Child sexual abuse is a worldwide concern. It is an insidious, persistent, and serious problem that, depending on the population studied and definition used, affects 2-62% of women and 3-16% of men as victims. Pain and tissue injury from child sexual abuse can completely heal in time, but psychological and medical consequences can persist through adulthood. Associated sexually transmitted diseases (such as HIV) and suicide attempts can be fatal. All physicians who treat children should be aware of the manifestations and consequences of child sexual abuse, and should be familiar with normal and abnormal genital and anal anatomy of children. This aim is best accomplished through training and routine examination of the anus and genitalia of children. Because as many as 86% of children assessed for suspected sexual abuse will have normal genital and anal examinations, a forensic interview by a trained professional must be relied on to document suspicion of abuse.

Definiton

Unlike physical abuse, where personal experience and economic issues and varying opinions about the usefulness and danger of corporal punishment may cloud the definition, the definition of what acts constitute child sexual abuse is rarely debated. Such abuse can be defined as any activity with a child before the age of legal consent that is for the sexual gratification of an adult or a substantially older child. These activities include oral-genital, genital-genital, genital-rectal, hand-genital, hand-rectal, or hand-breast contact; exposure of sexual anatomy; forced viewing of sexual anatomy; and showing pornography to a child or using a child in the production of pornography. Viewing or touching of the genitalia, buttocks, or chest by preadolescent children, separated by no more than 4 years of age, in which there has been no force or coercion, is termed sexual play.

Incidence and prevalence

The numbers of children who are sexually abused are unlikely ever to be known. There are several reasons why all instances of abuse are not recognized or reported. Young or handicapped children might not have adequate communication skills to report an event or provide details. A child might not recognize an action as improper; this lack of recognition is more likely if a female caretaker is the perpetrator. Children and adults may forget or repress unpleasant memories or co-operate with demands for secrecy. Countries with limited economic resources may not be able to manage all reports of suspected child sexual abuse or to collect and report data. Reports of adult rape, non-consensual sex in marriage and dating, and child sexual abuse may mingle the data. In a study of rape and sexual coercion in South Africa, forced sexual initiation was reported by "almost a third" of adolescent girls. The prevalence of children involved in child prostitution is unknown, but between 1 million and 10 million children are estimated to be involved.

In a report from Greenland, the incidence of child sexual abuse was 8% in women and 3% in men. A review of reports from Europe indicated "an incidence of sexual abuse experience" in 6-36% of girls and 1-15% of boys younger than 16 years. Differences in definitions and data-gathering techniques, including age of individuals surveyed in Europe, might account for the wide range of numbers and preclude a satisfactory search strategy and selection criteria

The information for this review article was obtained from a search of PubMed using the keyword "sex abuse" restricted only to articles involving human beings. This preliminary search selected 10,606 references. The first 500 abstracts, beginning with the most recent, were culled for appropriate articles involving children or the consequences to adults who experienced child sexual abuse. The second search of PubMed was restricted to articles involving human beings, the period of Dec 1, 2000, to Dec 1, 2002, and children aged 0-18 years. This resulted in 763 articles, of which 582 had abstracts. All 582 abstracts were reviewed, culled, and filed by major topic. To further assure that all critical articles were included, the past 5 years' publications of Child Abuse Quarterly, which reviews pertinent articles from the world's literature, were reviewed, as was the index of the years 2001 and 2002 of the monthly journal Child Abuse and Neglect, to ensure that articles that might not have been entered into the PubMed library were reviewed. Finally, information from a recently published article reviewing 10 years of research in child sexual abuse was incorporated into the text.
comparison with similar data from North America. For example, 33.8% of female and 10.9% of male adolescent respondents in classrooms in Geneva reported experience of at least one sexually abusive event. Physical contact was involved for 20.4% of girls and 3.3% of boys.

Incidence reports in the USA come from agencies that are mandated to receive reports and protect children. All US states that receive funds from the Federal Government are required to provide data about maltreated children. In 2000 a record number of 34 states submitted data representing 78.1% of the child population of the USA. From these data, 879,000 children were estimated to have been maltreated. Of the total, 10.1% were sexually abused, representing 1.7 victims per thousand girls and 0.4 victims per thousand boys. After a rise in reports through 1995, which began in 1992, a downward trend followed until 1999. Reasons for this decrease and the slight increase in 2000 are being debated. Reports from agencies in the county of Copenhagen, Denmark, in 1998, indicated 0.7 cases of child sexual abuse per thousand children; the incidence of all abuse had fallen from 2.7 per thousand in 1993 to 2.1 per thousand. Age and sex of the children were not indicated due to variations in reports.

Violence may exist in a continuum from childhood. Of 395 women in a community-based sample in Melbourne, Australia, 42.3% had experienced non-contact sexual abuse as a child and 35.7% had experienced contact sexual abuse. Of these women, 28.5% reported physical, sexual, or emotional domestic violence as adults, and 11.8% reported that they had been victims of attempted rape since the age of 16 years.

One approach to determining prevalence is through surveys of adults. In Europe 10–20% of women, and 3–10% of men surveyed have experienced sexual abuse before the age of 18 years. Of 930 San Francisco women surveyed in 1983, 54% reported being sexually abused before age 18 years. The prevalence rates for women from a national sample ranged from 15% to 32% depending on the definition.

**Consequences of child sexual abuse**

The consequences of abuse are both psychological and physical (table). Damaged tissue is likely to heal without scarring or other traces of healing, but psychological consequences may persist. Pregnancy and some sexually-transmitted diseases result in lifelong effects, some of which can be life-threatening; subsequent suicide attempts and psychological consequences such as post-traumatic stress disorder may be just as serious.

**Psychological consequences**

Child sexual abuse can have both immediate and long-term adverse psychological effects that carry over into adulthood (table). Perpetrators may rationalise their behaviour by suggesting that the child enjoyed the experience or seduced them. The wide range of serious long and short term consequences of child sexual abuse, and the need to prevent reactive abuse (abuse of other children by a victim of abuse), is one reason why all children who are suspected of being sexually abused should be referred for psychological assessment and treatment. Other psychological consequences, such as depression, interfere with quality of life. The child who reacts to abuse by physically or sexually abusing other children may be incarcerated, which in turn could have harmful results. The behavioural consequences of sexual abuse are affected by the child’s age, development, physical acts performed, threats and bribes, fear of retribution, fear of culpability, chronicity of acts, child’s resilience and relationship to the perpetrator, and effective treatment.

**Recognising behavioural consequences**

Goethe said “we see what we look for; we look for what we know”, and observation has implications for recognising the psychological as well as the physical consequences of child sexual abuse. Physicians dealing with adults whose condition is associated with a history

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<th>Child</th>
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<tr>
<td>Academic performance poor</td>
<td>Adjustment problems (male)</td>
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<td>Anxiety*</td>
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<td>Behavioural or psychological problems</td>
<td>Attention deficit*</td>
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<td>Depression*</td>
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<td>Distress*</td>
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<td>Suicide or suicide attempts*</td>
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*Some studies were unable to distinguish the effects of physical abuse from those of child sexual abuse due to their coexistence. To account the combined effects of poverty, unemployment, alcohol and drug abuse, and other social problems from those of child sexual abuse may not be possible.

Table: Some behavioural consequences of child sexual abuse
of child sexual abuse (table) may fail to ask about the abuse if they are unaware of the association or are uncomfortable asking such questions. A review of children's sexual experiences should be a routine part of the medical history, and should be mandatory if the child is reporting symptoms relating to the genitalia or anus or has sexual acting-out behaviour.

As with suspected physical abuse, these questions are best asked when the child is separated from the parent or caretaker. Various behavioural problems have been associated with child sexual abuse, none of which (including sexual behaviour problems) are specific for or diagnostic of such abuse. Sexual behaviour problems may increase professional suspicion, especially if the child performs or requests advanced sexual acts; however, without a history from the child, suspicious physical findings, or laboratory evidence, a report of suspected child sexual abuse is not indicated. These children should be referred for behavioural therapy. In time, as trust is built with a therapist, a history of child sexual abuse may surface.

Physical consequences
A careful or experienced perpetrator of child sexual abuse is unlikely to perform an act that will result in his or her detection. Immediate suspicion or detection is more probable if the child has intense and persistent pain, obvious tissue injury, or bleeding, unless the perpetrator is able to keep the trauma from being discovered. A child who is injured may be kept away from school or school or other adult caretakers until healing occurs. Some types of abuse, such as exhibitionism, voyeurism, viewing or creating pornography, touching, and licking, may not result in physical findings. Fraternal caused by rubbing will resolve in minutes to hours unless the skin is excoriated. Minor abrasions of mucous membranes may not be detectable.

Of great concern is the persistent lack of knowledge that physicians have shown about normal and abnormal female genitalia (figure). Misinterpretation of findings can lead to a mistaken report of physical trauma, or to failure to recognise trauma. Emergency room physicians should be skilled in the preadolescent female genital examination and anal examinations. When children seen by emergency room physicians who found no evidence of trauma were re-examined a mean of 2.1 weeks later, 17% were found to have clear evidence of abuse.

Normal and abnormal anatomy
Standards for what constitutes normal anatomy and consequences of trauma are still being debated. Some physical findings that were considered abnormal in the past, such as denti and bumps on the hymen, have been found to be normal. The transverse diameter of the hymen is significantly increased in girls who have been sexually abused compared with those who have not, but there is "significant overlap between the two groups to obviate its diagnostic utility." Anatomical features of the hymen that are thought to suggest penetration include narrowing of the posterior rim to less than 1 mm and complete hymenal clefs between 5 and 7 o'clock. Findings after penetration are hymenal fossa or fourchette, tears or transection. Neisseria gonorrhoea and deep lacerations to the anal sphincter are considered "diagnostic" of penetration by an object. Healing of a tear may be complete or result in hymenal clefs (figure) or v-shaped notches that approach the floor of the vagina below 3–9 o'clock. 77% of experts judge this finding to be due to possible trauma or sexual contact. Reviews by experts of physical findings seen by novices through referral or review of photographs sent by mail or the internet contributes to the creation of consensus and decreases the possibility of error. Tears of the anus may result from the insertion of blunt objects that are larger than the anal sphincter. There are no standards for anal opening size—this determination must be made on the basis of clinical knowledge of usual stool consistency and diameter; tears can also be caused by large and hard stools leaving the anus. This association

Figure: Normal and damaged hymen
(A) Normal hymen of preadolescent (5-year-old) girl. Note the delicate hymen membrane has a right and left wall and base. Trauma to the hymen generally causes tears in the 3 to 6 o'clock position. With menstruation, the hymen thickens and becomes redundant (swollen) so that examination of the edge requires manipulation of the hymen with a moist cotton swab or insertion of a Foley catheter that is inflated and pulled back against the hymen to assure continuity of the hymen edge. (B) Complete tear of the hymen (arrow). Some oestrogen effect is seen as white thickening of the hymen. The hymen is torn to the floor of the vagina. (C) Healing tear in the hymen (arrow). A tear in the hymen has healed with a U-shaped notch. Shallow U-shaped indentations in the hymen are normal. The traumatised hymen may heal completely over a few weeks to months. (D) Acute hymen tear. This 51-year-old girl has sustained penetration of the hymen, which is torn to the floor of the vagina. Blood is seen coming from the hymen walls and vaginal floor. This trauma may heal completely over time, or a V-shaped notch may remain in the hymen edge.
is further complicated by the possibility that sexual abuse may cause constipation, which can also cause anal fissures.

Recognition of pathology should begin with familiarity with normal anatomy. Physicians dealing with children should recognise normal genital and anal anatomy, examination techniques, diseases that may be mistaken for child sexual abuse, including causes of genital bleeding and other manifestations of genital and anal trauma. Familiarity with the diagnostic significance of findings is also necessary. Education about these issues should begin in medical school, and should continue with peer review throughout the paediatric practitioner's career. All complete physical examinations of children should include routine inspection of the anus and genitalia. This process, beginning with well baby examinations, should make it easier to do future examinations of the patient, improve familiarity with normal findings (figure), and increase diagnostic ability and certainty.

Findings such as notches and hymen narrowing are more significant if noted after a previous normal examination. Findings of female genital examination are affected by the age of the child and the examination technique used. Traction on the labia majora to expose the contents of the vestibule can affect the size and shape of the hymen. The hymen shape may also vary in the knee-chest and frog-leg positions. It is recommended that hymen abnormalities suspected in the frog-leg position be verified by examination in the knee-chest position, since the effect of gravity may facilitate a better view of the hymen walls. Physicians who are unfamiliar with the examination should have any suspected abnormal findings verified by an experienced examiner.

The physician's role

The primary care physician is often the first professional from whom a concerned caretaker requests consultation about possible child sexual abuse. Disclosure of abuse requires access to a trusted adult. Before entry into preschool, the physician may be the only professional who has isolated contact with the child. Some children who are abused may not disclose the event until a later time when they feel safe and protected. This delay, along with healing, can account for the absence of physical findings seen in association with detailed histories, and increases the need for forensic interviewing skills to gather the history, to ensure that the abused child is protected and receives therapy. The physician who is trained in relevant forensic interview techniques and the physical examination may feel comfortable in performing an assessment. This process takes 1-2.5 hours in a multidisciplinary diagnostic clinic where the participation of children's services, mental health, law enforcement, and prosecutors are present to reduce the need for repeated interviews of the child.

Few private practitioners are able to make space in their schedule for this forensic assessment. To protect from further abuse and to reduce recantation due to threats or bribes, it is necessary to see the child as soon as possible. The rapidity with which injuries heal and the need to collect forensic evidence make referral for an emergency assessment imperative if the event occurred within 72 hours. The vagaries of when the physician must appear to answer a subpoena make this eventuality a challenge to patient scheduling. Court appearances are the most stressful aspect of abuse assessments, according to emergency room physicians and specialists in the field.

Any statements made by a child about sexual abuse during a medical assessment should be recorded. Questions about what, who, when, how often, threats, and bribes must be open-ended. Visual and auditory recording of interviews provide documentation of the questions and answers. A record of questions asked might be of interest to a defence attorney attempting to imply that the physician may have unintentionally prompted the child. The ability to use recordings of child sexual abuse interviews in the courtroom varies from court to court, and from county to county in the USA. A complete medical and social history and physical examination should be undertaken due to the association of physical abuse and neglect with child sexual abuse. A detailed family history is likely to reveal a history of sexual abuse of a parent, substance abuse, mental illness, or domestic violence in about 30% of caretakers. Sexual abuse may be one of many issues that need professional attention.

All information gathered about the abuse should be legibly recorded in a manner designed to communicate all necessary information to lay people, to assure completeness, and to provide a source for research and accountability. A detailed printed form eliminates the need for memory recall and reduces the chance that a court appearance will be needed, by increasing the possibility of a plea bargain or confession. Photographs of abnormalities taken by a colposcope or macro-lens camera should be supplemented by drawings.

Children who are familiar with the examiner may be more cooperative for the genital examination. The colposcope used in most diagnostic centres for child sexual abuse provides magnification, ample lighting, and photo-documentation of the examination. Additionally, a child may be entertained or distracted by the television screen showing their examination. Physicians isolated in small communities may benefit from online consultation via telemedicine. The physician should obtain cultures for sexually transmitted diseases in children reporting genital-genital or genital-anal contact, especially if there are signs of infection. In Ohio, a telephone report is followed by a more detailed written report in 72 hours. Children's services should investigate all allegations.

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within 24 h or sooner, depending on risk factors for re-abuse or threats to the child. Children seen in a multidisciplinary centre who have representatives from children's services can be immediately protected by a request for an emergency court order. There should be no delay in seeking protection for the child suspected of being abused. It may be dangerous for a child to return to a home where the perpetrator has access to the child.

Court appearances
Physicians are not eager to appear in court, even if the appearance is to obey moral and legal directives aimed at protecting children. The physician testifying for the child may be the only physician in the courtroom; it is imperative that he or she prepares to testify as a content expert and teacher to a lay audience. Experts are familiar with published work and are more likely to believe children than are non-experts. Studies of college students indicate that they have misperceptions about perpetrators. Drawings and models, which increase knowledge and understanding of judges and juries, are indispensable when testifying. Meeting with the prosecutor before appearing in court is of value to the physician and prosecutor. The physician also may need to educate the prosecutor regarding the medical evidence. The physician should avoid responding to questions about the "credibility" of the child, since this issue is what the court is determining. Answering such a question could result in a mistrial.

In most of the USA, the physician may testify for the child due to the hearsay exception, which is based on the legal assumption that patients do not lie to physicians. This exception is valuable when the child cannot or will not testify on their own behalf.

Who is likely to sexually abuse a child?
National USA statistics indicate that "father only" and "other relatives" were responsible for 21.5% and 19.4% of sexual abuse victims, respectively. Other perpetrators were responsible for 24.9% of victims. Parents were the perpetrators of 45.3% cases of child sexual abuse. Mothers acting alone or with another person represented 3.9% and 7.9% of perpetrators, respectively. Both parents were perpetrators in 8.1% of reported cases. Day-care providers were perpetrators in 2.7% of cases. Of the perpetrators, 6-6% were younger than 20 years and 45-2% were 20-39 years of age. Only 7.2% were older than 49 years. The rate of child sexual abuse was 1.7 per thousand for girls and 0.4 per thousand for boys.

The severity of consequences for the child is not affected by the age or sex of the perpetrator, but are influenced by the sex of the victim and by culture.

These facts about perpetrators present challenges in prevention. How can children be trained to recognise and report abuse when the perpetrators are likely to be trusted caretakers, such as parents, priests, aid workers, hospital workers, and educators? Because women who have been sexually abused may have problems with self esteem (table) they might be more likely to unwittingly bring supportive individuals into their home who are potential abusers. Incarcerated perpetrators report that they seek children who are available, easily manipulated, and have desirable physical attributes. These children are likely to be found in single parent homes and to be alone and lonely. Perpetrators find vulnerable children in playgrounds, at family events, and near the perpetrator's home. They claim to prefer seduction and gaining trust over coercion by becoming the child's friend, playing games with them, and offering them gifts ranging from money and toys to beer and cigarettes. The most common threats include hitting and hurting loved objects. Less common threats involve the use of guns or hurting loved ones. Another group of perpetrators, whose average age was 41 years, were in treatment, special hospitals, on probation, or in jail when interviewed. Of the group, 48% were married; 93% had child victims only; 58% targeted girls only; 57% attempted or completed intercourse, and eight murdered a child. They targeted prety (42%), young or small (17%), innocent and trusting (13%) children who lacked confidence and self esteem (49%). Primarily they found the children in public places frequented by children (35%) or in the child's home (33%) and abused them in the perpetrator's home (61%) and child's home (40%). They used play (53%), babysitting (48%), bribes (46%), affection, and understanding and love (30%) to gain trust. Sexual abuse began with genital touching and kissing (40%), asking the child to undress or lie down (32%), or sex talk (28%). The perpetrators described techniques used to maintain the relationship, and to "dismobilize" the child through the use of drugs, alcohol, or pornography.

Controversy in child sexual abuse
Because of the overlap between sexual abuse, physical abuse, psychological maltreatment, and comorbid conditions such as poverty, it is difficult to ascertain which factors are the main causes of the consequences listed in the table. An article found little relation between child sexual abuse and adverse consequences was criticised for numerous problems in design and analysis, and the critiques were answered. One study of functional bowel disorders did not find an association with child sexual abuse but rather with family violence, the parents' history of maltreatment, mental illness, and substance abuse, and social risk factors such as poverty.

The historical information needed by social services and law enforcement to act on a report should not vary from county to county. There is a need to know about what happened, how often it happened, who
perpetrated the events, the existence of witnesses and other victims, threats and bruises. Interviewers must avoid identifying with suspected victims and maintain objectivity. Because of developmental and cultural variables, there is no standard or ideal way to interview a child. Individuals who are trained in the process and comfortable when speaking to children should undertake the interview. Children’s ability to recall information or be prompted is a topic for continuing research. More has been written about the ability of adults to recall painful childhood events especially during therapy and “false memory syndrome.”

When the allegations are made in the context of divorce, issues of prompting are more likely to arise. The separation in divorce and the possibility of prompting by a caretaker is raised may provide a child with severity and the ability to disclose. There is a strong need to overcome reliance on the physical findings, especially hymenal diameter to pursue child protection or prosecution. Of 2384 children referred for possible sexual abuse over a 5-year period, 4% had abnormal examinations. This finding emphasizes the importance of skilled forensic interviews in suspected abuse.

Definitions of child sexual abuse are complicated by terms such as “consensual sex.” Child sexual abuse is an international problem requiring universal definitions and prevention efforts. Early reports of child sexual abuse came from the USA, the UK, and Australia. Reports published in the last 2 years have come from all those countries that have begun to study the problem such as South Africa, Sweden, Palestine, China, Goa, Philippines, Hong Kong, Mexico, Switzerland, Ireland, and, in association with war, in Sierra Leone. Research is providing more information about violence towards women and children, including rape in war and child prostitution. Studies of child sexual abuse in the past 10 years have focused on epidemiology, risk factors, outcomes, psychopathology, psychology, prevention, and treatment. There is a need for further research on normal sexual behaviour in children. Despite studies of the relationship between culture and maltreatment published over the past 20 years, there is a need for continued research.

Prevention
To be effective, prevention efforts should begin with education in childhood that continues through high school. Such efforts must not focus on the child, who may be unable to prevent abuse because of size differences, trust, training to obey adults, and naivety about sex. Child victims and perpetrators must receive treatment. Reporting behaviour to proper resources should be encouraged. Prevention of child sexual abuse should begin in the office of the physician managing pregnancy. Various detectable risk factors, such as a parental history of child sexual abuse, can affect the future infant. Screening for child sexual abuse should continue through childhood in the physician’s office, at home and within the school system. Particular attention should be given to children with developmental, behavioural, or medical problems, who may be at increased risk of abuse. All parents and children should receive effective prevention education. Parents must screen what their children view on television and the internet and should be informed of the location of sex offenders in their community.

Physicians should be convinced that recognizing and reporting child sexual abuse, or tertiary prevention, is the most effective means of prevention of re-abuse (in childhood or adulthood), reactive abuse, and pederophilia. If there are any means to prevent the acute and long-term adverse consequences of this pervasive condition they should be aggressively pursued by professionals, general society, and its governments.

Conflicts of interest statement
None declared.

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