

Fetal Alcohol Syndrome Curriculum

With the RealCare™ Fetal Alcohol Syndrome Baby



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The RealCare™ Fetal Alcohol Syndrome Baby is an instructional aid created to help increase awareness and understanding of babies born with fetal alcohol syndrome (FAS) and the challenges associated with them. This manikin is an anatomically correct female comes with a fetal bloodstream animation, facial feature time lapse animation, normal infant brain model, and infant brain model with FAS.

This curriculum introduces the Fetal Alcohol Syndrome Baby and presents documented information about the causes and risk factors of FAS. The curriculum provides activities and discussions designed to educate participants and communities about FAS.

Curriculum Structure

The *Fetal Alcohol Syndrome Baby Curriculum* is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Understanding Prenatal Alcohol Exposure	60 minutes
Two	The Impact of FAS on Education and Learning	60 minutes
Three	Medical Aspects of FASD	60 minutes
	Total	3 hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table, which lists lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The actual lesson follows the overview, which contains some of the sections described below.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a demonstration, or a review of previous lesson information. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Understanding Prenatal Alcohol Exposure

Lesson Overview

In this lesson, participants will learn facts, concepts, medical effects, and consequences of prenatal alcohol exposure. Participants will be introduced to the RealCare™ Fetal Alcohol Syndrome Baby and see an associated fetal bloodstream animation that resembles prenatal alcohol exposure.

Lesson Objectives

After completing this lesson, participants will be able to:

- Gain awareness of the facts and concepts surrounding prenatal alcohol exposure
- Define fetal alcohol syndrome and fetal alcohol spectrum disorder
- Describe how nutrients, oxygen, and other substances (e.g., alcohol) reach a developing fetus
- List the effects of prenatal alcohol exposure
- Explain what happens developmentally when a pregnant woman and her fetus consume alcohol
- Identify the long-term consequences of prenatal alcohol exposure
- Identify guidelines for FASD prevention
- Determine strategies to help a family or mother when prenatal alcohol exposure is a possibility, or when FAS has been diagnosed by a medical professional

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Understanding Prenatal Alcohol Exposure Pre-Test</i> • <i>Understanding Prenatal Alcohol Exposure Pre-Test – Answer Key</i>	1. Print/photocopy <i>Understanding Prenatal Alcohol Exposure Pre-Test</i> (one per participant).	10 minutes
LEARN	• <i>Understanding Prenatal Alcohol Exposure</i> slide presentation • <i>Understanding Prenatal Alcohol Exposure Fact Sheet</i> • <i>Understanding Prenatal Alcohol Exposure Fact Sheet – Answer Key</i> • RealCare™ Fetal Alcohol Syndrome Baby • Fetal Blood Stream Animation • Facial Feature Time Lapse Animation • Infant Brain Model Set	1. Print/photocopy <i>Understanding Prenatal Alcohol Exposure Fact Sheet</i> (one per participant). 2. Prepare <i>Understanding Prenatal Alcohol Exposure</i> slide presentation for viewing. 3. Prepare the RealCare™ Fetal Alcohol Syndrome Baby for observations and discussions. 4. Have the Fetal Bloodstream Animation and Facial Feature Time Lapse Animation ready to show to participants. 5. Showcase the normal infant brain model and the infant brain model with FAS in front of participants to help with class discussions.	40 minutes
REVIEW	• <i>Understanding Prenatal Alcohol Exposure Post-Test</i>	1. Print/photocopy <i>Understanding Prenatal Alcohol Exposure Post-Test</i> (one per participant).	5-10 minutes

Fetal Alcohol Syndrome Curriculum

	• <i>Understanding Prenatal Alcohol Exposure Post-Test – Answer Key</i>		
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Lesson One – Understanding Prenatal Alcohol Exposure

FOCUS: Pre-Test and Discussion

10 minutes

Purpose:

Participants will check their prior knowledge on prenatal alcohol exposure by completing a pre-test and participate in a brief classroom discussion about the topic.

Materials:

- *Understanding Prenatal Alcohol Exposure Pre-Test*
- *Understanding Prenatal Alcohol Exposure Pre-Test – Answer Key*

Facilitation Steps:

1. Distribute the *Understanding Prenatal Alcohol Exposure Pre-Test* to participants before the start of class.
2. Give participants five minutes to complete the pre-test.
3. Once participants complete the pre-test, spend approximately five minutes on the discussion question prompt. The pre-test will be reviewed at the end of class.

The purpose of the discussion question prompt is to introduce the topic and spark interest.

4. Instruct participants to engage with the discussion question prompt in a rapid-fire approach. Meaning, answer the question in a brief and concise manner to allow for multiple participants to engage in conversation.

Name: _____ Class: _____

Understanding Prenatal Alcohol Exposure Pre-Test

Directions: The following questions will test your knowledge about prenatal alcohol exposure. Circle the best answer(s) or write your response in the space provided.

1. _____ can disrupt fetal development at any stage during a pregnancy.
 - a. Medication
 - b. Protein
 - c. Alcohol
 - d. Exercise

2. Exposure to alcohol during _____ can cause persistent abnormalities in physical and cognitive development.
 - a. Fertilization
 - b. Gestation
 - c. Labor
 - d. Adolescence

3. _____ is one of the most profound effects of prenatal alcohol exposure that can result in cognitive and behavioral challenges.
 - a. Brain damage
 - b. Infection
 - c. Birth weight
 - d. Reading literacy

Discussion Question Prompt:

What causes fetal alcohol syndrome?

Understanding Prenatal Alcohol Exposure Pre-Test – Answer Key

Directions: The following questions will test your knowledge about prenatal alcohol exposure. Circle the best answer(s) or write your response in the space provided.

1. _____ can disrupt fetal development at any stage during a pregnancy.
 - a. Medication
 - b. Protein
 - c. Alcohol**
 - d. Exercise

2. Exposure to alcohol during _____ can cause persistent abnormalities in physical and cognitive development.
 - a. Fertilization
 - b. Gestation**
 - c. Labor
 - d. Adolescence

3. _____ is one of the most profound effects of prenatal alcohol exposure that can result in cognitive and behavioral challenges.
 - a. Brain damage**
 - b. Infection
 - c. Birth weight
 - d. Reading literacy

Discussion Question Prompt:

What causes fetal alcohol syndrome?

Lesson One – Understanding Prenatal Alcohol Exposure

LEARN: Slide Presentation

40 minutes

Purpose:

In this discussion, the instructor reviews prenatal alcohol exposure. The presentation is designed to teach participants about fetal alcohol syndrome, fetal alcohol spectrum disorder, and the long-term consequences associated with each.

Materials:

- *Understanding Prenatal Alcohol Exposure* slide presentation
- *Understanding Prenatal Alcohol Exposure Fact Sheet*
- *Understanding Prenatal Alcohol Exposure Fact Sheet – Answer Key*
- RealCare™ Fetal Alcohol Syndrome Baby
- Fetal Bloodstream Animation
- Facial Feature Time Lapse Animation
- Infant Brain Model Set

Facilitation Steps:

1. Hold the RealCare™ Fetal Alcohol Syndrome Baby in your arms as you would a real infant. Introduce the baby to the classroom.
2. Distribute the *Understanding Prenatal Alcohol Exposure Fact Sheet* and instruct participants to complete it while you share the *Understanding Prenatal Alcohol Exposure* slide presentation. An answer sheet is provided for the instructor.

Slide 1: Introductory slide

Slide 2: What Is Prenatal Alcohol Exposure?

- Fetal alcohol exposure occurs when a woman drinks while pregnant
- Alcohol can disrupt fetal development at any stage during a pregnancy, including

at the earliest stages before a woman even knows she is pregnant

- Prenatal alcohol exposure represents a preventable cause of developmental and health problems for children
- Exposure to alcohol during gestation can cause persistent abnormalities in physical and cognitive development
- Facts: If you are pregnant, or trying to get pregnant, there is no safe amount of alcohol use.

Slide 3: Fetal Alcohol Syndrome (FAS)

- Fetal alcohol syndrome is a clinical diagnosis applied to children who have been exposed to alcohol during gestation and exhibit deficits in growth, physical structure, and the central nervous system.

Slide 4: How Is Fetal Alcohol Syndrome Determined?

- To meet the clinical FAS case definition, the child must have symptoms in each of the following categories:
 - Growth deficiency in both the prenatal and postnatal periods
 - Abnormalities in facial and skull structure
 - CNS deficits, such as intellectual disability and behavioral problems

Slide 5: FASD

- Fetal alcohol spectrum disorders (FASDs) are a group of conditions that can occur in a person who was exposed to alcohol before birth
- FASD effects can include physical problems and issues with behavior and learning
- Often, a person with an FASD has a mix of these problems

Slide 6: Guidelines for FASD Prevention

- FASDs are 100% preventable if a fetus is not exposed to alcohol
- It is recommended that women who are pregnant, might be pregnant, or planning pregnancy should not consume alcohol

Slide 7: FASD Strategic Action Plan

- The purpose of the FASD Strategic Action Plan is to improve the quality of life for children and adults with FASD
- There are 4 key national priorities of the plan which are:
 - Prevention
 - Screening and diagnosis
 - Support and management
 - Priority groups and people at increased risk

Slide 8: Fetal Bloodstream Animation

- Show the Fetal Blood Stream Animation to participants. After viewing the animation, discuss the following:
 - Describe what is happening in the animation?
 - How do you think the fetal blood stream is affected by alcohol?

Slides 9-10: A Developing Fetus: The Flow of Nutrients and Substances

- A fetus depends on its mother for nutrients and oxygen
- Due to a fetus not breathing air, the blood circulates differently than when they are born
- The umbilical cord connects a fetus to the placenta
 - The placenta develops and implants into the mother's uterus
- Substances, nutrients, and oxygen from the mother's blood travels through blood vessels in the umbilical cord to the placenta and to the baby
- The blood flows from the umbilical cord to the baby's liver
 - Remember, during this time, the baby's lungs are not used while

in the uterus, and their liver is not yet working)

- From the liver, the blood moves to a shunt called the ductus venosus
- Some of the blood goes to the liver, while most of the highly oxygenated blood flows to the inferior vena cava and then to the right atrium of the heart

Slide 11: Effects of Prenatal Alcohol Exposure

- Prenatal alcohol exposure can cause cognitive, developmental, and behavioral problems. These effects can develop and appear during childhood, lasting a lifetime.
- Effects of prenatal alcohol exposure can show up at any time throughout a person's lifetime.
- Brain damage is one of the most profound effects of prenatal alcohol exposure. Brain damage can result in impairments in cognitive functioning and behavior.
- Other effects and symptoms caused by prenatal alcohol exposure is fetal alcohol spectrum disorders (FASD).

Pass the Fetal Alcohol Baby around the room. Have participants identify what they notice on the Baby that may look "different." Make a master list on the board. If you have a RealCare Baby®, compare that to the Fetal Alcohol Baby as the healthy baby.

Here are a few things they may notice:

Small gestational size
Small head, widely set eyes
Low nasal bridge
Bigger, lower ears
Shorter nose and a smaller chin
Flattened mid-face
Curved fingers and joints

Slide 12: Impact on the Infant Brain

- Observe the two brain models
- Identify the similarities and differences between them

- Discuss how you think FAS effects an infant's brain

Pass around the Infant Brain Model Set.
Ask participants to compare what they see between the models.

Slide 13: Alcohol Consumption
Developmental Effects on a Fetus

- Alcohol consumption in the first 3 months (1st trimester) of pregnancy can cause the baby to have abnormal facial features
- Central nervous system problems, premature birth, miscarriage, low birthweight, and behavioral problems can all result from alcohol consumption during pregnancy

Slide 14: Facial Feature Time Lapse Animation

- As you watch the Facial Feature Time Lapse Animation, identify distinct facial features that may be associated with FAS

Slide 15: Long-Term Consequences of Prenatal Alcohol Exposure (Individuals)

- Long-term, prenatal alcohol exposure can affect memory, learning, attention span, vision, hearing, and communication.
- People with FASD, typically have challenges with school and getting along with others (behavioral problems).
- A common long-term consequence is difficulties with learning and problem-solving. Also, poor coordination, impulsiveness, and speech impairments are common.
- Individuals can have a mixture of the above effects.

Slide 16: Long-Term Consequences of Prenatal Alcohol Exposure (Families)

- The long-term consequences of prenatal alcohol exposure can be difficult for families
- Potential treatments can have a cost effect on families

- Alcohol exposure to a fetus can lead to developmental conditions that may result in extensive hospital visits, financial obligations, time away from family, and employment barriers

Slide 17: Long-Term Consequences of Prenatal Alcohol Exposure (Societal)

- Societal consequences of prenatal alcohol exposure can include challenges with social engagement in school, communities, and employment
- Other long-term effects are the financial obligations of society to help care for and protect prenatal alcohol exposure candidates

Slide 18: Resources for Additional Information

- [The Centers for Disease Control and Prevention Alcohol Portal](#): Offers information about alcohol and pregnancy
- [Fetal Alcohol Syndrome Facts Sheet – Kids Health](#)
- [FASD United Resource Directory](#)
- [FASD Information for Families](#)

Slide 19: Strategies to Help When Prenatal Alcohol Exposure is a Possibility (Families/Mother)

- If there is a possibility that a child has fetal alcohol syndrome, it is recommended to talk to a doctor as soon as possible and immediately stop the use of any alcohol.
- A doctor will perform a thorough assessment to diagnose FAS. The assessment can include testing cognitive ability, social and behavioral issues, health issues, and observations of the initial weeks of pregnancy.
- Early diagnosis is important. When FAS is diagnosed early, this may help to reduce problems like learning difficulties and behavioral challenges.

Slide 20: FAS Diagnosis from Medical Professional: What Next?

- Once FAS is diagnosed, it is important to know that there is no cure for FAS or one specific treatment that is the same for every person
- Convene a team of health and education providers that include a doctor, therapist, special education specialist, psychologist, and occupational therapist
- Early intervention may be needed to help with walking, talking, and social skills
- Discuss medications that can help with FAS symptoms
- Family counseling to help caregivers and family members learn more about FAS and how to best support their diagnosed family member

Name: _____ Class: _____

Understanding Prenatal Alcohol Exposure Fact Sheet

Directions: Complete the following note page as the slide presentation is shared.

1. _____ occurs when a woman drinks while pregnant.
_____ can disrupt fetal development at any stage during a pregnancy.
2. Exposure to alcohol during _____ can cause persistent abnormalities in physical and cognitive development.
3. Fetal alcohol syndrome is a clinical diagnosis applied to children who have been exposed to alcohol during gestation and exhibit deficits _____.
_____.
4. To meet the clinical FAS case definition, the child must have symptoms in each of the following three categories:
 - (1) _____
 - (2) Abnormalities in facial and skull structure
 - (3) CNS deficits, such as intellectual disabilities and behavioral problems
5. _____ are a group of conditions that can occur in a person who was exposed to alcohol before birth.
6. The purpose of _____ is to improve the quality of life for children and adults with FASD.
7. A fetus depends on its mother for _____.

8. Prenatal alcohol exposure can cause _____. These effects can develop and appear during childhood and last a lifetime.

9. Central nervous system problems, premature birth, miscarriage, low birthweight, and _____ can all result from alcohol consumption during pregnancy.

10. A common long-term consequence is difficulties with learning and problem-solving. Also, _____ are common.

11. If there is a possibility that a child has fetal alcohol syndrome, it is recommended to talk to a doctor as soon as possible and _____.

12. A doctor will perform a thorough _____ to diagnose FAS.

13. The assessment can include _____, health issues, and observations of the initial weeks of pregnancy.

14. Once FAS is diagnosed, it is important to know that there is _____ or one specific treatment that is the same for every person.

15. Convene a team of _____ that include a doctor, therapist, special education specialist, psychologist, and occupational therapist.

Understanding Prenatal Alcohol Exposure Fact Sheet – Answer Key

Directions: Complete the following note page as the slide presentation is shared.

1. **Fetal alcohol exposure** occurs when a woman drinks while pregnant. **Alcohol** can disrupt fetal development at any stage during a pregnancy.
2. Exposure to alcohol during **gestation** can cause persistent abnormalities in physical and cognitive development.
3. Fetal alcohol syndrome is a clinical diagnosis applied to children who have been exposed to alcohol during gestation and exhibit deficits **in growth, physical structure, and the central nervous system.**
4. To meet the clinical FAS case definition, the child must have symptoms in each of the following three categories:
 - (1) **Growth deficiency in both the prenatal and postnatal periods**
 - (2) Abnormalities in facial and skull structure,
 - (3) CNS deficits, such as intellectual disabilities and behavioral problems
5. **Fetal Alcohol Spectrum Disorders (FASDs)** are a group of conditions that can occur in a person who was exposed to alcohol before birth.
6. The purpose of **the FASD Strategic Action Plan** is to improve the quality of life for children and adults with FASD.
7. A fetus depends on its mother for **nutrients and oxygen.**
8. Prenatal alcohol exposure can cause **cognitive, developmental, and behavioral problems.** These effects can develop and appear during childhood and last a lifetime.
9. Central nervous system problems, premature birth, miscarriage, low birthweight, and **behavioral problems** can all result from alcohol consumption during pregnancy.
10. A common long-term consequence is difficulties with learning and problem-solving. Also, **poor coordination, impulsiveness, and speech impairments** are common.
11. If there is a possibility that a child has fetal alcohol syndrome, it is recommended to talk to a doctor as soon as possible and **immediately stop the use of any alcohol.**
12. A doctor will perform a thorough **assessment** to diagnose FAS.

13. The assessment can include **testing cognitive ability, social and behavioral issues**, health issues, and observations of the initial weeks of pregnancy.

14. Once FAS is diagnosed, it is important to know that there is **no cure for FAS** or one specific treatment that is the same for every person.

15. Convene a team of **health and education providers** that include a doctor, therapist, special education specialist, psychologist, and occupational therapist.

Lesson One – Understanding Prenatal Alcohol Exposure

REVIEW: Assessment

5-10 minutes

Purpose:

Participants will assess what they have learned.

Materials:

- *Understanding Prenatal Alcohol Exposure Post-Test*
- *Understanding Prenatal Alcohol Exposure Post-Test – Answer Key*

Facilitation Steps:

1. Distribute the *Understanding Prenatal Alcohol Exposure Post-Test*.
2. Give participants five minutes to complete the quiz.
3. Have participants self-check or peer check the quiz. Go over the answers orally. Alternatively, participants could turn it in for the instructor to grade.

Name: _____ Class: _____

Understanding Prenatal Alcohol Exposure Post-Test

Directions: The following questions will test your knowledge about prenatal alcohol exposure. Circle the best answer(s) or write your response in the space provided.

1. When a woman drinks during pregnancy, it can result in _____.
 - a. Coronavirus
 - b. Prenatal obesity
 - c. Fetal alcohol exposure
 - d. Alcohol virus
2. A clinical diagnosis applied to children who have been exposed to alcohol during gestation and exhibit deficits in growth, physical structure, and the central nervous system.
 - a. Prenatal cognitive disorder
 - b. Fetal alcohol condition
 - c. Central nervous virus
 - d. Fetal alcohol syndrome
3. A group of conditions that can occur in a person who was exposed to alcohol before birth.
 - a. Fetal alcohol spectrum disorders
 - b. Infant drug disorder
 - c. Fetal alcohol sensory disease
 - d. Prenatal disorder of alcohol
4. The _____ connects a fetus to the placenta (the placenta develops and implants into the mother's uterus).
 - a. Brain
 - b. Liver
 - c. Kidney
 - d. Umbilical cord

5. If there is a possibility that a child has _____, it is recommended to talk to a _____ as soon as possible and immediately stop the use of any alcohol.
- a. Down syndrome, doctor
 - b. Fetal alcohol syndrome, biologist
 - c. Cognitive disorder, psychologist
 - d. Fetal alcohol syndrome, doctor
6. Alcohol exposure to a(n) _____ can lead to developmental conditions.
- a. Adult
 - b. Fetus
 - c. Egg
 - d. Toddler
7. Alcohol consumption in the first _____ of pregnancy can cause the baby to have abnormal facial features.
- a. 3 months
 - b. 6 months
 - c. 9 months
 - d. 1 year
8. True or False (circle one) The baby's lungs are not used while in the uterus and their liver is not yet working.
9. True or False (circle one) A fetus depends on its father for nutrients and oxygen.
10. True or False (circle one) Prenatal alcohol exposure can cause cognitive, developmental, and behavioral problems.

Understanding Prenatal Alcohol Exposure Post-Test – Answer Key

Directions: The following questions will test and review your knowledge about prenatal alcohol exposure. Circle the best answer(s) or write your response in the space provided.

1. When a woman drinks during pregnancy, it can result in _____.
 - a. Coronavirus
 - b. Prenatal obesity
 - c. **Fetal alcohol exposure**
 - d. Alcohol virus
2. A clinical diagnosis applied to children who have been exposed to alcohol during gestation and exhibit deficits in growth, physical structure, and the central nervous system.
 - a. Prenatal cognitive disorder
 - b. Fetal alcohol condition
 - c. Central nervous virus
 - d. **Fetal alcohol syndrome**
3. A group of conditions that can occur in a person who was exposed to alcohol before birth.
 - a. **Fetal alcohol spectrum disorders**
 - b. Infant drug disorder
 - c. Fetal alcohol sensory disease
 - d. Prenatal disorder of alcohol
4. The _____ connects a fetus to the placenta (the placenta develops and implants into the mother's uterus).
 - a. Brain
 - b. Liver
 - c. Kidney
 - d. **Umbilical cord**

5. If there is a possibility that a child has _____, it is recommended to talk to a _____ as soon as possible and immediately stop the use of any alcohol.
- a. Down syndrome, doctor
 - b. Fetal alcohol syndrome, biologist
 - c. Cognitive disorder, psychologist
 - d. **Fetal alcohol syndrome, doctor**
6. Alcohol exposure to a(n) _____ can lead to developmental conditions.
- a. Adult
 - b. **Fetus**
 - c. Egg
 - d. Toddler
7. Alcohol consumption in the first _____ of pregnancy can cause the baby to have abnormal facial features.
- a. **3 months**
 - b. 6 months
 - c. 9 months
 - d. 1 year
8. **True** or False (circle one) The baby's lungs are not used while in the uterus and their liver is not yet working.
9. True or **False** (circle one) A fetus depends on its father for nutrients and oxygen.
10. **True** or False (circle one) Prenatal alcohol exposure can cause cognitive, developmental, and behavioral problems.

Sources

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Lesson Two – The Impact of FAS on Education and Learning

Lesson Overview

In this lesson, participants will learn more information about the impact and effects of fetal alcohol syndrome on education and learning. The lesson reviews the short-term and long-term impact of FAS and learning.

Lesson Objectives

After completing this lesson, participants will be able to:

- Explain direct impacts of FAS on education and learning
- Understand FAS effects at different stages of an individual’s life
- Explain teacher intervention and support of students with FAS
- Identify educational options for people, families, and schools who support people with FAS
- Explain performance problems associated with FAS
- Explain the effects of FAS on sensory integration

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>The Impact of FAS on Education and Learning Pre-Test</i> • <i>The Impact of FAS on Education and Learning Pre-Test – Answer Key</i>	1. Print/photocopy <i>The Impact of FAS on Education and Learning Pre-Test</i> (one per participant).	10 minutes
LEARN	• <i>The Impact of FAS on Education and Learning</i> slide presentation • <i>The Impact of FAS on Education and Learning Fact Sheet</i> • <i>The Impact of FAS on Education and Learning Fact Sheet – Answer Key</i> • RealCare™ Fetal Alcohol Syndrome Baby • Infant Brain Model Set	1. Prepare <i>The Impact of FAS on Education and Learning</i> slide presentation for viewing. 2. Prepare the RealCare™ Fetal Alcohol Syndrome Baby for observations and discussions. 3. Showcase the normal infant brain model and the infant brain model with FAS in front of participants to help with class discussions. 4. Print/photocopy <i>The impact of FAS on Education and Learning Fact Sheet</i> (one per participant).	40 minutes
REVIEW	• <i>The Impact of FAS on Education and Learning Post-Test</i> • <i>The Impact of FAS on Education and Learning Post-Test – Answer Key</i>	1. Print/photocopy <i>The Impact of FAS on Education and Learning Post-Test</i> (one per participant).	5-10 minutes

Lesson Two – The Impact of FAS in Education and Learning

FOCUS: Pre-Test and Discussion

10 minutes

Purpose:

Participants will check their prior knowledge on the impact of FAS in education and learning by completing a pre-test and participate in a brief classroom discussion about the topic.

Materials:

- *The Impact of FAS on Education and Learning Pre-Test*
- *The Impact of FAS on Education and Learning Pre-Test – Answer Key*

Facilitation Steps:

1. Distribute *The Impact of FAS on Education and Learning Pre-Test* to participants before the start of class.
2. Give participants five minutes to complete the pre-test.
3. Once participants complete the pre-test, spend approximately five minutes on the discussion question prompt. The pre-test will be reviewed at the end of the session.

The purpose of the discussion question prompt is to introduce the topic and spark interest.

4. Instruct participants to engage with the discussion question prompt in a rapid-fire approach. Meaning, answer the question in a brief and concise manner to allow for multiple participants to engage in conversation.

Name: _____ Class: _____

The Impact of FAS on Education and Learning Pre-Test

Directions: The following questions will test your knowledge about fetal alcohol syndrome. Circle the best answer(s) or write your response in the space provided.

1. _____ is a broad range of disabilities that includes intellectual disability, autism spectrum disorders, brain injury, and mental illness.
 - a. Physical disabilities
 - b. Cognitive disabilities
 - c. Infectious diseases
 - d. Education disorders

2. Fetal alcohol syndrome can adversely impact _____ at different levels of severity. When additional intervention is needed, there are options for students with FAS or FASD.
 - a. Healthcare
 - b. Sports
 - c. Law
 - d. Education

3. There is some degree of _____ in many students with FASD.
 - a. Brain damage
 - b. Ligament pain
 - c. Memory gain
 - d. Fracturing bones

Discussion Question Prompt

1. What are the impacts of FAS on education and learning?

The Impact of FAS on Education and Learning Pre-Test – Answer Key

1. _____ is a broad range of disabilities that includes intellectual disability, autism spectrum disorders, brain injury, and mental illness.
 - a. Physical disabilities
 - b. Cognitive disabilities**
 - c. Infectious diseases
 - d. Education disorders
2. Fetal alcohol syndrome can adversely impact _____ at different levels of severity. When additional intervention is needed, there are options for students with FAS or FASD.
 - a. Healthcare
 - b. Sports
 - c. Law
 - d. **Education**
3. There is some degree of _____ in many students with FASD.
 - a. **Brain damage**
 - b. Ligament pain
 - c. Memory gain
 - d. Fracturing bones

Discussion Question Prompt

1. What are the impacts of FAS on education and learning? **Answers will vary**

Lesson Two – The Impact of FAS on Education and Learning

LEARN: Slide Presentation

40 minutes

Purpose:

In this discussion, the instructor reviews the impact of FAS in education and learning. The presentation is designed to teach participants about the short-term, long-term, and overall impact of fetal alcohol syndrome on education and learning.

Materials:

- *The Impact of FAS on Education and Learning* slide presentation
- *The Impact of FAS on Education and Learning* Fact Sheet
- *The Impact of FAS on Education and Learning* Fact Sheet – Answer Key
- RealCare™ Fetal Alcohol Syndrome Baby
- Infant Brain Model Set

Facilitation Steps:

1. As a reminder, show the participants the normal infant brain model and the infant brain model with FAS. To recap the previous lesson, ask participants to state two to three things they learned about FAS.
2. Distribute the *Impact of FAS on Education and Learning* Fact Sheet and instruct participants to complete it while you share the *Impact of FAS on Education and Learning* slide presentation. An answer sheet is provided for the instructor.

Slide 1: Introductory Slide

Slide 2: Fetal Alcohol Syndrome (FAS)

- Remember, fetal alcohol syndrome disorder (FASD) is the effects that can happen to a person whose mother drank alcohol during pregnancy
- Issues caused by FAS include behavioral challenges, cognitive disabilities, and learning disorders

Slide 3: What Are Cognitive Disabilities?

- Cognitive disabilities are a broad range of disabilities that includes intellectual disability, autism spectrum disorders, brain injury, and mental illness
- **Note:** These are only a few examples of cognitive disabilities

Show participants the normal infant brain model and FAS brain model. Remind students of the differences and similarities of the models. Explain that because of the differences in the FAS brain model, cognitive disabilities can result from the damage.

Slide 4: Hidden/Invisible Disabilities

- An invisible disability is a physical, mental, or neurological condition that is not visible from the outside yet can limit or challenge individuals
- FASD is a hidden disability; many times, the symptoms and impact are unknown by others

Slide 5: FAS Educational Implications

- There is some degree of brain damage in many students with FASD
- Students who experience FASD have similar performance to students with attention-deficit/hyperactivity disorder, autism, and traumatic brain injury
- Information processing deficits can also occur with students with FAS

Slide 6: Direct Impacts of FASD On Education

- Delays and deficits that are commonly experienced by children with FASD, the child may require special education services. If support is not provided, the child will likely experience problems related to education and literacy.

- Some students with FASD are labeled with behavioral problems. Because of these problems, some students may be difficult to manage in a traditional classroom setting.
- Frequent incomplete assignments, attention deficits, and classroom interruptions have all been identified in children with FASD.
- Students with FASD are about three times more likely to repeat a grade and nine times as likely to receive special education services.

Slide 7: Classroom Learning

Recommendations: Communication

- Students with FAS can attend school and participate in school activities
- Literal communication with concrete examples is recommended for students with FAS
 - Abstract examples may be confusing and hard to interpret for some students
- The use of graphic organizers and visual examples are encouraged to help communicate lessons in the classroom
- Incorporating examples and the opportunity to be hands-on can help a student with FAS better navigate the classroom and enhance their learning experience

Slide 8: Tips to Address FAS in the Classroom

- Short-term memory and organization are 2 areas where students impacted by FAS have challenges
- To help, it is recommended to include assignment books as reminders and study skills strategies, work in quiet environments, and give multiple examples of content
- Allowing students to work in groups and teams can help build their confidence when working on difficult subjects and topics
- Multiple modalities of learning are essential for students with FAS

- Use all 5 senses when teaching students to promote a healthy learning environment
- The arts and creativity are another pathway to help students with learning lessons
- For example: incorporating music, dance, making art, singing, etc. into the lesson provides additional support for learning

Slide 9: FAS and Classroom Behavior

- Behavioral expression is a symptom of FASD.
- It is important to remember that behavior is a form of communication. When a student begins to exhibit challenging behavior, they are likely trying to communicate a problem or issue.
- Fidgeting is a common behavior of students with FASD. In the classroom, fidgeting during an assignment or lesson may indicate that the student does not understand what is going on.
- Being startled or anxious, may cause a student to hit or use physical touch.
- Remember, information processing is a challenge. When students throw materials in the classroom or have a tantrum, this may mean there is an overload of information.

Slide 10: Participant Discussion

- Brainstorm 5 tips for teachers to help create an effective learning environment for students with FASD.

Slide 11: Educational Options for Students with FASD

- Fetal alcohol syndrome can adversely impact education at different levels of severity. When additional intervention is needed, there are options for students with FAS or FASD.
- Students can benefit from special education classes under the Individuals with Disabilities Education Act (IDEA). There are eligibility criteria for the special education program.

- Students whose learning is impacted by FASD may qualify for a Free Appropriate Public Education (FAPE), an individualized public education program.
- If students do not qualify for IDEA, there is section 504 of the Rehabilitation Act. A 504 plan in schools provide a regular or special education plan, aids, and services.

Slide 12: Learning Strengths and Success with FASD

- Often the challenges are highlighted with FAS, but people with FASD also have many educational strengths
- Students with FASD that have caring teachers and supportive learning environments are extremely success in school
- Art, vocabulary, work habits, and sports are some of the top areas of success among children with FASD
- In schools, strengths are built when students with FASD learn to ask for help, when teachers understand FASD, cultivating friendships, and participating in group and team activities

Slide 13: Decision-Making Strategies for Students with FASD

- Students with FASD may not understand the actions that come along with their decisions; they may need extra help learning how to make decisions
- An effective tip is to always show concise practical examples to students to better understand their decisions
 - Example: If a student rips a book, an effective approach would be to show the student multiple times how to correctly read a book
- Routines are important; try to do the same routine every day to help the student understand

- Keep explanations short and use visual representations; offer only 2 choices at a time
 - Give students enough time and cut down on distractions

Slide 14: Strategies and Tips for Group Work and Activities

- Be clear and upfront with teachers and staff about things that may be difficult or fearful for students with FASD
- Share information about FASD with staff
- Encourage students with FASD to work with other peers they may know or feel more comfortable around
- All activities should be supervised

Name: _____ Class: _____

The Impact of FAS on Education and Learning Fact Sheet

Directions: Complete the following note page as the slide presentation is shared.

1. Remember, _____ is the effects that can happen to a person whose mother drank alcohol during pregnancy.
2. Issues caused by FAS include _____.
3. _____ is a broad range of disabilities that include intellectual disability, autism spectrum disorders, brain injury, and _____. Note: These are only a few examples of cognitive disabilities.
4. An _____ is a physical, mental, or neurological condition that is not visible from the outside yet can limit or challenge individuals. _____. Many times, the symptoms and impact are unknown by others.
5. There is some degree of _____ in many students with FASD. Students who experience FASD has similar performance to students with _____. Information processing deficits can also occur with students with FAS.
6. Delays and deficits that are commonly experienced by children with FASD, the child may require _____. If support is not provided, the child will likely experience _____. Some students with FASD are labeled with behavioral problems. Because of these problems, some students may be difficult to manage in a traditional classroom setting.

7. Students with FAS can attend school and participate in _____. Literal communication with concrete examples is recommended for students with FAS.

_____ may be confusing and hard to interpret for some students. The use of _____ are encouraged to help communicate lessons in the classroom.

8. _____ are 2 areas where students impacted by FAS have challenges. To help, it is recommended to include assignment books as reminders and study skills strategies, work in quiet environments, give multiple examples of content. Allowing students to work in groups and teams can help build their confidence when working on difficult subjects and topics. _____ of learning are essential for students with FAS.

_____ students to promote a healthy learning environment.

The arts and creativity are another pathway to help students with learning lessons. For example: Incorporating music, dance, art, singing, etc. into the lesson provides additional support for learning.

9. _____ is a symptom of FASD. It is important to remember that behavior is a _____. When a student begins to exhibit challenging behavior, they are likely trying to communicate a problem or issue. _____ is a common behavior of students with FASD. In the classroom, fidgeting during an assignment or lesson may indicate that the student does not understand what is going on.

10. Students can benefit from special education classes under the _____. There are eligibility criteria for the special education program.

Students whose learning is impacted by FASD may qualify for a _____, an individualized public education program. If students do not qualify for IDEA, there is section 504 of the Rehabilitation Act. A _____ in schools provide a regular or special education plan, aids, and services.

11. Students with FASD that have _____ are extremely successful in school.

_____ are some of the top areas of success among children with FASD.

12. Students with FASD may not _____ that come along with their decisions. Students may need extra help learning how to make decisions.

An effective tip is to always show _____ to students to better understand their decisions. If a student rips a book, an effective approach would be to show the student multiple times how to correctly read a book.

13. Be _____ with teachers and staff about things that may be difficult or fearful for students with FASD. Share information about FASD with staff.

_____ to work with other peers, they may know or feel more comfortable around. All activities should be supervised.

The Impact of FAS on Education and Learning Fact Sheet – Answer Key

1. Remember, **Fetal Alcohol Syndrome Disorder (FASD)** is the effects that can happen to a person whose mother drank alcohol during pregnancy.
2. Issues caused by FAS include **behavioral challenges, cognitive disabilities, and learning disorders.**
3. **Cognitive disabilities** is a broad range of disabilities that include intellectual disability, autism spectrum disorders, brain injury, and **mental illness**. **Note:** These are only a few examples of cognitive disabilities.
4. An **invisible disability** is a physical, mental, or neurological condition that is not visible from the outside yet can limit or challenge individuals. **FASD is a hidden disability**. Many times, the symptoms and impact are unknown by others.
5. There is some degree of **brain damage** in many students with FASD. Students who experience FASD has similar performance to students with **attention-deficit/hyperactivity disorder, autism, and traumatic brain injury**. Information processing deficits can also occur with students with FAS.
6. Delays and deficits that are commonly experienced by children with FASD, the child may require **special education services**. If support is not provided, the child will likely experience **problems related to education and literacy**. Some students with FASD are labeled with behavioral problems. Because of these problems, some students may be difficult to manage in a traditional classroom setting.
7. Students with FAS can attend school and participate in **school activities**. Literal communication with concrete examples is recommended for students with FAS. **Abstract examples** may be confusing and hard to interpret for some students. The use of **graphic organizers and visual examples** are encouraged to help communicate lessons in the classroom.
8. **Short-term memory** and **organization** are two areas where students impacted by FAS have challenges. To help, it is recommended to include assignment books as reminders and study skills strategies, work in quiet environments, and give multiple examples of content. Allowing students to work in groups and teams can help build their confidence when working on difficult subjects and topics.
Multiple modalities of learning are essential for students with FAS. **Use all 5 senses when teaching** students to promote a healthy learning environment.
The arts and creativity are another pathway to help students with learning lessons. For example: Incorporating music, dance, art, singing, etc. into the lesson provides additional support for learning.

9. **Behavioral expression** is a symptom of FASD. It is important to remember that behavior is a **form of communication**. When a student begins to exhibit challenging behavior, they are likely trying to communicate a problem or issue. **Fidgeting** is a common behavior of students with FASD. In the classroom, fidgeting during an assignment or lesson may indicate that the student does not understand what is going on.

10. Students can benefit from special education classes under the **Individuals with Disabilities Education Act (IDEA)**. There are eligibility criteria for the special education program.

Students whose learning is impacted by FASD may qualify for a **Free Appropriate Public Education (FAPE)**, an individualized public education program. If students do not qualify for IDEA, there is section 504 of the Rehabilitation Act. A **504 plan** in schools provide a regular or special education plan, aids, and services.

11. Students with FASD that have **caring teachers and supportive learning environments** are extremely successful in school.

Art, vocabulary, work habits, and sports are some of the top areas of success among children with FASD.

12. Students with FASD may not **understand the actions** that come along with their decisions. Students may need extra help learning how to make decisions.

An effective tip is to always show **concise practical examples** to students to better understand their decisions. If a student rips a book, an effective approach would be to show the student multiple times how to correctly read a book.

13. Be **clear and upfront** with teachers and staff about things that may be difficult or fearful for students with FASD. Share information about FASD with staff. **Encourage students with FASD** to work with other peers they may know or feel more comfortable around. All activities should be supervised.

Lesson Two – The Impact of FAS on Education and Learning

REVIEW: Assessment

5-10 minutes

Purpose:

Participants will assess what they have learned.

Materials:

- *The Impact of FAS on Education and Learning Post-Test*
- *The Impact of FAS on Education and Learning Post-Test – Answer Key*

Facilitation Steps:

1. Distribute *The Impact of FAS on Education and Learning Post-Test*.
2. Give participants five minutes to complete the quiz.
3. Have participants self-check or peer check the quiz. Go over the answers orally. Alternatively, participants could turn it in for the instructor to grade.

Name: _____ Class: _____

The Impact of FAS on Education and Learning Post-Test

Directions: The following questions will test and review your knowledge about the impact of FAS in education and learning. Circle the best answer(s) or write your response in the space provided.

1. _____ is the effects that can happen to a person whose mother drank alcohol during pregnancy.
 - a. Attention deficit disorder (ADD)
 - b. Attention deficit hyperactivity disorder (ADHD)
 - c. Fetal alcohol syndrome disorder (FASD)
 - d. Alzheimer's disease
2. Issues caused by FAS include behavioral challenges, cognitive disabilities, and _____.
 - a. Stomach ulcers
 - b. Fatigue
 - c. Fetal aging
 - d. Learning disorders
3. Cognitive disabilities are a broad range of disabilities that include intellectual disability, autism spectrum disorders, brain injury, and _____.
 - a. Sickle cell anemia
 - b. Mental illness
 - c. Breast cancer
 - d. Covid-19
4. FASD is a _____. Many times, the symptoms and impact are unknown by others.
 - a. Physical ailment
 - b. Hidden disability
 - c. 504 plan
 - d. Contagious disease

5. Students who experience FASD has similar performance to students with _____, autism, and traumatic brain injury.
 - a. Attention deficit hyperactivity disorder
 - b. Alzheimer's disease
 - c. Emotional syndrome
 - d. Infectious disease
6. The use of _____ and visual examples are encouraged to help communicate lessons in the classroom with students impacted by FAS.
 - a. Calculators
 - b. Black and white pictures
 - c. Graphic organizers
 - d. Lab equipment
7. _____ and organization are two areas where students impacted by FAS have challenges in school. To help, it is recommended to include assignment books as reminders.
 - a. Cognitive hearing
 - b. Long-term walking
 - c. Short-term memory
 - d. Physical listening
8. Students can benefit from special education classes under the _____. There are eligibility criteria for the special education program.
 - a. 489 plan
 - b. Students with Disabilities Law (SDL)
 - c. Caring Disability Act
 - d. Individuals with Disabilities Education Act (IDEA)

9. Students whose learning is impacted by FASD may qualify for a _____ an individualized public education program.

- a. Free Appropriate Public Education (FAPE)
- b. Free Application For Student Aide (FAFSA)
- c. Individualized Education Disability Form
- d. Disability Student Association

10. When working with students impacted by FASD, routines are important. Try to do the same routine every day to help the student understand.

- a. True
- b. False

The Impact of FAS on Education and Learning Post-Test – Answer Key

1. _____ is the effects that can happen to a person whose mother drank alcohol during pregnancy.
 - a. Attention deficit disorder (ADD)
 - b. Attention deficit hyperactivity disorder (ADHD)
 - c. **Fetal alcohol syndrome disorder (FASD)**
 - d. Alzheimer's disease
2. Issues caused by FAS include behavioral challenges, cognitive disabilities, and _____.
 - a. Stomach ulcers
 - b. Fatigue
 - c. Fetal aging
 - d. **Learning disorders**
3. Cognitive disabilities are a broad range of disabilities that includes intellectual disability, autism spectrum disorders, brain injury, and _____.
 - a. Sickle cell anemia
 - b. **Mental illness**
 - c. Breast cancer
 - d. Covid-19
4. FASD is a _____. Many times, the symptoms and impact are unknown by others.
 - a. Physical ailment
 - b. **Hidden disability**
 - c. 504 plan
 - d. Contagious disease

5. Students who experience FASD has similar performance to students with _____, autism, and traumatic brain injury.
- a. **Attention deficit hyperactivity disorder**
 - b. Alzheimer's disease
 - c. Emotional syndrome
 - d. Infectious disease
6. The use of _____ and visual examples are encouraged to help communicate lessons in the classroom with students impacted by FAS.
- a. Calculators
 - b. Black and white pictures
 - c. **Graphic organizers**
 - d. Lab equipment
7. _____ and organization are two areas where students impacted by FAS have challenges in school. To help, it is recommended to include assignment books as reminders.
- a. Cognitive hearing
 - b. Long-term walking
 - c. **Short-term memory**
 - d. Physical listening
8. Students can benefit from special education classes under the _____. There are eligibility criteria for the special education program.
- a. 489 plan
 - b. Students with Disabilities Law (SDL)
 - c. Caring Disability Act
 - d. **Individuals with Disabilities Education Act (IDEA)**

9. Students whose learning is impacted by FASD may qualify for a _____an individualized public education program.

- a. **Free Appropriate Public Education (FAPE)**
- b. Free Application For Student Aide (FAFSA)
- c. Individualized Education Disability Form
- d. Disability Student Association

10. When working with students impacted by FASD, routines are important. Try to do the same routine every day to help the student understand.

- a. **True**
- b. False

Sources

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Lesson Three – Medical Aspects of FASD

Lesson Overview

In this lesson, participants will learn about the medical aspects of FASD. The lesson will review FASD diagnoses, epidemiology, assessment, pathophysiology, and management of fetal alcohol syndrome disorders.

Lesson Objectives

After completing this lesson, participants will be able to:

- Explain the diagnosis of FASD
- Identify the incidence, distribution, and control of FASD
- Explain the medical conditions associated with FASD
- Identify the four types of fetal alcohol spectrum disorders
- Identify the DSM 5 criteria for FASD

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>The Medical Aspects of FASD Pre-Test</i> • <i>The Medical Aspects of FASD Pre-Test – Answer Key</i>	1. Print/photocopy <i>The Medical Aspects of FASD Pre-Test</i> (one per participant).	10 minutes
LEARN	• <i>The Medical Aspects of FASD</i> slide presentation • <i>The Medical Aspects of FASD Fact Sheet</i> • <i>The Medical Aspects of FASD Fact Sheet – Answer Key</i> • RealCare™ Fetal Alcohol Syndrome Baby • Infant Brain Model Set	1. Prepare <i>The Medical Aspects of FASD</i> slide presentation for viewing. 2. Prepare the RealCare™ Fetal Alcohol Syndrome Baby for observations and discussions. 3. Showcase the normal infant brain model and the infant brain model with FAS in front of participants to help with class discussions. 4. Print/photocopy <i>The Medical Aspects of FASD Fact Sheet</i> (one per participant).	40 minutes
REVIEW	• <i>The Medical Aspects of FASD Post-Test</i> • <i>The Medical Aspects of FASD Post-Test – Answer Key</i>	1. Print/photocopy <i>The Medical Aspects of FASD Post-Test</i> (one per participant).	5-10 minutes

Lesson Three – The Medical Aspects of FASD

FOCUS: Pre-Test and Discussion

10 minutes

Purpose:

Participants will check their prior knowledge on the medical aspects of FASD by completing a pre-test and participate in a brief classroom discussion about the topic.

Materials:

- *The Medical Aspects of FASD Pre-Test*
- *The Medical Aspects of FASD Pre-Test – Answer Key*

Facilitation Steps:

1. Distribute *The Medical Aspects of FASD Pre-Test* to participants before the start of class.
2. Give participants five minutes to complete the pre-test.
3. Once participants complete the pre-test, spend approximately five minutes on the discussion question prompt. The pre-test will be reviewed at the end of the session.

The purpose of the discussion question prompt is to introduce the topic and spark interest.

Instruct participants to engage with the discussion question prompt in a rapid-fire approach. Meaning, answer the question in a brief and concise manner to allow for multiple participants to engage in conversation.

Name: _____ Class: _____

The Medical Aspects of FASD Pre-Test

Directions: The following questions will test your knowledge about fetal alcohol syndrome disorder. Circle the best answer(s) or write your response in the space provided.

1. The CDC reports that there is 1 infant with FAS for every _____ live births.
 - a. 200
 - b. 500
 - c. 750
 - d. 1,000
2. High FASD prevalence reflects the high prevalence of _____ use.
 - a. alcohol
 - b. illegal drug
 - c. prescription drug
 - d. harmful food
3. The key diagnostic features of FASD are (1) growth deficiency, (2) the FAS facial features, (3) neurocognitive structural and functional abnormalities, and (4) prenatal alcohol exposure.
 - a. true
 - b. false

Discussion Question Prompt

1. What are the medical aspects of FASD?

The Medical Aspects of FASD

Pre-Test – Answer Key

1. The CDC reports that there is 1 infant with FAS for every _____ live births.
 - a. 200
 - b. 500
 - c. 750
 - d. 1,000**
2. High FASD prevalence reflects the high prevalence of _____ use.
 - a. alcohol**
 - b. illegal drug
 - c. prescription drug
 - d. harmful food
3. The key diagnostic features of FASD are (1) growth deficiency, (2) the FAS facial features, (3) neurocognitive structural and functional abnormalities, and (4) prenatal alcohol exposure.
 - a. true**
 - b. false

Discussion Question Prompt

1. What are the medical aspects of FASD? **Answers will vary**

Lesson Three – The Medical Aspects of FASD

LEARN: Slide Presentation

40 minutes

Purpose:

In this discussion, the instructor reviews the medical aspects of FASD. The presentation is designed to teach participants about the diagnosis, incidence, medical conditions, and types of FASD.

Materials:

- *The Medical Aspects of FASD* slide presentation
- *The Medical Aspects of FASD Fact Sheet*
- *The Medical Aspects of FASD Fact Sheet – Answer Key*
- RealCare™ Fetal Alcohol Syndrome Baby
- Infant Brain Model Set

Facilitation Steps:

1. As a reminder, show the participants the normal infant brain model and the infant brain model with FAS. Ask participants to describe the difference between the two brain models.

2. During the recap, share the titles of the curriculum lessons:

Lesson 1 – Understanding Prenatal Alcohol Exposure

Lesson 2 – The Impact of FAS in Education and Learning

Lesson 3 – Medical Aspects of FASD

Have participants share what they learned from lessons 1 and 2.

3. Distribute the *Medical Aspects of FASD Fact Sheet* and instruct participants to complete it while you share the *Medical Aspects of FASD* slide presentation. An answer sheet is provided for the instructor.

Slide 1: Introductory Slide

Slide 2: How Is FASD Diagnosed?

- A healthcare provider can diagnose FASD
- The diagnosis is based on the mother's history of alcohol use and the appearance of the baby
- An examination is conducted on the baby to look for changes in the face, upper lip, and eyes
- In a newborn, there may be signs of alcohol withdrawal; signs can include a high-pitched cry and shaking
- In older children, diagnostic tests can be performed to diagnose FASD

Slide 3: Epidemiology of FASD

- There is no exact number of how many people have FASD in total
- Approximately 1-5% of U.S. first graders have FASD
- The CDC reports that there is 1 infant with FAS for every 1,000 live births
- High FASD prevalence reflects the high prevalence of alcohol use

Slide 4: 4 Types of Fetal Alcohol Spectrum Disorders

- The medical disorders labeled as FASD include:
 - Fetal alcohol syndrome (FAS)
 - Partial FAS (pFAS),
 - Alcohol-related neurodevelopmental disorder (ARND)
 - Alcohol-related birth defects (ARBD)
 - Neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE).

Slide 5: Discussion

- From the previous lessons, what are some known symptoms of FASD?

Slide 6: DSM 5 Criteria for FASD

- It requires evidence of both prenatal alcohol exposure and central nervous system (CNS) involvement
- As indicated by impairments in the following 3 areas: Cognition, self-regulation, and adaptive functioning
- The key diagnostic features of FASD: (1) growth deficiency, (2) the FAS facial features, (3) neurocognitive structural and functional abnormalities, and (4) prenatal alcohol exposure

Slide 7: FASD Treatment

- There is no cure for FASDs, but research shows that early intervention treatment services can improve a child's development
- If a child has not received a diagnosis, they might qualify for early intervention treatment services
- Involvement in special education and social services is also a treatment method
- A medical care team is necessary, which may include a pediatrician, geneticist, audiologist, immunologist, and neurologist

Slide 8: Possible Complications of FASD

- People with FASD can have problems with learning, memory, attention span, communication, vision, or hearing
- They might have a mix of these problems
- People with FAS may have a hard time in school and trouble getting along with others

Slide 9: Clinical Features of FASD

- People with FASD have central nervous system (CNS) problems, minor facial features, and growth problems
- The 3 cardinal facial features are evident: Short palpebral fissures, smooth

philtrum, and relatively thin vermilion border of the upper lip

Slide 10: Discussion

- What are some learning impacts of FASD?

Slide 11: Dysmorphology (FASD)

- The clinical recognition of craniofacial dysmorphology in FASD – most commonly short palpebral fissures, smooth philtrum, and thin upper lip vermilion
- Facial dysmorphology may become more readily apparent in early childhood and include a thin upper lip, smooth philtrum, and small palpebral fissures

Slide 12: Sensory and Neuropsychological Abnormalities

- It is possible for someone with FASD to be more or less sensitive to stimulus than normally developing persons
- The stimuli may include temperatures, smells, sounds, colors or patterns, textured clothing, or touching

Slide 13: Neurological Deficits

- Prenatal alcohol exposure can damage the corpus callosum and hippocampus, causing cognitive, attention, and memory problems
- Children with FASD typically have difficulty thinking through things (and poor attention) and some children also have problems with motor coordination

Slide 14: Brain Abnormalities

- Children exposed to alcohol prenatally can experience significant deficits in cognitive and psychosocial functioning as well as alterations in brain structure and function
- Due to disruption of normal brain development, individuals with FASD may have a range of neurobehavioral deficits including impairments in attention, reaction time, visuospatial abilities, executive functions, motor skills, memory, language,

and social and adaptive functions, and
reduced IQ

Slide 15: Medical Conditions Associated with
FASD

- Individuals with FASD can also have permanent vision and hearing problems; poorly developed bones, limbs, and fingers; and damage to the heart, kidney, liver, and other organs
- Secondary disabilities are not present at birth but occur later in life because of the primary disabilities associated with FASD

Name: _____ Class: _____

The Medical Aspects of FASD

Fact Sheet

Directions: Complete the following note page as the slide presentation is shared.

1. A healthcare provider can _____. The diagnosis is based on the mother's history of alcohol use and the appearance of the baby.
2. An examination is conducted on the baby to look for changes in _____.
3. There is no exact number of how many people have FASD in total. _____ of U.S. first graders have FASD. The CDC reports that there is 1 infant with FAS for every 1,000 live births.
4. The medical disorders labeled as FASD include:
 - _____
 - Partial FAS (pFAS)
 - Alcohol-related neurodevelopmental disorder (ARND)
 - Alcohol-related birth defects (ARBD)
 - Neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE)
5. It requires evidence of both _____ and central nervous system (CNS) involvement.
6. The key diagnostic features of FASD: _____ (3) neurocognitive structural and functional abnormalities, and (4) prenatal alcohol exposure.

7. There is no cure for FASDs, but research shows that _____ services can improve a child's development. If a child has not received a diagnosis, they might qualify for early intervention treatment services.
8. People with FASD can have problems with _____ communication, vision, or hearing.
9. The 3 cardinal facial features are evident: _____, and relatively thin vermilion border of the upper lip.
10. The clinical recognition of _____ in FASD – most commonly short palpebral fissures, smooth philtrum, and thin upper lip vermilion.
11. Facial dysmorphology may become more readily apparent in _____ and include a thin upper lip, smooth philtrum, and small palpebral fissures.
12. It is possible for someone with FASD to be more or less _____ than normally developing persons.
13. Prenatal alcohol exposure can damage _____, causing cognitive, attention, and memory problems.
14. Due to disruption of normal brain development, individuals with FASD may have a range of _____ including impairments in attention, reaction time, visuospatial abilities, executive functions, motor skills, memory, language, and social and adaptive functions, and reduced IQ.
15. Individuals with FASD can also have _____, limbs, and fingers; and damage to the heart, kidney, liver, and other organs.

The Medical Aspects of FASD Fact Sheet

– Answer Key

Directions: Complete the following note page as the slide presentation is shared.

1. A healthcare provider can **diagnose FASD**. The diagnosis is based on the mother's history of alcohol use and the appearance of the baby.
2. An examination is conducted on the baby to look for changes in **the face, upper lip, and eyes**.
3. There is no exact number of how many people have FASD in total. **Approximately 1-5%** of U.S. first graders have FASD. The CDC reports that there is 1 infant with FAS for every 1,000 live births.
4. The medical disorders labeled as FASD include:
 - **Fetal alcohol syndrome (FAS)**
 - Partial FAS (pFAS)
 - Alcohol-related neurodevelopmental disorder (ARND)
 - Alcohol-related birth defects (ARBD)
 - Neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE)
5. It requires evidence of both **prenatal alcohol exposure** and central nervous system (CNS) involvement.
6. The key diagnostic features of FASD: **(1) growth deficiency, (2) the FAS facial features**, (3) neurocognitive structural and functional abnormalities, and (4) prenatal alcohol exposure.
7. There is no cure for FASDs, but research shows that **early intervention treatment** services can improve a child's development. If a child has not received a diagnosis, they might qualify for early intervention treatment services.
8. People with FASD can have problems with **learning, memory, attention span**, communication, vision, or hearing.
9. The 3 cardinal facial features are evident: **Short palpebral fissures, smooth philtrum**, and relatively thin vermilion border of the upper lip.
10. The clinical recognition of **craniofacial dysmorphism** in FASD – most commonly short palpebral fissures, smooth philtrum, and thin upper lip vermilion.
11. Facial dysmorphism may become more readily apparent in **early childhood** and include a thin upper lip, smooth philtrum, and small palpebral fissures.
12. It is possible for someone with FASD to be more or less **sensitive to stimulus** than normally developing persons.
13. Prenatal alcohol exposure can damage the **corpus callosum and hippocampus**, causing cognitive, attention, and memory problems.

14. Due to disruption of normal brain development, individuals with FASD may have a range of **neurobehavioral deficits** including impairments in attention, reaction time, visuospatial abilities, executive functions, motor skills, memory, language, and social and adaptive functions, and reduced IQ.

15. Individuals with FASD can also have permanent **vision and hearing problems; poorly developed bones**, limbs, and fingers; and damage to the heart, kidney, liver, and other organs.

Lesson Three – The Medical Aspects of FASD

REVIEW: Assessment

5-10 minutes

Purpose:

Participants will assess what they have learned.

participants could turn it in for the instructor to grade.

Materials:

- *The Medical Aspects of FASD Post-Test*
- *The Medical Aspects of FASD Post-Test – Answer Key*

Facilitation Steps:

1. Distribute *The Medical Aspects of FASD Post-Test*.
2. Give participants five minutes to complete the quiz.
3. Have participants self-check or peer check the quiz. Go over the answers orally. Alternatively,

Name: _____ Class: _____

The Medical Aspects of FASD

Post-Test

Directions: The following questions will test and review your knowledge about the medical aspects of FASD. Circle the best answer(s) or write your response in the space provided.

1. A healthcare provider can diagnose FASD. The diagnosis is based on the _____ and the appearance of the baby.
 - a. father's health history
 - b. mother's history of food allergies
 - c. father's history of alcohol use
 - d. mother's history of alcohol use
2. An FASD examination is conducted on the baby to look for changes in the face, upper lip, and _____.
 - a. heart
 - b. eyes
 - c. toes
 - d. fingers
3. In a newborn, there may be signs of _____. Signs can include a high-pitched cry and shaking.
 - a. alcohol withdrawal
 - b. overdose
 - c. flu
 - d. infant obesity
4. FASD is indicated by impairments in the following three areas: _____, self-regulation, and adaptive functioning.
 - a. social
 - b. financial
 - c. cognition
 - d. physical
5. There is no cure for FASDs, but research shows that _____ can improve a child's development.
 - a. diagnostic chemists

Fetal Alcohol Syndrome Curriculum

- b. early intervention treatment
 - c. physical therapy treatment
 - d. cognitive intervention
6. A medical care team is necessary which may include a _____, geneticist, audiologist, immunologist, and neurologist.
- a. biologist
 - b. physical chemist
 - c. oncologist
 - d. pediatrician
7. People with FASD have central nervous system (CNS) problems, minor facial features, and growth problems.
- a. peripheral nervous system
 - b. eating disorders
 - c. central nervous system
 - d. brain genetic problems
8. Facial dysmorphology may become more readily apparent in _____.
- a. early childhood
 - b. adulthood
 - c. in the uterus
 - d. teenage years
9. Children exposed to alcohol prenatally can experience significant deficits in cognitive and _____ functioning.
- a. social media
 - b. autonomous
 - c. imperative
 - d. psychosocial
10. Individuals with FASD can also have permanent vision and hearing problems.
- a. True
 - b. False

Lesson 3 Quiz – Answer Key

1. A healthcare provider can diagnose FASD. The diagnosis is based on the _____ and the appearance of the baby.
 - a. father's health history
 - b. mother's history of food allergies
 - c. father's history of alcohol use
 - d. **mother's history of alcohol use**
2. An FASD examination is conducted on the baby to look for changes in the face, upper lip, and _____.
 - a. heart
 - b. **eyes**
 - c. toes
 - d. fingers
3. In a newborn, there may be signs of _____. Signs can include a high-pitched cry and shaking.
 - a. **alcohol withdrawal**
 - b. overdose
 - c. flu
 - d. infant obesity
4. FASD is indicated by impairments in the following three areas: _____, self-regulation, and adaptive functioning.
 - a. social
 - b. financial
 - c. **cognition**
 - d. physical
5. There is no cure for FASDs, but research shows that _____ can improve a child's development.
 - a. diagnostic chemists
 - b. **early intervention treatment**
 - c. physical therapy treatment
 - d. cognitive intervention

Fetal Alcohol Syndrome Curriculum

6. A medical care team is necessary which may include a _____, geneticist, audiologist, immunologist, and neurologist.
- a. biologist
 - b. physical chemist
 - c. oncologist
 - d. **pediatrician**
7. People with FASD have central nervous system (CNS) problems, minor facial features, and growth problems.
- a. peripheral nervous system
 - b. eating disorders
 - c. **central nervous system**
 - d. brain genetic problems
8. Facial dysmorphology may become more readily apparent in _____.
- a. **early childhood**
 - b. adulthood
 - c. in the uterus
 - d. teenage years
9. Children exposed to alcohol prenatally can experience significant deficits in cognitive and _____ functioning.
- a. social media
 - b. autonomous
 - c. imperative
 - d. **psychosocial**
10. Individuals with FASD can also have permanent vision and hearing problems.
- a. **True**
 - b. False

Sources

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