Course Script

1. Welcome to Shaken Baby, SIDS and Early Brain Development.

2. This training is required for anyone who works with infants and toddlers in child care or foster care. You'll learn to recognize and prevent abusive head trauma, or shaken baby syndrome, sudden infant death syndrome and become familiar with early brain development.

3. As those who work with little ones, we must be diligent, informed, observant advocates who protect children in our care, while always respecting parents and expecting that they are doing their best to care for their child. This course will give you the tools to inform your own work with infants and to help educate and support the parents of the children you work with.

4. Before we begin, let’s look at the learning objectives for this course. By the end, you should be able to:
   - Define shaken baby syndrome
   - Explain the risk factors of shaken baby syndrome
   - Define sudden infant death syndrome
   - List 3 ways to reduce the risk of SIDS
   - Describe 4 ways to promote healthy brain development

5. Take a moment now to print the listening sheet and script for this course. You’ll find them in the side bar. You can read along the script as you go through the course, and complete the listening sheet, which will serve as a review of what you’ve learned. You’ll also find handouts attached throughout that will serve as references for further learning.

6. The course has several topics of discussion, and we will begin with shaken baby syndrome, a form of physical child abuse.

7. I’d like to tell you a personal story about my experience with an infant who had been physically abused. He came to our family as a foster placement. He was 6 weeks old and had been in the hospital for 1 week – so he had only been with his parents for 5 weeks. He arrived late one evening, brought to our home by child protective services who had received him from the hospital. Someone had squeezed him so hard, on numerous occasions, that he had 19 broken ribs. He also had 3 fractures on his legs.
This little guy had a face I’ll never forget – a reflection of pain and discomfort that no one should ever have to endure.

8. This baby was one of the lucky ones. He was hurt badly but he didn’t have any apparent brain damage. He recovered from his injuries and developed typically until he left our care 15 months later as a strong, happy, outgoing toddler. He never returned to the home where he was abused and a family member was sent to jail for abusing this little one plus another child, who did not survive.

9. Shaken baby syndrome is also called abusive head trauma. It’s a serious brain injury resulting from forcefully shaking an infant or toddler. It destroys brain cells and prevents the brain from getting enough oxygen.

10. Shaken baby syndrome is a form of child abuse that can result in permanent brain damage or death.

   Babies have weak neck muscles and struggle to support their heavy heads. If a baby is forcefully shaken, his fragile brain moves back and forth inside the skull. This causes bruising, swelling and bleeding.

11. These injuries aren’t caused by bouncing a child on your knee, minor falls, or even rough play. It occurs when a parent or caregiver severely shakes a baby or toddler out of frustration or anger — often because the child won’t stop crying and the person caring for them loses control.

12. Quiz question
13. Quiz answer

14. Let’s watch a video that will help you understand some of the implications of shaking a baby. As you watch the video, answer the questions on your listening sheet.

15. Shaken baby:  https://www.youtube.com/watch?v=YoXonRCHM1w

16. It’s very sobering, isn’t it, to think of how a moment of frustration and loss of control can have such far-reaching implications for a child. Let’s review the answers...

   A baby’s head is 25% of their body weight. And their neck muscles are not strong enough to support their head if they are shaken or handled roughly. It only takes a few seconds for irreversible brain damage to occur when a baby is shaken. It creates injuries that can cause bleeding and swelling, permanent brain damage, physical and cognitive limitations, poor vision or blindness, hearing loss and death.

17. Quiz question
18. Quiz answer
19. Shaken Baby Syndrome is seen most frequently in those younger that 6 months old, but can occur up to the age of three.

Abusive head injuries are the most common cause of death in child abuse. This includes death from shaken baby syndrome.

20. So, what should you be aware of, what should you watch for? These are some of the visible changes you might see in a baby whose been shaken:

- Extreme irritability
- Poor eating
- Vomiting
- Difficulty staying awake
- Pale or bluish skin
- Breathing problems
- Seizures
- Paralysis
- Tremors
- Coma

21. Other injuries that are not immediately noticeable include bleeding in the brain and eye, damage to the spinal cord and neck, and fractures of the ribs, skull and bones. Evidence of prior child abuse also is common.

In mild cases of shaken baby syndrome, a child may appear normal after being shaken, but over time he or she may develop health, learning, or behavior problems.

22. Let’s take a look at the risk factors. Research describes circumstances that may increase the risk of adults losing control and shaking a baby. These include:

- Unrealistic expectations of babies
- Young or single parenthood
- Stress
- Domestic violence
- Alcohol or substance abuse
- Unstable family situations
- Depression
- A history of mistreatment as a child

Statistically, men are more likely to inflict shaken baby syndrome than are women.

23. An educational campaign called “The Period of Purple” has been successful. The acronym PURPLE is used to describe specific characteristics of an infant’s crying during this phase and let parents and caregivers know that what they are experiencing is
indeed normal and, although frustrating, is simply a phase in their child's development that will pass. The word Period is important because it tells parents that it is only temporary and will come to an end. Take a moment to pause the video and read through the descriptions – it will help you in your work and you can communicate it to the parents you serve.

24. Quiz question
25. Quiz answer

26. Let’s move on the next topic of this training, Sudden Infant Death Syndrome, or SIDS.

27. When I was an infant teacher, one year right before Christmas break, my director told me that when we came back to work we’d have a new family in the program and they had 3-month-old twins. We were so excited to meet them and to have twins in our class!

Sadly, over the holiday break one of the babies died of SIDS. Sudden infant death syndrome is the unexplained death, usually during sleep, of a seemingly healthy baby less than a year old. SIDS is often called crib death because infants often die in their cribs. It’s the most common cause of death for infants between 1 and 6 months of age. The incidence of SIDS peaks between 2 and 4 months.

28. SIDS is suspected when a previously healthy infant is found dead in bed. Often, the baby is fed normally just before being placed in bed to sleep, no outcry is heard, and the baby is found in the position in which he or she had been placed at bedtime or naptime.

29. Although the cause is unknown, it appears that SIDS may be associated with abnormalities in the portion of an infant's brain that controls breathing and arousal from sleep.

30. Quiz question
31. Quiz answer

32. Researchers have discovered some factors that may put babies at extra risk. They’ve also identified some measures caregivers can take to help protect babies.

33. Let’s take a look at some of these risk factors first. * Research studies have linked SIDS to:

- **Gender** - Boys are more likely to die of SIDS.
- **Age** - Infants are most vulnerable during the second and third months of life.
- **Race** - For reasons that aren’t well-understood, black, Native American, or Eskimo infants are more likely to develop SIDS.
• **Family History** - Babies who’ve had siblings or cousins die of SIDS are at higher risk.

• **Secondhand Smoke** - Babies who live with smokers have a higher risk.

• **Being premature/low birth weight** - Both being born early and having low birth weight increase babies’ chance of SIDS. Less than 5.5 lbs. is considered low birth weight

*Distinguishing Sudden Infant Death Syndrome from Child Abuse Fatalities, PEDIATRICS Vol. 107, No.2, February 2001.*

34. During pregnancy, the risk of SIDS is affected by the mother, especially if she:
   - Is younger than 20
   - Smokes cigarettes
   - Uses drugs or alcohol
   - Has inadequate prenatal care

35. Quiz question
36. Quiz answer

37. It’s really important that we are aware of and implementing every measure we can to prevent SIDS. Let’s take a look at what you can do as you care for babies. As we review these precautions, you’ll recognize that many of these are part of licensing minimum standards, so you’re already doing them. Now you understand the “why” behind these rules!

38. Always use a firm mattress that snugly fits the sides of the crib. Bean bag chairs, waterbeds or foam pads may not be used for sleeping. Additionally, blankets, sleep positioning devices like foam pads that prevent a child from rolling over, stuffed toys, quilts, pillows, bumper pads and comforters may not be used in cribs for babies under 12 months.

39. Babies put to sleep on their backs are much less likely to die from SIDS because the airway from the nose to the lungs is not restricted. The “Back to Sleep” educational campaign has dramatically decreased the incidence of SIDS in the United States and in other countries.

40. Assign someone to conduct “baby checks” as they sleep, insuring babies sleep on their backs and cribs are free of blankets, pillows and toys. I remember watching the infants in my class sleep, making sure I could see their chests rise and fall as they breathed.

41. Educate all caregivers about SIDS and ways to reduce the risk factors. Make sure that substitutes, respite workers and volunteers are informed. Also, make information about
SIDS readily available to parents so they can share it with grandparents, friends, babysitters and other family members.

42. Video preview
43. Video:  https://www.youtube.com/watch?v=MUuqAXkWX6s

44. Review of video content
45. Quiz question
46. Quiz answer

47. The last topic of our training is understanding healthy brain development.

48. The growth of the brain is a lifelong process that’s essential to physical, cognitive and emotional development. When a baby is born, her brain is only about ¼ to 1/3 of its eventual adult size. And by age 3, the brain has reached nearly 90% of its adult size. That means there is a lot happening in that little brain in the first few years of life!

49. And that’s what makes your work and interactions with infants and toddlers so crucial.

50. At birth, the brain has a total of 100 billion brain cells, or neurons. However, most of the neurons are still immature. The cells are not yet activated and connections between the neurons are not strong or haven’t taken place yet.

51. Quiz question
52. Quiz answer

53. One indicator of a baby’s neurological development is their reflexive behaviors. We all have reflexes that control our body – like blinking, yawning, coughing, gagging and shivering, that serve to protect us throughout life. Newborns have many other reflexes that protect them during this period of immature brain development.

54. A few reflexes that you can observe in the first year are:

   a. **The Moro or startle reflex.** This happens when the baby is dropped (or thinks they’re being dropped) or hears a loud noise. You’ll see them extend their legs, arms and fingers, with the back arched and their head drawn back. This reflex disappears around 3 months of age.

   b. **The Rooting reflex.** This happens where the baby’s cheek or lower lip is stroked with a finger or a nipple. The baby’s head turns towards the nipple, opens their mouth and begins to suck. This reflex disappears around 9 months of age.

   c. **The Darwinian or grasp reflex.** This happens when the palm of the baby’s hand is stroked. They make a strong fist around your finger, so strong they
can be raised to a standing position if both fists are closed around the adult’s finger. This reflex disappears around 4 months of age.

55. I’m sure you can envision how these reflexive behaviors serve to protect very young infants. And they go away as neural connections are made which allow them to shift towards more voluntary motor behaviors. Disappearance of unneeded reflexes on schedule is a sign that brain development is taking place, therefore we can evaluate a baby’s neurological development by seeing whether certain reflexes are present or absent at different ages.

56. Quiz question
57. Quiz answer

58. As brain structure develops, babies will reach the developmental milestones that we expect to see in the first year. Things like grabbing or reaching for an object, responding to others, learning to make sounds to communicate, crawling and walking are all indicators that neural connections are made and brain growth is happening.

59. How can we promote this development? Responsive caregiving is key! When you pay close attention to what the child is signaling and provide a response that meets their needs, brains develop.

   When a child sees that her you respond to her signals, she will continue to communicate with you and feel secure. When you respond by touching, rocking, talking, smiling, and meeting the communicated need, this promotes brain development.

60. So, what happens if a baby is not cared for by someone who is responsive to their needs? Look at these pictures. The image compares two children’s brains. The brain on the left is a healthy brain. The brain on the right is a child whose parents subjected them to extreme neglect. In this photo, you can see the neglected child’s brain is about 1/3 of the size of the healthy child’s brain.

61. Touch is especially important – holding and stroking stimulates the brain to release important hormones necessary for growth.

   Babies experience others through their senses:
   - They see the way you look into their eyes
   - They study the expressions on your face
   - They hear you cooing, singing, talking and reading
   - They feel you holding or rocking them
   - They take in your familiar smells
All these things added together contribute to the attachment relationship that is so crucial for social-emotional development.

62. Here’s a video that illustrates research that’s been done in the area of facial recognition and explains why babies always love to gaze at your face. Let’s take a look.

63. Video:  https://www.youtube.com/watch?v=GK3ebhSmC4A&t=3s
64. Summary of video.

65. Quiz question
66. Quiz answer

67. In other research, Dr. Carolyn Newberger discovered “Positive interactions with caring adults stimulate a child’s brain profoundly, causing synapses to grow and existing connections to be strengthened. Those synapses in a child’s brain that are used tend to become permanent fixtures; those that are not used tend to be eliminated. Neural plasticity, the brain’s ability to adapt with experience, confirms that early stimulation sets the stage for how children will continue to learn and interact with others throughout life.”

We see an example of this in language acquisition. If you or I tried to learn a new language, it would take months, even years to get a good grasp on it. A baby who hears one language at home and another at school is able to learn and understand both languages, simultaneously learning to comprehend and speak both. This is an example of neural plasticity.

68. By eight months of age, the average infant, living in a stimulating, secure and loving environment, will have sparked 500 trillion neural connections. By the age of two, an infant has developed around 1000 trillion of these connections.

Although the connections continue to form throughout life they have reached their highest density. The root brain structure, which provides the foundation for future functioning, is largely established by the age of three. By then, the foundations for thinking, language, aptitudes and attitudes, have been laid down and the structure and design of the brain is almost complete.

69. Quiz question
70. Quiz answer

71. We’ve covered lots of information in this course so I hope you’ve taken some good notes on your listening sheet. To summarize, we’ve talked about three important things in caring for infants.
72. You now know the risk factors and symptoms of shaken baby and sudden infant death syndrome. And you know that responsive, intentional care and interactions with infants and toddlers support healthy brain development.

You will find handouts attached to this section that you can print and use for further learning. You can also share these with parents.

73. References for this training

74. Quiz

75. Conclusion