29.9 (overweight)	14.1 to 22.7 kg
≥30.0 (obese)	11.4 to 19.1 kg

Poor gestational weight gain after 20 weeks appears to have a greater impact than poor first trimester weight gain

- Poor gestational weight gain after 20 weeks appears to have a greater impact than poor first trimester weight gain
- 600 kcal/day
- After 20 weeks of gestation, weight gain should be approximately 1.75 pounds/week for underweight women and approximately 1.5 pounds/week for normal weight women, with the same or slightly lower weekly weight gain in overweight and obese women.

Nutrition

Same advise about diet ,lifestyle and nutritional supplement as in routine antenatal care .

Be aware of the heigher incidence of **anemia**

NIEC guidline:perform CBC at **20-24** wk to identify anemia

Twin pregnancy nutritional recommendations

Intervention	First trimester	Second trimester	Third trimester
Maternal weight/weight gain	Assess maternal pregravid BMI, determine BMI-specific weight gain goals	Assess/counsel regarding maternal BMI-specific weight gain (each prenatal care visit)	Assess/counsel regarding maternal BMI-specific weight gain (each prenatal care visit)
Caloric requirements (kcal × kg^{-1} × d^{-1})			
Normal BMI	40 to 45	Alter as necessary for weight gain goal	Alter as necessary for weight gain goal
Underweight	42 to 50		
Overweight	30 to 35		
Micronutrient supplement (daily total intake)			
MVI with iron (30 mg elemental tablets)	1	2	2
Calcium (mg)	1500	2500	2500
Vitamin D (international units)	1000	1000	1000
Magnesium (mg)	400	800	800
Zinc (mg)	15	30	30
DHA/EPA (mg)	300 to 500	300 to 500	300 to 500
Folic acid (mg)	1	1	1
Vitamin C/E (mg/international units)	500 to 1000/400	500 to 1000/400	500 to 1000/400
Nutritional consultation	Yes	Repeat if not at weight gain goal, anemia, GDM	Repeat if not at weight gain goal, anemia, GDM
Laboratory nutritional assessment	Hemoglobin ferritin folate/B12 early screen for GDM (risk factors) vitamin D	Follow up abnormalities from first trimester	Hemoglobin ferritin GDM screen with or without vitamin D
Risk factor-appropriate exercise or reduction in activity	Screen	Screen	Screen

Daily energy intake is divided over three meals and three snacks, with 20% of calories from protein, 40% of calories from low-glycemic index carbohydrates, and 40% of calories from fat.

BMI: body mass index; MVI: multivitamin; DHA: docosahexaenoic acid; EPA: eicosapentaenoic acid; GDM: gestational diabetes mellitus.

From: Goodnight W, Newman R. Optimal nutrition for improved twin pregnancy outcome. Obstet Gynecol 2009; 114:1121. DOI: 10.1097/AOG.0b013e3181bb14c8.

Screening for congenital anomalies

- anatomic survey at 18 to 22 weeks of gestation

Physical activity and exercise

- In early pregnancy, women with uncomplicated twin pregnancies can generally follow the same exercise/physical activity recommendations as women with singleton pregnancies

- Recommendations for individual patients may depend on factors such as overall state of health, proposed exercise regimen, and musculoskeletal factors.

Monitoring in the second/third trimesters

- serial examinations
- Documentation of the sites of placental implantation (anterior, posterior, lateral) and of the sites and types of placental cord insertion (eg, marginal versus central; normal versus velamentous)

Assessment of fetal well-being

- antepartum fetal monitoring in twins is widely practiced beginning at 32 weeks of gestation because of the increased risk of stillbirth in twins, particularly monochorionic twins

Which fetal well-being test?

- Both NSTs and BPPs are reliable in twin gestations

- We begin weekly testing routinely at 32 weeks of gestation in all twin pregnancies, but earlier and/or more frequently if complications, such as fetal growth restriction, develop

- In dichorionic twin pregnancies, the American College of Obstetricians and Gynecologists suggests reserving antenatal testing for gestations complicated by maternal or fetal disorders that require antepartum testing, such as fetal growth restriction

- The best technique to assess amniotic fluid volume in diamniotic twin gestations is uncertain. Subjective assessment of the volume of amniotic fluid in each sac appears to be as accurate as quantitative assessment

Chorionicity-based follow-up

Monochorionic twins

- first-trimester scan and be scanned every 2 weeks after 16 weeks in order to detect TTTS and TAPS.
- Complicated monochorionic twins should be scanned more frequently, depending on the condition and its severity

- monitoring monochorionic/diamniotic pregnancies beginning at 16 to 18 weeks by assessment of amniotic fluid volume and fetal bladder in both twins for early detection of **TTTS;**

- we begin measurement of middle cerebral artery peak systolic velocity (MCA-PSV) in both fetuses at 26 to 28 weeks for early detection of twin anemia-polycythemia sequence (TAPS) although there is no consensus about routine performance of middle cerebral artery Doppler to assess for **TAPS**

- There are inadequate data to determine the optimal frequency of monitoring, but measurement every two to three weeks is reasonable, with more frequent monitoring if abnormalities are detected (eg, discordant amniotic fluid volumes that do not yet meet criteria for stage I TTTS

Dichorionic twins

- Close fetal monitoring for TTTS and TAPS is unnecessary in dichorionic twins.

- first-trimester scan,
- a detailed second-trimester scan,
- scans every 4 weeks there after.

- Complicated dichorionic twins should be scanned more frequently, depending on the condition and its severity

- We perform an ultrasound examination every four to six weeks after 20 weeks of gestation to monitor fetal growth, as fetal growth deceleration leading to discordancy is optimally detected between 20 and 28 weeks of gestation.

- Many twin fetuses with growth abnormalities can be identified by 20 to 24 weeks, so if there is no evidence of growth abnormality at that time, then frequent scanning might not be necessary however, we continue serial ultrasound assessment until delivery.

At each ultrasound assessment,

- fetal biometry, amniotic fluid volume
- umbilical artery Doppler (from 20 weeks' gestation) for both twins. Discordance in estimated fetal weight (EFW)

In monochorionic twin pregnancy,

- middle cerebral artery (MCA) peak systolic velocity (PSV) should be recorded from 20 weeks, in order to screen for TAPS.

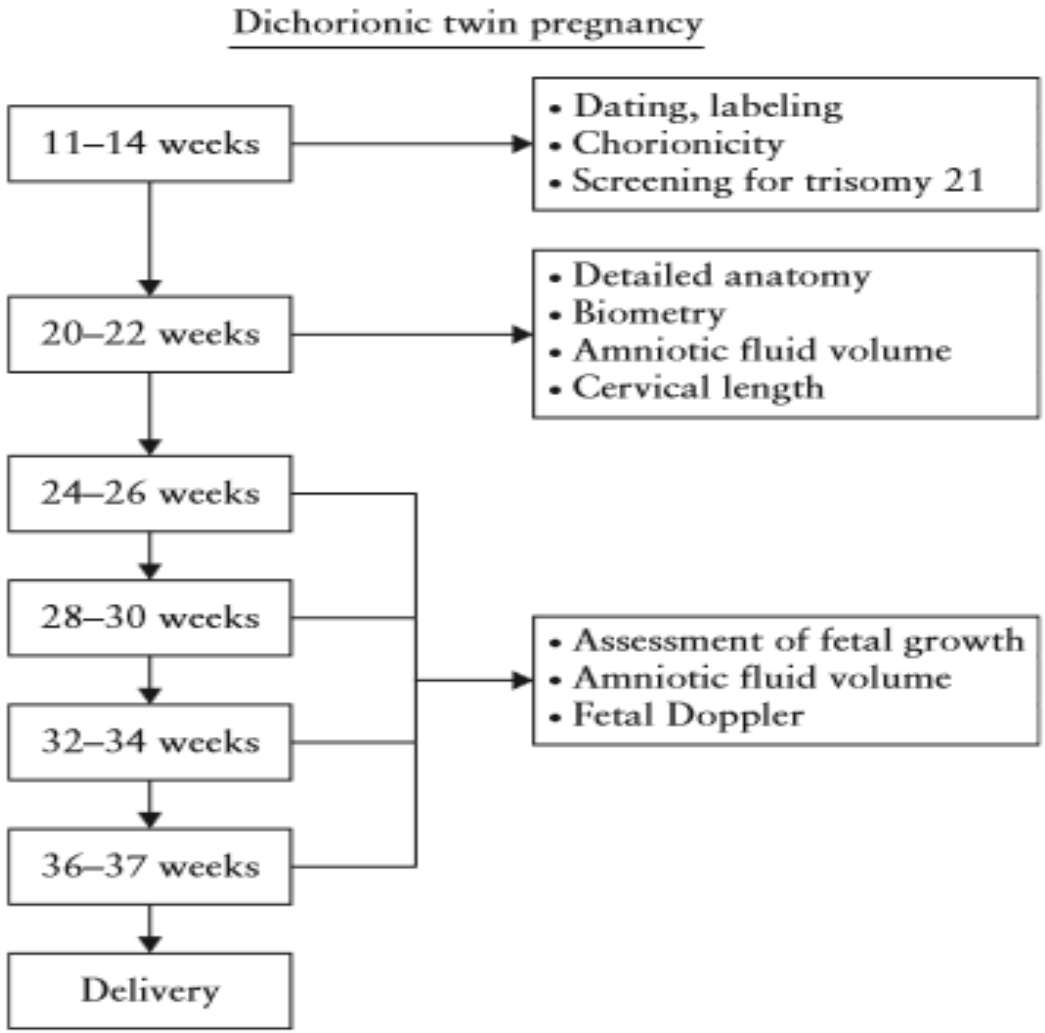
- the amniotic fluid volume (deepest vertical pocket) should be assessed and documented at each ultrasound scan to screen for TTTS.

- Cervical length assessment is performed ideally at the same visit as the anomaly scan in the second trimester, in order to identify women at risk of extreme preterm birth

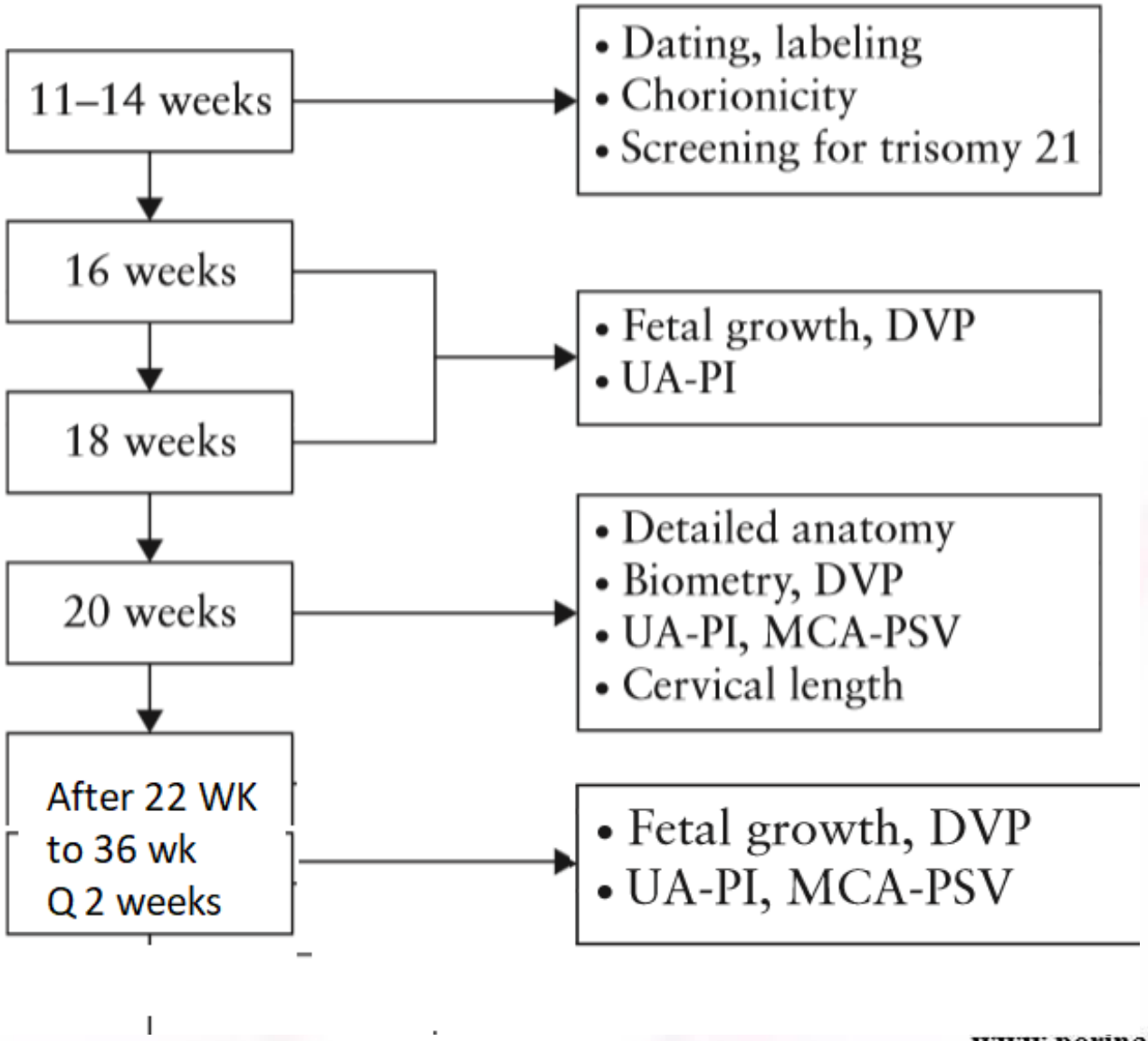
Monoamnion twin

- MCMA twins almost always have umbilical cord entanglement when visualised using colour flow Doppler. Such a finding has not consistently been demonstrated to contribute to overall morbidity and mortality.
- MCMA twins have a high risk of fetal death and should be delivered by caesarean section between 32 and 34 weeks.
- Scan should be performed at 15-16,18,20,22,24,26 and 28,32,34 weeks gestation
- Amnitic fluid volume ,fetal bladder,biometry. EFW,
- Assessment of intracranil anatomy
- Assessment of cord with doppler
- Where there is evidence of cord entaglement,consideration should be given to carrying out scans weekly

DC twin pregnancy



Monochorionic twin pregnancy



راهنمای کشوری ارائه خدمات مامایی و زایمان

(بازنگری سوم)

صفحه ۸۳

حاملگی چند قلویی

- ✓ گرفتن شرح حال مادر (سابقه بارداری های قبلی) *
- ✓ انجام سونوگرافی جهت تعیین وضعیت کوریون و آمنیون به محض تشخیص چند قلویی
- ـ تجویز mg ۱۰۰ ـ ۶۰ آهن، اسید فولیک ۱ میلی گرم و مولتی ویتامین
- ـ توصیه به تغذیه مناسب و اجتناب از فعالیت های سنگین
- ـ آموزش علائم زایمان زودرس، پارگی زودرس کیسه آب و کاهش حرکت جنین
- ـ ویزیت از هفته ۲۲ هر دو هفته یکبار تا هفته ۳۶ و سپس هفتگی تا ختم بارداری
- – ارزیابی خطر ترومبوآمبولی طبق پروتکل
- – غربالگری کاردیو میوپاتی طبق پروتکل بیماری قلبی در هفته ۳۵ تا ۳۷

مونوکوریون و منوآمنیون (پرخطرترین)**

ارجاع یا مشاوره با پریناتالوژیست جهت ادامه مراقبت ها و ارزیابی وضعیت جنین ها از هفته ۱۶ بارداری

مونوکوریون و دی آمنیون**

انجام سونوگرافی آنومالی اسکن و بررسی حجم مایع آمنیوتیک از هفته ۱۶ تا ۱۸ بارداری توسط فرد متبحر

حداکثر میزان پاکه عمودی بیشتر از ۸ سانتیمتر در یک ساک و کمتر از ۲ سانتیمتر در ساک حاملگی دیگر

بله

- تکرار سونوگرافی هر ۳- ۲ هفته یک بار تا ختم بارداری
- داپلر عروق شریان مغزی در هر سونوگرافی از هفته ۲۸- ۲۶ بارداری

توضیحات

* آسپیرین روزانه ۸۰ میلی گرم در مادران با سن ۴۰ سال یا بیشتر، حاملگی اول، فاصله بین دو بارداری بیش از ۱۰ سال، نمایه توده بدنی ۳۵ و بالاتر، سابقه فامیلی پره اکلامپسی از ۱۲ هفتگی تا تولد تجویز شود.

** در موارد دوقلویی مونو کوریون احتمال سندرم TTTS وTRAP وجود دارد.

نکته ۱ : در موارد گزارش دو قلوهای به هم چسبیده یا حاملگی مولار در یکی از قل ها ادامه مراقبت ها توسط پریناتالوژیست انجام شود.

نکته۲ : موارد زیر در بارداری چند قلویی باعث کاهش زایمان زودرس نمی گردد بنابراین به صورت روتین توصیه نمی شود: استراحت در منزل، تجویز توکولیتیک خوراکی، عمل سرکلاژ (اندازه گیری طول سرویکس نیازی نیست مگر در موارد پر خطر)، تجویز پروژسترون خوراکی و تزریقی، تجویز کورتیکواستروییید بدون هدف

DC twin pregnancy

11-14 wk	Dating ,labeling Chorionicity Screening for trisomy 21
20-22wk	Detailed anatomy Biometry AF volume Cervical length
24-26wk	Assessment of fetal growth AF volume Fetal doppler
28-30wk	
32-34wk	
36-37wk	

MC twin pregnancy

11-14wk	• Dating ,labeling • Chronicity • Screening for trisomy 21
16wk	• Fetal growth .DVP • UA PI
18wk	
20 wk	• Detailed anatomy • Biometry,DVP • UA-PI,MCA-PSV • Cervical length
22wk ⟶ 24wk ⟶ 26wk ⟶ 28wk	• Fetal growth .DVP • UA PI,MCV-PSV
30wk ⟶ 32wk ⟶ 34wk ⟶ 36wk	

Thanks