
Clinical Notes

Nouvelles en recherche clinique

Note From the Editor: *In this section we are featuring overviews of related clinical topics of interest. The overviews were first published in a provincial publication which is described in the following introduction.*

The *Alberta Child Development Newsletter* is a multidisciplinary newsletter for professionals working with children with disabilities. The initial two issues were the result of cooperation between the Faculty of Rehabilitation Medicine at the University of Alberta, the Glenrose Rehabilitation Hospital, and the Alberta Education Response Centre. The Children's Health Centre awarded the editorial board a grant to help offset production costs for a one year period. The advisory board now consists of representatives from Alberta Education, Faculty of Rehabilitation Medicine, City of Edmonton Community and Family Services, Glenrose Rehabilitation Hospital, and the University of Alberta Centre for Developmental Disabilities.

The newsletter provides current information on a relevant topic in four areas: information from the literature; local Alberta resources; practical advice for parents and/or teachers; and a bibliography of resources. Most of the information relates to children 10 years of age or younger. Literature from a wide variety of disciplines is surveyed in preparation for writing the newsletter.

There is no copyright associated with the newsletter. Readers are free to make photocopies of the newsletter or copy the sections on tips for parents or teachers to distribute or post. Our goal is to make current information readily accessible in an easy-to-read brief format. A copy of each issue is sent to the editor of various professional newsletters so that their readers can be informed of its availability. The *Alberta Child Development Newsletter* was included with the SHAA newsletter for a one year period.

The first issue of the four-page newsletter focused on self-injurious behaviour. Subsequent issues have dealt with middle ear infections, sleep disorders, school injuries, preventive dental care, brain injuries, enuresis, and challenges for daily living. If there are specific topics which you would be interested in having addressed in future issues, please contact me at (403) 492-0402. We would like your suggestions of topics which are of relevance to a wide range of Alberta professionals. At present the board is seeking support for specific issues of the newsletter and applying for a second grant.

Joyce Magill-Evans, Ph.D.

Note de la rédaction: *Dans cette section nous présentons un panorama de sujets qui présentent un intérêt d'ordre clinique. Nous reproduisons ici une série d'articles publiés dans un bulletin provincial décrit dans le texte d'introduction qui suit.*

Le Alberta Child Development Newsletter est un bulletin multidisciplinaire à l'intention des professionnels qui travaillent auprès des enfants handicapés. Les deux premiers numéros ont été le résultat d'une collaboration entre la Rehabilitation Medicine, Faculty de l'Université de l'Alberta, du Glenrose Rehabilitation Hospital et du Alberta Response Centre. Le Children's Health Centre a accordé une subvention à l'équipe éditoriale pour aider à défrayer les coûts de production pour une période d'une année. Le conseil consultatif est maintenant composé de représentants du ministère de l'Éducation de l'Alberta, de la faculté de médecine rééducative, du City of Edmonton Community and Family Services, du Glenrose Rehabilitation Hospital et du Alberta Centre for Development Disabilities.

Le Alberta Child Development Newsletter contient des informations à jour sur un sujet pertinent dans quatre domaines: des informations tirées de la littérature pertinente; les ressources disponibles en Alberta; des conseils pratiques à l'intention des parents et/ou des enseignants, et une bibliographie des ressources. La plus grande part des informations publiées concerne les enfants de 10 ans et moins. La littérature afférente à une multitude de disciplines est consultée en vue de la préparation de ce bulletin.

Aucun droit d'auteur n'est applicable au contenu du bulletin. Les lecteurs sont libres de photocopier le bulletin ou de copier les pages de conseils aux parents et aux enseignants aux fins de distribution. Notre but est de rendre accessible au plus grand nombre des informations à jour dans un format facile à consulter. Une copie de chaque numéro est envoyée aux rédacteurs en chef de divers bulletins professionnels afin qu'ils ou elles informent leurs lecteurs de sa disponibilité. Le Alberta Child Development Newsletter a été inséré dans le bulletin du Speech-Language Hearing Association of Alberta pendant une période d'une année.

Le premier numéro du bulletin de quatre pages a traité de comportements menant aux blessures auto-infligées. Dans les numéros suivants, nous nous sommes penchés sur les infections de l'oreille moyenne, les troubles du sommeil, les blessures en milieu scolaire, la prévention des troubles dentaires, les lésions cérébrales, l'énurésie, et les défis de la vie quotidienne. Si vous avez des suggestions de sujets à traiter dans des numéros futurs de notre bulletin, n'hésitez pas à entrer en communication avec moi en composant le (403) 492-0402. A l'heure actuelle l'équipe de rédaction sollicite un appui financier pour des numéros spécifiques du bulletin et prépare une demande pour une seconde subvention.

Joyce Magill-Evans, Ph.D.

What is Self-Injurious Behavior?'

Self-injurious behavior (SIB) is defined as self-inflicted injury causing temporary or permanent tissue damage. It is one of the most dramatic categories of excessive behavior in persons with disabilities.

Common factors of SIB are head banging, biting, scratching, pinching, and gouging. SIB tends to be chronic and repetitious varying from a few times a day to several times a second. SIB may occur among all children but usually disappears by the age of five.

There are procedures to decrease the chance that SIB will occur at all. One involves the reinforcement of other behaviors that are incompatible with SIB or that distract the child from self-injury.

Literature Review

Children with Self-Injurious Behavior

Hyman S., Fisher W., Mercuqliano M., Cataldo, M.F.
Pediatrics, 1990 Mar; 85: 437-41

Self-injurious behavior is often present in individuals with a mental handicap. Medical and developmental characteristics of 97 children, adolescents and young adults (age range 11 months to 21 years) assessed and treated for self-injurious behavior in a specialized interdisciplinary inpatient unit between 1980 and 1988, were reviewed. This population differed from those reported in previous studies in that it was school aged and predominantly community based. Severe or profound mental retardation was present in 82.5% of the patients. The causative diagnoses associated with self-injurious behavior were similar to those of severe mental retardation alone. Associated disabilities represented at greater than expected frequencies included pervasive developmental disorders, visual impairment and a history of infantile spasms. Most patients (81.4%) engaged in more than one type of self-injurious behavior. Scratching was most common. Physical injury was documented in 77% of cases; the injuries most frequently reported were excoriations, scars/callus formation, hematomas and local infection. As community placement of handicapped individuals continues to increase, pediatricians will be called upon to monitor patients who engage in self-injurious behavior.

The Self-Injury Trauma (SIT) Scale

Iwata, B.A., et. al.,

Journal of Applied Behavior Analysis 1990: 23: 99-110

Results of this study indicate that the Self-Injury Trauma (SIT) Scale is a reliable method for collecting data on sur-

face tissue damage caused by SIB. The advantages of the SIT Scale include its objectivity, its applicability to the most commonly seen forms of SIB and its provision for documenting multiple aspects of surface injury (location, type, number and severity). Given these characteristics, the SIT Scale may be helpful in documenting the extent of damage caused by SIB, in determining initial risk, as a secondary source of data in substantiating successful treatment, or perhaps, as a primary source of data in epidemiological studies or follow-up situations in which it might be impossible to conduct direct observation.

Psychopharmacology of Self-Injurious Behavior in the Mentally Retarded

Farber

J. Amer. Acad. Child Adol. Psychiatric., 1987; 26, 3: 296-302

The most important question that must be addressed, is whether medication should be used at all. Recent trends, both in inpatient and outpatient settings, have turned away from pharmacological approaches and toward behavioral ones. SIB is a phenomenon that should perhaps be slower in following this trend. It differs from other stereotypes in that the potential for serious injury exists, even if rarely realized in practice (perhaps because of broad use of medication, restraints, etc.); many behavioral approaches, such as extinction, that are used for more benign behaviors are impossible because of the risks involved.

In treating SIB there does not need to be a dichotomy between pharmacological and behavioral approaches, as is often the case at present. Attention should be given to combining the two (as in Durand, 1982). Behavioral psychology has much to offer, both in terms of treatment and data collection approaches. Medication, by providing a rapid decrease in SIB, may be able to bring it under sufficient control such that a behavior program can be carried out without excessive risk to the patient. Medication also has the practical advantage, unlike behavior programs, of being easily transferred across settings and institutions. Medication has an important role to play in the treatment of SIB, and in collaboration with other disciplines. The well-designed scientific study of drug treatment should be a major thrust of SIB research in the next decade.

Self-Injurious Behavior: A Somatosensory Treatment Approach

Hirama, H.

1989. Baltimore, MD: CHESS Pub. (37 pages) ISBN 0-935273-01-8

This booklet includes a description of SIB and its etiology together with a brief review of the literature dealing with different treatment approaches. The author then describes the

effectiveness of a tactile simulation program with eight institutionalized, nonambulatory, nonverbal adolescents, which results in a marked decrease in SIB. The author also includes a description of a treatment program.

Tips For Families on Self-Injurious Behavior (SIB)

1. Early intervention is more effective. Ask your doctor, nurse or teacher if you are concerned about your child injuring himself.
When you see a health care professional, be ready to answer the following questions:
 - What part of the party is injured most?
 - How does this injury occur?
 - How often does it occur?
 - When is the child most likely to engage in SIB?
 - Can you get the child to stop the SIB and if so, how?
 - What are the circumstances in which the SIB is least likely?
2. There is increasing evidence of a biochemical (biological) cause for self-injurious behavior. Brain damage, biochemical or neurological, is thought to release endorphins (opiate like substances), which cause the threshold for this substance to be raised. This is thought to initiate a cycle of self-injurious behaviors that also release endorphins so keeping at the level desired by the body. Drugs that block the action of these opiate like substances have been found on an experimental basis to reduce the frequency of SIB.
3. Medical causes should be ruled out in conjunction with your family doctor and specialists (pediatricians, psychiatrists, neurologists).
4. A combination of approaches is likely to be most effective—medical (medications), behavioral management (behavioral modifications) and environmental (structured environment).
5. This can be a chronic and stressful problem for the family with the need for all (child, parents and siblings) to get some relief (a night out, respite care, etc.).

Resources for Teachers, Parents, Health Professionals*

Azrin, N.H., Besalel, V.A., and Wisotzek, I.E. (1982). Treatment of self-injury by a reinforcement plus interruption procedure. *Analysis and Intervention in Developmental Disabilities*, 2, 105-114.

Donnellan, A.M. et al. (1984). Analyzing the communicative functions of aberrant behavior. *Journal of the Association for Persons with Severe Handicaps*, 9, 201-212.

Durand, V.M. and Crimmins, D.B. (1988). Identifying the variables maintaining self-injurious behavior. *Journal of Autism and Developmental Disorders*, 18 (1), 99-117.

Edelson, S.M. (1984). Implications of sensory stimulation in self-destructive behavior. *American Journal of Mental Deficiency*, 89 (2), 140-145.

Favell, J.E., McGimsey, J.F., and Schell, R.M. (1982). Treatment of self-injury by providing alternate sensory activities. *Analysis and Intervention in Developmental Disabilities*, 2, 83-104.

Gaylord-Ross, R.J., Weeks, S.M., and Lipner, C. (1980). An analysis of antecedent, response, and consequence events in the treatment of self-injurious behavior. *Education and Training of the Mentally Retarded*, 15, 35-42.

Griffin, J.C. et al. (1987). A community survey of self-injurious behavior among developmentally disabled children and adolescents. *Hospital and Community Psychiatry*, 38 (9), 959-63.

Gunter, P.L. (1984). Self-injurious behavior: Characteristics, aetiology and treatment. *Exceptional Child*, 31 (2), 91-98.

Jenson, W.R. et al. (1985). Reduction of self-injurious behavior in an autistic girl using a multifaceted treatment program. *Journal of Behavior Therapy and Experimental Psychiatry*, 16 (1), 77-80.

Lettick, A. et al. (1980). *Benhanven's manual for handling severe aggression and self-abuse*. New Haven, CT: The Benhaven Press.

Meyer, Luanna H. and Evans, Ian M. (May, 1989). *Nonaversive intervention for behavior problems: A manual for home and community*. Baltimore, MD: Paul H. Brookes Publishing Co.

Mohr, C. and Sharpley, C.F. (1985). Elimination of self-injurious behavior in an autistic child by use of overcorrection. *Behavior Change*, 2 (2), 143-147.

Pickering, D. and Morgan, S.B. (1985). Parental ratings of treatments of self-injurious behavior. *Journal of Autism and Developmental Disorders*, 15 (3), 303-314.

Rincover, A. (1980). *How to use sensory extinction: A nonaversive treatment for self-stimulation and other behavior problems*. Lawrence, KS: H & H Enterprises.

Smith, M.D. (1985). Managing the aggressive and self-injurious behavior of adults disabled by autism. *Journal of the Association for Persons with Severe Handicaps*, 10 (4), 228-232.

Weeks, M. and Gaylord-Ross, R. (1981). Task difficulty and aberrant behavior in severely handicapped students. *Journal of Applied Behavior Analysis*, 14, 449-463.

*The above bibliography was supplied by the Edmonton Autism Society.

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Sleep Disorders²

Sleep disorders, well recognized in infants, are also common and may be persistent or recurring in older children. This has led to increasing study and research into the causes and

consequences. However, this has yet to result in practical suggestions based on scientific information being freely available to parents. Sleep disorders can be generally classified as difficulty in settling into sleep, difficulty in returning to sleep after arousal, and night fears or night terrors.

Types	Causes (examples)
Physiological	respiratory obstruction, large tonsils
Environmental	excessive noise or light, inadequate sleeping arrangements
Behavioral	bedtime routine or management

Persistent sleep disorders can create stress for the child, parents, family unit and ultimately create stress for the parents in their work environment.

Older children may be affected by marital discord in the home, problems at school, with peers or siblings, or other stress factors.

Treatment of sleep disorders is dependent on the underlying causes. In the absence of psychological causes, treatment may include parent education on sleep cycles, parent and/or child counselling and behavior modification. Medications are usually a last resort and may be useful for crisis situations when there is significant family disruption.

Literature Review

Sleep problems: A group approach

Carpenter, A.
Health Visitor. 1990:63,9:305-307

Various studies indicate the prevalence of sleeplessness is 20% in children up to two years old and 14% in children up to three years old. The peak prevalence occurs in 12-18 month old babies. Although some parents perceive sleeplessness in children (difficulty in settling into sleep and night waking) as inevitable, others perceive it as the behavior which causes most stress.

Behavior therapy is generally recognized as the most appropriate and effective intervention as sleeplessness can be reduced or exacerbated according to the parents' reactions.

Early treatment is needed. The most effective intervention provides professional support and mobilization of support networks within families and communities, e.g. relatives and friends. As well as receiving treatment on an individual basis, groups of parents can focus on practical approaches to modifying a child's behavior.

Programs can take various forms: shaping behavior through gradual withdrawal of parent contact on settling or waking; extinction by leaving the child to cry; star charts for older children; and restructuring bedtime routines where appropriate.

In addition to these structured programs, issues, such as feelings of guilt, anger and resentment towards a child, can be discussed and explored within the group.

Annotation: Sleep and its disorders in children

Horne, J.
Journal of Child Psychology and Psychiatry. 1992:33, 473-478

This general review article contains 43 references and addresses problems associated with sleep in children and their treatment.

Topics include normal sleep, difficulty going to sleep, night-time feeding, sleep-wake rhythm disorders, dreaming sleep (REM) and its disorders (nightmares), slow wave sleep and its disorders (sleepwalking, night terrors), epilepsy in sleep, and other general sleep problems.

The author feels many sleep problems are unwittingly caused by parents and these behavioral problems can be quickly resolved.

Reducing sleep disruptions in young children. Evaluation of therapist-guided and written information approaches: A brief report

Seymour, F.W., Brock, P., During, M., and Poole, G.
Journal of Child Psychology and Psychiatry. 1989:30, 913-918

Forty-five New Zealand children (mean age 18 months) with sleep problems were randomly assigned to groups. The program group received a written parent guide (describing organized bedtime routine, and procedures for settling, handling crying, getting out of bed), an hour long interview, and daily phone calls as needed. The written information group received the parent guide (questions were answered). The control group was placed on a waiting list.

The program group progressed more rapidly during the initial two weeks. The program and written information groups did not differ from other at four weeks post-treatment, and also had more improvement than the control group.

Sleep problems in healthy preadolescents

Kahn, A., Van de Marckt C., Rebuffat E., Mozin M.J., Sottiaux M., Blum D., Hennart P.
Paediatrics. 1988:84,542-546

Few data exist concerning sleep problems in preadolescents. In this study, a parent report questionnaire was developed and completed by 972 parents of third, fourth and fifth grade children from randomly selected schools in an urban area.

Sleep difficulties lasting more than six months were present in 43% of the children. Wakening periods of longer than 30 minutes were present in 14% of the children and more than one arousal occurred at least two nights a week.

Variables identified for poor sleepers were low levels of parent education and professional status, divorced or separated parents, and more noise or light in the sleeping rooms. There was also a higher incidence of somnambulism (sleep-walking), somniloquia (talking in sleep), and night fears

(nightmares and night terrors) than in children who slept well. Boys who slept poorly were more likely to have insomniac fathers. Four per cent of poor sleepers used sedatives regularly.

Among poor sleepers, 79% had passed their school year, although school achievement difficulties were significantly higher in poor sleepers than in those without sleep problems. A desire for counselling was expressed by 28% of families with poor sleepers.

The researchers suggest more attention by pediatricians to sleep problems in apparently normal preadolescents. Pediatricians could help alleviate parental anxiety and help to limit sedative use in children.

Tips for Parents on Sleep Disorders*

- If a child's sleep patterns create a problem—then there is a problem to be dealt with early.
- Have your child's health checked by your pediatrician to exclude a physical cause (e.g. tonsils and adenoids, respiratory infections).
- A consistent bedtime routine followed by both parents is indispensable: maintains discipline and avoids bargaining.
- Infants learn by association. Put infants to bed when drowsy but not asleep.
- Leave infants to cry for a short time.

For older children:

- Make bedtime a pleasant time.
- Children should be taught their bedtime routine.
- Warn children that bedtime is near, maybe 15 minutes beforehand.
- Spend some special time with your child before bed. Read a story, have a conversation.
- Avoid rough and tumble games. These only excite children and make it more difficult to go to sleep.
- A favourite toy or blanket may reassure your child.
- Children sleep better when tired after physical activity held earlier in the day.
- If your child has night fears, talk about them. Reassure your child that you are there for protection.
- Leave a nightlight or hall light on. Leave the door ajar if necessary.
- Talk with your child about the effects of T.V. programs. A question such as "What is happening?" or "What are you watching?" is sufficient to alert you.
- Medications should be only for "crisis" periods.

*Sources: Dr. Deborah Andrews, Consultant Pediatrician, Developmental Pediatrics, Glenrose Rehabilitation Hospital
 Dr. David Merchant, Clinical Psychologist
 Ferber, R. (1985). *Solve Your Child's Sleep Problems*. New York: Simon & Schuster.

Resources for Teachers, Parents, Health Professionals

Adams, L.A., Rickert, V.I. (1989). Reducing bedtime tantrums: Comparison between positive routines and graduated extinction. *Pediatrics*. 84,756-61.

Balsmeyer, B. (1990). Sleep disturbances of the infant and toddler. *Pediatric Nursing*. 16,447-52.

Cook, J., and Burd, L. (1990). Preliminary report on construction and validation of a Pediatric Sleep Disturbance Questionnaire. *Perceptual and Motor Skills*. 70,259-267.

Ferber, R. (1985). *Solve your child's sleep problems*. New York: Simon and Schuster.

Ferber, R. (1990). Sleep schedule-dependent causes of insomnia and sleepiness in middle childhood and adolescence. *Pediatrics*. 17,13-20.

Fisher, B.E., Rinehart, S. (1990). Stress, arousal, psychopathology and temperament: A multidimensional approach to sleep disturbance in children. *Person*. 11,431-438.

France, K.G., Blampied, N.M., Wilkinson, P. (1991). Treatment of infant sleep disturbance by Trimeprazine (Panectyl) in combination with extinction. *Developmental and Behavioral Pediatrics*. 12,308-314.

Jimmerson, K.R. (1991). Maternal, environmental, and temperamental characteristics of toddlers with and toddlers without sleeping problems. *Journal of Pediatric Health Care*. 5(2),71-77.

Kataria, S., Swanson M.S., Trevathan, G.E. (1987). Persistence of sleep disturbances in preschool children. *Journal of Paediatrics*. 110,642-646.

Katz, L.G. (1990). Nightmares and other sleep problems. *Parents*. 65(4),192.

Madansky, D., Edelbrock, C. (1990). Cosleeping in a community sample of 2- and 3-year old children. *Pediatrics*. 86,197-203.

Quine, L. (1991). Sleep problems in children with mental handicaps. *Journal of Mental Deficiency Research*. 35,269-290.

Richman, N., Douglas, J., Hunt, H., Landsdown, R., Levere, R. (1985). Behavioral methods in the treatment of sleep disorders — a pilot study. *Journal of Child Psychology and Psychiatry*. 26,581-90.

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Scott, G. Richards, P.M. (1990). Night waking in 1-year-old children in England. *Child Care, Health and Development*. 16-283-302.

Shaver, J.L.F. (1989). Sleep. *Annual Review of Nursing Research*. 7,71-93.

Stores, G. (1991). Confusions concerning sleep disorders and the epilepsies in children and adolescents. *British Journal of Psychiatry*. 158,1-7.

Wood, K.R. (1988). *Maternal, environmental, and temperamental characteristics of toddlers with and toddlers without sleep problems*. University of Alabama at Birmingham. D.S.N. (93p).

Woody, R.C. (1988). *Sleep disorders in children*. Seminar of Neurology. 8(1),71-77.

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School Injuries³

Injuries are the leading cause of child mortality and ill-health in industrialized countries (World Health Organization, 1979). Most serious injuries occur outside school (e.g. traffic accidents); however, a significant number do happen in school environments. Canada Survey (1987) reported 262,000 injuries occurring in schools. The Edmonton Public School Board receives an average of 220 reported school injuries each school month. Although school boards identify injuries for insurance purposes, there is no accurate reporting system that also includes uninsurable, minor injuries.

School-related injuries are generally minor in terms of severity (e.g. cuts, scrapes and contusions); however, serious injuries, such as fractures, dislocations, internal injuries and brain injuries do occur. The cost of these injuries and the resources set aside to deal with them is quite considerable.

Researchers have concluded that most day care and elementary school injuries happen on the playground. They

also note that injuries occur more often during unorganized activities on playgrounds and in school buildings.

Many school injuries are preventable if safety awareness and injury prevention strategies are established. The Canadian Standards Association has provided guidelines for manufacturing, installing and maintaining playground equipment. School administrators are responsible for ensuring safety standards in their schools.

The integration of students with disabilities into the school system requires additional safety precautions (e.g. ramps and guardrails for wheelchairs and hand rails for students lacking coordination or balance). However, safety measures and guidelines are only effective if they are observed by the users. Encouraging safety awareness and practice is a major step toward injury prevention in schools.

Literature Review

Sheps, S. & Dewey Evans, G. (1987). **Epidemiology of school injuries: A 2-year experience in a municipal health department.** *Pediatrics*, 79, 69-75.

This study reviewed school injuries that occurred over a two year period in a municipal school district in Vancouver, B.C. The purpose was to identify epidemiologic features of school injuries, to determine data requirements for ongoing injury surveillance and to identify potential preventive strategies. The review included elementary and secondary school students.

During the review period, 3,009 injuries were reported, a rate of 2.82 per 100 students. The elementary school student rate was 2.85, the secondary school student rate was 2.78.

Playgrounds were the site of the highest overall rate, 0.81. Playgrounds were also the site of the highest injury rate for elementary students, 1.09. More than half of the recorded injuries resulted from "falls" and "striking mechanical or other objects."

Although contusions, abrasions and swelling were the most common injuries, other injuries included open wounds, fractures, sprains and dislocations, concussions, nosebleeds, whiplash, eye injuries, crushing and burns. The most common injuries to elementary students involved the head and face areas.

Key methodological issues that need to be addressed by researchers and the need for more comprehensive injury reporting systems for schools were identified. Also suggested was that playgrounds and sports activities require greater supervision to prevent school injuries.

Lenaway, D., Ambler, G. & Beaudoin, D. (1992). **The epidemiology of school-related injuries: New perspectives.** *American Journal of Preventive Medicine*, 8, 193-8.

This study was undertaken in nine schools in Boulder Valley School District, Colorado, to explore the etiology of school-related injuries and to provide information relevant to their prevention. The study included elementary, middle/junior high and high school students.

Types of injuries reported included cuts, abrasions, contusions, fractures, dislocations, dental injuries, nose-bleeds, dizziness and bites.

The injury rate among elementary students was 12.6 per 100 students. Playground injuries were highest at 6.2.

Cuts/abrasions, swelling and general pain were most frequently reported by elementary students. Body sites most frequently injured were wrist, hand, finger, leg, knee and head.

Playground equipment accounted for 38% of injuries. Climbing bars were associated with 51% of these injuries.

The researchers concluded that a better understanding of the etiology of injuries should promote increased safety awareness in schools. As a result of the study, local schools planned to enhance school safety programs by developing preventive measures.

Winter, J. (1988). **A medicolegal review of playground equipment injuries in children.** *Pediatric Emergency Care*, 4, 137-143.

Children are vulnerable to trauma and their susceptibility is high for playground injuries.

This review from the Department of Emergency Medicine, Minneapolis, argues strongly for injury prevention. Data collected from various countries (e.g. United States, New Zealand, Australia) stress the importance of regular maintenance and proper use of playground equipment. In

one study of 53 schools, 23% of playground equipment was found to be over 2.5 metres high and 88% of equipment was not set over impact-diminishing surfaces, increasing the possibility of severe injury. In another study of 880 children with head injuries, 30% were playground-related injuries.

Playground injury liability mostly deals with inadequate supervision and failure to remedy a dangerous condition after notice is given. Liability laws are complicated. By using examples of judgments, the reviewer explains how liability is determined and why responsibility is assigned.

Preventive measures for playground injuries include educating children, adequate supervision, planning safe playgrounds and enforcing rules for manufacturing, maintenance and play.

Hodgson, C., Woodward, C. & Feldman, W. (1985). **Parent report of school-related injuries.** *Canadian Journal of Public Health*, 76, 56-58.

Studies of school-related injuries generally concentrate on schools as the source of information. In this Ontario study, parents of school-aged children were randomly surveyed for injury information. Of the 2,111 questionnaires sent to parents, 53% were returned by mail and 32.1% were completed by telephone, giving a response rate of over 80%.

Parents of elementary school students reported the highest incidence of injuries. The reviewers suggest this could be because younger children are more likely to report injuries to their parents. The rate of injuries, including multiple injuries (i.e. more than one injury occurring during the specified month but not necessarily at the same time), was 22.1%. Nearly one-third of parents reporting injuries in a given month reported multiple injuries.

Although most injuries were considered minor, outside professional help was sought for 21% of the injuries. Nearly two per cent required X-rays and two per cent reported school absences as a result of the injury. The average time absent was 5.2 days.

Tips for Teachers on School Injuries

- Provide adequate supervision for all activities during school hours. Review the school timetable and identify the time and place where risk factors are highest and ensure adequate supervision.
- Establish safety awareness education for staff and students on a periodic basis.
- Review injury records to identify potential hazards.
- Keep corridors free from clutter.
- Allow sufficient walking and wheelchair space between desks and other furniture.
- Maintain disabled students' wheelchair ramps, guardrails and handrails in good order.
- Clearly identify hazardous liquids and keep supplies locked. This includes janitorial supplies.

Tips for Teachers on School Injuries (continued)

- Set hot water thermostats between 45°C and 60°C to avoid scalding injuries.
- Check electrical equipment regularly for frayed cords and cap electrical outlets when not in use.
- Ensure that students are instructed in the use of any equipment they are likely to handle.
- Provide safe alternatives to "horseplay" in classrooms, gymnasiums and on school grounds.
- Consider establishing a School Safety Committee with students, teachers, health nurse, administrators and parents.

Tips for Parents on School Injuries

- Teach safety awareness at home by establishing and maintaining home safety rules.
- Install home playground equipment correctly. Make sure it is firmly anchored and set over grass and sand.
- Supervise young children at local playgrounds.
- Teach your child playground safety rules. Toddlers should not play on equipment designed for older children. They should not walk in front of swings or climb up a slide.
- Dress your child for play areas. Scarves, ties or long hair should be tucked safely inside jackets to avoid being caught in equipment.
- Discuss school safety awareness programs with your child.
- Take advantage of local programs in developing awareness of safety (Fire Department, Police, Red Cross, St. John's Ambulance Association).

Resources for Teachers, Parents, Health Professionals

- Canada Safety Council (1989). Let's look out for each other. *Playing safe* (pamphlet).
- Canadian Red Cross Society (1988). *First aid* (booklet).
- Canadian Red Cross Society (1988). *Child safe, a parent's guide to first aid and safety* (booklet).
- Canadian Red Cross Society (1989). *Emergency child care for child care workers* (booklet).
- Canadian Standards Association (1990). *A guideline on children's playspaces and equipment*. CAN/CSA-Z614-M90.
- Edmonton Board of Health (1992). Day care injuries. *Childhood Injury Control Newsletter*. 43, 1-2.
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Enuresis (Bed Wetting)⁴

Nocturnal enuresis (night bedwetting) results from lack of bladder control during sleep. It is natural in infants and children before the age of three. As the child develops, bladder control is achieved, first during waking hours, then during sleep. Most children are able to remain dry during sleep by the age of five to six years.

About 200,000 Canadian children over six years of age are enuretic. Enuresis is not fully understood. Causes are thought to include delayed neurological development of the system that controls the bladder; reduction of a hormone, vasopressin, which controls urine production; genetic (hereditary), small bladder capacity; and too deep sleep. About 2% of enuresis results from disease or physical abnormality such as diabetes mellitus or urinary tract infection.

Primary enuresis occurs when a child has never achieved night dryness. Secondary enuresis occurs when a child who has been dry reverts to bedwetting, and may result from illness or from some psychological reason. In this case, the underlying cause must be investigated.

Most children with primary enuresis grow out of it in time as their neurological systems develop. For some parents, enuresis is only a problem when out of the home (e.g., sleepovers and vacations), for others it is a source of stress.

Treatment for primary enuresis may include drug therapy (e.g., desmopressin, which reduces urine production); conditioning therapy (e.g., alarm signals that waken the child

when urine is released); motivational therapy (e.g., rewarding the child for dry nights); hypnotherapy; or a combination of therapies.

Stress and anxiety in the child and parents are often side effects of enuresis. The child may become withdrawn and lack confidence and self-esteem. This may be made worse by parents using punishment in an attempt to 'cure' the child. Others may have unrealistic expectations of the child. A major part of treatment is reassuring, counselling and educating the child and parents about enuresis. Just learning that he/she is not alone, that other children have the same problem, can make a difference to both child and parents. There are no 'quick cures' for enuresis and parents should be advised against using commercial products that offer instant results and are usually costly.

Nocturnal enuresis affects:

- 1 in 6 five-year-olds
- 1 in 14 seven-year-olds
- 1 in 20 ten-year-olds

(Source: Pierce, 1980; Dobson, 1991)

Literature Review

Schwartz, R., & Hodson, G. (1989). **Nocturnal enuresis.** *Medicine: North America*, 4(2), 173-177.

This article from Halifax, Nova Scotia, describes the **typical enuretic child as an otherwise healthy child with no urological or neurological problems.** The authors discuss the need for a thorough history and physical examination prior to treatment. Treatments outlined include drug therapy (and possible side effects), alarm systems, motivational therapy and hypnosis. The effectiveness of these treatments is also discussed.

Family stress and tension result from enuresis and family counselling is a necessary part of treatment. In some cases, parents may require referral to another specialist, if only to show that there are no 'quick cures.' The authors also comment on how desperate parents may spend large amounts of money on unsubstantiated 'quick cure' commercial remedies.

Dobson, P. (1991). **Bedwetting: Take a positive attitude.** *Professional Care of Mother and Child*, 1(3), 108-109.

Research shows that night bedwetting has a pervasive effect on a child's self-image and self-confidence while night dryness in the same child improves self-confidence. This article

from Bristol, England, states that because bedwetting is not openly discussed, the enuretic child may become withdrawn, lonely and isolated. It is important for an enuretic child to know that many children have the same problem.

In England, 23% of parents resort to punishment to stop bedwetting. Next to persistent crying, bedwetting is the most common reason for physical abuse injury to children. The author stresses the importance of providing counselling support and reassurance to the child and parents. She also suggests that parental support is more likely if the parents are encouraged to have a positive attitude toward the problem and the treatment. Treatment, she states, is a team effort of child, parents and medical advisor.

Various treatments such as drug therapy and alarm systems are also discussed.

Bradley, A. et al. (1991). **Primary nocturnal enuresis: Current concepts about an old problem.** *Pediatric Annals*, 20(5), 246-255.

This article from Kansas, Missouri, gives a textbook presentation of enuresis. Causes (delayed neurological development, hormonal and genetic (hereditary) factors) and treatments (drug therapy, conditioning, motivational and alarm systems) are described in detail. The authors discuss various drugs used in treatment, their dosages, success rates and side effects.

The authors state that nocturnal enuresis is not 'socially acceptable' and it is this fact, rather than the actual bedwetting, that creates anxiety in the child and parents. The authors also discuss the importance of a thorough physical examination prior to treatment and stress the need for parent counselling and education as part of treatment.

Treatment Effectiveness				
	Success	Relapse	Side Effects	Benefits
Tricyclic Antidepressants	+	+	Sibling poisoning Cardiac arrhythmia	Effective for sleepovers and camps
Desmopressin	++	+	Costly, Dependency	(As above) Rapid response
Alarm Systems	++	+	Delayed Response	Self-esteem
Motivational Therapy	0	+	Failure	Patient involvement

Marchessault, V.J.H. (1992). **Nocturnal enuresis — the pediatric perspective.** *Nocturnal Enuresis*, 2(3), 1-4.

Pediatricians are often consulted for treatment of enuresis and it is important that they are fully prepared to undertake treatment of the condition.

This Canadian author provides a guide for the care and treatment of enuresis. He discusses the need to gain the child's cooperation, to develop a reassuring attitude with the child and parents, and to be aware of the emotional effects enuresis has upon the child and parents.

Patient and family histories, physical examination, causes and treatments of enuresis are outlined. In addition, the author stresses the importance of educating the child and parents about enuresis. The patient will develop self-confidence and learn to cope with the condition with a pediatrician who takes enuresis seriously, has a supportive attitude, provides counselling and gives therapeutic treatment, if required.

Facts and Tips for Teachers on Enuresis

- Enuresis is a common condition affecting over 200,000 Canadian school-age children.
- Enuresis can affect a child's social behavior and school progress.
- If a child is withdrawn and lacks self-esteem, enuresis may be the root of the problem.
- Discuss enuresis as a health/science project.
- Stress that there is no shame to being enuretic.
- If a child confides in you, reassure the child and talk frankly about it.
- Reassure the child that he/she is not alone. There are many other children with the same problem.
- Discuss the child's concerns and the effect on the child's school and social progress with the parents.
- Suggest medical assistance if it has not been sought.
- Suggest discussing the problem with the school counsellor. Assist in making an appointment if this is required.

Facts and Tips for Parents on Enuresis

- Enuresis is not a disease.
- Your child is not alone. There are over 200,000 Canadian children with the same problem.
- There is no shame to being enuretic. Your attitude toward your child's bedwetting will affect your child's attitude.
- Your child is not deliberately bedwetting to annoy you. Don't punish your child.
- Be supportive. Remember, your child is as unhappy about bedwetting as you are.
- Seek medical advice if you are concerned. Your pediatricians or general practitioner will help you and your child.
- Be guided by, and work closely with, your physician. You are an important part of the treatment team.
- Involve your child in the treatment. Discuss the various types of treatment. What works for one child may not work for yours. Respect your child's opinions and wishes.
- Learn all you can about bedwetting. Your physician will be happy to answer your questions.
- If your child has never stopped bedwetting, your child has primary enuresis. If your child has been dry and goes back to bedwetting, your child has secondary enuresis. This may be due to illness or some psychological problem (e.g., a new baby in the family, school problems) and must be checked out.
- Treatment may be long. Be optimistic.
- Avoid wasting money on commercial products that promise 'instant cures.' There are none.
- Are you expecting too much, too quickly of your child? Check your expectations.

Resources for Teachers, Parents, Health Professionals

Homsy, Y., & Hamburger, B. (1992). Nocturnal enuresis: Current clinical experience at Hospital Ste-Justine. *Nocturnal Enuresis*, 2(1), 2-4.

Meadow, R. (1986). Childhood Enuresis. *Medicine International*, 2(31), 1283-1289.

Novello, A., & Novello, J. (1987). Enuresis. *Pediatric Clinics of North America*, 34(3), 719-731.

Robson, W. et al. (1992). The genetic influence in primary nocturnal enuresis. *Nocturnal Enuresis*, 2(3), 4-5.

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