

# I'm Having a What?!

## A PBL Case Study on the Female Reproductive System and Early Pregnancy

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### Scenario

A female, 19-year-old college student comes to the ER complaining of severe menstrual cramping and bleeding. A physical and a few tests reveal that she is having a miscarriage. She is mortified, as she didn't even know that she was pregnant. What may be the underlying cause of her miscarriage?

There are several correct solutions to this problem! Your answer will depend upon the information you find in your research and the reasonable assumptions you make during the process.

### Learning Objectives

*Content Objectives* (things you may be tested on in exams):

- Major organs of female reproductive system, their spatial relationships and general functions.
- How to predict ovulation day in female reproductive cycle, regardless of cycle length.
- Determination of when sexual intercourse is most likely (or nearly impossible) to result in pregnancy.
- Major steps involved in early embryogenesis (from fertilization to classification as a fetus), including when and where they occur inside the female reproductive system.

*Process Objectives* (things you will practice, which will be evaluated through worksheets, summaries, participation, etc.):

- Identifying information needed to solve a problem.
- Identifying and using appropriate resources to find information required.
- Problem-solving.
- Team-work.
- Integrating and analyzing information from different sources to formulate conclusions and make recommendations.

### The Problem-Solving Process

*Step 1:* What do you know? This should include both the information within the problem and any knowledge you may already have that is relevant to the issue.

*Step 2:* What other information do you want/need in order to begin answering the question? What assumptions can you make? What else might you want to know about the situation? Where can you go to find these answers?

*Step 3:* Begin researching. Assign questions and tasks within your team and discuss possible resources in order to find the information you're missing.

*Step 4:* What did you find? Discuss with your team. What new questions do you have? Do you have a likely cause for the miscarriage for which you're confident? Do you have recommendations for the patient for avoiding another pregnancy or miscarriage? If not, go back to step 2.

## Worksheets

### *Planning Worksheet (Group Assignment)*

In the first class meeting you will work on Steps 1–3 of the problem solving process. Fill out two copies of a Planning worksheet. At the end of class, your team will hand in one copy, and keep the other so that you can continue to work on it in the next class. This worksheet should include your team's name, the names of all team members, and answers to the following three questions:

1. What do you know?
2. What do you need/want to know to solve this problem? Keep in mind the content objectives, as they may help guide you in your research.
3. Where will you look for this information (keeping in mind the reliability and credibility of various sources)? Who will research which part?

### *Out-of-Class Worksheet (Individual Assignment)*

Individually, work on your assigned task(s), and complete this worksheet so that you can bring it to your team next class. This is essential to move forward! It should include your name and your team's name, and identify the questions/tasks you were assigned to research and answer for your team. For each task you were assigned, indicate what you learned, the source of your information, and why you think that source is reliable (consider source type, reputation, accuracy, etc.), arranged as follows:

Question/Task:

Answer/Information:

Source(s)/Citation(s):

Rationale for Source Choice:

### *Solution Worksheet (Group Assignment)*

Complete Steps 3–4 of the problem solving process (including any cycles back to Step 2 that may be required to finalize your answers). Then, fill in your information in a solution worksheet, and nominate a speaker from your team for next class. Remember, your team's solution will likely be different from those of other teams; more than one solution is possible. We will discuss all of them in class. Be prepared to take notes during this discussion!

Your solution should include your team's name, the names of all team members, and answer the questions below. For each of the questions, you must explain how you came to your answer, noting any supporting information/evidence and any assumptions. You must also cite all sources!

1. How far along was the pregnancy? (When did fertilization take place?)
2. What developmental stage is the embryo in, and where is it located?
3. Likely cause of miscarriage?
4. Recommendation for avoiding another unplanned pregnancy?
5. Recommendation for avoiding another miscarriage?
6. Any other notes/comments?

## Planning Worksheet

Team Name: \_\_\_\_\_

Team Members: \_\_\_\_\_  
\_\_\_\_\_

1. What do you know?

2. What do you need or want to know to solve this problem? Keep in mind the content objectives, as they may help guide you in your research.

3. Where will you look for this information (keeping in mind the reliability and credibility of various sources)? Who will research which part?

## Out-of-Class Worksheet

Team Name: \_\_\_\_\_

Your Name: \_\_\_\_\_

### *Instructions*

List below the questions/tasks you were assigned to research and answer for your team. For each one, indicate what you learned, the source of your information, and why you think that source is reliable (consider source type, reputation, accuracy, etc.). Use as many copies of this sheet as necessary to complete all of your tasks.

Question/task:

Answer/information:

Source(s)/citation(s):

Rationale for source choice:

