BIOL 110 Human Reproduction Lab

# Fetal Alcohol Syndrome

*With a partner, answer the following questions:*

1. Would binge drinking once or twice a week be more likely to affect facial features during the first, second, or third trimester of pregnancy? Explain your answer.

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2. If a pregnant woman drinks two glasses of wine every day during her third trimester, would that be more likely to affect development of facial features or brain function? Explain why.

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3. If a nursing mother continues to drink heavily, could her drinking continue to affect the baby’s growth? Facial features? Brain development? Explain your answer.

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## Fetal Alcohol Syndrome Case Studies

*Imagine that you are an adoption counselor for high-risk babies. Review the four case studies provided by your lab instructor, and write a short summary citing your concerns for each of these newborns. You can use information from the “Developmental Chart” reading above and consult internet sources.*

**Adam**

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**Beatrice**

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**Carlos**

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**Danielle**

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# Sexually Transmitted Diseases

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| **Name of Pathogen/Disease** | **Type of Pathogen** | **Sketch** |
| *Candida Albicans*/Yeast Infection |  |  |
| *Chlamydia trachomatis*/Chlamydia |  |  |
| Human immunodeficiency virus |  |  |
| *Pediculus pubis*/Pubic lice |  |  |
| *Treponema pallidum/*Syphilis |  |  |

#  Contraception

1. Which reversible method of birth control described above is most effective against pregnancy?

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2. Which reversible method of birth control described above is most effective against STDs?

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3. Given that the answers to the two questions above are different, what would you suggest as being the best method of protection against BOTH pregnancy and STDs?

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4. What type of lubricants should NOT be used with latex condoms, as they can cause them to tear or break?

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5. LAM is a method that may be effective under what circumstances?

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6. The fertility awareness method involves . . .

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7. Overall, are hormonal methods or barrier methods of contraceptives more effective against pregnancy?

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8. Which birth control method is 100% effective?

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*Finally, fill in the shaded cells to complete the table below:*

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| **Method** | **Category** | **Description** | **Failure Rate** |
| IUD | Intrauterine | Small device that is shaped in the form of a “T” that is placed in the uterus |  |
| Implant |  | Thin rod containing progestin inserted under the skin of the arm | 0.01% |
| Injection | Hormonal |  | 4.0% |
|  | Hormonal | Pills taken daily that contain the hormones estrogen and progestin | 7.0% |
| Diaphragm | Barrier |  | 17% |
| Condom |  | Latex sheath worn over a penis to prevent sperm from getting into the partner’s body |  |
|  | Barrier | Foam, gel, cream, film, suppository, or tablet that kills sperm |  |
|  | Emergency | Pills that can be taken by a person with a uterus up to 5 days after sex | N/A |
| Vasectomy |  | Surgery performed to keep a sperm from going to the penis |  |
|  | N/A |  | 0% |

# Assessing Nutritional Data

*Now, we will analyze the nutrition data that you collected over the past week.*

1. Using the chart you filled out as a part of last week’s home assignment, compare the following categories:

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|  | **What is the nutritional target for this group?**  | **How much (by what percentage) were you over or under this daily target limit?**  |
| **Carbohydrates** |  |  |
| **Lipids (Fats)** |  |  |
| **Protein** |  |  |

2. Let's consider fat intake now. Did you, or the sample meal plan you evaluated, consume more unsaturated fats, saturated fats, or trans-fats?

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3. What about salt?

 a) Was your meal plan under or over the target limit for sodium? By how much?

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 b) Look at the date or meal that contained the most salt. Which foods contained the highest amount of sodium? List them here.

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4. Are there any vitamins and minerals for which your meal plan did not meet the daily targets? List them below.

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5. Was your meal plan over the limit for any of the fat-soluble vitamins? List them below.

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# Calculating Basal Metabolic Rate

*Now, we will learn how to calculate BMR. We can estimate BMR using the Harris Benedict formula, which determines daily caloric needs more accurately than an estimate based only on body weight.*

To calculate for women: 655 + (9.6 x weight in kg) + (1.7 x height in cm) – (4.7 x age in years)

To calculate for men: 66 + (13.7 x weight in kg) + (5 x height in cm) – (6.8 x age in years)

6. In the space provided below, record the BMR for Jean (female) and Gene (male) that will be calculated by your lab instructor. Both weigh 130 lbs, are 5’4” tall, and 20 years old.

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| BMR for Jean: |
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| BMR for Gene: |
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1 pound = 0.454 kg

1 inch = 2.54 cm

1. Now, use the correct formula above to calculate your own BMR, or one of the celebrities listed on the website.

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# Practice Exercise

Now we will examine the diet of a student named Helen, a 150-pound, 20-year old female college student. A typical day’s food for Helen consists of around 2,000 calories: 60 grams of protein, 70 grams of fat, and 282.2 grams of carbohydrate.

 In order to calculate the calories provided by each type of nutrient, we need to know that:

* Protein and carbohydrates provide 4 calories/gram
* Fats provide 9 calories/gram
1. Calculate the percentage of calories provided by Helen’s diet, and determine whether or not she is getting a recommended percentage of each macronutrient.

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1. OPTIONAL QUESTION: Considering what you have learned about nutrition during this activity, are there any changes you think you might want to make in the future for your own eating habits?

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