



# A little intro

- Why use an interactive PP for a case study?
- Student preparation pre-class
- Starting is the hardest part!
  - Draw yourself a map & clump things together
  - Double check your links
  - Make a key
- Have fun – solve the mystery



# Nutrition During Pregnancy – a Case Study

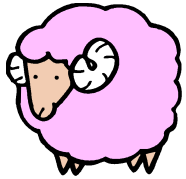
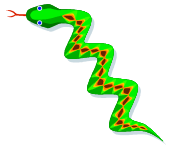
Can You Pull  
the Clues Together?



- Josie Kroeger is a 25 yo client who is 20 weeks pregnant. At a routine prenatal visit she complains of occasional dizziness that has increased over the last few weeks.
- [Prenatal History](#)
- [Assessment](#)
- [Report to Provider](#)



# Prenatal History



**What do you want to know about Josie's prenatal history?**

# Previous Pregnancies

## Birthweights

- GTPAL: 4-1-1-1-3-
- 1<sup>st</sup> pregnancy: Vaginal birth at 38 weeks gestation 9/29/04
- 2<sup>nd</sup> pregnancy: Miscarriage at 4 weeks 1/20/05
- 3<sup>rd</sup> pregnancy: Vaginal birth twins at 35 weeks gestation 12/25/05
- 4<sup>th</sup> pregnancy – EDB 1/8/07
  - Began prenatal care at 16 weeks gestation

Client

Prenatal  
History

# Birthweights

- 1<sup>st</sup> – 6lbs 8 ounces
- 2<sup>nd</sup> – miscarriage
- 3<sup>rd</sup> – 3lbs 5 ounces and 3 lbs 12 ounces

# Complications

- 1<sup>st</sup> pregnancy – none
- 2<sup>nd</sup> pregnancy – miscarriage
- 3<sup>rd</sup> pregnancy – anemia and preterm labor
- Current – nausea with occasional vomiting until 16 weeks gestation

Client

Prenatal  
History

# General Health History

- Began to menstruate at age 10
- No concurrent disease states or illness during pregnancy
- Never hospitalized except for birth
- Lost 25 pounds in short period of time at age 17, then weight stabilized at 105

Client

Prenatal  
History



# Social/Work History

- Married for 6 years – own home
- Partner works full time at a car factory and goes to school part-time
- Client works part-time at a day care center, plans to go to college when children are in elementary school
- Religious affiliation: Methodist

# Social/Work History (2)

- Both sets of grandparents live within 20 miles
- Denies any form of partner abuse
- Does not drink alcohol or use illicit drugs
- Non-smoker, as is partner

# Feeding History

- 1<sup>st</sup> baby: breastfed until 9 months old
- 2<sup>nd</sup> baby: miscarried
- 3<sup>rd</sup> babies: breastfed until 16 weeks pregnant with 4<sup>th</sup> pregnancy
- 4<sup>th</sup> baby: plans to breastfeed

Client

Prenatal  
History

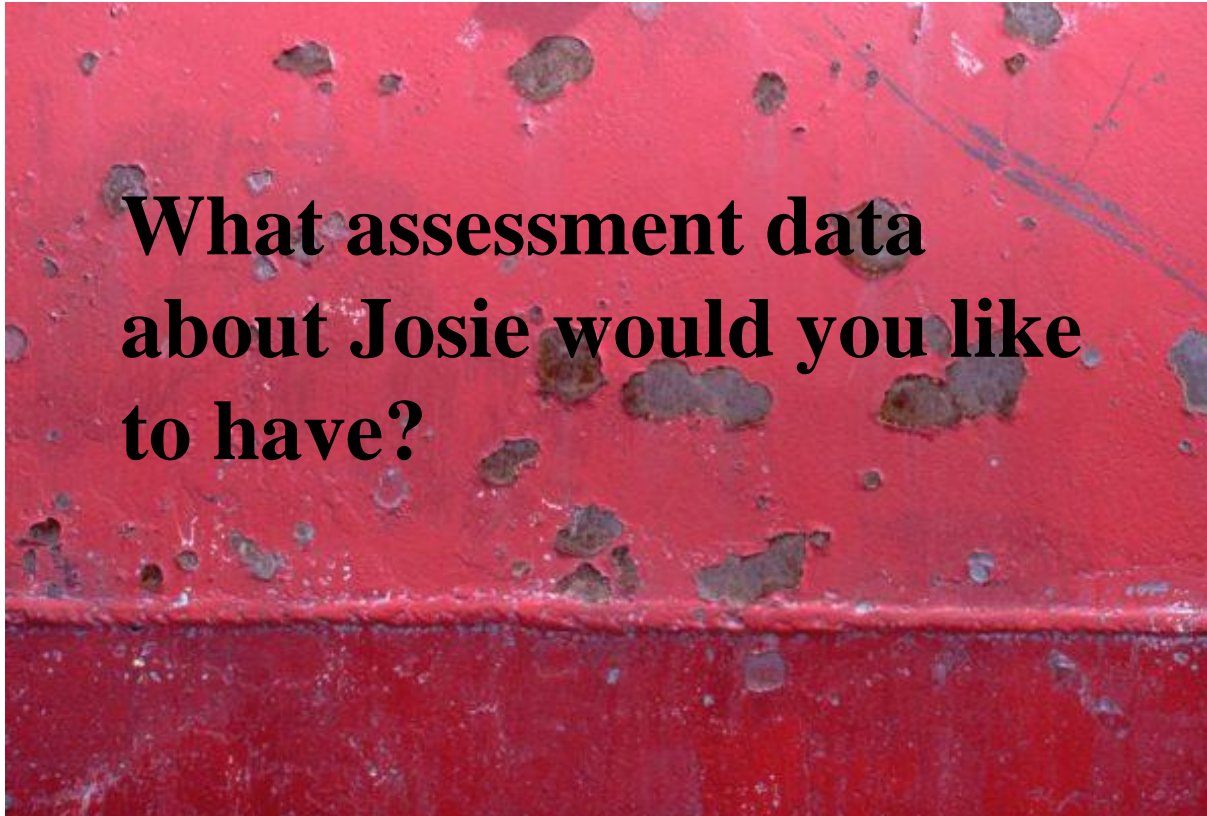
# Contraception

- Breastfeeding and inconsistent condom use

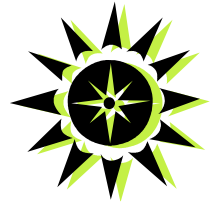
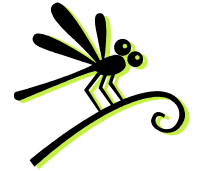
Client

Prenatal  
History

# Assessment Data



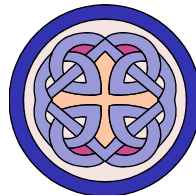
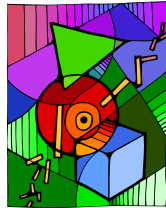
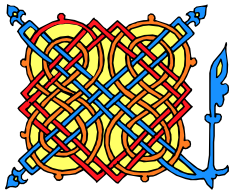
**What assessment data  
about Josie would you like  
to have?**



Client

# Height and Weight

- Prepregnancy weight 105 lbs
- Height 5-4
- Weight today 113 lbs



Client

Assessment Data

# BMI table

## [Height and Weight](#)

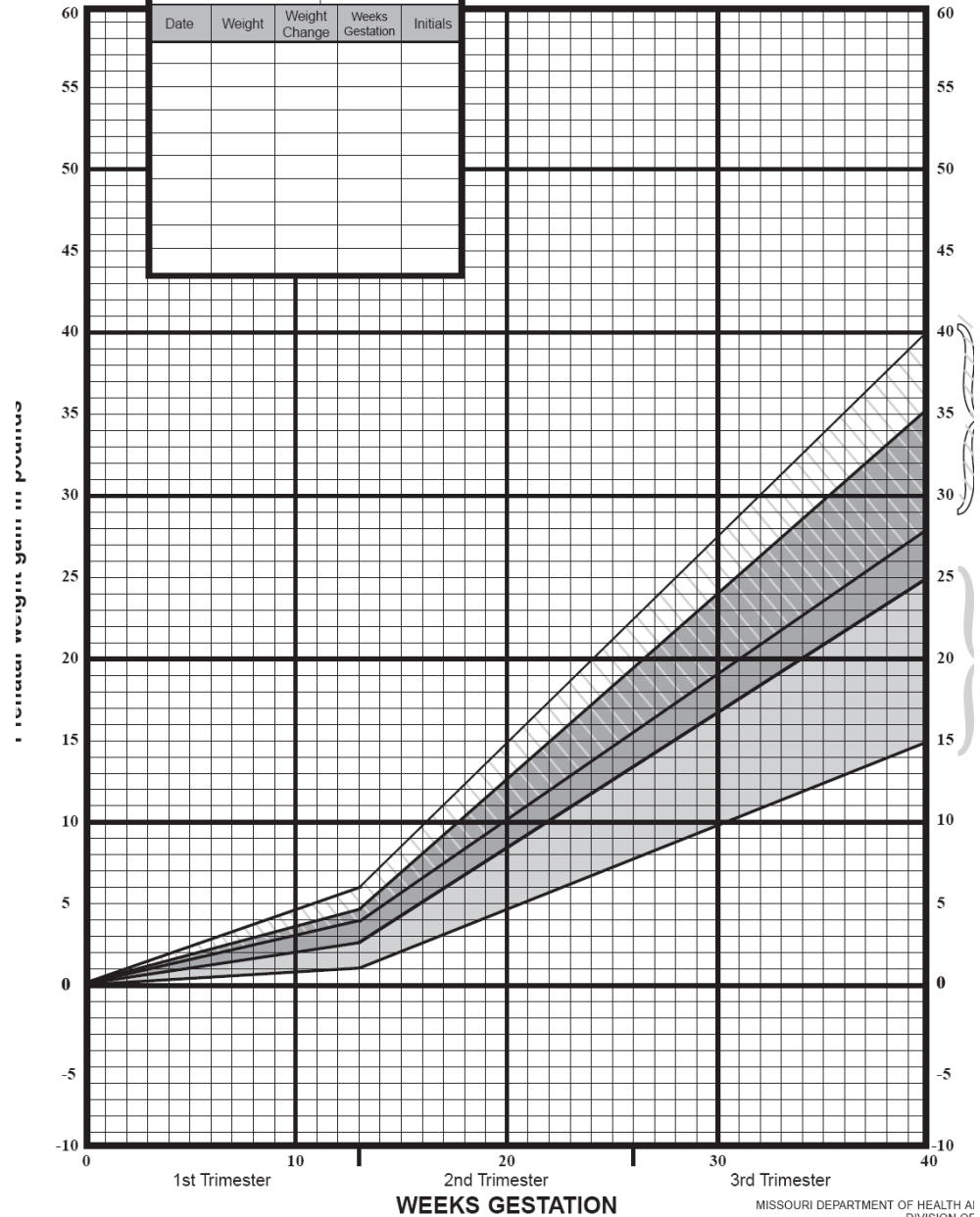
Body Mass Index Table

	Normal					Overweight					Obese					Extreme Obesity																				
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Height (inches)	Body Weight (pounds)																																			
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243	249	256	262	269	276	282	289	295	302	308	315	322	328	335	341	348	354
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250	257	263	270	277	284	291	297	304	311	318	324	331	338	345	351	358	365
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443

# Prenatal Weight Gain Chart

## PRENATAL WEIGHT GAIN CHART

NAME				
HEIGHT (WITHOUT SHOES)		PREGRAVID BMI		
PREGRAVID WEIGHT		EDC		
Date	Weight	Weight Change	Weeks Gestation	Initials



Height and Weight



# Weight Gain Recommendations by BMI

<b>Pre-pregnancy Weight Group</b>	<b>Pre-pregnancy Body Mass Index (BMI)</b>	<b>Recommended Total Weight Gain Ranges for Pregnant Woman (pounds)</b>
Underweight	<19.8 BMI	28 - 40 lbs.
Normal Weight	19.8 to 26.0 BMI	25 - 35 lbs.
Overweight	26.1 to 29.0 BMI	15 - 25 lbs.
Obese*	>29.0 BMI	At least 15 lbs.

[Height and Weight](#)

# Fundal Height

- 20 cm



Client

Assessment Data

# Fundal Height in Pregnancy

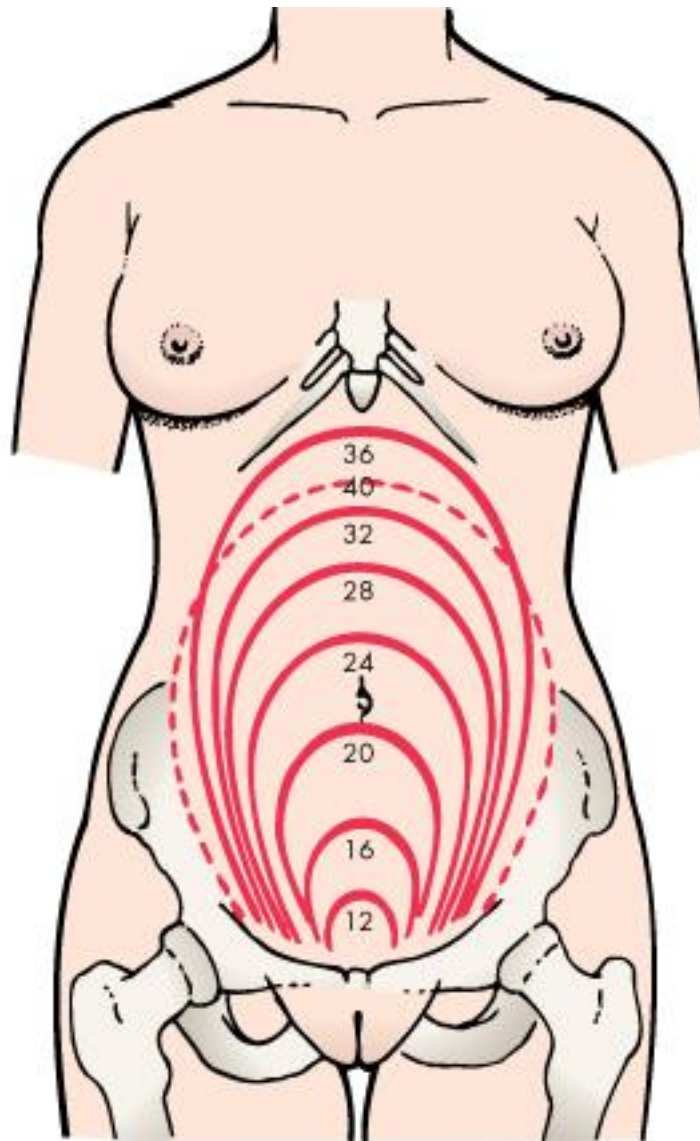
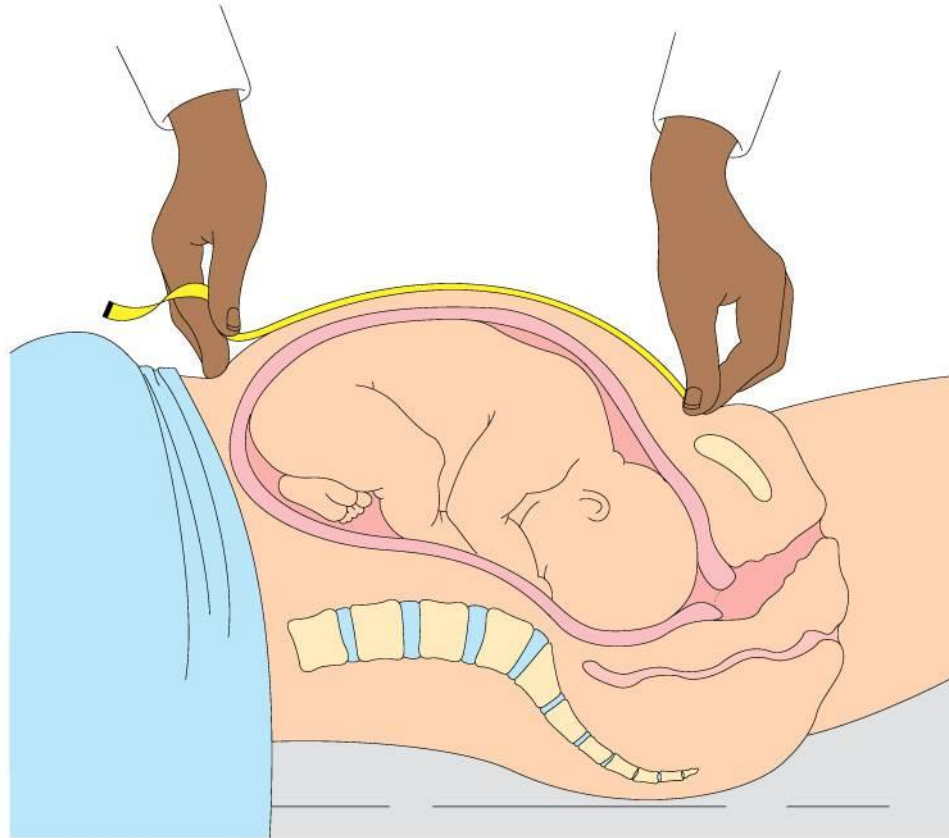


Fig. 14-2 Height of fundus by weeks of normal gestation with a single fetus. (Seidel et al, 2003)  
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Fundal Height

# Measuring Fundal Height



Fundal Height

# Vital Signs

- Temperature – 98.2°F
- Pulse – 84
- Respirations – 20
- B/P – 106/66

# Skin

- Pale including conjunctivae
- No edema
- No bruising

# Cardio/Respiratory

- Heart rate regular
- Pulses regular and equal
- Respirations regular
- No adventitious sounds heard

# CNS

- DTRs 2+ bilaterally
- No c/o headache
- No blurred vision or “seeing stars”



# “Dip” Urine

- Negative for blood, glucose, protein
- pH 7.0
- Color – moderately dark amber without sediment

# Fetal Assessment

- Client reports feeling movement
- FHR 156 per doppler

# Subjective Complaint

- Began about 1 week ago
- No specific trigger for dizziness
- Has felt more tired last few weeks

Sleep Pattern

Client

Assessment Data

# Sleep Pattern

- Sleeps about 8 hours at night
- Naps for 30 min after work when partner gets home
- Mother spent past weekend with family so client was able to get more rest

# Report to Provider



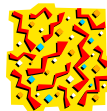
Pallor



Dizziness



Tiredness



Urine color



Weight gain < expected



Nutritional deficiencies

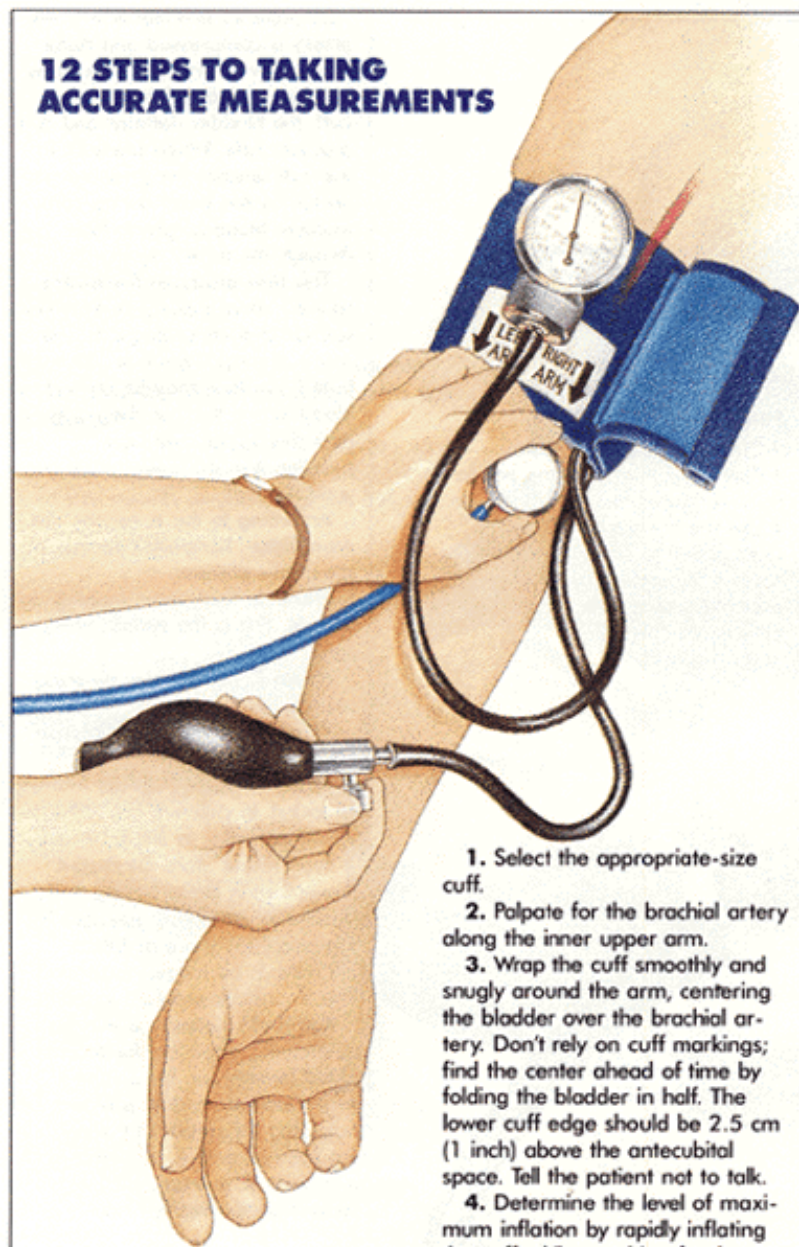
**What will you report  
to the provider?**

# Provider's Orders

- Obtain a nutritional history
- CBC
- UA, hold for culture
- Serum glucose
- Take B/P and pulse in supine, sitting, and standing positions



## 12 STEPS TO TAKING ACCURATE MEASUREMENTS



1. Select the appropriate-size cuff.
2. Palpate for the brachial artery along the inner upper arm.
3. Wrap the cuff smoothly and snugly around the arm, centering the bladder over the brachial artery. Don't rely on cuff markings; find the center ahead of time by folding the bladder in half. The lower cuff edge should be 2.5 cm (1 inch) above the antecubital space. Tell the patient not to talk.
4. Determine the level of maximum inflation by rapidly inflating the cuff while watching for the point where you can no longer feel the radial pulse (palpated systolic). To that reading, add 30 mm Hg.

5. Deflate the cuff rapidly and steadily, then wait 15 to 30 seconds before reinflating.

6. Insert the stethoscope earpieces, making sure they point forward. Apply the bell head lightly but with complete contact over the palpable brachial artery.

7. Inflate the cuff rapidly and steadily to the level of maximum inflation determined in step 4.

8. Release the air so the pressure falls at 2 to 3 mm Hg per second.

9. Listen for the onset of at least two consecutive beats (Korotkoff's sounds, phase 1). This is the systolic pressure. Note the closest mark on the manometer. Always record blood pressure measurements in even numbers.

10. Listen for a muffling sound (phase 4) with children or the cessation of sound (phase 5) with adults. This is the diastolic pressure. Continue listening for 10 to 20 mm Hg below the last sound to confirm your reading, then make sure to deflate the cuff rapidly and completely.

11. Record the patient's blood pressure, position (sitting or standing), cuff size, and the arm used for the measurement.

12. Wait 1 to 2 minutes before repeating the pressure measurement on the same arm, so the blood trapped in the arm veins can be released. If your patient's initial measurement is elevated, the American Heart Association recommends that you take two additional blood pressure measurements at 1- to 2-minute intervals. Refer the patient for treatment if the average of the second and third readings is elevated.

# Taking Blood Pressure Correctly

# Nutritional Assessment

- Eats 2 meals and 2 snacks per day
- Smell of cooking meat still causes some nausea, so rarely eats
- Likes fish but eats sparingly
- Likes bread, cereal, etc but limits to 5 servings/day
- Drinks 3 glasses water/day
- 1 cup coffee in am, no sodas, iced tea with meals if it's made



# Nutritional Assessment con't

- Does not drink milk but eats hard and soft cheeses, yogurt, and ice cream (lowfat or nonfat only)
- Eats some fruits (1 serving/day)
- Eats all vegetables except broccoli and spinach (4 or 5 servings/day)
- Eats crushed ice throughout the day
- Likes to eat raw cookie dough made with eggs
- Does not have food stamps or WIC

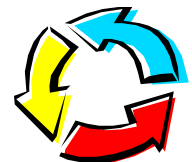
[Provider's orders](#)

[Client](#)

[Assessment Data](#)

# Lab Results

- Hemoglobin 11.2 g/dL
- Hematocrit 34%
- Platelets 200,000/mm<sup>3</sup>
- WBC 7.0
- Serum glucose (non-fasting) 72 mg/dL
- Urine – no bacteria but high specific gravity



[next](#)

# Maternal Lab Values

## NORMAL MATERNAL LABORATORY VALUES

Test	Nonpregnant Values	Pregnant Values
Hematocrit	37%–47%	32%–42%
Hemoglobin	12–16 g/dL**	10–14 g/dL**
Platelets	150,000–350,000/mm <sup>3</sup>	Significant increase 3–5 days after birth (predisposes to thrombosis)
Partial thromboplastin time (PTT)	12–14 seconds	Slight decrease in pregnancy and again in labor (placental site clotting)
Fibrinogen	250 mg/dL	400 mg/dL
Serum glucose		
·Fasting	70–80 mg/dL	65 mg/dL
·2-hour postprandial	60–110 mg/dL	Less than 140 mg/dL
Total protein	6.7–8.3 g/dL	5.5–7.5 g/dL
White blood cell total	4500–10,000/mm <sup>3</sup>	5000–15,000/mm <sup>3</sup>
Polymorphonuclear cells	54%–62%	60%–85%
Lymphocytes	38%–46%	15%–40%

\*\* At sea level

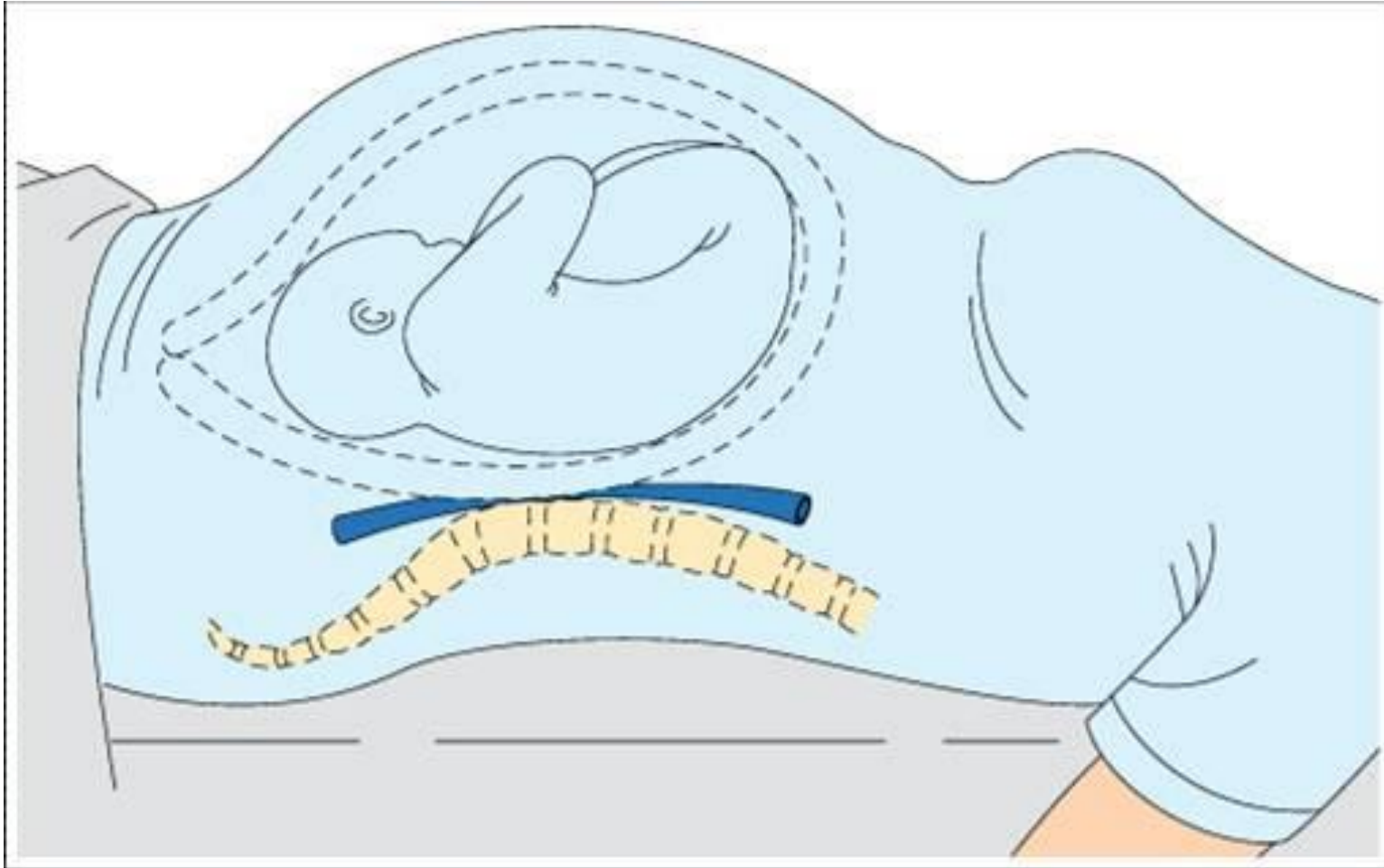
# B/P & Pulse Checks

- Negative for orthostatic hypotension

[next](#)



# What would you do?



B/P & Pulse Checks

# What's Going on with our Client?

 On lower end of physiologic anemia

 May also be dehydrated a bit

 Inadequate weight gain to this point

 Nutritional deficiencies

[next](#)

# What Factors in Josie's History Put Her at Risk for Poor Nutrition?



Maternal parity and close intervals between



Possible disordered eating in high school



History of anemia in 2<sup>nd</sup> pregnancy



Eats ice all day (pica?)



Eats soft cheese and cookie dough

[next](#)

# Nutritional Teaching Needed



Increase calories



Increase fruits



Increase grains



Increase protein



Increase fluid intake



Increase iron in diet



Pica alternatives



Food safety

Which are specific to the client's problems?

What also needs teaching based on her nutritional assessment?

[next](#)



# Preparatory Teaching

- If Josie were planning on bottle feeding, by how many calories should she reduce her daily intake after birth?



300 calories

- Josie plans to breastfeed. How much should she increase her caloric intake by?



200 calories over pregnancy requirements