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# CHAPTER 6 – DYSFUNCTIONAL PROBLEMS OF CHILDHOOD

*First Nations and Inuit Health Branch (FNIHB) Pediatric Clinical Practice Guidelines for Nurses in Primary Care.*  
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## INTRODUCTION

These topics include a variety of physiological, psychological and social problems that may interfere with important functions of daily living. Children may have more than one of these conditions.

Assessment of these problems requires, above all, establishing a good rapport with the family and the child. Usually, the initial interview is lengthy; this is the session during which trust is established. Consider shorter, frequent assessments after the initial encounter in order to continue this rapport and to maintain good communication with the family.

The history and physical examination vary with the presenting complaint.

## COMMON DYSFUNCTIONAL PROBLEMS

### ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

A cluster of behavioural symptoms:

- Poor attention span
- Impulsiveness
- Hyperactivity

Not all children with the disorder will exhibit all three behaviours. For example, some very quiet children have a poor attention span. Children can have ADHD, the predominantly inattentive type, the predominantly hyperactive impulsive type, or the combined type.

More boys are affected than girls.<sup>1</sup>

#### CAUSES

##### **Genetic Syndromes**

- Fragile X syndrome
- Phenylketonuria (PKU)
- Gilles de la Tourette syndrome

##### **Intrauterine or Prenatal Damage**

- Fetal alcohol exposure
- Intrauterine anoxia

##### **Postnatal Factors**

- Prematurity
- Meningitis
- Significant head injuries

May be familial without a specific cause.

In most affected children, there is no obvious contributing cause.

#### HISTORY

- Prenatal: pregnancy, exposure to drugs or alcohol
- Perinatal: delivery, asphyxia, illnesses
- Family history: ADHD, related behavioural disorders, stresses
- Past medical history: illnesses such as meningitis, injuries, hospital admissions, any suspicion of psychosis
- History of school progress and behaviour (talk with teacher)
- What behaviour problems the child has and how the parents handle them<sup>2</sup>
- Symptoms usually present before child enters school
- Symptoms specific to ADHD (*see "Diagnostic Criteria"*)

**PHYSICAL FINDINGS<sup>3</sup>**

- Complete general examination: weight, height, head circumference, congenital anomalies, dysmorphic features of genetic conditions and fetal alcohol spectrum disorder
- Examine ears and check hearing
- Examine eyes and check vision
- Note child's affect, speech and behaviour (including interaction with parent and ability to play – for example, draw or play with toys)
- "Soft neurologic signs" often present (for example, increased reflexes, poor coordination, poor balance)
- Educational evaluation done through the school system

**DIFFERENTIAL DIAGNOSIS**

- Acting-out behaviour disorders
- Reaction to a highly stressful environment
- Deafness
- Pervasive developmental disorder (for example, autism spectrum disorders)
- Schizophrenia, mood disorder, anxiety disorder

**DIAGNOSTIC CRITERIA**

The current and most widely used criteria for ADHD are defined, with permission from the American Psychiatric Association, as follows:

**DSM-IV Criteria for Attention Deficit Hyperactivity Disorder<sup>1,4</sup>**

A. Either 1) or 2)

- 1) Six or more of the following symptoms of **inattention** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level:

**Inattention**

1. Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
2. Often has difficulty sustaining attention in tasks or play activities
3. Often does not seem to listen when spoken to directly

4. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
5. Often has difficulty organizing tasks and activities
6. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
7. Often loses things necessary for tasks or activities (for example, toys, school assignments, pencils, books, or tools)
8. Is often easily distracted by extraneous stimuli
9. Is often forgetful in daily activities

- 2) Six or more of the following symptoms of **hyperactivity-impulsivity** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level:

**Hyperactivity**

1. often fidgets with hands or feet or squirms in seat
2. often leaves seat in classroom or in other situations in which remaining seated is expected
3. often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
4. often has difficulty playing or engaging in leisure activities quietly
5. often talks excessively
6. is often 'on the go' or often acts as if 'driven by a motor'

**Impulsivity**

1. often has difficulty awaiting turn in games or group situations
2. often blurts out answers to questions before they have been completed
3. often interrupts or intrudes on others (for example, butts into other children's games)

- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before the age of 7.<sup>5</sup>
- C. Some impairment from the symptoms is present in 2 or more settings (for example, at school or work or at home).
- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
- E. The symptoms do not occur exclusively during the course of a pervasive developmental disorder, schizophrenia or other psychotic disorder and are not better accounted for by another mental disorder (for example, mood disorder, anxiety disorder, dissociative disorder, personality disorder).

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## MANAGEMENT

### Goals of Treatment

- Improve academic achievement
- Improve attention span
- Improve hyperactivity (behaviour)
- Improve self-esteem

Appropriate management includes the involvement of an interdisciplinary team, of which educational specialists are the mainstay. Many specific methods can be used to overcome the child's weaknesses and take advantage of his or her strengths.

The medical role involves advocacy and sometimes the administration of medication. The school and the parents or caregiver should monitor for desired effects and side effects (for example, impaired growth or tic).

### Adjuvant Therapy

#### Client Education

- Explain nature, course and treatment modalities of the disorder
- Stress importance of regular follow-up
- Counsel parents or caregiver about medication: appropriate use, dosage and side effects
- Stress the strengths of the child and family<sup>3</sup>

### Behavioural Strategies<sup>3</sup>

Counsel parents or caregiver about behavioural strategies:

- Decrease environmental stimuli
- Focus on the child's positive traits to increase self-esteem
- Give clear, simple, single-step directions
- Make eye contact with the child
- Use "time out" as a disciplinary tactic
- Reward target outcome behaviours (for example, praise, hugs, stars on a chart)

Ensure child knows acceptable and unacceptable behaviours that are measurable. A contract with the child can list these and the rewards and consequences.

### Nonpharmacologic Interventions

- Support for the family
- Advocacy within the educational system and within the community

### Pharmacologic Interventions

Drug of choice:

methylphenidate (for example, Ritalin), starting dose 2.5–5 mg per dose morning and noon; the dose can be increased by 0.1 mg/kg/dose or by 5–10 mg/day at weekly intervals. The usual dose is 0.15–1 mg/kg/day or 10–60 mg/day in 1–3 divided doses, depending on response and formulation used<sup>6,7</sup>

This drug is not recommended for children < 6 years of age.

This drug can improve concentration and, in higher doses, reduce hyperactivity. Its use is associated with potentially serious adverse effects and it should be prescribed only by a physician after a full evaluation.

### Monitoring and Follow-Up

- Follow up 2 or 3 times a year with the child and the parents or caregiver to assess progress and provide support. Follow up more often when the child is initially started on medications. Follow up 4 times a year once the medication dosage is stable
- Monitor medication use, dosage and side effects
- For children on methylphenidate monitor symptoms, weight, height, blood pressure and response to medication<sup>8</sup>
- Liaise annually with the school (with parental consent)

**Referral**

- Refer the child to a physician for thorough medical evaluation as soon as possible if ADHD is suspected and particularly if nonpharmacologic and adjuvant therapies do not work
- A baseline assessment by a pediatric developmental specialist may be indicated

## FETAL ALCOHOL SPECTRUM DISORDER

A range of adverse sequelae in infants exposed to alcohol in utero, including fetal alcohol syndrome, partial fetal alcohol syndrome, alcohol-related birth defects and alcohol-related neurodevelopmental disorder. These children are at risk for neurodevelopmental (for example, motor, speech), psychological and behavioural problems. School-aged children not previously identified may present with learning problems and/or behavioural concerns.<sup>9</sup> The range of disability varies, even for those with a diagnosis of fetal alcohol spectrum disorder (FASD). FASD is disabling but preventable.

**CAUSES**

Alcohol is a known physical and behavioural teratogen that can cause birth defects by affecting the growth and proper formation of the fetus's body and brain.

There is no definitive information as to the quantity of alcohol that may be safely consumed during pregnancy.

Older maternal age, high parity and being Native American, along with maternal genetic factors seem to increase the risk of the offspring developing FASD. A potentially greater detrimental effect has also been observed after binge drinking during pregnancy when compared with the same amount consumed spread over time. Children born to mothers who consumed on average one or two drinks per day and who may occasionally have consumed up to five or more drinks at a time are at higher risk for learning disabilities and other cognitive and behavioural problems. Moderate maternal alcohol intake in early pregnancy does not seem to directly affect future IQ.<sup>10</sup> However, the Society of Obstetricians and Gynaecologists of Canada<sup>14</sup> recommends abstinence prior to and during pregnancy because there is insufficient evidence regarding fetal safety or harm with even low levels of alcohol consumed in pregnancy.

**RISK FACTORS<sup>11,14</sup>**

Those women at high risk for having a child with FASD drink alcohol and have the following characteristics:

- Lower socioeconomic status
- Reduced access to prenatal and postnatal care
- Lower education level
- Smoker
- Use of other illicit drugs
- Inadequate nutrition
- Higher or younger maternal age
- Live in a poor developmental environment (for example, stress, abuse, neglect)
- Partner using alcohol and/or drugs during the pregnancy
- Single or unmarried woman

Recent research suggests women who have a college education or are still students, who are unmarried, who smoke and who come from households with an annual income of more than \$50,000 are also at risk of having a baby with FAS.

**DIAGNOSTIC CRITERIA<sup>12</sup>**

Abnormalities related to prenatal exposure to alcohol occur along a spectrum of disorders. Many terms have been and are still used to describe the severity of these alcohol-related abnormalities. The following criteria for diagnosis utilize Canadian Guidelines and are only applicable if other diagnoses are excluded.

**Fetal Alcohol Syndrome (FAS)**

- Evidence of prenatal or postnatal growth impairment in at least 1 of the following:
  - Birth weight or birth length at or below the 10th percentile for gestational age
  - Height or weight at or below the 10th percentile for age
  - Disproportionately low weight-to-height ratio (= 10th percentile)
- Simultaneous presentation of all 3 of the following facial anomalies at any age:
  - Short palpebral fissure length (2 or more standard deviations below the mean)
  - Smooth or flattened philtrum (rank 4 or 5 on the lip-philtrum guide)
  - Thin upper lip (rank 4 or 5 on the lip-philtrum guide)

- c) Evidence of impairment in 3 or more of the following central nervous system domains:
- Hard and soft neurologic signs; decreased cranial size at birth; brain structure; cognition; communication; academic achievement; memory; executive functioning and abstract reasoning; attention deficit/hyperactivity; adaptive behaviour, social skills, social communication
- d) Confirmed or unconfirmed maternal alcohol exposure.

### **Partial Fetal Alcohol Syndrome**

- a) Simultaneous presentation of 2 of the following facial anomalies at any age:
- Short palpebral fissure length (2 or more standard deviations below the mean)
  - Smooth or flattened philtrum (rank 4 or 5 on the lip-philtrum guide)
  - Thin upper lip (rank 4 or 5 on the lip-philtrum guide)
- b) Evidence of impairment in 3 or more of the following central nervous system domains:
- Hard and soft neurologic signs; decreased cranial size at birth; brain structure; cognition; communication; academic achievement; memory; executive functioning and abstract reasoning; attention deficit/hyperactivity; adaptive behaviour, social skills, social communication
- c) Confirmed maternal alcohol exposure.

### **Alcohol-related Neurodevelopmental Disorder**

- a) Evidence of impairment in 3 or more of the following central nervous system domains:
- Hard and soft neurologic signs; decreased cranial size at birth; brain structure; cognition; communication; academic achievement; memory; executive functioning and abstract reasoning; attention deficit/hyperactivity; adaptive behaviour, social skills, social communication
- b) Confirmed maternal alcohol exposure.

### **Alcohol-related Birth Defects**

#### **Cardiac**

- Atrial septal defects
- Ventricular septal defects
- Aberrant great vessels
- Tetralogy of Fallot

#### **Skeletal**

- Hypoplastic nails
- Shortened fifth digits
- Radioulnar synostosis
- Flexion contractures
- Camptodactyly
- Clinodactyly
- Pectus excavatum and carinatum
- Klippel-Feil syndrome
- Hemivertebrae
- Scoliosis

#### **Renal**

- Aplastic, dysplastic, hypoplastic kidneys
- Horseshoe kidneys
- Ureteral duplications
- Hydronephrosis

#### **Ocular**

- Strabismus
- Retinal vascular anomalies
- Refractive problems secondary to small globes

#### **Auditory**

- Conductive hearing loss
- Neurosensory hearing loss

### **MANAGEMENT**

#### **Appropriate Consultation**

Consult a physician as soon as possible about any child suspected of suffering the effects of alcohol in utero. Early diagnosis and interventions are important.

#### **Referral**

The care of a child with FASD requires a coordinated, multidisciplinary, team approach to maximize the child's potential for optimal quality of life. This includes at least the nurse, teacher, parents, psychologist, and physician. Parents should be referred for help in managing FASD related behaviours.

There is a small window of opportunity, up to age 10 or 12, to achieve the greatest benefit for a child affected by alcohol in utero. This is the period when the greatest development of fixed neural pathways occurs, and thus when it is easiest to develop alternative coping pathways to work around damaged areas of the brain. Therefore, if FAS is suspected in a child, the child should be referred for treatment even if a definitive diagnosis has not been made.

### Prevention

Pregnancy presents the health care professional with an excellent opportunity to encourage behavioural change, as women are generally receptive to suggestions about controlling their alcohol consumption during pregnancy.

According to the Canadian Paediatric Society<sup>13</sup> and the Society of Obstetricians and Gynaecologists<sup>14</sup> of Canada, prevention efforts should target women before and during their childbearing years, as well as those who influence such women, including their partners, their families and the community. All efforts should be family-centred and culturally sensitive; should address the child bearing aged female<sup>14</sup>, pregnant woman, her partner and her family in the context of their community; and should be comprehensive, drawing on all services appropriate to the often-complex social, economic and emotional needs of these women.

The Canadian Paediatric Society<sup>13</sup> also recommends that health care professionals working with members and leaders of communities must be consistent in advising women and their partners that the prudent choice is not to drink alcohol during pregnancy.

### Primary Prevention

Become involved in educating women, their partners and the community in general about FAS and the adverse effects of alcohol on a fetus.

Goals of primary prevention:

- Early recognition of women who drink alcohol during pregnancy
- Appropriate counselling to reduce or eliminate alcohol use before conception and during pregnancy
- Early recognition and intervention for any child born with alcohol-related effects

Ask all female clients of childbearing age some basic questions about alcohol consumption, even if they are not pregnant<sup>14</sup>:

- Do you use alcohol?
- Has alcohol ever caused a problem for you or your family?
- Do you regularly use any other drugs or substances (for example, illicit drugs, prescription or over-the-counter drugs)?

Discuss contraceptive methods with women and their partners and enhance access to contraception.

Encourage awareness of and access to community resources for alcohol abuse. Be aware of, use, and offer educational handouts on the effects of alcohol in pregnancy.

### Secondary Prevention

According to the Canadian Paediatric Society<sup>13</sup> and the Society of Obstetricians and Gynaecologists of Canada<sup>14</sup>, health care professionals play an essential role in identifying women who drink at levels that pose a risk to the fetus and to themselves. Screening should be implemented to identify women at high risk for heavy alcohol consumption before and during pregnancy. Similarly, health care professionals have a responsibility to inform women at risk and to initiate appropriate referrals and supportive interventions.

To identify any woman who is using alcohol during pregnancy, screen all pregnant women with basic questions about their alcohol use (*see “Primary Prevention”*). If the woman answers “Yes” to any of those questions, pose some additional screening questions to assess her level of risk:

- In a typical week, on average, how many days do you drink?
- On those days, how many drinks do you usually have?

In addition, administer a standard screening test, such as the **T-ACE** questionnaire:

- **T for tolerance:** How many drinks does it take to make you feel high? (score 2 for more than 2 drinks, score 0 for 2 drinks or less)
- **A for annoyance:** Have people annoyed you by criticizing you about your drinking? (score 1 for a Yes response)
- **C for cut down:** Have you felt you should cut down on your drinking? (score 1 for a Yes response)

- E for **eye opener**: Have you ever had a drink first thing in the morning to get rid of a hangover or to steady your nerves? (score 1 for a Yes response)

### **Any score $\geq 2$ indicates high risk**

For women identified as being at high risk of having a child with FAS, take the following steps:

- Ask such women why they drink
- Counsel pregnant women who are using alcohol about the effects of alcohol on the fetus and their own health
- Counsel pregnant women on the benefits of stopping or reducing the use of alcohol at any time during the pregnancy
- Provide client with educational materials to facilitate behavioural change
- Follow up closely, and provide support and encouragement

The Canadian Paediatric Society<sup>13</sup> recommends that health care professionals inform women who have occasionally consumed small amounts of alcohol during pregnancy that the risk to the fetus in most situations is likely minimal. They should also explain that the risk is related to the amount of alcohol consumed, body type, nutritional health and other lifestyle characteristics of the expectant mother. If exposure has already occurred, health care professionals should inform the mother that stopping consumption of alcohol at any time will benefit both fetus and mother.

### **Tertiary Prevention**

- Strategies should include early diagnosis of the condition and programs designed specifically for children with FASD and their parents or caregivers to prevent secondary problems like school failure, loss of self-esteem, frustration, and acting out
- Refer women who are at high risk to appropriate treatment resources for alcohol abuse
- Identify and treat women and their partners who already have one FASD child and who plan to have more children

## **LEARNING DISABILITIES**

Inability to process language and its symbols or lack of arithmetic-related skills at a level equal to peer group.

Affected children usually suffer from a learning disability in a specific area and are normal in all other areas of development.

### **Causes**

Specific learning disabilities are generally thought to be biologic in origin, although the exact mechanisms and biology have not yet been determined.

Major psychiatric disturbances, familial dysfunction with a long history of intrafamilial stress, social deprivation or loss of vision or hearing can also produce poor learning skills and must be differentiated from specific disabilities.

### **History**

- Medication use: decongestants, anticonvulsants
- Current and past behaviour and school performance (look for specific patterns and for hyperactivity, which is often associated with a learning disability)
- Toxic exposure during pregnancy (for example, alcohol)
- Perinatal history (perinatal asphyxia or intrauterine injury may play a role in some cases), prematurity
- Family history (such disorders often run in families)
- Early development: recognition of risk factors such as delayed language development
- Social, environmental, family and social factors that may aggravate the problem (for example, dietary history or constant derision, which may lead to low self-esteem)
- History of meningitis, head trauma and/or recurrent ear infections
- Any evidence of poor vision or hearing

**Physical Findings**

Most aspects of the examination required to define a specific learning disability are performed by a psychologist and education specialists.

Perform a physical examination to rule out the following conditions:

- Hearing and vision problems
- Medical problems
- Fetal alcohol spectrum disorder
- Maltreatment
- Iron deficiency anemia
- Neurologic abnormality

**DIFFERENTIAL DIAGNOSIS**

- Poor school performance (common)
- Poor motivation (family disorganization)
- Global developmental delay (intellectual disability)
- General learning problem
- Depression
- Sensory disorders (for example, hearing loss secondary to otitis media)
- Cerebral palsy
- Autism spectrum disorders (pervasive developmental delays)

**MANAGEMENT****Nonpharmacologic Interventions**

- Advocate for the child in the education system
- Support the child's self-esteem
- Support child and parents or caregiver with behavioural strategies in conjunction with psychological counselling and education

**Monitoring and Follow-Up**

- Follow up two or three times a year with the child and the parents or caregiver to assess progress and provide support
- Liaise annually with the school (with parental consent)

**Referral**

- Management of learning problems is usually done through the education system
- Refer the child to a physician for a thorough medical evaluation as soon as possible (elective)
- A baseline assessment by a pediatric developmental specialist may be indicated

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