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TOXICOLOGY TIDBITS

VETERINARY NOTES

Motor-Vehicle Occupant Fatalities and Restraint Use Among Children Aged 4-8 Years United States, 1994-1998

In the United States, more children aged 4-8 years die as occupants in motor-vehicle related crashes than from any other form of unintentional injury. To reduce the number of deaths and injuries caused by motor-vehicle related trauma, child passengers in this age group should be restrained properly in a vehicle's back seat. To characterize fatalities, restraint use, and seating position among occupants aged 4-8 years involved in fatal crashes, the Centers for Disease Control (CDC) analyzed 1994-1998 data from the Fatality Analysis Reporting System (FARS), which is maintained by the National Highway Traffic Safety Administration (NHTSA). This report summarizes the results of that analysis, which indicate that during 1994-1998, little change occurred in the death rate, restraint use, and seating position among children aged 4-8 years killed in crashes.

During 1994-1998, 14,411 child occupants aged 4-8 years were involved in crashes where one or more fatalities occurred; of these, 2549 (17.7%) died. Approximately 500 child occupants died each year during the study period; the average annual age-specific death rate was 2.6 per 100,000 population. In 1994, restraint use among fatally injured children was 35.2% (177 of 503); in 1998, restraint use was 38.1% (201 of 527). The proportion of fatally injured children seated in the back seat of a vehicle involved in a crash was 50.1% (252 of 503) in 1994 and 53.7% (283 of 527) in 1998.

Editorial Note: During 1994-1998, child occupant death rates did not decrease, restraint use among fatally injured child occupants changed little, and the proportion of fatally injured children seated in the back seat of a motor vehicle involved in a crash remained fairly constant. Children aged 4-8 years represent a special population for motor-vehicle occupant protection. Having outgrown child-safety seats (CSS) designed for younger passengers, children aged 4-8 years frequently sit unrestrained or are placed prematurely in adult seat belt systems. **Public health and traffic safety organizations recommend that children in this age group be restrained properly in booster seats.** This study found that nearly two thirds of fatally injured children were unrestrained at the time of the crash. Only 4%-6% of children aged 4-8 years used booster seats when riding in motor vehicles.

Belt-positioning booster seats raise a child so that the shoulder belt fits securely between the neck and arm and the lap belt lies low and flat across the upper thighs. Children do not fit in adult lap/shoulder belts without a booster seat until they are 58 inches tall and weigh 80 lbs. Children should ride in a booster seat from the time they graduate from their forward-facing CSS until approximately age 8 years or until they are tall enough for the knees to bend over the edge of the seat when the child's back is resting firmly against the seat back.

Despite recommendations for children to ride in the back seat whenever possible to reduce risk for injury in a crash, approximately one fourth of child passengers ride in the front seat. Riding in the back virtually eliminates injury risk from deployed front-seat passenger air bags and places the child in the safest part of the vehicle in the event of a crash. As of January 1, 2000, 35 children aged 4-8 years have died while seated in front of air bags. Of these children, 31 (89%) were either unrestrained or improperly restrained (8). Riding in the back seat is associated with at least a 30% reduction in the risk for fatal injury. Approximately half of those children in this study who were fatally injured were sitting in the back seat.

The 50 states, District of Columbia, and Puerto Rico have child-passenger safety laws; however, substantial gaps in coverage exist for child passengers aged 4-8 years. For example, in 19 states, children this age can ride unrestrained in the back seat of a motor vehicle. In most states, children as young as age 4 years may use an adult seat belt. No state requires the use of booster seats for children who have outgrown their CSSs. Three states have laws requiring that children be seated in the back seat of passenger vehicles. The ages of the children covered by these laws vary by state.

The findings in this study are subject to at least three limitations. First, police crash reports overestimate restraint use; therefore, restraint use may be lower for children in this age group. Second, vehicle miles traveled have increased during 1994-1998; consequently, improvements in fatality rates may be masked by increased exposure to travel. Finally, increases in restraint use and resulting changes in occupant fatalities may require many years of investigation before they become apparent.

Reducing fatalities among motor vehicle occupants aged 4-8 years will require finding effective strategies to promote booster seat use and placement of children in the back seat. Public health and traffic safety efforts should be accelerated to increase appropriate occupant protection among children aged 4-8 years as a primary means to reduce fatal motor-vehicle related injuries. Efforts are under way by CDC and others to determine the best ways to encourage booster seat use and to increase the prevalence of properly restrained children riding in the back seat.

REF: *Morbidity and Mortality Weekly Report*, 49(07), February 25, 2000 .

Lead Contamination of Imported Candy Wrappers

Lead toxicity in a young Hispanic woman from sucking a terra cotta candy container led to investigating lead contamination in candy packaging materials imported from Mexico. Printed cellophane candy wrappers may present a

significant risk for lead exposure.

Although the highest exposures tend to occur in occupational settings, the more frequent, albeit often lower-dose, exposures among children may have a greater health impact. Children are particularly susceptible to lead toxicity because of increased hand-to-mouth activity, increased gut absorption, decreased sequestration in bone, and relatively less functional blood-brain barrier. The most common source of childhood lead poisoning is dust or paint flakes within a residence from deteriorated lead-based paint.

Although lead is a well-recognized cause of childhood toxicity, lead-based inks and pigments continue to be present on food wrappers and containers. A case of lead toxicity in a young pregnant Latino woman resultant from chewing on a candy container led the authors of this study to review the literature and examine candy packaging for lead concentrations in local Latino markets.

All of the cellophane-wrapped candies except 1 had 1 mg lead/g of wrapper. Although the US Food and Drug Administration (FDA) does not have a standard for permissible concentration of lead in candy, they have set a limit of 0.5 ppm lead in candy for regulatory action to protect children. The FDA recommends that children <7 years of age consume < 6 ug lead daily from foodstuffs. Milligram quantities of the cellophane on terra cotta packaging samples would exceed this limit, in several cases by factors of 10.

REF: *Veterinary and Human Toxicology*, 42(1), February 2000.

Debate Over Organic Food Safety Sparked by TV Report

A report aired Feb. 4 on the ABC newsmagazine "20/20" has sparked a debate over the safety of organically grown foods. The report, presented by John Stossel, raised questions about the nutritional value and bacterial risks of organic produce -- and the environmental effects of organic farming. The "20/20" investigators did not detect pesticide residues on the sampled produce. However, 5% of the samples were contaminated by bacteria, and contamination levels were greatest in organically grown produce. One-third of all sprout samples tested positive for an unspecified type of *E. coli*, but the organic samples had twice as many bacteria. The report suggested that the presence of more bacteria in the organic samples is a result of the use of manure for fertilizer. In a letter to "20/20's" executive producer before the report was aired, Katherine DiMatteo, executive director of the Organic Trade Association (OTA), argues that, based on the laboratory evidence, it was impossible to tell if the strains of *E. coli* detected on the samples were harmful or not.

REF: *Food Chemical News*, 42(2), Feb 28, 2000.

Editorial Note: Bacterial contamination of produce with pathogenic *E. coli* has been reported previously and is suspected as a major contributor to foodborne disease. See article below.

USDA to Prohibit Genetically Modified Foods from Being Labeled 'Organic'

USDA will publish (*Federal Register*, March 13) a proposed regulation that would prohibit genetically modified foods and those grown with synthetic pesticides from being labeled "organic." The rules are part of a sweeping, revised proposal to set federal standards for organic foods. The rules would prohibit crops from being labeled organic if they were raised on land on which prohibited materials had been utilized in the previous three years. Natural pesticides would be allowed, but synthetic pesticides would be prohibited unless they are on the National List of Allowed and Prohibited Substances. The list contains synthetic materials allowed in organic production and handling, such as fertilizers, seed treatments, pest control treatments, and certain pesticides. It also includes natural materials that are disallowed, such as arsenic. Additionally, the National List contains method restrictions on the allowed substances.

In the proposed rule, USDA lays out four categories of organic products:

- Products with 100% organic ingredients. These can be labeled as such.
- Products containing at least 95% organic ingredients. These can be labeled organic, such as "organic cereal."
- Products with 50-95% organic ingredients. These labels can state that food is "made with organic ingredients" and can list up to three ingredients.
- Products that contain less than 50% organic ingredients. These foods can include the word "organic" in the ingredient information panel only.

Fact sheets and other background materials on the proposed organic rule can be accessed on the web at www.ams.usda.gov/nop.

Salmonellosis Associated with Chicks and Ducklings ---- Michigan and Missouri, Spring 1999

During the spring of 1999, outbreaks of salmonellosis associated with handling chicks and ducklings occurred in Michigan and Missouri. These outbreaks demonstrate that handling chicks and ducklings is a health risk, especially for children, and highlight the need for thorough handwashing after contact with chicks, ducklings, and other young fowl.

Michigan: During the 5 days before illness onset, 14 (74%) of 19 patients had direct contact with young fowl or resided in a household that raised fowl (chicks, ducklings, goslings, pheasants, and/or turkeys) compared with six (16%) of 37 controls. In several households, young birds were kept inside the home. One child kept young birds in his bedroom and another carried chicks inside his jacket.

During the spring, the implicated hatchery shipped approximately 100,000 birds per week by mail order directly to customers and to several feed and farm supply retail outlets across the state. Fowl were shipped in lots of 25 to 100 birds, and usually were raised for backyard use (i.e., meat and egg production for the family). *S. Infantis* with the outbreak PFGE pattern was recovered from three of 47 environmental samples and five of 33 bird samples taken at the hatchery. Other Salmonella serotypes also were isolated from the environmental samples, including serotypes Montevideo (seven), Chester (one), and Mbandaka (one).

Missouri: In April 1999, the Missouri Department of Health (MDOH) noted a cluster of *Salmonella* serotype

Typhimurium infections with an identical PFGE pattern; 40 case-patients were identified with onset of illness during April 4--May 30, 1999. Symptoms reported by the 33 patients interviewed included fever (42%), bloody diarrhea (27%), stomach cramps (27%), and vomiting (21%). Three patients were hospitalized. Overall, 32 (97%) persons reported exposure to young fowl: 18 (56%) were exposed to chicks, 10 (31%) to ducklings, three (9%) to both chicks and ducklings, and one (3%) to a young turkey. During the 4 weeks before onset of patient illness, chicks or ducklings that were identified as ill by the patient or handler were associated with human illness; handwashing after handling fowl was protective against illness.

Although most of the 1.4 million human salmonellosis cases that occur annually in the United States are caused by foodborne sources, direct contact with animals, particularly reptiles and occasionally birds, also may be a source of infection. Most reptiles and many birds shed Salmonella in their feces. Humans become infected when contaminated food, hands, or other objects are placed in the mouth; therefore, handwashing is critical to prevent Salmonella infections following direct or indirect contact with animals. The Missouri outbreak described in this report and previous outbreaks demonstrate that handling young fowl can be a risk for Salmonella infections, particularly in children who receive fowl as gifts during Easter; children have more frequent hand-to-mouth contact and are less likely to practice handwashing after handling fowl. The Michigan outbreak describes the risk for infection associated with the backyard production of fowl.

Prevention efforts, such as sales restrictions and consumer education, may be difficult because selling pet fowl and raising backyard fowl are largely unregulated. Several states responding to the survey reported laws that restrict the sale of chicks, ducklings, and other young fowl. Some of these restrictions are based on previous reports of chick-associated and duckling-associated salmonellosis during Easter. Enforcement also may be difficult because young fowl can be purchased by mail and Internet orders from out-of-state hatcheries. State-mandated point-of-sale educational material may be effective in educating consumers about the risk for salmonellosis. States may wish to join Michigan and Missouri in issuing a press release during the spring of 2000 to raise public awareness about the risk for *Salmonella* infections posed by young fowl. Michigan and Missouri health departments have developed safety instructions to be distributed with young fowl that emphasize the importance of handwashing and supervision of young children interacting with young fowl.

To prevent the transmission of Salmonella from chicks, ducklings, and other young fowl to humans, persons should avoid contact with feces and carefully wash their hands with soap and water after handling young fowl or anything that has come in contact with them. Chicks, ducklings, and other young fowl may not be appropriate pets for children and should not be kept in households with infants, children aged <5 years, or immunocompromised persons. During investigations of Salmonella infections, especially during spring and Easter, health-care workers and public health personnel should consider contact with young fowl as a potential source and obtain cultures from these animals if they are suspected as the source of infection.

REF: *Morbidity and Mortality Weekly Report,* 49(14);297-9, April 14, 2000.

Escherichia coli O111:H8 Outbreak Among Teenage Campers --- Texas, 1999

In June 1999, the Tarrant County Health Department reported to the Texas Department of Health (TDH) that a group of teenagers attending a cheerleading camp during June 9--11 became ill with nausea, vomiting, severe abdominal cramps, and diarrhea, some of which was bloody. Two teenagers were hospitalized with hemolytic uremic syndrome (HUS), and two others underwent appendectomies. Routine stool cultures from eight ill persons failed to yield a

pathogen. Stools subsequently were sent to laboratories at the Texas Department of Health and CDC, where *Escherichia coli* O111:H8 was isolated from two specimens. This report summarizes the investigation of this outbreak.

To identify additional cases, surveillance for non-O157 Shiga toxin-producing *E. coli* (STEC) illnesses in Texas was enhanced by alerting all local health departments, hospitals, clinical laboratories, and physicians about the outbreak. A cohort study of all campers attending the 3-day camp was conducted to identify the source of the outbreak and to collect data describing the clinical illness. Illness was defined as either diarrhea (three or more loose stools during any 24-hour period) accompanied by abdominal cramps or bloody diarrhea alone, occurring within 14 days after the start of the camp. Campers were interviewed for demographic information, medical histories, and symptoms and about their food and beverage consumption during the camp. Sanitarians inspected the cafeteria where meals were prepared and served to campers and the plumbing system in the dormitory where campers resided. Foodhandlers and other kitchen staff were interviewed about food preparation practices, menus, and the delivery schedules and suppliers for food items served to campers. Foodhandlers submitted stool specimens and rectal swabs for testing. Several food items from the cafeteria were cultured.

Of the 650 campers composing the cohort, 521 (80%) were interviewed. Of these, 58 (11%) had illnesses that met the case definition. The median age of the 58 ill persons was 16 years (range: 12--53 years), and 95% were female. The median length of illness was 5 days; four (7%) persons were hospitalized. Two persons developed HUS. In addition to diarrhea, reported symptoms included abdominal cramping (100%), nausea (62%), headache (56%), vomiting (38%), bloody diarrhea (37%), and fever with a median temperature of 100 F (38 C) (29%).

Illnesses peaked on the third and final day of camp. Illnesses with bloody diarrhea peaked on the day after the camp ended. No campers reported having a diarrheal illness or contact with a person with diarrhea during the 2 weeks before the start of camp.

One meal (supper on the first day of camp) and 21 other exposures were significantly associated with risk for developing illness. Of these 21 exposures, 19 were specific food items from among 202 foods and beverages served in the cafeteria during the camp and two were more general exposures. Only the two general exposures were significantly and independently associated with illness: consuming any ice from large trash can-style lined barrels that the camp provided in the dormitory lobby for filling water bottles (73% of ill persons versus 43% of non ill persons) (adjusted odds ratio [AOR]=3.4; 95% confidence interval [CI]=1.8--6.3; p=0.0001) and eating any salad from the cafeteria salad bar on at least one occasion (93% of ill persons versus 79% of non ill persons; AOR=3.5; 95% CI=1.4--11.8; p=0.02).

Inspection of the camp's water systems showed no evidence of plumbing cross-connections or failures that might have led to exposures to contaminated water or waste. Coliform testing of ice from the ice machines used to fill the barrels was negative. Campers reported dipping their drink containers and arms, hands, and heads into the ice. They also reported observing floating debris in the ice barrels. Inspection of the cafeteria and kitchen indicated that kitchen staff may have improperly followed cooking times and temperatures recommendations when preparing meals.

The laboratory investigation of stools specimens submitted by 11 ill persons yielded *E. coli* O111:H8 from two specimens. Three enrichment broths prepared from these 11 specimens had detectable Shiga toxin when screened with a commercial enzyme immunoassay (EIA). Two of these three EIA-positive stool specimens yielded colonies of Shiga toxin-producing *E. coli*, which were serotyped as *E. coli* O111:H8. Both isolates contained gene sequences for Shiga toxins 1 and 2 by polymerase chain reaction. *E. coli* O157:H7 was not isolated from any camper, foodhandler, or food or water sample. Samples of the implicated ice and salad items served during the camp were not available for testing.

Editorial Note: This was the first community outbreak of infections attributable to Shiga toxin-producing *E. coli* O111 reported in the United States. The findings of the investigation suggest a point-source outbreak. Although primary infection from eating a contaminated salad item and then secondary spread through the barrel ice is a plausible hypothesis, the original source of contamination and its means of spread are unknown.

Identification of non-O157 STEC requires techniques not used routinely by clinical laboratories. In this outbreak, a commercially available EIA kit was used to detect and isolate STEC in stool specimens; isolates were then serotyped at CDC.

STEC cause illness in otherwise healthy persons, including severe abdominal cramping (sometimes confused for appendicitis), bloody diarrhea, and HUS. *E. coli* O111 was the second most common non-O157 STEC (after *E. coli* O26) isolated from specimens submitted to CDC for serotyping during 1983--1998 and among isolates from persons with diarrhea collected for an ongoing survey in Minnesota initiated in 1995. STEC cause an estimated 110,000 illnesses each year in the United States, of which ≥30% may be attributable to non-O157 serotypes such as O111; the burden of disease attributable to non-O157 STEC is unknown.

Most STEC outbreaks in North America have resulted from infection with *E. coli* O157. A household cluster of *E. coli* 0111 infection was reported in 1990 from Ohio, and outbreaks have occurred in Australia, Europe, and Japan. Despite investigations involving large numbers of persons in well-defined settings, the vehicle of transmission has been epidemiologically implicated and microbiologically confirmed in only one 1995 outbreak in South Australia, which was attributable to mettwurst, a dried fermented sausage.

REF: *Morbidity and Mortality Weekly Report*, 49(15):321-4, April 21, 2000.

Good Agricultural Practices are Critical to Stemming Increase in Produce Outbreaks

Data indicate that produce-related foodborne illness outbreaks rise as consumption of produce increases. Vigilance about producing fresh fruits and vegetables under the safest conditions possible is necessary for industry to maintain consumer confidence in fresh domestic produce. The U.S. total per capita consumption of fresh fruits and vegetables increased 24% from 1970 to 1996, thanks to federal initiatives encouraging Americans to eat more produce. However, a review of produce-related outbreaks from 1987 to the present shows that the number of outbreaks more than doubled; the number of people affected more than doubled; a variety of fruits and vegetables were involved; 75% of the outbreaks were related to domestically-grown produce, and most of the outbreaks were caused by bacteria, especially *Salmonella* species and *E. coli* 0157:H7. Many different types of domestic and imported fruits and vegetables have been linked to outbreaks, including lettuce, mesclun lettuce, green onions, tomatoes, sprouts, cantaloupe, carrots, raspberries, frozen strawberries, basil and basil-containing products, unpasteurized apple cider and unpasteurized orange juice.

There are several factors that have contributed to the increases in foodborne disease outbreaks, such as the use of larger and more centralized production units. These larger, more complex food systems permit the survival and growth of harmful microorganisms and their distribution to larger numbers of people. Consumer demand for minimally processed produce -- such as fresh-squeezed juices and fresh-cut fruits and vegetables -- has contributed to outbreaks. Harmful microbes can grow and risk of foodborne illness increases when these products are stored at warm temperatures. Increased use of salad bars and the number of meals eaten outside the home are also contributing factors. Food prepared outside the home is subject to additional preparation, which can increase the risk of food-handling errors with fresh produce. Other changes in social demographics, e.g. more Americans are elderly, immunocompromised or suffering from chronic disease and, consequently, are more susceptible to developing foodborne illnesses, have also contributed to the increase.

Growers should reevaluate operating conditions, eliminate risks

Growers and shippers need to survey and evaluate their present operating conditions to reduce risks on the farm and in packing houses. On the farm and in packing facilities, there are many ways harmful microorganisms can be introduced to fresh produce, and there are many conditions that permit their survival and growth. There is a potential for

contamination through soil; irrigation water; manure and fecal material; wild and domestic animals; personal hygiene and sanitation of field workers; harvesting equipment; transport containers (used to carry produce from the field to the packing facility); air and dust; wash and rinse water; improper handling during sorting and packaging and in packing facilities; equipment used to soak, pack or cut produce; ice; storage at improper temperatures; improper packaging, and cross-contamination in storage, display and preparation. The riskiest areas are thought to be manure, irrigation water, and hygiene of field workers.

E. coli 0 1 57:H7, *Salmonella* and *Campylobacter* can be present in manure slurry and soil for up to three months, depending on temperature and soil conditions. Growers need to look at the source of water used for overhead irrigation, produce cooling, washing, dipping, and processing operations. Growers need to pay attention to worker hygiene in the field and in packinghouses. In-field portable toilets and hand-washing facilities that are kept well-supplied need to be available to workers, and workers should be trained to use these facilities. Growers should also implement manure management programs, complete with records, to better time use of well-composted manure. Slurry should be stored at least 60 days in the summer or 90 days in the winter before being applied to fields. Growers and shippers can prevent contamination through vehicle transport by knowing, and documenting, what was carried in trucks before loading fresh produce onto them.

REF: *Food Chemical News*, **42**(4), March 13, 2000.

Toxicology Tidbits

Pesticide Exposure and Children
Part 2: Children in Agricultural Communities

New concerns about pesticide health risks and children in the late 1980s were the foundation for the 1996 Food Quality Protection Act. Those concerns also spawned new efforts among public health scientists. We saw the need for a better understanding of exposure if we were to produce more accurate estimates of risk. Equally important, we needed to identify special populations at high risk.

Risk is often defined as the probability of harm. Groups at increased risk are normally those who either have high exposures or enhanced susceptibility to a particular disease agent. In the case of pesticides, for example, mixers, loaders, and applicators are considered "high risk" because of the relatively high exposure that can result from direct contact with commercial products and spray. Children are considered "high risk" because of possible increased susceptibility and the ongoing development of their organ systems.

So what about children of pesticide handlers and others who work with agricultural chemicals? Aren't their risks potentially high both from the point of view of exposure and of susceptibility? Our studies here at the University of Washington School of Public Health and Community Medicine for the past eight years have tried to answer these questions. We decided that children in farming communities should be defined as a special population for research, and that we needed to find out if their exposures and risks were different from those of other children. Furthermore, we knew that children in farming communities were probably exposed to more than one pesticide, and that pesticides that work by a common mechanism of action may produce an additive or cumulative risk. In the end we decided to focus

our efforts on younger children (1-6 years old), and we examined their exposure to the organophosphorus (OP) insecticides. Nearly all OP pesticides have a similar mode of action: they inhibit the nervous system enzyme acetylcholinesterase.

For more info: http://www2.tricity.wsu.edu/

REF: *Agrichemical and Environmental News*, Issue No. 167, March 2000.

Insecticidal Genes
Part I: From Tight Fit to Uptight

Part of the reason for a reluctance to accept genetic modification of crops may lie in a general unfamiliarity with basic cell biology and the ecological distribution of native Bt (Bacillus thuringiensis). Bt's natural ubiquity may be misunderstood because it can be formulated as a commercial spray that is registered with the Environmental Protection Agency (EPA) as a pesticide. In Europe, this lack of understanding has been exacerbated by recent food "scandals" including mad cow disease, tainted Coke®, and dioxins in Belgian chickens.

For more info: http://www2.tricity.wsu.edu/

REF: *Agrichemical and Environmental News*, Issue No. 167, March 2000.

Insecticidal Genes
Part II: Human Health Hoopla

Who and what information do we trust to decide whether transgenic technology is safe?

For more info see: http://www2.tricity.wsu.edu/

REF: *Agrichemical and Environmental News*, Issue No. 168, April 2000.

FDA warns Chinese herbal products contain prescription drugs

FDA has warned diabetics not to use five brands of Chinese herbal products because they allegedly contain two prescription drugs that can lower blood pressure. The action follows an investigation by the California Department of Health Services (CDHS). The products were identified as Diabetes Hypoglucose Capsules, Pearl Hypoglycemic Capsules, Tongyi Tang Diabetes Angel Pearl Hypoglycemic Capsules, Tongyi Tang Diabetes Angel Hypoglycemic Capsules and Zhen Qi Capsules. CDHS said that while the products claim to contain only natural Chinese herbal ingredients, its food and drug branch determined that they contain the prescription drugs glyburide and phenformin, which can be used to treat diabetes. The state investigation was launched after a diabetic patient suffered from several episodes of low blood sugar after consuming one of the products. The products are available by mail order, by telephone or via the Internet.

REF: *Food Chemical News Daily*, 2(166), February 25, 2000.

Examining the Contribution of Infant Walkers to Childhood Poisoning

Parents frequently utilize baby walkers in their infants of approximately 5-15 months of age and create opportunities for traumatic accidents. Healthcare professionals have tried to increase awareness of their dangers; despite this, between 1986 and 1991 reported walker-related accidents rose 45%. This study determined if walkers were a significant contributor to childhood poisonings and what toxins were encountered most commonly. Substances involved were: plants (56.7%), cleaning products (9.9%), cosmetics (5.5%), construction supplies (5.0%), cigarettes (4.5%), topicals (4.5%), oral medications (2.0%), chalk (2.0%), and miscellaneous (9.9%) e.g., markers, playdough, aquarium products, desiccants, candles, potpourri, magazines, and feces.

There were no fatalities or major effects from any of the exposures and 95% of the patients had no symptoms. Seven patients experienced minor outcomes that included oral mucosal irritation, emesis, and ocular irritation. One child suffered a moderate ocular exposure and was diagnosed with a corneal abrasion.

According to the National Electronic Information Surveillance System, in 1994 an estimated 25,500 baby-walker related injuries to children under 15 months of age were treated in hospital emergency departments in the US. This figure represents only those injuries severe enough to require medical treatment. A significant number of less severe accidents probably occur as demonstrated by this study in which 201 poisoning incidents occurred, but only 1 child was evaluated in a physician's office.

Walkers are potentially dangerous to unsupervised children. The American Medical Association recommends that "physicians counsel parents on the risk of injury that can occur from the use of infant walkers and inform parents that these devices do not either promote bipedal ambulation or offer a substitute for careful parental supervision."

REF: *Veterinary and Human Toxicology*, 42(1), February 2000.

USDA's Agricultural Research Service Posts Quarterly Report

USDA's Agricultural Research Service has posted its latest quarterly report on research on the Internet. The report contains all of the agency's latest research findings in soil and water quality, food safety and quality, animal production and protection, human nutrition, crop productivity, and other areas. For more information check out: www.ars.usda/gov/is/qtr/index.html

REF: *Food Chemical News*, 42(2), Feb 28, 2000.

MTBE Website

Methyl Tertiary Butyl Ether (MTBE), an oxygen enhancer added to gasoline to make it burn cleaner, is also contaminating surface and ground water. MTBE in drinking-water sources is of concern because it is a potential human carcinogen and it has low taste and odor thresholds which can make a water supply nonpotable even at low concentrations. Although there is no established drinking-water regulation, USEPA has issued a drinking-water advisory of 20 to 40 micrograms per liter (µg/L) on the basis of taste and odor thresholds. This advisory concentration is intended to provide a large margin of safety for noncancer effects and is in the range of margins typically provided for potential carcinogenic effects.

See: http://www.epa.gov/swerust1/mtbe/

Learn About Chemicals Around Your House

The Office of Pollution Prevention and Toxics (OPPT) and the Office of Pesticide Programs have released Learn About Chemicals Around Your House, an interactive web site designed to help kids identify household chemicals and to learn about their hazards.

Sodium Nitrite

Sodium nitrite has been referred to a California expert committee to determine whether it has been scientifically shown to cause reproductive problems. Sodium nitrite was previously slated to be listed under Proposition 65 as a developmental toxicant, but it was later determined that it did not meet the required criteria to be included on this list. So the substance has now been referred to the Developmental and Reproductive Toxicant Identification Committee, (DART), which advises California's Environmental Protection Agency in compiling a list of chemicals known to cause reproductive problems. That agency's Office of Environmental Health Hazards Assessment has prepared a draft document, "Evidence on the Developmental and Reproductive Toxicity of Sodium Nitrite," for public comment. Comments should be directed to Cynthia Oshita, OEHHA, 301 Capital Mall, Second Floor, Sacramento, CA 95814 (Fax 916-327-1097). Comments are due by Tuesday, May 2. The DART committee will discuss sodium nitrite June 2. To get copies of the draft document, visit www.oehha.ca.gov or call 916-445-6900.

REF: Food Chemical News, 42(4), March 13, 2000.

VETERINARY NOTES

Blue-green Algae Toxicosis

Blue-green algae toxicosis caused massive hepatic necrosis and death of approximately eight, 14- to 17-month-old Holstein heifers over one month from a group of 45 on pasture in Sonoma County, CA. Heifers were found dead or obtunded, down and unable to move. Samples from two of three heifers had typical liver necrosis. Blue-green algae were found in rumen contents and a thick green bloom was found on one of four ponds in the pasture. One-fourth of the surviving animals had markedly elevated liver enzymes and developed photosensitization on the white areas of their nose and their vulva. Concurrent selenium deficiency was also found.

REF: *Lab Notes* (UC Davis California Animal Health and Food Safety Laboratory System), 12(4), Winter 2000.

Nitrate Toxicosis

Nitrate toxicosis caused multiple sudden deaths in 10- to 12-month-old cattle on three farms. On one dairy, nitrates in concentrations of 2.7 to 3 percent was discovered in Sudan hay, 18 heifers and 50 bulls died in one day. Nine of 30 dairy and beef heifers died after eating oat hay with 2.5 percent nitrates on a second ranch. Thirteen of 100 pregnant

16- to 18-month-old Holsteins were found dead after eating Sudan grass hay on a third ranch. All animals tested had toxic levels of ocular nitrates.

REF: *Lab Notes* (UC Davis California Animal Health and Food Safety Laboratory System), 12(4), Winter 2000.

Organophosphate Toxicosis

Organophosphate toxicosis was diagnosed based on clinical signs in two of three horses after consumption of hay. The hay sample submitted contained 40 ppm phorate and 10 ppm ethion. Clinical signs associated with organophosphorus insecticide exposure include patchy sweating, frequent urination, and defacation, colic, bradycardia, and muscle tremors. Later, respiratory efforts become exaggerated and muscle weakness leading to prostration and respiratory failure developed. Horses that survive the first 12 hours post exposure have a good prognosis.

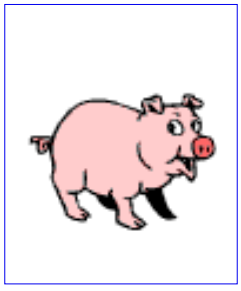
REF: *Lab Notes* (UC Davis California Animal Health and Food Safety Laboratory System), 12(4), Winter 2000.

Copper Toxicosis

Copper toxicosis was diagnosed in a doe (goat) with a history of dark urine for several months. Main lesions were severe hemoglobulinuric nephrosis and necrotizing hepatitis, with elevated liver and kidney copper levels. Copper toxicosis is uncommon in goats compared to sheep.

REF: *Lab Notes* (UC Davis California Animal Health and Food Safety Laboratory System), 12(4), Winter 2000.

!! Click on the pig !!

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