

THE AMERICAN BOARD OF PEDIATRICS®

CONTENT OUTLINE

Developmental-Behavioral Pediatrics

Subspecialty In-training and Certification Examinations

INTRODUCTION

This document was prepared by the American Board of Pediatrics Subboard of Developmental-Behavioral Pediatrics for the purpose of developing in-training and certification examinations. The outline defines the body of knowledge from which the Subboard samples to prepare its examinations. The content specification statements located under each category of the outline are used by item writers to develop questions for the examinations; they broadly address the specific elements of knowledge within each section of the outline.

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I. Foundations of Developmental-Behavioral Pediatrics

A. Domains of development

1. Motor

Know the developmental milestones of normal gross motor development in the first year after birth

Know that the progression of gross motor development proceeds in a cephalocaudal fashion

Know the developmental milestones of normal fine motor development in the first year after birth

Know that the progression of fine motor development proceeds in a midline to lateral fashion

Know the developmental milestones of normal gross motor development in the toddler age group (12-36 months of age)

Know the developmental milestones of normal gross motor development in the preschool age group (36-60 months of age)

Know the developmental milestones of normal fine motor development in the toddler age group (12-36 months of age)

Know the developmental milestones of normal fine motor development in the preschool age group (36-60 months of age)

Know the age ranges for the developmental milestones of normal gross motor development in children above 60 months of age

Know the developmental milestones of normal fine motor development in children above 60 months of age

2. Speech and language

Know the developmental milestones of normal language/speech development in the first year after birth

Know the developmental milestones of normal language/speech development in the toddler age group (12-36 months of age)

Know the developmental milestones of normal language/speech development in the preschool age group (36-60 months of age)

Know the developmental milestones of normal language/speech development in children above 60 months of age

Understand the typical progression of normal speech and language development

3. Social-emotional

Know the developmental milestones of normal social-emotional development in the first year after birth

Know the developmental milestones of normal social-emotional development in the toddler age group (12-36 months of age)

Know the developmental milestones of normal social-emotional development in the preschool age group (36-60 months of age)

Know the developmental milestones of normal social-emotional development in the school age group (5-12 years of age)

Know the developmental milestones of normal social-emotional development in adolescents (13-21 years of age)

Understand the typical progression of normal social-emotional development

4. Cognitive

Know the developmental milestones of normal cognitive development in the first year after birth

Know the developmental milestones of normal cognitive development in the toddler age group (12-36 months of age)

Know the developmental milestones of normal cognitive development in the preschool age group (36-60 months of age)

Know the developmental milestones of normal cognitive development in the school age group (5-12 years of age)

Know the developmental milestones of normal cognitive development in the adolescent age group (13-21 years of age)

Understand the typical progression of normal cognitive development

B. Theoretical frameworks

1. Criteria for evaluating theories

Recognize the characteristics of a good developmental theory

2. Maturational theory (Gesell)

Know that maturational theory (Gesell) proposes that development proceeds in a systematic direction (principle of developmental direction)

Understand the major components of Gesell's maturational theory

Know the limitations of Gesell's maturational theory in explaining child

development

Understand the relationship between the maturational theory and developmental testing

Describe developmental tests based on Gesell's theory

3. Cognitive (Piaget)

Differentiate between assimilation and accommodation as cognitive processes described by Piaget to facilitate the learning of new information

Understand how disciplinary strategies are best adapted to the conceptual development of the child (pre-operational, concrete operational, formal operational)

Know the implications of a belief in immanent justice and magical thought for young children's understanding of illness and loss

Understand the characteristics of the four stages of conceptual development as described by Piaget

Formulate a developmentally appropriate explanation of illness or loss for a child in any one of the conceptual stages described by Piaget

Know how to design treatment plans for common medical conditions in ways that would facilitate the adjustment of children at various conceptual stages described by Piaget

Understand the relevance of object permanence to the development of stranger anxiety and sleep problems in infancy

Understand the limitations of Piaget's theory of cognitive development

Describe developmental tests based on Piaget's theory

4. Psychodynamic (Freud)

Understand the three primary motivating forces of psychosexual development

Distinguish between the concepts of conscious/unconscious/subconscious awareness

Recognize the role of denial in response to a death, chronic illness, disability, or other significant stress

Differentiate between signs of regression and of projection

Understand the impact of transference and counter-transference on the relationship of physician and patient

Know the characteristics of the stages of psychosexual development as described

by Freud

Understand the limitations of Freudian theory of psychosexual development

Understand that parental anger toward healthcare providers may be a result of projection

Understand the theory that conversion symptoms in adolescent females may result from unconscious conflicts regarding issues of sexuality

5. Social-emotional (Erikson)

Know the parallels between Erickson's and Freud's stages of development from infancy to adolescence

Know the components of the stages of Erickson's paradigm

Appreciate the impact of unsuccessful resolution of one of Erickson's stages on children's ability to meet the challenges of subsequent stages

Know the implications of succeeding at the various stages described by Erickson for success in relationships and school

Understand why formal testing and team sports are inappropriate for preschoolers based on Erickson's theory of development

6. Attachment (Mahler, Bowlby)

Appreciate the reciprocal contributions of infants and caregivers on the development of attachment

Understand how attachment theory and cognitive developmental theory together explain the phenomena of separation protest and stranger anxiety

Differentiate among securely attached, insecurely attached, and ambivalently attached infants using Ainsworth's "strange situation" paradigm

Recognize the behavioral hallmarks of securely attached infants in the first year of life

Know the components of child-rearing that promote the development of secure attachment

Recognize signs of insecure attachment seen in infants

Know how to advise parents on the use of brief and predictable physical separations to help promote psychological separation- individuation

Understand the limitations of attachment theory

7. Behavioral theory

Distinguish between classical and operant conditioning paradigms

Understand how modeling and shaping can be used to facilitate the expression of a novel and complex behavior

Understand how various schedules of reinforcement facilitate learning of a new behavior and maintenance of an established behavior

Be able to counsel a family on the likelihood of post-extinction burst

Understand the concept of positive reinforcement in behavior theory

Understand that reinforcement during a post-extinction burst will render the behavior more resistant to extinction

Understand the problems associated with punishment-based behavior management plans

Know the limitations of behavioral theory

Recognize the role of modifying antecedents in changing behavior

8. Social learning theory

Know that social learning theories posit that the main determinants of individual behavior are observations and interactions with others

Understand that according to social learning theories, social hierarchies, family bonds, sex, age, motivation, and perception all influence the rate of an individual's behavior change

Differentiate methods of behavior change based on operant conditioning versus social learning theory

Plan a parent group aimed at improving child care practices using social learning theory

Understand the differences between cognitive behavioral and social influence theories

Understand the distinction between behavioral norms and behavioral values

Know how social influence theory predicts behavioral norms

Know the limitations of social learning theory for behavior change

Distinguish between methods of toilet training based on social learning versus behavioral therapy

Know how behavioral values are related to the adoption and maintenance of high-risk behaviors

9. Moral reasoning (Kohlberg)

Know that moral reasoning in Kohlberg's theory progresses from explanations based on what feels good to an individual to explanations based on abstract principles of fairness and justice

Understand the poor association between the level of moral reasoning and the individual's moral behavior

Understand the stages of moral reasoning as defined by Kohlberg

Know how to interpret a child's explanations for moral decisions based on Kohlberg's theory

10. Individual variation

Understand the concept of "goodness of fit" and implications for interpreting parents' perceptions of their children's temperament

Identify the major categories used for describing temperament

Know the temperament characteristics of the "difficult child" syndrome

Plan appropriate management for a family upset by one of their child's temperament characteristics

Understand the prevalence of the "difficult child" cluster of temperament characteristics

Understand the natural history of infants with the "difficult child" cluster of temperament characteristics

Know the limitations of temperament as an explanatory concept

11. Theories of behavior change

Know the key health beliefs that, according to the Health Belief Model, produce a readiness to act

Understand how perceived barriers or costs and perceived benefits of behavior change can influence the efficacy of risk reduction efforts

Understand the stages of change described by Prochaska in the Transtheoretical Model

Know how assessment of an individual's stage of change helps in the selection of an appropriate intervention to facilitate behavior change (eg, weight reduction, safe sex practices, stopping cigarette smoking)

Know the limitations of the Transtheoretical Model of behavior change

Understand how to ascertain and address perceived barriers in devising a health

II. Biological Mechanisms in Development and Behavior

A. Early development of the central nervous system

Understand the neuroanatomic anomalies that arise from perturbations in neural tube development

Understand current theories on the genetic control of central nervous system development

Recognize the importance of folate in preventing defects in neural tube closure

Understand the neuroanatomic abnormalities that arise from perturbations in neuronal migration

Understand that developing neurons form complex dendritic arbors with synaptic connections to many other neurons

Understand the timing and the process of myelination in the central nervous system

Understand the influence of steroids on the developing brain

B. Later development of the central nervous system

Realize that the post-natal maturation of the central nervous system includes a subtractive process (pruning) in which synapses that are insufficiently active are lost

Understand that the period of time that synaptic pruning is most active may vary according to region of the brain

Realize that synaptic pruning often results in loss of cortical plasticity

Know how molecular processes and synaptic activity reflect learning at a cellular level

Know the definition of "plasticity" and the neurobiological mechanisms that are believed to underlie plasticity

Know the effect of environmental enrichment on neurobiological development

C. Functional organization of the central nervous system

Understand that the cortex is highly interconnected, facilitating interactions between parts of the brain that are engaged in different types of information processing

Realize that the brain systems responsible for a given function may be different in children than in adults

Know the range of functions that are served by the frontal lobes

Know the range of functions that are served by the parietal lobes

Know the range of functions that are served by the temporal lobes

Know the range of functions that are served by the occipital lobes

Know the range of functions that are served by the cerebellum

Know the range of functions that are served by the basal ganglia

Explain the theory of dual cortical streams for visual-spatial processing

Understand the layered and columnar organization of the normal neocortex

D. Genetics

Know how to characterize the different Mendelian modes of genetic inheritance

Understand genomic imprinting and its implications for genetic inheritance

Understand the pattern of inheritance associated with mitochondrial genetic disease

Understand the phenomenon of anticipation, associated with triplet repeat genetic disease

Understand the concept of contiguous gene deletion syndromes

Understand the continuing interaction between genes and environment that influences development and behavior

Understand the limitations in interpreting heritability parameter (h^2) that is used in population genetic studies

Differentiate between malformations and deformations

Know genetic mechanisms that contribute to the etiology of developmental and behavioral disorders

Understand how to interpret a pedigree for genetic risk

Understand the concept of behavioral phenotypes

Understand the concept of uniparental disomy and its role in genetic disorders (eg, Prader-Willi and Angelman syndromes)

E. Biological risk factors to neurobiological development

Understand how biomedical risk factors (eg, infection, trauma, hypoxia-ischemia, toxins, nutritional deficiencies) jeopardize neurobiological

development

Recognize factors that may mitigate biomedical risks to neurobiological development (eg, other biological factors, genetic factors)

Recognize that the timing of exposure to biological risks is important in determining the effect of that exposure on neurobiological development

III. Family and Societal Factors

A. Structural diversity

Recognize common challenges to the psychosocial development of children in blended families (eg, insecurity associated with loss of a parent, difficulties with attachment to a new parent, reactions to new siblings, inconsistent discipline practices, etc)

Understand that children whose parents are gay or lesbian have been shown to be indistinguishable from children whose parents are heterosexual with respect to their academic achievement, psychological adjustment, and psychosexual development

Understand that children whose parents are separated or divorced often feel responsible for their parents' separation and work for them to reunite

Recognize possible effects of new relationships of either parent, after divorce or separation, on children's behavior (eg, bedwetting, separation difficulties, attentional difficulties, depression, hostility or jealousy toward the new adult and/or children)

Understand the ways that parents who are separating can minimize the adverse effects on their children (eg, keeping the environment as unchanged as possible, avoiding sharing adult information and responsibilities, maintaining amicable, reliable child care arrangements)

Understand the ways a single parent can best support her/his child(ren)

Recognize signs of children's vulnerability in the face of the loss by death or disappearance of one parent

Recognize common symptoms of attachment disorders at various ages

Understand the benefits and potential problems of kinship versus non-kinship adoption

Understand issues related to children's development and behavior as a result of adoption at different ages

Recognize ways adopting parents can assist the adjustment of children from an ethnic/national group different from their own

Know the developmental periods that are particularly challenging for children who have been adopted and for their parents

Understand the risks of repeated or prolonged foster care arrangements

Understand the risks to child development and behavior of group care in large institutions

Recognize the challenges to attachment that may be associated with using modern forms of assisted reproduction (eg, surrogacy, identity confusion)

Understand the legal and ethical issues raised by modern reproductive technologies

Understand the effects of sibling number and order on children's developmental and behavioral challenges

Recognize the influences of parental divorce on child development and behavior at different ages

Know child factors that affect adjustment to foster care

Understand the challenges faced frequently by homosexual parents and their children

Recognize the special challenges to children's development and behavior of parenting without a partner as a result of choice, death, or divorce

Identify developmental and behavioral problems among international adoptees

B. Functional diversity

Know the impact of parental depression on young children (eg, childhood depression, delayed language development)

Know the genetic and familial risk of psychiatric disorders in children whose parent(s) have the disorder (eg, schizophrenia, obsessive compulsive disorder)

Know the impact of parental intellectual ability and educational attainment on child development and behavior

Understand the developmental and educational challenges posed by being from an immigrant family

Understand the influence of religious affiliation and values on children and families

Understand the effects on children's development and behavior of a chronic physical illness or disability in a parent or grandparent

Recognize the protective factors associated with the integrity and functioning of the nuclear and extended family

Recognize children's loyalty to and protection of their parents even in the face of

neglect or abuse

Understand the vulnerabilities of siblings in a family in which a child has a chronic health condition or disability

Distinguish among permissive, restrictive, and authoritative parenting

Understand the mechanisms by which parental conflict affects children's behavior and development

Recognize the effects of temperament variations on the relationships among siblings

Identify predictors of successful adolescent functioning

Understand the effects on children of parental alcohol abuse

C. Socioeconomic diversity

Recognize the influences of poverty on the epidemiology of developmental and behavioral disorders

Know the range of recommendations that might be made to help families with limited resources facilitate their child's development

Know the additive disadvantage for children with disability, minority group membership, poverty, and social isolation

Understand the influence of affluence on the epidemiology of child developmental and behavioral disorders

D. Societal factors

1. Geographic

Understand common stresses on families living in urban areas

Understand common stresses on families living in rural/isolated areas

2. Education

Understand the significance of school-community relationships in the educational success of children

Understand how community values influence educational processes in schools

Understand the importance of parental involvement in schools for educational success of children

Understand issues associated with each of the various school arrangements that are available to families (eg, home schooling, charter schools, private and parochial schools)

Understand the potential benefits and problems associated with school health clinics

Understand how the structure and administrative characteristics of schools are associated with school behavior and learning problems

Know the benefits of full-day kindergarten for children's development

Know the benefits of early childhood education programs (eg, Head Start) on children's development

Know the benefits of Early Intervention Programs on children's development

3. Media

Know the health problems associated with TV or video watching

Understand the risks of excessive media coverage of student suicide

Understand the influences of media exposure on child development and behavior

Know the mechanisms by which TV or video watching contributes to health problems

4. Discrimination

Recognize the effects of stigmatization and discrimination on children and families who are in some way different from their community

Know the range of recommendations for parents to help children to recognize, confront, and protect themselves from the damaging effects of social discrimination

Know the range of recommendations for schools to minimize isolation and stigmatization of children with individual or family differences

5. Violence

Know the detrimental effects on children of being a witness, victim, or perpetrator of domestic or community violence

Understand the co-occurrence of domestic violence against parents and violence against children

6. Housing

Recognize the influences of homelessness on child development and behavior

7. Exposure to disasters

Know recommendations for helping children and families in the face of natural

disasters (eg, flood, hurricane, fire)

Know recommendations for helping children and families cope with the occurrence of human disasters (eg, mass shootings, automobile or bus accidents)

Understand common behavioral symptoms of functional and dysfunctional coping in the face of a disaster

Know recommendations for helping community groups (eg, schools) cope with the occurrence of disasters

8. Access to health care

Understand the risks to child development of inadequate access to health care

Understand the potential contribution of the "medical home" concept to promoting optimal child development and behavior

IV. Elements of Assessment and Management

A. Assessment

Know the principles of developmental screening

Understand the characteristics of a good screening test

Distinguish between developmental surveillance and developmental assessment

Know the psychometric properties and proper use of common parent questionnaires available to screen development

Know the psychometric properties and proper use of common direct evaluation developmental screening tools

Know the psychometric properties and proper use of common parent- completed behavioral and emotional screening measures

Know the measures for assessing the home environment

Differentiate global from domain-specific screening instruments

Understand the issues important to hearing screening for infants in the newborn period and beyond

Know the methods for assessing hearing at different developmental stages

Know the methods for assessing vision at different developmental stages

Be able to identify the commonly found dysmorphic features

Know appropriate assessments to evaluate a child's motor coordination

Know the procedures in evaluating a child's mental status

Know methods to assess a child's or adolescent's emotions and moods

Understand the important historical information required to assess the possible etiologies for developmental delay/disabilities

Know the appropriate laboratory evaluation for developmental delay

Know the indications for DNA molecular testing

Know the indications for cytogenetic testing

Know the indications for biochemical/metabolic testing

Know the indications for neuroimaging

Understand the importance of identifying child and family strengths in the process of planning intervention

Know how to interpret results of infant cognitive assessments

Know how to interpret results of verbal and non-verbal cognitive assessments in children

Know how to interpret results of achievement testing

Know how to interpret results of motor assessments

Understand the implications of neuromaturational delays for a child with school problems

Recognize the impact of cultural differences on developmental testing performance

Know how to obtain and interpret a genogram for the understanding of family function

Know the principles of behavioral screening

Know the psychometric properties and proper use of common child or adolescent self-report behavioral and emotional screening measures

Know methods to assess a child's or adolescent's attention span, impulsivity, and hyperactivity

Know methods to assess the significance of a child's or adolescent's defiant or aggressive behaviors

Know methods to assess an adolescent's substance use

Know methods to assess an adolescent's sexual behaviors

Know methods to assess family functioning

Know methods to assess a child's or adolescent's peer relationships

Know methods to assess for social stressors

Know interviewing techniques appropriate for children of various ages

Know how to interpret results of adaptive skill assessments

Know how to interpret results of speech and language assessments

Understand current classifications of behavioral health disorders in infants and toddlers

Know the indications for fluorescence in situ hybridization (FISH) testing

Know the indications for electroencephalography

Know methods to assess for autistic spectrum disorders

Know methods to assess executive functions

B. Management

1. Communication skills

Understand the principles of counseling a family on how to use active listening skills with their children

Understand how to inform parents of a diagnosis of a developmental disability or life-threatening condition in their child

2. Anticipatory guidance/health promotion

Know how to counsel families on the potential negative effects of physical punishment

Know specific recommendations for parents to limit the influence of the media on their child's development and behavior

Know how to advise a family of a toddler on knowing when the child is ready to initiate toilet training

Know how to advise parents to address resistance to toilet training

Know how to advise parents on sleep hygiene to avoid problematic sleep associations and bedtime resistance

Know how to advise parents to approach discussions with their child regarding high-risk behaviors at different ages

Know how to advise parents concerned about their child's sexual behaviors at different ages and in different settings

Know recommendations that could be given to parents to help them facilitate their child's adjustment to a new sibling at different ages

Know how to advise parents on key features of quality day care

Understand the importance of sexuality education for teenagers with developmental disabilities

Know the developmental and behavioral advantages of breast-feeding

Know how to advise parents on disciplinary strategies appropriate for children of different ages

Know how to advise parents on habits and repetitive behaviors at different ages

Know how to advise parents whose child is having temper tantrums or breath holding spells

Know how to advise parents of children engaging in aggressive behavior at different ages

Know how to advise parents on strategies they can use to promote the development and academic success of their children

Know how to advise parents on strategies to promote their child's self-esteem at different ages

Know how to advise parents who are concerned about their infant's crying

Know how to advise parents concerned about sibling rivalry at different ages

Know how to advise parents about the use of transitional objects at different ages

Know how to advise parents about fears or anxieties in their child at different ages

Know how to advise parents concerned about their child's feeding behaviors at different ages

Know how to advise parents on promoting toilet training for a preschool-age child

Know how to advise parents on promoting toilet training for a developmentally delayed school-age child

Know how to advise parents to avoid overprotection of a child with developmental disability

3. Counseling

Understand how reframing can be used within counseling as a therapeutic maneuver

Understand the important role providing information about a condition can play in therapy

Understand how strategic family therapy can be used to challenge the family with particular tasks to improve existing maladaptive patterns of problem solving or communication

Understand the concepts of hierarchy, triangulation, and subsystem boundaries as used in family therapy

Understand how cognitive restructuring and attribution retraining can be employed in cognitive-behavioral counseling to address disorders of mood or emotion

Know the benefits of group therapy for enhancing social skills and behaviors

Appreciate conditions for which group therapy is most appropriate

4. Behavioral interventions

Understand conditions in which classical conditioning is utilized for treatment

Differentiate among schedules of reinforcement most appropriate for a behavior management plan (eg, fixed and variable; ratio and interval)

Understand that reinforcing incompatible behavior is an alternative to planned ignoring of the target behavior

Know the various forms of punishment, including natural consequences, logical consequences, behavioral penalties, physical punishment, and time out

Understand the importance of identifying the function of a behavior in selecting a behavior management technique

Know the important components of a successful time-out procedure

Know how to initiate a token economy within a home or school

Identify situations in which planned ignoring or time-out would not be an appropriate recommendation to decrease a problem behavior

Know how to initiate a school-home note as a behavioral intervention

5. Basic pharmacotherapy

Understand the chemical properties and physiologic activity of various neurotransmitters (eg, dopamine, norepinephrine, serotonin,

gamma-aminobutyric acid, acetylcholine)

Know how to apply the principles of pharmacodynamics

Know how to apply the principles of pharmacokinetics

Know how common psychotherapeutic agents are metabolized and excreted

Understand the issues related to the combined use of psychopharmacologic agents

Understand the pharmacodynamic and pharmacokinetic properties of stimulant medications

Know indications for the use of stimulant medications

Understand the clinical use of stimulant medications

Know the side effects of stimulant medications

Know indications for the use of selective serotonin reuptake inhibitors

Understand the clinical use of selective serotonin reuptake inhibitors

Know the side effects of selective serotonin reuptake inhibitors

Know indications for the use of mood stabilizers

Understand the clinical use of common mood stabilizing medications

Know the side effects of common mood stabilizing medications

Know indications for the use of tricyclic antidepressants

Understand the clinical use of tricyclic antidepressants

Know the side effects of tricyclic antidepressants

Know indications for alpha-adrenergic agonists

Understand the clinical use of alpha-adrenergic agonists

Understand the side effects of alpha-adrenergic agonists

Know indications for the use of anti-anxiety medications

Understand the clinical use of common anti-anxiety medications

Know the side effects of common anti-anxiety medications

Know indications for the use of antipsychotic medications for problems seen in developmental and behavioral pediatrics

Understand the clinical use of antipsychotic medications for problems seen in developmental and behavioral pediatrics

Know the side effects of antipsychotic medications

Understand the clinical use of norepinephrine re-uptake inhibitors

Know the side effects of norepinephrine re-uptake inhibitors

Know the clinical use of atypical antidepressants (eg, bupropion, clomipramine, etc)

Know the side effects of atypical antidepressants (eg, bupropion, clomipramine, etc)

Know how to monitor for side effects of antipsychotic medications

6. Other strategies

Understand the importance of adequate basal treatment of pain

Understand how to formulate a pain management plan

Understand the principles and techniques of hypnosis

Understand the principles and techniques of biofeedback

Know appropriate advice for a school on the appropriate timing and nature of memorialization activities after the death of a student

Understand principles in providing post-suicide intervention services in a high school

Know how to evaluate the utility of non-standard therapies for developmental and behavioral disorders

Know how to counsel families who are utilizing non-standard (alternative) therapies

C. Team processes

1. Principles of collaboration

Know the importance and process of identifying the underlying agenda for consultation requests from community sites

Know the steps in establishing a collaborative relationship with community organizations and agencies

Know how developmental-behavioral pediatricians can serve as consultants to schools

Know the steps in conducting an evaluation of a child as a school consultant

Know how to conduct an evaluation of a child as a consultant to a day care center

Understand the benefits and challenges of multidisciplinary evaluations within a collaborative team model

Understand how the role of consultant to a school system differs in quality and scope to the role of the physician seeing a patient in the office

Understand issues of confidentiality as they relate to the role of consultant to a school system

2. Knowledge of other health professionals' roles and methods

Be familiar with the elements of a psychological and educational evaluation conducted as part of a multidisciplinary team evaluation for a child with learning and/or behavior problems

Understand common behavioral assessment techniques

Understand the elements of a neuropsychological evaluation of a child with learning problems or a brain injury

Recognize the indications for neurological consultation in a child with a developmental or behavioral problem

Know the role of genetic consultation and counseling in a child with developmental disabilities

Know the indications for speech and language evaluation and treatment in a child with developmental or behavioral disorders

Know how speech and language testing evaluates pragmatics, semantics, and syntax

Differentiate between the evaluations and services provided by physical therapy and occupational therapy

Recognize the role of occupational therapy in evaluation and treatment of children with developmental disorders

Know controversial therapies (eg, sensory integration, optometric training, facilitated communication, etc) and their current status (eg, unproven, questionable, unsafe, proven ineffective, etc)

Recognize indications for psychiatric consultation in a child with a developmental or behavioral problem

Recognize the role of physical therapy in evaluation and treatment of children with developmental disorders

Differentiate among the evaluations and services provided by a play therapist, behavioral counselor, behavior analyst, psychodynamic therapist, and family therapist

Know the role of a vision specialist in the treatment of a child with visual impairment

V. Adaptation to General Health Problems and Their Treatment

A. Acute illness

Know the impact of a child's acute illness on the child's behavior and the family's functioning

Understand child and family factors that might moderate the stress reaction during acute illness

Identify sources of family stress during a child's acute illness

Understand methods of prevention and management of behavioral problems that develop during or immediately after an acute illness

Know the sequence of development of children's concepts of illness causation

B. Chronic conditions

Understand the different strategies of clinical management that lead from a non-categorical approach to special health care needs and a diagnostically specific approach

Understand the benefits and limitations of using a non-categorical approach to special health care needs in public policy

Know the sources of stress for children who require medical technology and for their families

Understand the functional domains that may be affected in children with chronic illness or disabilities

Understand the distinction among the concepts of disability, handicap, and impairment

Know that the prevalence of disabilities in the US population of children increases with increasing age, ethnic minority membership, and low socioeconomic status

Differentiate between major depression versus depressed mood secondary to adjustment to a chronic condition

Know the factors that affect the social relationships of children with special health care needs

Understand the benefits of the inclusion of children with disabilities or chronic illness in mainstream schools and community activities

Know appropriate management to support parents and siblings of children with special health care needs

Know the factors that promote resilience to the stresses of chronic health conditions

Know how to counsel parents on dividing responsibility for day-to-day management of a chronic illness between the parent and the child

Know the impact of painful procedures on children with chronic illnesses

Know how to minimize the impact of painful procedures on children

Understand the difficulties associated with the inclusion of children with disabilities or chronic illnesses in mainstream schools and community activities

Know that the prevalence of behavioral health disorders is increased in children with special health care needs

C. Hospitalization

Know how to advise families about behavioral problems that are commonly seen after hospitalization

Know how to prepare a child for a planned hospitalization

Know appropriate management for a child with behavior problems after hospitalization or during prolonged hospitalization

Know the benefits of therapeutic play programs for children in hospitals

D. Terminal illness

Understand differences in children's responses to life-threatening illness at various age levels

Know how to plan appropriate psychosocial management for a child or adolescent with a terminal illness

Know how to plan appropriate psychosocial management for the family of a child with a terminal illness

Differentiate between acute grief and clinical depression

E. Death

Understand the development of children's concepts of death and the psychosocial implications of their perceptions

Understand the factors that may affect children's concepts of death

Know appropriate advice for parents on how to explain to children of various ages the death of a family member

Understand the impact on children of the death of a peer

Know how to advise families on whether a child should attend a funeral

Understand the variations in response of children at various age levels to the death of a family member

F. Adherence

Differentiate between adherence and compliance

Identify child factors that affect likelihood of adherence to a complex medical or behavioral plan

Know how to develop a management plan to promote adherence to therapeutic regimens in children and adolescents at various developmental levels

Evaluate methods for improving adherence to behavior change treatments such as smoking cessation programs

Identify family factors that affect likelihood of adherence to a complex medical or behavioral plan

Identify community factors that affect likelihood of adherence to a complex medical or behavioral plan

G. Vulnerable child

Know the hallmark features of the vulnerable child syndrome

Be able to provide advice to parents to prevent the development of the vulnerable child syndrome in the aftermath of a child's life-threatening illness

H. Impact of treatments for chronic conditions on development/behavior

Recognize the behavioral effects of antihistamines

Recognize behavioral effects of sympathomimetic medications

Recognize the behavioral effects of anti-epileptic drugs

Understand the developmental and behavioral effects of central nervous system ventricular shunts

Understand the developmental and behavioral effects of cranial radiation

Understand the developmental and behavioral effects of the anesthetic and

bypass/circulatory arrest procedures used during cardiac surgery in infants

Recognize the behavioral effects of chemotherapeutic drugs

Recognize the long-term developmental and behavioral outcomes of survival of childhood cancer

VI. Developmental-Behavioral Aspects of Chronic Conditions and Treatment

A. Prematurity and adverse prenatal conditions

1. Prematurity and small for gestational age (SGA) infants

Know the major and minor morbidity outcomes associated with prematurity

Know the most prevalent special health care needs affecting children born prematurely

Understand the neonatal medical/surgical conditions that are associated with adverse developmental and behavioral outcomes in children born prematurely

Understand the association of socioeconomic factors and outcome in children born prematurely

Plan appropriate management for children and families in the neonatal intensive care unit to maximize the child's developmental and behavioral outcomes

Understand the pathogenesis of cerebral palsy and associated brain lesions in infants born prematurely

Understand the natural history of increased muscle tone in infants born prematurely

Understand the pathogenesis of visual impairment in infants born prematurely

Understand the pathogenesis of hearing impairment in infants born prematurely

Know how to plan a surveillance strategy for detecting hearing loss in infants born prematurely

Understand the typical growth patterns of premature infants

Understand the effectiveness of early intervention for children born prematurely

Understand the variations in developmental and behavioral outcomes after premature birth as a function of the child's birth weight and gestational age

Know the developmental and behavioral outcome for children who are small for gestational age

Plan the developmental monitoring of a child born prematurely or with low birth weight

2. Prenatal drug exposure

Recognize specific medications that are known teratogens

Know the developmental and behavioral consequences of prenatal exposure to opioids

Know the developmental and behavioral consequences of prenatal exposure to illicit drugs

Know the features of fetal alcohol syndrome

Understand the developmental and behavioral characteristics of children with fetal alcohol spectrum disorders

Know the developmental and behavioral consequences of prenatal exposure to tobacco

Know the developmental and behavioral consequences of prenatal exposure to anticonvulsants

3. Prenatal infections

Identify prenatal infections associated with teratogenic effects

Know how to plan the laboratory evaluation of a child with a suspected prenatal infection

Understand the usual route of transmission of common prenatal and perinatal infections (eg, herpes, HIV)

Recognize the features of congenital syphilis

Recognize the features of congenital herpes varicella-zoster infection

Know the epidemiology of cytomegalovirus infection

Recognize the features of congenital cytomegalovirus infection

Recognize the features of congenital rubella infection

Recognize the features of congenital Toxoplasma infection

Know the developmental and behavioral outcomes associated with specific prenatal infections

4. Maternal adverse effects

Know that maternal toxemia (pre-eclampsia) may have adverse effects on fetal growth and development

Understand the developmental and behavioral consequences for children born of

mothers with diabetes mellitus

Know the developmental and behavioral consequences for the child of maternal chronic malnutrition during pregnancy

B. Adverse perinatal conditions

Know the criteria for identifying perinatal (intrapartum) asphyxia as the cause of developmental disabilities

Know the developmental and behavioral outcomes associated with perinatal asphyxia

Know the developmental and behavioral outcomes associated with perinatal herpes simplex (HSV) infection

C. Chromosomal and genetic disorders

1. Down syndrome

Understand that the phenotypic expression of Down syndrome may be caused by trisomy 21, translocation of chromosome 21, or mosaicism

Know the epidemiology of Down syndrome

Know the typical IQ range and changes over time of children with Down syndrome

Differentiate between language and visual-spatial skills in the development of children with Down syndrome

Identify factors contributing to speech and language delays in children with Down syndrome

Identify common behavior problems in children with Down syndrome

Understand the reasons for sign language training for toddlers with Down syndrome

Know how to plan appropriate management of a neonate, child, or adolescent with Down syndrome

Know the medical problems commonly associated with Down syndrome

Recognize the typical phenotypic features associated with Down syndrome

Know the evaluation and recommendations for a child with Down syndrome who wants to participate in athletic activities

Know the neurologic complications associated with Down syndrome

2. Fragile X syndrome

Understand the pathogenesis of Fragile X syndrome

Know the appropriate laboratory evaluation to establish the diagnosis of Fragile X syndrome

Recognize the phenotypic features of boys and men with Fragile X syndrome

Know the prevalence of Fragile X syndrome

Know the developmental and behavioral characteristics of boys with Fragile X syndrome

Understand the developmental and behavioral characteristics of girls with Fragile X mutation

Know the medical problems commonly associated with Fragile X syndrome

Understand the wide range of outcomes in children with Fragile X syndrome

3. Sex chromosome abnormalities

Recognize the phenotypic features of Turner (XO) syndrome

Know the developmental and behavioral characteristics of girls with Turner (XO) syndrome

Recognize the phenotypic features of boys with a karyotype of 47, XYY

Know the developmental and behavioral characteristics of boys with a karyotype of 47, XYY

Know that the average age of presentation of males with Klinefelter (XXY) syndrome is late adolescence or adulthood

Know the developmental and behavioral characteristics of boys with Klinefelter (XXY) syndrome

Know the developmental and behavioral characteristics of girls with a 47, XXX karyotype

Recognize the phenotypic features of Klinefelter (XXY) syndrome

Know the cytogenetic heterogeneity associated with Turner (XO) syndrome

Know the natural history of Turner (XO) syndrome

Know the medical problems commonly associated with Turner (XO) syndrome

4. Trisomy 13 and Trisomy 18

Recognize the phenotypic features of Trisomy 13

Know the developmental and behavioral characteristics of children with Trisomy 13

Recognize the phenotypic features of Trisomy 18

Know the developmental and behavioral characteristics of children with Trisomy 18

5. Williams syndrome

Know the developmental and behavioral characteristics of children with Williams syndrome

Recognize the phenotypic features of Williams syndrome

Know the medical problems commonly associated with Williams syndrome

Know the etiology of Williams syndrome

6. Prader-Willi syndrome and Angelman syndrome

Know the developmental and behavioral characteristics of children with Prader-Willi syndrome

Know the etiology of Prader-Willi syndrome

Understand the natural history of Prader-Willi syndrome

Know how to plan the management for a child with Prader-Willi syndrome

Know the developmental and behavioral characteristics of children with Angelman syndrome

Recognize the phenotypic features of Prader-Willi syndrome

Recognize the phenotypic features of Angelman syndrome

7. Velocardiofacial syndrome

Know the etiology of velocardiofacial syndrome

Know the developmental and behavioral characteristics of children with velocardiofacial syndrome

Recognize the phenotypic features of velocardiofacial syndrome

8. Other genetic disorders

Know the etiology of Smith-Magenis syndrome

Know the developmental and behavioral characteristics of children with Smith-Magenis syndrome

Know the etiology of neurofibromatosis types I and II

Know how to plan the diagnostic evaluation of a child with neurofibromatosis

Know the medical problems commonly associated with neurofibromatosis types I and II

Know the developmental and behavioral characteristics of children with neurofibromatosis

Know the etiology of tuberous sclerosis

Recognize the phenotypic features of tuberous sclerosis

Know the developmental and behavioral characteristics of children with tuberous sclerosis

Know the medical problems commonly associated with tuberous sclerosis

Recognize the phenotypic features of neurofibromatosis types I and II

Know the natural history of neurofibromatosis types I and II

Know the prevalence of neurofibromatosis types I and II

Know the natural history of tuberous sclerosis

Know the phenotypic features of other neurocutaneous syndromes, eg, Sturge-Weber, incontinentia pigmenti

Know the developmental and behavioral characteristics of children with other neurocutaneous syndromes

D. Metabolic disorders

1. Phenylketonuria (PKU)

Understand the importance of neonatal screening for PKU

Know the principles of dietary treatment of individuals with PKU

Know how to plan appropriate counseling for a girl with PKU about sexuality, pregnancy, and genetic risks

Know the phenotypic features of PKU

Know the developmental and behavioral characteristics of children with PKU

Know the evaluation of suspected PKU

2. Mucopolysaccharidoses

Understand the usual natural history of developmental skills in children with mucopolysaccharide disorders

Recognize the phenotypic features suggestive of a mucopolysaccharide disorder

Know the etiologies of the major mucopolysaccharide disorders

Know the developmental and behavioral characteristics of children with mucopolysaccharide disorders

3. Purine metabolism

Know the developmental and behavioral characteristics of children with Lesch-Nyhan syndrome

Know the evaluation of suspected Lesch-Nyhan syndrome

Recognize the phenotypic features of Lesch-Nyhan syndrome

Plan the management of a child with Lesch-Nyhan syndrome

E. Infectious diseases

1. Meningitis and encephalitis

Recognize the neurological, developmental, and behavioral complications of various forms of meningitis

Understand the association between neurological outcomes and cerebrospinal fluid findings

2. HIV/AIDS

Know the neurological, developmental, and behavioral complications of pediatric HIV/AIDS and its treatment

Understand the natural history of pediatric HIV/AIDS

Understand the epidemiology of pediatric HIV/AIDS

3. Chronic otitis media

Know the sensory, developmental, and behavioral consequences of chronic otitis media with effusion

Understand the factors that moderate the impact of otitis media on development

F. Central nervous system (CNS) disorders

1. Seizures and epilepsy

Differentiate between seizures and epilepsy

Understand the international classification of epileptic syndromes

Know how to plan the evaluation of a child with staring spells

Know that the prevalence of seizures and epilepsy is higher in children with developmental disorders than in the general population

Know the appropriate management for a child with epilepsy and attention deficit hyperactivity disorder

Know that developmental and behavioral difficulties are more common in children with epilepsy than in children with other types of chronic physical illnesses

Know how to plan the evaluation of a child with suspected seizures

Know the etiologies and natural history of infantile spasms

2. Hydrocephalus

Know the causes of hydrocephalus in children

Know the developmental and behavioral characteristics of children with hydrocephalus

3. Stroke

Understand the natural history of motor development following a stroke at different ages

Understand the natural history of language development in children following a left hemisphere stroke at different ages

Know the causes of pediatric stroke at different ages

4. Traumatic Brain Injury (TBI)

Differentiate between mild, moderate, and severe head injury on the basis of the Glasgow coma score

Know the long-term management for a child with traumatic brain injury

Understand the pathogenesis of brain injury with penetrating head trauma

Know the developmental, cognitive, and behavioral consequences of penetrating injury to specific brain regions

Understand the pathogenesis of brain injury with closed head trauma

Know the developmental, cognitive, and behavioral consequences of mild, moderate, and severe closed head injury

Understand the natural history of recovery from traumatic brain injury

5. Central nervous system (CNS) tumors

Understand the reasons for developmental and behavioral problems in children with CNS tumors

Know the neurological symptoms suggestive of a CNS tumor

6. Congenital CNS malformation

Know brain malformations that may be found in individuals with no developmental or behavioral disabilities

Know the brain malformations that have been found in individuals with developmental disabilities

G. Sensory defects

1. Visual impairments

Differentiate among visual impairment, social blindness, virtual blindness, and total blindness

Know the leading causes of childhood blindness

Understand the advantages of teaching Braille to children with virtual or total blindness

Know how to assess developmental progress in children who are visually impaired

Know how to plan the management of severe visual impairment and its developmental and behavioral complications

Understand the developmental and behavioral problems associated with severe visual impairment

Understand the developmental and behavioral problems associated with mild to moderate visual impairment

Understand the developmental maturation of visual acuity in early childhood

Understand the early developmental delays associated with blindness

2. Hearing loss

Recognize the typical audiogram of a child with conductive or sensorineural hearing loss

Know the effectiveness of teaching sign language to children who have severe to profound hearing loss

Know how to plan the developmental assessment of a child with severe/profound hearing loss

Know the impact of deafness on development, behavior, and academic achievement

Understand the efficacy of cochlear implantation for children with profound hearing loss

Understand the factors that affect decisions on use of cochlear implants

Recognize the importance of early language exposure and instruction for children with hearing impairment

Know the three common educational/communication methods for children with hearing impairments: oral, manual, and total language and reasons for choosing each

Know the leading causes of severe hearing impairment

Know the criteria for amplification with hearing aids

Understand the developmental and behavioral consequences of mild or moderate hearing loss

Understand the developmental and behavioral consequences of unilateral hearing loss

Understand the developmental-behavioral consequences of severe or profound hearing loss

H. Other chronic conditions

Understand the reasons for inclusion of thyroid testing in the neonatal screening battery

Differentiate between congenital and acquired hypothyroidism in terms of developmental outcomes

Know the impact of type 1 diabetes on development and behavior

Understand the association of recurrent diabetic ketoacidosis and problems in family functioning

Understand the effects of excess corticosteroids on affect and behavior in children

Identify the developmental and behavioral consequences of iron deficiency at different ages

Know the factors that affect the developmental and behavioral outcome of children with congenital heart disease

Know the nutritional deficiencies associated with developmental and behavioral problems in children

Understand the impact of prolonged caloric malnutrition (failure to thrive) on development and behavior

Identify the developmental and behavioral effects of lead exposure

Understand the risks for lead exposure in children with developmental disabilities

Understand the impact of iodine deficiency and maternal hypothyroidism on the fetus

Understand the emotional and family factors that affect symptoms and prognosis in children with asthma

Know the factors affecting the developmental and behavioral outcome of children with hematologic disorders

Know the factors affecting the developmental and behavioral outcome of children with oncologic disorders

Know the factors affecting the developmental and behavioral outcome of children with rheumatologic disorders

Know the factors affecting the developmental and behavioral outcome of children with immunologic disorders

Know the factors affecting the developmental and behavioral outcome of children with pulmonary disorders

Know the factors affecting the developmental and behavioral outcome of children with renal disorders

Know the factors affecting the developmental and behavioral outcome of children with gastrointestinal disorders

Know the developmental risks to the fetus and young child of mercury toxicity

Know the factors affecting the developmental and behavioral outcome of children with asthma

VII. Cognitive/Adaptive Disabilities

Understand current psychological theories of intelligence

Understand the levels of severity of intellectual disability

Know the diagnostic criteria for intellectual disability

Understand the interaction of environment and biology in the etiology of intellectual disability

Know the risk factors related to the causes of intellectual disability

Understand the academic potential of individuals with the different levels of severity of intellectual disability

Understand the occupational potential of individuals with the different levels of intellectual disability

Understand the independent living potential of individuals with the different levels of intellectual disability

Know the conditions that may affect the validity of assessments of intellectual ability

Know the differential diagnosis of intellectual disability

Understand the specific behavioral, educational, and social challenges associated with each developmental stage for a child with intellectual disability

Know the common etiologies of intellectual disability

Know the educational interventions available for children with intellectual disability

Plan the medical evaluation of a child with intellectual disability

Understand the effects of early intervention for children with or at risk for developmental delays

Interpret the psycho-educational assessment of a child with intellectual disability

Know the co-morbid conditions associated with intellectual disability

Understand the appropriate educational interventions and accommodations for a child with intellectual disability

Plan the treatment of common behavioral and emotional problems associated with intellectual disability

Understand the principles of planning for the transition to adulthood for youth with intellectual disability

Know the epidemiology of intellectual disability

VIII. Language and Learning Disorders

A. General

Understand the discrepancy definition of learning disabilities

Understand the low achievement definition of learning disabilities

Know how to plan the evaluation of a child for a learning disability

Understand the structure of educational interventions attempting to provide the least restrictive environment (eg, classroom aide, resource room)

Understand the overlap between mental retardation and learning disorders

Know the epidemiology of learning disabilities

Know the natural history of learning disabilities

Understand the issues related to differentiating learning disabilities from normal variations in academic skill acquisition

B. Reading disorder

Understand the cognitive and adaptive skills that are necessary for the typical development of reading abilities

Understand the relationship between early language delays and later reading disorders

Understand current concepts of the genetics of reading disorders

Understand the current concepts regarding the underlying neuropsychological deficits in reading disorders

Understand the appropriate educational interventions and accommodations for children with a reading disorder

Understand the range of prognoses for children with a reading disorder

Know the specific CNS localization of deficits related to reading disorder

Know the conditions commonly associated with reading disorder

Understand that reading disorders may result in academic failures in other subject areas

Know the diagnostic criteria for reading disorder

Recognize the symptoms of reading disorder

Know the differential diagnosis for low achievement in reading

C. Mathematics disorder

Understand the appropriate educational interventions and accommodations for a child with mathematics disorder

Understand the range of prognoses for children with mathematics disorder

Know the conditions commonly associated with mathematics disorder

Know the diagnostic criteria for mathematics disorder

Recognize the symptoms of mathematics disorder

Understand the cognitive and adaptive skills that are necessary for the typical development of mathematics abilities

Know the current concepts regarding the underlying neuropsychological deficits in mathematics disorder

Know the differential diagnosis for low achievement in mathematics

D. Other academic disorders

Know the diagnostic criteria for disorder of written expression

Understand the cognitive and adaptive skills that are necessary for the typical development of writing and spelling abilities

Know the differential diagnosis of disorders of written expression and spelling

Know the components of the evaluation of children for disorders of written expression or spelling

Know the appropriate educational accommodations for children with spelling disorder or disorder of written expression

Recognize the signs and symptoms of a non-verbal learning disorder

Understand the natural history of non-verbal learning disorders

Know the conditions commonly associated with non-verbal learning disorders

Recognize the symptoms of disorder of written expression

Know the appropriate educational interventions and accommodations for children with non-verbal learning disorder

E. Speech and language disorders

1. Language

Understand the distinction between speech and language

Distinguish the phonological, semantic, grammatical, and prosodic aspects of language

Know the differential diagnosis of language disorders

Understand the role of hereditary factors in language disorders

Understand theories about the causes of language disability

Recognize disabilities in semantic skills

Recognize disabilities in phonological skills

Recognize disabilities in syntax

Recognize disabilities in prosodic skills

Understand the distinction between receptive and expressive language skills

Know the diagnostic criteria for mixed expressive-receptive language disorder

Know the diagnostic criteria for expressive language disorder

Know how to plan the evaluation of a child with language delay

Know how to plan the management of a child with a language disorder

Know the range of prognoses for children with different types of language disorders

Understand the neural basis of language functioning and language development

Understand the impact of exposure to more than one language (bilingual household) on language development

Understand the role of environmental factors in language disorders

Understand the neural basis for language disorders

Know the epidemiology of language disorders

Recognize the signs and symptoms of language disorders

2. Speech disorders

Understand the distinctions among articulation, voice/resonance, and fluency

Know the pathophysiologic factors that affect articulation

Recognize the developmental progression of articulation skills

Know the definitions of dysarthria and oral-motor dyspraxia

Know how to plan the evaluation of a child with articulation abnormalities

Know the differential diagnosis of a child with articulation delays

Know how to plan the management of a child with speech abnormalities

Understand the range of prognoses for children with articulation disorders

Understand the normal development of speech fluency

Know the criteria for referral of a child with speech dysfluency

Know how to plan the management of a child with speech dysfluency

Understand the prognosis for a child with speech dysfluency

Know the pathophysiologic factors that affect voice and resonance

Know how to plan the evaluation of a child with abnormalities of voice or resonance

Know how to plan the management of a child with abnormalities of voice or resonance

Know the prognosis for a child with abnormalities of voice or resonance

3. Selective mutism

Recognize the signs and symptoms of selective mutism

Differentiate between selective mutism and other conditions affecting speech and language

Know how to plan the evaluation of a child with selective mutism

Know how to plan the management of a child with selective mutism

Differentiate selective mutism from normal variations in a child's comfort speaking in social settings

IX. Motor Disabilities and Multiple Handicaps

A. Cerebral palsy

Recognize signs in early infancy that are associated with the later development of cerebral palsy

Recognize the signs and symptoms of spastic cerebral palsy

Know the prevalence and epidemiology of cerebral palsy

Distinguish the different subtypes of spastic cerebral palsy

Recognize the signs and symptoms of extrapyramidal cerebral palsy

Know specific causes of the different types of cerebral palsy

Distinguish cerebral palsy from spinal cord injuries, peripheral motor disorders, and lower motor neuron lesions

Know how to plan the management of a toddler or preschooler with cerebral palsy

Know how to plan the management of a school-age child or adolescent with cerebral palsy

Evaluate early intervention and physical therapy in the management of cerebral palsy

Know the pharmacologic management of spasticity

Know the natural history of cerebral palsy

Know the pharmacologic management of drooling in children with cerebral palsy

Understand the neurological, orthopedic and/or ophthalmological complications associated with cerebral palsy

Know the developmental and behavioral characteristics of individuals with cerebral palsy

Know the range of prognoses for children with different types of cerebral palsy

B. Myelodysplasia

Understand the high prevalence of hydrocephalus and Chiari malformation in children with myelodysplasia

Understand the relationship between the level of myelodysplasia and motor and cognitive dysfunction

Know how to plan the management of children with different levels of myelodysplasia

Know the conditions commonly associated with myelodysplasia

Understand the relationship between genetic and environmental factors in the etiology and prevention of myelodysplasia

Understand the urological, neurological, and/or orthopedic complications associated with myelodysplasia

Know the developmental and behavioral characteristics of individuals with myelodysplasia

C. Muscular dystrophy

Recognize the signs and symptoms of Duchenne muscular dystrophy

Understand the long-term prognosis for a boy with Duchenne muscular dystrophy

Know how to plan the laboratory evaluation for a child with progressive muscular weakness

Understand the genetics of Duchenne muscular dystrophy

Know how to plan the management of a boy with Duchenne muscular dystrophy

Understand the neurological and orthopedic complications associated with muscular dystrophy

Know the developmental and behavioral characteristics of individuals with muscular dystrophy

Recognize the cases of non-Duchenne muscular dystrophy

D. Other

Plan the evaluation of an infant with hypotonia

Recognize the typical presentation of developmental coordination disorder

Know appropriate management strategies for a school-age child with developmental coordination disorder

Know the causes of congenital hypotonia

Know the signs and symptoms of spinal muscular atrophy (SMA)

X. Autism Spectrum Disorders

A. Autism

Know medical conditions commonly associated with autistic disorder

Know the etiologies of autistic spectrum disorder

Know the diagnostic criteria for autistic disorder

Understand the deficits of children with autistic disorder in joint attention, social referencing, and theory of mind

Know the differential diagnosis for autistic disorder

Know how to plan the psycho-educational evaluation of a child with autistic disorder

Develop a management plan for a child with autistic disorder

Understand the role of psychopharmacologic agents in the management of

autistic disorder

Understand the role of behavior therapies in the treatment of autistic disorder

Know the range of prognoses for a child with autistic disorder

Know the neurologic, developmental, and behavioral characteristics of Landau-Kleffner syndrome

Understand the normal development of social skills

Know how to plan the medical evaluation of a child with autistic disorder

Know the risks of special diets, supplements, and other common alternative treatments that are often recommended for children with developmental disabilities

Know the appropriate educational interventions and accommodations for a child with autistic disorder

B. Asperger and pervasive developmental disorder- not otherwise specified

Differentiate the natural history of Asperger disorder from that of other pervasive developmental disorders

Know how to plan the management for a child with Asperger disorder

Know the diagnostic criteria for Asperger disorder

Know the differential diagnosis of Asperger disorder

Know how to plan the psycho-educational evaluation of a child with Asperger disorder

Understand the range of prognoses for a child with Asperger disorder

Know how to plan the medical evaluation of a child with Asperger disorder

Know how to plan the management for a child with PDD-NOS or autistic spectrum disorder

Know the diagnostic criteria for PDD-NOS or autistic spectrum disorder

Know the differential diagnosis for PDD-NOS or autistic spectrum disorder

Know how to plan the psycho-educational evaluation of a child with PDD-NOS or autistic spectrum disorder

Understand the range of prognoses for a child with PDD-NOS or autistic spectrum disorder

Know how to plan the medical evaluation of a child with PDD-NOS or autistic spectrum disorder

C. Rett syndrome

Know the developmental and behavioral characteristics of Rett syndrome

Recognize the signs and symptoms of Rett syndrome

Know the etiology of Rett syndrome

Understand the natural history of Rett syndrome

Know the evaluation of a child with Rett syndrome

Know how to plan the management of a child with Rett syndrome

Understand the prognosis for a child with Rett syndrome

XI. Attention Deficit Hyperactivity Disorder (ADHD)

Know the epidemiology of ADHD

Distinguish between ADHD, problems with and normal variations in activity, impulsivity, and attention at different ages

Know the diagnostic criteria for ADHD

Understand the limitations of the diagnostic criteria for ADHD

Know the characteristics and diagnostic criteria for the subtypes of ADHD

Understand current concepts regarding the underlying deficits in ADHD

Know current research on neuroimaging in ADHD

Understand the current research on the etiology of ADHD

Know the prenatal and environmental exposures that can cause ADHD symptoms

Know the environmental situations that exacerbate ADHD symptoms

Know the familial pattern of ADHD

Know the differential diagnosis of ADHD

Recognize the common co-morbid externalizing conditions in ADHD

Recognize the common co-morbid internalizing conditions in ADHD

Know the motor deficits commonly associated with ADHD

Know the common language deficits associated with ADHD

Know the relationship between ADHD and accidents

Know how to plan the pharmacological management of children with ADHD

Know the appropriate dosing of stimulant medications in treating ADHD

Know the limitations and benefits of tricyclic antidepressants in treating ADHD

Know the limitations and benefits of centrally acting alpha-adrenergic agonists in treating ADHD

Understand the rationale and risks associated with combining medications in treating ADHD

Know the behavioral management of ADHD in the home setting

Know the behavioral management of ADHD that can be utilized in the classroom

Know how to plan a comprehensive intervention program for children with ADHD

Know the range of prognoses for children with ADHD

Understand the evidence relating specific neurotransmitters to ADHD

Understand the natural history of ADHD

Know how to plan the evaluation for ADHD

Know the issues associated with the assessment of preschool-age children for ADHD

Know the issues associated with the assessment of adolescents for ADHD

Understand the relationship between ADHD and problems with peer relationships

Understand the relationship between diet and ADHD symptoms

Know the mechanism of action of the stimulants in the treatment of ADHD

Know the limitations and benefits of stimulant medications in treating ADHD

Know the learning disorders commonly associated with ADHD

XII. Externalizing Conditions

A. Aggressive behavior

Differentiate aggressive behavior problems from normal variants

Know the factors associated with aggressive and violent behavior at different ages

Plan the behavioral management for aggressive behavior at different ages

Know the pharmacological interventions for aggressive behavior

Characterize effective preventive programs for aggressive behavior

Understand the natural history of aggressive behavior

Know how to evaluate a child with aggressive behavior

Know the criteria for referral of a child with aggressive behavior

Know the epidemiology of aggressive behavior at various stages of development

Understand the association between child maltreatment and later aggressive behavior

Understand the etiologies of bullying behavior

Know how to advise families on the management of bullying behavior

Know how to advise a school or day care center on the management of aggressive or bullying behaviors

Understand the components of school or community programs to teach social skills and non-violent conflict resolution

Understand the epidemiology and management of biting behavior at various stages of development

Understand the influences of exposure to violence in media on aggressive behavior in children and adolescents

Know how to plan the management of a child with aggressive behavior

Understand the association between corporal punishment and aggression in children, adolescents, and adults

B. Oppositional defiant disorder (ODD)/Conduct disorder

Recognize the natural history of ODD/conduct disorder

Distinguish between ODD and temperamental variations

Recognize the environmental contributors so oppositional and defiant behaviors

Recognize the behavioral and functional characteristics of ODD and the variations in presentation based on developmental stage

Recognize the common co-morbid conditions of ODD

Plan the management of a child with ODD

Understand the range of prognoses for children with ODD

Recognize the environmental situations that contribute to the development and maintenance of antisocial, aggressive, and delinquent behaviors

Recognize the signs and symptoms of conduct disorder at different developmental stages

Recognize the common co-morbid conditions of conduct disorder

Understand the range of prognoses for children with conduct disorder

Know the pharmacologic treatments for conduct disorder

Know the psychologic treatments for conduct disorder

Describe the characteristics of effective training programs for parents of children with ODD/conduct disorder

Understand the stages of development typically associated with oppositional behaviors

Know the diagnostic criteria for ODD

Know how to evaluate a child for ODD/conduct disorder

Understand the benefits and limitations of different venues (eg, family, community, residential) for the treatment of conduct disorder

Know the diagnostic criteria for conduct disorder

Recognize family systems factors that contribute to the development and maintenance of ODD and conduct disorder

XIII. Internalizing Behaviors and Conditions

A. Anxiety disorders

Understand the natural history of anxiety disorders

Understand the relationship between temperamental characteristics and anxiety

Recognize the environmental situations that contribute to or exacerbate anxious and fearful behaviors

Recognize the signs and symptoms of phobias and anxiety disorders and the range of common presentations

Know the initial management of phobias and anxiety disorders

Know the pharmacologic management of phobias and anxiety disorders

Know the psychologic management of phobias and anxiety disorders

Recognize the common co-morbid conditions of anxiety disorders

Understand the range of prognoses for children with anxiety disorders

Recognize the signs and symptoms of post-traumatic stress disorder in children and adolescents and the range of common presentations

Plan the treatment of a child or adolescent with post-traumatic stress disorder

Differentiate worries from anxiety disorder

Understand the etiology and environmental contributors to PTSD

Understand the role of medication in the management of acute stress disorder

Understand the role of medication in the management of PTSD

Understand the natural history of PTSD

Recognize the importance of active outreach and screening for PTSD after a traumatic event

Recognize that PTSD may have a delayed onset after a traumatic event

Plan the management of a child with acute stress disorder

B. Mood disorders

Understand the natural history of mood disorders

Understand the relationship between temperamental characteristics and mood

Recognize the social and environmental contributors to the development of depressive symptoms

Recognize the signs and symptoms of dysthymia and the variations in presentation based on developmental stage

Recognize the signs and symptoms of major depression and the variations in presentation based on developmental stage

Recognize the signs and symptoms of bipolar disorder and the variations in presentation based on developmental stage

Recognize the common co-morbid conditions of mood disorders

Understand the pharmacologic treatment of mood disorders

Understand the psychologic interventions for the treatment of mood disorders

Understand the range of prognoses for children and adolescents with dysthymia or depressive disorders

Differentiate between extended bereavement and major depressive disorder

Know the familial risk of major depressive disorder in children

Understand the range of prognoses for children and adolescents with bipolar disorders

Know the diagnostic criteria for mood disorders

Recognize the family systems factors that contribute to mood disorders

Understand the epidemiology of depression in children and adolescents (eg, gender-based differences, age-based differences, etc)

C. Ritualistic/obsessive compulsive behavior

Understand the possible association of obsessive-compulsive disorder (OCD) and beta-hemolytic streptococcal infection

Know the natural history of OCD

Understand that the rituals associated with obsessive-compulsive disorder can be very time consuming and lead to social isolation

Differentiate OCD from normal variations in obsessive or compulsive personality traits

Understand the range of prognoses for children with obsessive-compulsive disorder

Understand the etiology of obsessive-compulsive disorder

Know the pharmacological treatments for obsessive-compulsive disorder

Know the diagnostic criteria for OCD

Recognize the signs and symptoms of OCD

Understand the genetics of OCD

Know the psychologic treatments for OCD

D. Suicidal behavior

Know the risk factors associated with suicidal behavior in children and adolescents

Know the risk factors associated with a poor prognosis for children and adolescents who have attempted suicide

Know the steps in the prevention of suicidal behavior and management of an adolescent at risk of suicidal behavior

Know how to assess a child or adolescent with suicidal ideation

Know the indications for hospitalization of a child or adolescent at risk of suicide

Recognize the impact of suicide on peers and members of the family

Plan the management of a child with suicidal ideation or behavior

XIV. Substance Use/Abuse

A. Tobacco use

Know the factors that predict high risk for the onset of tobacco smoking in adolescents

Understand the major strategies for prevention of tobacco use in adolescents

Know how to plan a smoking cessation program directed at adolescents

Understand the natural history of tobacco use during adolescence

B. Alcohol use

Understand that familial tendencies toward violence or alcoholism may involve both genetic mechanisms and social learning

Know how to screen for excessive alcohol use in adolescents

Recognize the behavioral consequences of alcohol use in adolescents

Know the epidemiology of alcohol use among adolescents

Know the health and behavioral effects of alcohol use

Know how to plan an alcohol education program in a middle or high school

Recognize the co-incidence of chronic alcohol abuse with other health risks during adolescence (eg, tobacco, depression, sexual activity, school failure)

Recognize the signs and symptoms of increasing alcohol dependence

Know how to plan an intervention for a child whose parent chronically abuses alcohol

Know the familial pattern of alcohol abuse

Know how to counsel parents regarding prevention and early intervention of alcohol abuse

Know the epidemiology of alcohol abuse in adolescents

Know the natural history of alcohol abuse in children and adolescents

Know the criteria for referral of adolescents for alcohol abuse

Know the appropriate treatment for alcohol dependence

Know office-based interventions for adolescents who are abusing alcohol (eg, rescue plans)

C. Illicit drug abuse

Recognize the common signs and symptoms of use of common illegal drugs

Recognize the common signs and symptoms of abuse of stimulant drugs

Recognize the common signs and symptoms of abuse of depressant drugs

Understand that there are problems associated both with the particular substance used and with the vehicle of use (eg, needles, sniffing, etc)

Differentiate between patterns of experimentation and evidence of addiction to illicit drugs

Know how to plan a drug use prevention program for a middle or high school

Understand the natural history of drug abuse

Know the elements of treatment for an adolescent who is abusing illicit chemicals (eg, withdrawal, family therapy, group treatment, such as AA/NA)

Identify the stages in the continuum of substance abuse (eg, problem use, abuse, dependence)

Understand the use and limitations of urine and serum drug screens

XV. Child Abuse and Neglect

A. Physical abuse

Know the parental risk factors associated with physical abuse of young children (eg, stress, isolation, parental abuse, substance abuse, poverty)

Know the child risk factors that predispose to physical abuse (eg, prematurity, disability, irritability, male gender)

Describe common screening techniques to identify children at risk of physical abuse

Recognize signs and symptoms of physical abuse

Understand the legal and clinical implications of reporting physical abuse

Recognize characteristics of fractures caused by physical abuse

Know the signs and symptoms of "shaken baby syndrome"

Know the appropriate management for a child suspected of having been abused

Know the advantages and disadvantages of "family preservation" vs removal of the child from the home in the face of repeated serious physical abuse

Know the components of effective programs for the prevention of child abuse

Know the long-term outcome of physical trauma

B. Sexual abuse

Know the risk factors for sexual abuse

Recognize physical signs and symptoms of sexual abuse

Recognize psychological symptoms of sexual abuse

Know appropriate interviewing techniques for assessing possible victims of sexual abuse

Know how to plan the management of a child who has been sexually abused

Know the long-term outcomes of childhood sexual abuse

Know the epidemiology, including the most common perpetrators, of sexual abuse

Know the components of effective school-based programs to prevent sexual abuse

Recognize the heightened risk of individuals with developmental disabilities to become victims of sexual abuse

Know how to evaluate a child for possible sexual abuse

C. Factitious disorder by proxy (Munchausen syndrome by proxy)

Recognize signs and symptoms suggestive of factitious disorder by proxy

Know family risk factors often seen in cases of factitious disorder by proxy

Know how to plan the management of cases of factitious disorder by proxy

Know how to diagnose factitious disorder by proxy

D. Child neglect

Know common developmental and behavioral sequelae of chronic neglect

Understand how the developmental and behavioral symptoms of neglected children vary with stages of development

Know the legal definition of child neglect

Know how to plan the management of chronic neglect

Know the parental risk factors associated with child neglect

Recognize child neglect as the most common form of child maltreatment

Know the child risk factors that predispose to child neglect

Describe interventions that can lower the risk of child neglect (eg, home nurse visits)

XVI. Somatoform Disorders and Pain

A. Chronic pain syndromes

Recognize patterns of chronic or recurrent pain that are commonly seen without evidence of associated tissue damage

Know the psychological symptoms and disorders commonly associated with chronic pain

Know how to plan initial treatment strategies for a child/adolescent with a recurrent pain syndrome

Recognize the signs and symptoms of common headache syndromes

Know the appropriate evaluation of a child with recurrent pains

Understand common psychologic and psychophysiologic treatments for chronic pain

Know the epidemiology of common pain complaints

Know the signs and symptoms of complex regional pain syndrome

Know the signs and symptoms of fibromyalgia

Understand the interaction between psychologic and physiologic factors that produce pain

Understand the principles underlying effective medication regimens for the treatment of chronic pain

B. Conversion disorders

Know the differential diagnosis of somatoform disorders

Know how to plan the management of children/families with somatic symptoms not fully explained by a medical condition

Know how to plan the evaluation for a child/adolescent suspected of having a conversion disorder

Recognize the common complications of conversion disorders

Recognize the signs and symptoms of different somatoform disorders

Understand the distinction between primary and secondary gain in conversion disorder

Understand the etiology of conversion disorder

Understand the importance of symptom modeling in the development of conversion symptoms (eg, pseudoseizures in a patient with seizures)

Understand the natural history of conversion symptoms

Understand the role of psychosocial stressors in conversion disorder

Understand the role of social and cultural factors in the development of somatic symptoms

Understand that the particular manifestations of a conversion disorder result from an unconscious process

Understand that conversion disorder rarely presents prior to 5 years of age

Understand the characteristics and management of group conversion disorder (ie, mass hysteria)

XVII. Sleep Problems

A. General

Recognize the cultural variations in acceptance of co-sleeping

Know the association of sleep disorders with other psychiatric, developmental, and behavioral disorders

Know the different stages of sleep

Understand the changes in sleep cycles with development

Understand the physiology of sleep cycles

Know the behavioral effects of sleep deprivation

Understand the changes in the need for sleep with age

Know the effects of commonly used medications on sleep

B. Night-time awakening

Know the concept of "sleep associations" and its relevance to night-time awakening

Know the management of frequent night awakenings

Know the epidemiology of night-time awakening

Know how to evaluate a child with frequent night-time awakenings

C. Bedtime resistance

Relate the ages of peak bedtime resistance to developmental theory

Know how to manage bedtime resistance in a developmentally appropriate way

Understand the distinction between intrinsic and extrinsic sleep disorders

Know how to evaluate a child with bedtime resistance

Understand factors that contribute to bedtime resistance

Know the epidemiology of bedtime resistance

D. Excessive daytime somnolence

Recognize the signs and symptoms of narcolepsy

Know the familial pattern of narcolepsy

Know how to plan the laboratory evaluation of narcolepsy

Know the signs and symptoms of obstructive sleep apnea

Understand the impact of obstructive sleep apnea on development and behavior

Know the treatment of narcolepsy

E. Insomnia

Know the differential diagnosis of insomnia

Know how to plan the management of a child or adolescent with insomnia

Know common pharmacologic management of insomnia

F. Parasomnias

Know the primary parasomnias

Understand the physiology of sleepwalking and night terrors

Know the management of common parasomnias

Know the sleep stages associated with common parasomnias

Know the epidemiology of common parasomnias

Differentiate between night terrors and nightmares

XVIII. Feeding and Eating Problems

A. Obesity

Know the commonly accepted criteria for obesity

Know the epidemiology of obesity

Describe the environmental factors that contribute to obesity

Know the psychosocial problems commonly associated with obesity

Know how to plan the psychological management of an infant, child, or adolescent with obesity

Recognize the importance of behavioral interventions in the prevention and treatment of obesity

Understand the risks associated with non-standard approaches to the treatment of obesity

Know how to plan an obesity prevention program

Know how to evaluate a child with obesity for an underlying endocrinopathy or genetic syndrome

B. Failure to thrive (FTT)

Know how to identify failure to thrive (FTT)

Understand the etiology of FTT

Understand the importance of the social circumstances for a child with FTT

Recognize the developmental and behavioral conditions associated with FTT

Understand the prognosis for children with FTT

Know how to plan the management of behavioral and developmental conditions associated with FTT

C. Anorexia nervosa and bulimia nervosa

Know the diagnostic criteria for anorexia nervosa

Know the diagnostic criteria for bulimia nervosa

Understand the association of body-image disorders with anorexia and bulimia

Know the pre-morbid behaviors that may be associated with anorexia or bulimia

Know the epidemiology of anorexia and bulimia

Recognize the signs and symptoms of anorexia and bulimia

Know the psychological evaluation of a patient with anorexia or bulimia

Know the differential diagnosis of a patient with anorexia or bulimia

Recognize the medical complications of anorexia and bulimia

Know the criteria for hospitalization of a patient with anorexia or bulimia

Know the criteria for choosing among treatment approaches for a patient with anorexia or bulimia

Know the criteria for referral of a patient with anorexia or bulimia to a treatment specialist

Know the psychiatric co-morbidity of anorexia and bulimia

Understand the prognoses of anorexia and bulimia

D. Disorders of feeding in infants and toddlers

Know the developmental progression of food selectivity in children

Know the medical and psychological factors that affect appetite

Understand the benefits of a mealtime routine

Understand the development of feeding skills in healthy children

Know the medical factors that increase risk for feeding disorders in infants and toddlers

Know the developmental and behavioral conditions associated with feeding

disorders

Understand that impairments in feeding skills may manifest as food selectivity

Know the physiologic phases of swallowing

Recognize the signs and symptoms of gastroesophageal reflux

Understand the importance of feeding observation for patients with feeding disorders

Know how to evaluate a child who is a picky/selective eater

Know how to evaluate a child with rumination

Know how to evaluate an infant or toddler with a feeding skill disorder

Be able to evaluate whether a child with oral-motor dysfunction is safe to feed orally

Know how to plan the management for infants or toddlers with feeding disorders

Know the management of a child with picky eating

XIX. Elimination Disorders

A. Normal development of continence

Know the sex-related variability in the development of urinary continence

Know the typical developmental course for acquiring stool continence in American children

Know the cultural variability in the development of urinary continence

B. Encopresis

Know the epidemiology of encopresis

Know the medical and psychosocial factors that may predispose to encopresis

Know the psychological and behavioral complications of encopresis

Understand the pathophysiology of encopresis

Understand the role of initial catharsis in the treatment of encopresis

Know how to evaluate a child with encopresis

Know the treatment of a child with encopresis

Understand the time course of recovery of normal bowel function during

treatment for encopresis

Formulate the differential diagnosis for encopresis

Know the diagnostic criteria for encopresis

C. Enuresis

Recognize the medical disorders that can present with urinary incontinence

Know the pathophysiologic theories of primary enuresis

Know that genetic factors, including sex, may predispose a child to nocturnal enuresis

Understand the natural history, including spontaneous remission, of nocturnal enuresis

Differentiate between primary and secondary enuresis and their etiologies

Know how to evaluate a child with nocturnal enuresis

Know how to treat a child with nocturnal enuresis

Understand the theoretical psychological explanation for the efficacy of urinary alarms

Know the indications for pharmacologic management of nocturnal enuresis

Know how to evaluate a child with diurnal enuresis

Know how to treat a child with diurnal enuresis

Know the pharmacologic interventions for nocturnal enuresis

Know the epidemiology of enuresis

XX. Sexuality

A. Stages of development

Know how children of various ages understand sexuality

Understand the typical development of sexual behaviors during childhood and adolescence

Know the appropriate content of school-based programs on sexuality, at different grade levels

B. Problems and disorders

1. Gender identity

Understand the long-term outcomes of gender identity disorder in young children

Understand the difference between sexual orientation and gender identity

Know approaches to counseling parents concerning variations in young children's gender identity and sexual orientation

Know the diagnostic criteria for gender identity disorder in children

Understand the concept of "transgenderism" and approaches to its management

2. Sexual deviance

Recognize children whose sexual interests or activities suggest a history of sexual abuse

Recognize symptoms of pathological sexual development

Know approaches to management of sexual deviance in children

3. Sexual orientation

Understand that sexual orientation ranges from exclusively homosexual to exclusively heterosexual

Know the typical stages of development of sexual orientation in males and females

Understand the difficulties resulting from the isolation and stigmatization of homosexual individuals

Know the problems faced by adolescents who are or think they may be gay or lesbian

Know the responses and needs of parents who have a homosexual child

Know that the age of self-identification of sexual orientation is decreasing in the U.S.

Know that gay and lesbian adolescents have increased risk of tobacco, alcohol, and other substance abuse

Know that lesbian adolescents have increased risk of obesity

Know the emotional and behavioral disorders for which gay and lesbian youth are at increased risk (eg, restrictive eating disorders, depression, and suicide)

C. Sexuality in developmental disorders

Recognize the healthy drive for sexuality among individuals with developmental disabilities

Know the challenges to sexuality that face individuals with developmental disorders

Be able to develop a plan for sexuality counseling directed to individuals with developmental disabilities

XXI. Atypical Behaviors

A. Repetitive behaviors and habits

Differentiate between normal variations in repetitive behaviors and stereotypic movement disorder

Know the potential medical complications of repetitive behaviors such as nail-biting, nose-picking, and hair-pulling

Know how to evaluate a child with repetitive behaviors such as nail-biting, nose-picking, and hair-pulling

Know how to plan the treatment for a child with repetitive behaviors such as nail-biting, nose-picking, and hair-pulling

B. Tics

Differentiate tics from voluntary and other involuntary movements, such as chorea, athetosis, and ballismus

Know the epidemiology of tics and tic disorders

Know the diagnostic criteria for tic disorders, including transient tic disorder, chronic tic disorder, and Tourette disorder

Describe the natural history of tics and tic disorders

Know the conditions commonly associated with Tourette disorder (eg, ADHD and OCD)

Understand the pathophysiology of Tourette disorder

Plan the evaluation of a child with a tic disorder

Plan the treatment for a child with a tic disorder

Know the pharmacologic interventions that can be helpful in management of tics

Recognize the behavioral and developmental complications of Tourette disorder

Understand the genetics of Tourette disorder

C. Self-injurious behaviors without developmental disabilities

Know the epidemiology of self-injurious behavior in children without developmental disabilities

Understand the natural history of self-injurious behavior in children without developmental disabilities

Recognize the signs of self-injurious behaviors that occur in adolescents without developmental disabilities

Distinguish between self-injurious behaviors that are suicidal in intent, and those that are not

Know how to evaluate an adolescent without disabilities who engages in self-injurious behaviors

Know how to plan the treatment of an adolescent without disabilities who engages in non-suicidal self-injurious behaviors

D. Repetitive/disruptive/self-injurious behavior in dev. disabilities

Know the epidemiology of self-injurious behavior among children with developmental disabilities

Recognize the specific genetic disorders that are associated with an increased risk of self-injurious behavior

Describe the complications that may result from self-injurious behavior in children with developmental disabilities

Understand the etiologies of self-injurious, repetitive, and disruptive behavior among children with developmental disabilities

Understand the role of functional behavioral analysis in the evaluation of self-injurious, repetitive, and disruptive behaviors in children with developmental disabilities

Know how to plan the management for patients with developmental disabilities who engage in self-injurious, repetitive, or disruptive behavior

Know the pharmacologic treatment of self-injurious behaviors

Recognize the spectrum of repetitive behaviors that may be seen in pervasive developmental disorders

Know that some self-injurious, disruptive, or repetitive behaviors may be the result of an unrecognized medical disorder in patients with developmental disabilities

Know how to evaluate a child with a developmental disability who engages in repetitive, disruptive, or self-injurious behaviors

Know the pharmacologic management of repetitive behaviors in individuals with developmental disabilities

Know the pharmacologic management of disruptive behaviors in individuals with developmental disabilities

Know the behavioral treatments that may be used for self-injurious, repetitive, or disruptive behaviors in children with developmental disabilities

E. Alterations in mental status

Recognize the signs and symptoms of delirium

Recognize the signs and symptoms of dementia

Understand the heightened risk for delirium or dementia in some disorders causing developmental disabilities

Know the differential diagnosis for delirium and dementia

Plan the evaluation of a child with delirium or dementia

Plan the treatment for a child with delirium or dementia

XXII. Law, Policy, and Ethics

A. Legal rights and processes

1. Individuals with disabilities

Know the criteria for early intervention or special education for children from birth through 21 years of age

Understand the different implications of the Americans with Disabilities Act for public, private, and parochial schools

Know the components of an Individual Family Service Plan (IFSP)

Understand parents' rights to participate in special education decisions as described in the Individuals with Disabilities Education Act (IDEA)

Understand how to apply the concept of least restrictive environment to designing an educational program for a child with a disability

Understand the importance to special education of the related concepts of natural environments, inclusion, and mainstreaming

Appreciate the right to a publicly funded evaluation and special education services for all children in need, including those attending private and parochial schools

Recognize the necessity to provide medical services within the school setting if required by a child in order to participate in an educational program

Understand the components of the Individuals with Disabilities Education Act (IDEA)

Describe the eligibility criteria for services described in the Individuals with Disabilities Education Act (IDEA)

Know the guidelines for school disciplinary procedures described in the Individuals with Disabilities Education Act (IDEA)

Know the application of the Americans with Disabilities Act and special education law to higher education

B. Educational administration and processes

Understand the role of a pediatrician in initiating and participating within a school evaluation of a child with learning problems

Know the purpose and limitations of an individualized education program

Know the differences between special education services provided under an individualized education program and those provided under Section 504 of the Rehabilitation Act

C. Health care structures and processes

Understand the impact of various healthcare financing arrangements on the quality of services for children with special healthcare needs

Appreciate the financial incentive for insurance companies to discourage enrollment of children with special healthcare needs

Know the ethical implications of financial disincentives to specialty referrals within managed care systems and its differential impact on children with special healthcare needs

Be familiar with issues relating to the impact of mental health carve-outs on the quality of and access to mental health services for children

D. Advocacy (See also XVIII.D.)

Know how to advocate within a school system for a child with learning problems, utilizing both informal means and due process

Know how to advocate for children with disabilities at the local, state, and federal level

E. Ethics

1. Treatment

Understand the ethics of participation of the competent adolescent patient in decisions to withhold treatment in serious, life-threatening medical conditions

Understand the appropriateness of psychiatric hospitalization of a young adolescent who the clinician feels is at serious risk of self-harm when the parent and child do not agree to hospitalization

Understand the legal and ethical implications of drug screening in adolescents

Understand the ethical implications of potential financial conflicts of interest of treating physicians and how to avoid and manage such potential conflicts

XXIII. Core Knowledge in Scholarly Activities

A. Principles of Use of Biostatistics in Research

1. Types of variables

Distinguish types of variables (eg, continuous, categorical, ordinal, nominal)

Understand how the type of variable (eg, continuous, categorical, nominal) affects the choice of statistical test

2. Distribution of data

Understand how distribution of data affects the choice of statistical test

Differentiate normal from skewed distribution of data

Understand the appropriate use of the mean, median, and mode

Understand the appropriate use of standard deviation

Understand the appropriate use of standard error

3. Hypothesis testing

Distinguish the null hypothesis from an alternative hypothesis

Interpret the results of hypothesis testing

4. Statistical tests

Understand the appropriate use of the chi-square test versus a t-test

Understand the appropriate use of analysis of variance (ANOVA)

Understand the appropriate use of parametric (eg, t-test, ANOVA) versus non-parametric (eg, Mann-Whitney U, Wilcoxon) statistical tests

Interpret the results of chi-square tests

Interpret the results of t-tests

Understand the appropriate use of a paired and non-paired t-test

Determine the appropriate use of a 1- versus 2-tailed test of significance

Interpret a p-value

Interpret a p-value when multiple comparisons have been made

Interpret a confidence interval

Identify a type I error

Identify a type II error

5. Measurement of association

Differentiate relative risk reduction from absolute risk reduction

Calculate and interpret a relative risk

Calculate and interpret an odds ratio

Interpret a hazard ratio

Understand the uses and limitations of a correlation coefficient

6. Regression

Identify when to apply regression analysis (eg, linear, logistic)

Interpret a regression analysis (eg, linear, logistic)

Identify when to apply survival analysis (eg, Kaplan-Meier)

Interpret a survival analysis (eg, Kaplan-Meier)

7. Diagnostic tests

Recognize the importance of an independent "gold standard" in evaluating a diagnostic test

Calculate and interpret sensitivity and specificity

Calculate and interpret positive and negative predictive values

Understand how disease prevalence affects the positive and negative predictive value of a test

Calculate and interpret likelihood ratios

Interpret a receiver operator characteristic curve

Interpret and apply a clinical prediction rule

8. Systematic reviews and meta-analysis

Understand the purpose of a systematic review

Understand the advantages of adding a meta-analysis to a systematic review

Interpret the results of a meta-analysis

Identify the limitations of a systematic review

Identify the limitations of a meta-analysis

B. Principles of Epidemiology and Clinical Research Design

1. Study types

Distinguish between Phase I, II, III, and IV clinical trials

Recognize a retrospective study

Understand the strengths and limitations of retrospective studies

Recognize a case series

Understand the strengths and limitations of case series

Recognize a cross-sectional study

Understand the strengths and limitations of cross-sectional studies

Recognize a case-control study

Understand the strengths and limitations of case-control studies

Recognize a longitudinal study

Understand the strengths and limitations of longitudinal studies

Recognize a cohort study

Understand the strengths and limitations of cohort studies

Recognize a randomized-controlled study

Understand the strengths and limitations of randomized-controlled studies

Recognize a before-after study

Understand the strengths and limitations of before-after studies

Recognize a crossover study

Understand the strengths and limitations of crossover studies

Recognize an open-label study

Understand the strengths and limitations of open-label studies

Recognize a post-hoc analysis

Understand the strengths and limitations of post-hoc analyses

Recognize a subgroup analysis

Understand the strengths and limitations of subgroup analyses

2. Bias and Confounding

Understand how bias affects the validity of results

Understand how confounding affects the validity of results

Identify common strategies in study design to avoid or reduce bias

Identify common strategies in study design to avoid or reduce confounding

Understand how study results may differ between distinct sub-populations (effect modification)

3. Causation

Understand the difference between association and causation

Identify factors that strengthen causal inference in observational studies (eg, temporal sequence, dose response, repetition in a different population, consistency with other studies, biologic plausibility)

4. Incidence and Prevalence

Distinguish disease incidence from disease prevalence

5. Screening

Understand factors that affect the rationale for screening for a condition or disease (eg, prevalence, test accuracy, risk-benefit, disease burden, presence of a presymptomatic state)

6. Decision analysis

Understand the strengths and limitations of decision analyses

Interpret a decision analysis

7. Cost-benefit, cost-effectiveness, and outcomes

Differentiate cost-benefit from cost-effectiveness analysis

Understand how quality-adjusted life years are used in cost analyses

Understand the multiple perspectives (eg, of an individual, payor, society) that influence interpretation of cost-benefit and cost-effectiveness analyses

8. Sensitivity analysis

Understand the strengths and limitations of sensitivity analysis

Interpret the results of sensitivity analysis

9. Measurement

Understand the types of validity that relate to measurement (eg, face, construct, criterion, predictive, content)

Distinguish validity from reliability

Distinguish internal from external validity

Distinguish accuracy from precision

Understand and interpret measurements of interobserver reliability (eg, kappa)

Understand and interpret Cronbach's alpha

C. Applying Research to Clinical Practice

1. Assessment of study design, performance, & analysis (internal validity)

Recognize when appropriate control groups have been selected for a case-control study

Recognize when appropriate control groups have been selected for a cohort study

Recognize the use and limitations of surrogate endpoints

Understand the use of intent-to-treat analysis

Understand how sample size affects the power of a study

Understand how sample size may limit the ability to detect adverse events

Understand how to calculate an adequate sample size for a controlled trial (ie, clinically meaningful difference, variability in measurement, choice of alpha and beta)

2. Assessment of generalizability (external validity)

Identify factors that contribute to or jeopardize generalizability

Understand how non-representative samples can bias results

Assess how the data source (eg, diaries, billing data, discharge diagnostic code) may affect study results

3. Application of information for patient care

Estimate the post-test probability of a disease, given the pretest probability of the disease and the likelihood ratio for the test

Calculate absolute risk reduction

Calculate and interpret the number-needed-to treat

Distinguish statistical significance from clinical importance

4. Using the medical literature

Given the need for specific clinical information, identify a clear, structured, searchable clinical question

Identify the study design most likely to yield valid information about the accuracy of a diagnostic test

Identify the study design most likely to yield valid information about the benefits and/or harms of an intervention

Identify the study design most likely to yield valid information about the prognosis of a condition

D. Principles of Teaching and Learning

1. Educational theory

Understand the basic principles of adult learning theory (eg, adult learners are self-directed, goal-oriented, practical; need to feel respected, build on life experiences; learn best when learning is based on an existing framework)

Understand the attributes of an effective learning environment

Understand the importance of "reflective practice" in teaching and learning

Identify strategies that motivate learners

Recognize the impact of the "hidden curriculum" on learning

2. Feedback and Evaluation

Identify components of effective feedback

Distinguish between formative and summative feedback

Distinguish between evaluation and feedback

Understand the strengths and weaknesses of various methods to evaluate learners

3. Teaching Methods

Understand the strengths and weaknesses of various teaching methods (eg, lecture, small group discussion, bedside teaching, simulation)

Understand that individuals may learn more effectively with certain teaching methods (eg, reading, hearing, doing) than with others

4. Educational Planning

Understand the role of needs assessment in educational planning

Distinguish between goals and learning objectives

Identify components of well-formulated learning objectives

Recognize the strengths and weaknesses of various educational outcome measures (eg, participant satisfaction, acquisition of knowledge and skills, behavioral change, patient outcomes)

E. Ethics in Research

1. Conflicts of Interest and Commitment

Evaluate whether an investigator has a conflict of interest during the course of a study

Understand ways to manage a conflict of interest

Understand what constitutes a conflict of commitment

2. Professionalism and Misconduct in Research

Identify forms of research misconduct (eg, plagiarism, fabrication, falsification)

Differentiate honest error and differences of opinion from research misconduct

Understand the criteria for authorship of clinical research publications

3. Principles of Research with Human Subjects

Understand and apply the three main principles of research ethics articulated in the Belmont Report (ie, respect for persons, beneficence, and justice)

Understand the role of analysis of risks and benefits in the ethical conduct of research

Understand the federal regulatory definitions regarding which activities are considered research

Understand the federal regulatory definitions regarding when research includes the use of human subjects

Understand the federal regulatory definition of minimal risk

Understand the functions of an Institutional Review Board

Understand when an exemption from review by the Institutional Review Board is permissible

Understand the functions of a Data Safety Monitoring Board

Understand the importance of clinical equipoise in research with human subjects

Understand the impact of "therapeutic fallacy" on clinical research with human subjects

Understand the ethical considerations of study design (eg, placebo, harm of intervention, deception, flawed design)

Understand the privacy rules regarding recruitment and participation of subjects in a research study and reporting the results of that study

4. Principles of Consent and Assent

Understand what constitutes informed consent in research

Understand when an exemption from review by the Institutional Review Board is permissible (eg, medical record review of de-identified data)

Understand how undue influence can affect obtaining consent for research

Understand how coercion can affect obtaining consent for research

Understand the special ethical considerations related to research utilizing children because of their inability to give informed consent

Distinguish among consent, assent, and permission in research involving children

5. Vulnerable Populations

Recognize that the definition of "children" is related to the underlying clinical intervention in the jurisdiction in which the child is located rather than a fixed nationwide notion of age

Recognize the types of protections that might be accorded to vulnerable populations (eg, incarcerated individuals, pregnant women, fetuses, children, mentally disabled individuals, educationally or economically disadvantaged)

individuals)

Understand the concept of minimal risk as it applies to research involving children

Understand the circumstances under which research that involves children and that entails greater than minimal risk may be permissible

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