

# Chapter 2

## Child Development

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Changes in the developing child make normal behavior a moving target. It is important for clinicians to understand normal developmental stages in order to appreciate the bounds of normal behavior. The clinical vignettes in this chapter illustrate a few of these developmental stages that may present as a challenge to parents and professionals.

At the end of the chapter, the readers will be able to:

1. Describe normal cognitive, social, emotional, and adaptive functioning of a pre-school age child, latency age child, and adolescent youth.
2. Describe protective and parental factors that can help foster normal development.
3. Identify ways in which development, personality, family, culture, and society influence development, adaptation, and coping.
4. List risk factors that may contribute to developing psychopathology at various stages.
5. Relate to how a child's developmental stage influences the physician–patient interview.

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**Vignette 2.1.1 Presentation Situation: Caleb**

You are a resident in a pediatric clinic where 34-month-old Caleb is brought in by his parents with the concern of distressing tantrums. The parents describe that the child can “rage.” He may lie on the floor and flail around for what seems like an hour. He may also run away from his parents in the home and slam doors, then yell at them. He sometimes stands with stiff arms and legs and cries inconsolably. With further discussion, Caleb’s mother shares that her sister has been diagnosed with Bipolar Disorder and that she is concerned that he may have attention deficit hyperactivity disorder “like his cousins.”

Table 2.1.1

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

**Vignette 2.1.2: Continuation**

The parents note that Caleb can generally rage up to 10 min, but they can give an example when it lasted over 30 min. They both agree that triggers for the episodes may be when he does not get what he wants, when they may not be understanding what he says, and when he is tired or hungry. The father states that he speaks clearly to Caleb and sits him in a chair for a couple of minutes. Caleb usually is able to calm down when this happens. The mother admits that she becomes frustrated with him and usually ends up yelling at him. She gives an example from that morning: She gave Caleb some crayons and paper but he only colored for a few minutes and then wanted to play with blocks. She redirected him to the coloring and he sat on the floor and “raged” for at least 5 min. She yelled “stop it” and then felt guilty; so, she gave him the blocks and walked away.

You ask for more history. The parents state that Caleb was the product of a full-term first pregnancy. There were no in utero exposures or complications. He was of easy temperament. He has fed well, slept well, and has always loved to be held. He responded to social games such as peek-a-boo. He shared references with his parents as a toddler as he would point at objects and look at them to share experiences frequently. He spoke his first words by age one and three-word sentences by age 30 months. He walked at 13 months, rode a tricycle at 30 months, can color a circle, and potty trained just recently, though he does wear a pull-up at night. Generally, Caleb is a “happy kid” when he is not having an episode.

You ask to see Caleb alone, and he agrees to let the parents leave the room to meet with you. He is shy initially, but after looking at toys he picks out a

toy truck and starts to push it around the room. He looks at you and smiles, then he tells you about his big green and red trucks that he has at home. You prompt him to draw and he colors lines and circles. He asks for his mother a few times during the exam, but he is reassured that she is in the waiting room and then continues to play. He denies that anyone has ever hurt him. He does state that he can get mad and he imitates standing up with a stiff posture, clenching his fists and holding his breath. He then laughs and returns to playing with the truck.

Table 2.1.2

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

**Vignette 2.1.3: Continuation**  
Caleb has attended day care 3 days a week for the past 6 months. The teacher told Caleb’s mother that he did have difficulty sharing with other kids and following rules initially. He would throw a tantrum and even hit a couple of kids during these episodes. The teacher initiated time-outs. The teacher then used counting to three to give him time to make a choice. Initially, he required several time-outs per day and had difficulty making the right choice. The past month they have not noted any concerns.

2.1 Learning Issues

Reviewing the Denver Developmental Screening Test-II in the pediatric clinic, you note that Caleb has normal development for a boy of his age (Frankenburg et al. 1992). Nearly 3 years of age, he is able to perform social, motor, and adaptive skills for his age. He communicates socially, appreciates personal boundaries, and shares affect (Smidt 2006). His play and conversations remain self-centered, but this is expected of toddlers and preschoolers. This self-centered perspective of the young child can be frustrating for many adults. For example, Caleb is only focused on his interests and does not ask the examiner of her opinion. His attention span during activities may only be 5 min; so he tends to change activities frequently. It is clear, however, that the examiner’s presence is important to Caleb. The adult provides a reference for the child and can serve to share experiences and encourage appropriate exploration, communication, and expansion of the child’s own self-awareness and learning during his play.

The child's desire for social and environmental interaction is paramount to learning and early brain development. As the child experiences life, neurons undergo dendritic branching and form synapses to create complex networks that allow the child to integrate their understanding of their environment and gain control over their own abilities. This process is also important as the less useful dendritic and synaptic connections undergo the process of pruning (Higgins and George 2007). Approximately one-fifth of neurons are effectively programmed by the age of 2 years, and it is through exploration, and to some extent testing limits, that allows the child to gather the data needed to program the other 80 % of the brain.

Most parents understand that they serve a critical role in providing a safe and interesting environment as well as rules and structure to help children learn without physical injury. Emotional development and learning affective (emotional) regulation also require such interactive parenting. For instance, when Caleb pushes the limits of behavior (throws a tantrum or puts himself at risk) in an attempt to further engage in exploration, the caregiver can acknowledge this desire to learn and then identify acceptable alternatives for the child. For example, Caleb runs across the street to watch the garbage truck at work. The caregiver can acknowledge that this is interesting but he cannot run across the street or stand near the truck as it is unsafe. The caregiver may offer alternatives such as "We can stand on our sidewalk and watch the truck from across the street or we may go home and read a book about trucks." Offering the child options and time to make a decision helps the child develop self-awareness and problem-solving skills. When children resist and retaliate, it may be time for a brief and respectful consequence. If the child makes a good choice, then it is helpful to immediately praise the child. Consistency in these ongoing interactions models appropriate emotional and behavioral regulation and also nurtures the child's security and attachment with the caregiver.

There are a number of developmental theorists who have contributed to the understanding of child and adolescent development. For example, Piaget (1964) noted that the preschooler is in the preoperational phase of development; this phase is egocentric from a cognitive, affective, perceptual, and social standpoint. According to Erik Erikson (1950), a child of this age is navigating through the developmental phase of autonomy versus shame and doubt. The young child becomes more aware of being a separate individual differing from wishes and needs of the parents. "No!" is a common refrain heard by parents of toddlers and preschoolers. There can be a battle of the wills as the child attempts to exert control. Effective communication and established trust between the child and the caretaker are essential for healthfully resolving this stage. Parents who learn to apply supportive interactions will have ongoing rewards, as the child's efforts toward greater separation may begin during this phase but will continue throughout childhood (Wiener and Dulcan 2004). Sociocultural theorists describe that children at this age use significant social referencing. They offer the concept of scaffolding, in which problem-solving for the young child occurs with helpful adults who are the child's primary tool for learning (Lewis 2007).

**Vignette 2.1.4: Conclusion**  
You reassure Caleb’s parents that he is normal, bright, and healthy. You offer your favorite resource for parenting the preschooler: 1,2,3 Magic! (Phelan 2003) and Your Child (Pruit 2000), and the website by the American Academy of Pediatrics (AAP)—healthychildren.org. You strongly recommend that both parents observe the preschool teacher’s techniques so that they can see what works at school and what would be consistent at home. A local resource for parenting classes is reviewed. They are encouraged to return to the clinic if these initial recommendations are not effective for the family within the next few months.

**Vignette 2.2.1 Presenting Situation: Susana**  
Susana is a 10-year-old Hispanic girl brought to your outpatient clinic by her mother, who is worried that she has been having difficulty concentrating and crying spells for the past few weeks. The girl sits politely next to her mother with a sad expression and wide-opened eyes. She is holding a rubber toy dinosaur close to her chest with her right hand and is touching her mother’s arm with her left hand. Susana is the only child and has not had any major health problems in the past.

Table 2.2.1

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

**Vignette 2.2.2: Continuation**  
Susana’s mother tearfully tells you that her husband, Susana’s father, passed away from cancer last month. He had been in hospice care at their home for the last couple of months of his life. She says that even before he died, Susana was having difficulty completing her work at school and her homework. Susana’s teacher sent a note home that her worksheets are covered with clouds and the sky. Her mother tells you that Susana has been crying for about 20 min a few times a day for the past several weeks. One time she became frantic when she could not find the toy dinosaur that she has been carrying with her for the past 2 months—a gift from her father on her ninth birthday. She also has awakened her mother at night in a panic, needing to find a particular T-shirt that her father used to wear. Once she finds the shirt, she goes back to sleep. Her mother notes that even though her sleep has been disturbed, her appetite and overall energy level have been fine. You glance at the chart and see that Susana has remained slightly above the 50th percentile for weight.

Table 2.2.2

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

**Vignette 2.2.3: Continued**

When asked about their support system, Susana’s mother tells you that they do not have much family, but they do attend a grief group at their church and they have a community of friendships. They have been able to talk about the impact of her father’s death.

You ask to speak to Susana alone. Susana appears intelligent in conversation and is open to discussion about the sadness associated with the loss of her father. She admits that she cries for him and that she misses him. She holds the dinosaur closely. During the interview you find that she has several good friends and she has talked to them about her sadness and loss. She continues to ride bikes with them, play at recess, and notes that overall her grades are still good though she recognizes that she finds herself daydreaming about the sky. She feels that looking out the window at school and seeing the clouds and the sky remind her of heaven and she is comforted by the belief that he is “up there” and always with her. She has shared this belief with her mother and her pastor.

Table 2.2.3

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

2.2 Learning Issues

Grief is an emotional pain or anguish that one feels after the loss of a loved one. Anticipatory grief is a similar emotional pain that occurs before the impending loss. Three categories, based on age and maturity, of a child’s understanding of death have been described (Lewis 2007). Preschoolers look at death as a sleep or a long journey. Five- to nine-year-olds accept that someone can die; however, they do not believe it happens to everyone and especially not to themselves. By 10 years of age, children can understand that death is inevitable and that it may happen to them.

Normal bereavement is not considered a disorder, and loss of a close friend or relative occurs in up to half of all youth by the age of 21. Loss of a parent occurs in approximately 4% of children by the age of 18 (Lewis 2007). Refer to Chap. 16 for a more extended discussion on grief.

Susana's developmental phase has been described by Erik Erikson (1950) as industry versus inferiority. This is a time during which a child develops a sense of competence and focuses on self-worth. The child learns how to become a friend and to identify with others. He or she also gains satisfaction in experiencing hard work that leads to success and also learns to compensate for their weaknesses in some areas by noting accomplishments in other areas. Piaget (1964) describes this stage of development as concrete operations. The child is able to conceptualize rather than simply perceive, but is not able to utilize their own abstract thinking. Thus, Susana can understand the irreversibility and inevitability of death, but may have difficulty applying the concept generally. Mastery of these concepts may then be seen in the themes of dreams or play. Susana pictures heaven as the clouds and the sky and finds this comforting that her father is "up there." She does not expand past this concept.

Complicated bereavement in children does occur and is important to recognize to minimize morbidity later in life. Symptoms of complicated grief are longing and searching for a loved one, preoccupation with thoughts of the loved one, purposelessness and futility about the future, numbness and detachment from others, difficulty accepting death, lost sense of control and security, and anger and bitterness over the death (APA 2013). A study by Melham et al. (2007) indicated that these symptoms could lead to difficulties in schoolwork, friendships, relationships, and other activities. Even 2 years after the death of a parent, preadolescent girls were noted to have increased rates of depression, anxiety, and aggressive behaviors. Adolescent boys were noted to be more withdrawn and have more social problems. Adolescent girls and preadolescent boys seemed to have no differences from their matched controls. Overall, 20% of children who suffered the death of a parent had serious problems at 1 year that could benefit from treatment (Melham et al. 2007).

#### **Vignette 2.2.4: Conclusion**

You reassure Susana's mother that Susana is experiencing normal grief or bereavement. This can present in a myriad of ways—some children cry, avoid, deny, or have serious anger when a death occurs. Susana and her mother are commended for their open communication and participation with the community and spiritual supports. It will be important for Susana to continue to express feelings and discuss memories of her father as she works through the process of grief. You advise Susana's mother to have an awareness of the complicated signs of grief. You provide her with a reference to the local grief center that provides support groups for kids that have lost a parent, as Susana may benefit from being with a peer group that have had the same experience.

**Vignette 2.3.1 Presenting Situation: Brian**

Brian is a 15-year-old male with a history of insulin-dependent diabetes who comes to your family medicine clinic with his mother. He is currently in the 10th grade and lives with his mother, 17-year-old sister, and 11-year-old brother. Brian’s parents divorced when he was 9. His father, who lives in town, sees Brian and his siblings every week. His mother brought him to see you due to concerns about changes in his behavior. She states that over the past 6 months, he has changed from a “sweet, loving, and attentive son” to a “stranger.” He spends most of his time in his room, on the phone with friends, or on the computer. He used to be a conscientious student, but recently has been doing his homework at the last minute. His grades have fallen from his usual 4.0-grade average to a 3.2 on his last report card. He has been staying up late and sleeping in on the weekends. His taste in music and dress has changed. She describes that he used to be very neat, but more recently has been wearing “skater clothes.” He also pierced his ear and eyebrow. He has been talking about wanting a tattoo. His eating habits have changed and he has been more casual about managing his blood glucose levels.

**Table 2.3.1**

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

**Vignette 2.3.2: Continuation**

You meet with Brian without his mother. He is soft-spoken and cooperative, with brown shaggy hair, a large hooded sweatshirt, and baggy jeans. He tells you he does not know why his mother brought him in and that she “overreacts” to everything. Brian reports that he was diagnosed with diabetes when he was 10 years old. He says, “I know I should do better (managing his diabetes), but sometimes I just want to eat without thinking about it, and it’s a pain carrying my insulin around all of the time.” Brian used to spend more time at home in middle school because “I didn’t have anyone my age to hang out with, so I hung out with my mom.” He states that his mother is fairly strict. “It’s unfair, my sister would never do anything my mom wouldn’t like, so she now does not know what to do with me.” He does not tell his mother too much about his girlfriend or friends because “it usually turns into a lecture.” Brian also has positive things to say about his family: “My mom is an awesome cook, and she would do anything for us. My sister is kind of a dork, but she always looks out for me.”

Brian tells you that school has been going overall well, though he could try harder. He admits to skipping school a few times when the weather was

warmer to go skateboarding with friends. He also has a girlfriend and says it is a serious relationship. He had few friends when he was younger, and until a couple of years ago, he was one of the shortest kids in his class. Since starting high school, he has grown 11" and is now 5'9" tall. In high school, he has established a large group of friends. He says he has tried alcohol and marijuana at parties, but "they are not for me." He denies discipline problems in school and denies any conduct issues such as a history of stealing, destruction of property, or other high-risk behaviors. He has no legal history.

He notes his mood has been good; he sleeps well, has a good appetite, and overall enjoys his activities and feels he is still performing well in school. When his parents divorced, he remembers that he was easily frustrated and somewhat angry at his father. He denies a history of mania, psychosis, self-harm, or suicidal ideation. In addition to skateboarding, he likes to write, listen to music, and play guitar. He works at an ice cream shop 10 h per week. Brian's ultimate goal is to become a professional skateboarder, but if that does not work out he may eventually open up a skate shop or become an accountant "like his dad."

You invite Brian's mother to talk to you alone. Brian was diagnosed with diabetes after presenting to the emergency room in diabetic ketoacidosis. Brian's mother strictly managed his diet and blood glucose levels. Recently, Brian has wanted more responsibility, and his last hemoglobin A1C was 7 (previous levels had been in the normal range). She tells you that Brian is a "great kid," but points out that her own brother had behavioral difficulties when younger and started using substances in high school. Brian's mother was raised in a very religious household, and her brother regularly had conflict with the family. Her brother continues to abuse substances, has irregular contact with the family, has spent some time in jail related to his drug use, and has been unable to maintain steady employment. Brian's mother says, "I may be completely off base, but I just don't want to see what happened to my brother happen to Brian."

Table 2.3.2

FACTS	HYPOTHESES	INFORMATION NEEDED	LEARNING ISSUES

At this point, the differential remains quite broad. Brian's change in behavior including being more isolative, declining school performance, and change in sleep patterns could be consistent with normal development but may also indicate a substance abuse disorder or depression. It would be important to understand how Brian's change in behavior is affecting his function in other areas, such as with

friends and work, as well as his overall level of functioning. A commonly used screening tool is the HEADSS (Home/health, Education/employment, Activities, Drugs, Depression, Safety, Sexuality) Assessment (Stephens 2006).

Adolescence is a period of development during which one discovers one's identity versus suffers identity diffusion (Erikson 1950). The adolescent's goal is to answer the question "Who am I?" As the adolescent tries to figure this out, they may experiment with different identities and rebel against some adult expectations. This stage accompanies significant physical changes and further development of gender and sexual identity. The teen's social network increases in importance. The adolescent engages in various activities as he or she determines his or her own values and goals. The adolescent will begin separating and reconciling their feelings for the family of origin. They will develop romantic relationships, explore interests, and work on mastering one's bodily impulses and functions (Weiner and Dulcan 2004). Thus, the normal process of separation and individuation can be a challenging time for parents.

Brain has admitted to substance use. Teenagers at risk for developing serious substance problems include those who have a family history of substance use, depression, are depressed, have low self-esteem, or feel they do not fit into the mainstream (Weinberg et al. 1998). Signs and symptoms of substance use may be physical fatigue, repeated health complaints, red or glazed eyes, and a lasting cough (Stager 2011). Emotional complaints may be personality change, sudden mood change, irritability, irresponsible behavior, low self-esteem, poor judgment, depression, and general lack of interests or motivation. The family may notice the teen argues more, breaks rules, and is more withdrawn. School concerns may include decreased interest, negative attitude, drop in grades, many absences, truancy, and discipline problems. The teen may have new friends who are less interested in standard home and school activities, have problems with the law, and are less interested in conventional styles of dress and music (Stager 2011). To further assess Brain's substance use, you explore these issues with him. You also administer the CRAFFT (Car, Relax, Alone, Forget, Friends, trouble) screening interview and he scores at low probability of abuse or dependence (Knight et al. 1999). Refer to Chap. 19 for more discussion on substance use disorders.

Screening for other mental health disorders is warranted with changes in behavior. Of note, 10–15% of children and adolescents may have symptoms of depression at any one time (Smucker et al. 1986). The prevalence of major depressive disorder among kids 9–17 years of age has been estimated at 5% (Shaffer et al. 1996).

As adolescents approach adulthood, their brains continue to develop in areas of greater complexity. For example, the process of myelination to insulate neurons into greater conductive speed is already finished in the ventral and deep brain structures. This process continues in adolescence in dorsal regions responsible for higher cognitive functions, such as prefrontal cortex. In the peak adolescent years after puberty, the brain matures specific regions devoted to executive function such as integrating senses and reasoning (Blakemore and Choudhury 2006; Toga et al. 2006). This concept of brain development is consistent with Erikson's stage of development, as he discusses learning responses of inhibition, emotional regulation, planning and organization.

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