

UCSF

UC San Francisco Previously Published Works

Title

Pubic Hair Grooming Injuries Presenting to U.S. Emergency Departments

Permalink

<https://escholarship.org/uc/item/7xm6b605>

Journal

Urology, 80(6)

ISSN

0090-4295

Authors

Glass, Allison S
Bagga, Herman S
Tasian, Gregory E
et al.

Publication Date

2012-12-01

DOI

10.1016/j.urology.2012.08.025

Peer reviewed

Pubic Hair Grooming Injuries Presenting to U.S. Emergency Departments

Allison S. Glass, Herman S. Bagga, Gregory E. Tasian, Patrick B. Fisher, Charles E. McCulloch, Sarah D. Blaschko, Jack W. McAninch, and Benjamin N. Breyer

OBJECTIVE	To describe the demographics and mechanism of genitourinary (GU) injuries related to pubic hair grooming in patients who present to U.S. emergency departments (EDs).
MATERIALS AND METHODS	The National Electronic Injury Surveillance System contains prospectively collected data from patients who present to EDs with consumer product-related injuries. The National Electronic Injury Surveillance System is a stratified probability sample, validated to provide national estimates of all patients who present to U.S. EDs with an injury. We reviewed the National Electronic Injury Surveillance System to identify incidents of GU injury related to pubic hair grooming for 2002-2010. The variables reviewed included age, race, gender, injury type, location (organ) of injury, hospital disposition, and grooming product.
RESULTS	From 2002 to 2010, an observed 335 actual ED visits for GU injury related to grooming products provided an estimated 11,704 incidents (95% confidence interval 8430-15,004). The number of incidents increased fivefold during that period, amounting to an estimated increase of 247 incidents annually (95% confidence interval 110-384, $P = .001$). Of the cohort, 56.7% were women. The mean age was 30.8 years (95% confidence interval 28.8-32.9). Shaving razors were implicated in 83% of the injuries. Laceration was the most common type of injury (36.6%). The most common site of injury was the external female genitalia (36.0%). Most injuries (97.3%) were treated within the ED, with subsequent patient discharge.
CONCLUSION	Most GU injuries that result from the use of grooming products are minor and involve the use of razors. The demographics of patients with GU injuries from grooming products largely paralleled observations about cultural grooming trends in the United States. UROLOGY 80: 1187-1191, 2012. Published by Elsevier Inc.

Since the latter half of the 20th century, pubic hair removal has become an increasingly common grooming practice in the United States and other developed nations.¹⁻³ Changing beauty ideals are reflected in media sources, such as sexually explicit media or pornographic images,⁴ and have likely contributed to the expansion of this cultural trend. Evidence of the increasing practice is largely anecdotal, because very few

reports have described pubic hair depilation practices, including the prevalence, product type used, or associated injuries. From survey data, partial or complete pubic hair removal has been reported by upward of 70%-88% of young women in the United States.^{1,5} Similar findings have been reported from both Australia² and the United Kingdom.³ Investigators have also assessed the prevalence of pubic hair depilation practices in gay and heterosexual men, and 58%-78% reported regular partial or complete pubic hair removal.^{6,7}

Pubic hair depilation can be accomplished by shaving, waxing, trimming with scissors or clippers, and/or tweezing. Herbenick et al,¹ in a cross-sectional Internet-based survey of women aged 18-68 years, found that of those who had removed pubic hair ≥ 1 time in the previous month, $\leq 67\%$ used razors, 6% waxed, and 1%-2% had undergone electrolysis or laser hair removal. These rates varied by age group as did the frequency and extent of pubic hair removal. Other studies have reported similar distributions of products used.⁶ Although the safety of certain personal use depilatory products such as hot wax have been questioned,^{8,9} genital injury from grooming products is largely unstudied. Minor

Financial Disclosure: The authors declare that they have no relevant financial interests.

Financial Support: B. N. B. was supported by National Institutes of Health grant K12KD083021. This project was supported by the National Center for Research Resources, the National Center for Advancing Translational Sciences, and the Office of the Director, National Institutes of Health, through UCSF-CTSI grant KL2 RR024130. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Institutes of Health.

From the Department of Urology, University of California San Francisco, School of Medicine, San Francisco, California; Division of Urology, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; and Department of Epidemiology and Biostatistics, University of California, San Francisco, School of University, San Francisco, California

Reprint requests: Benjamin N. Breyer, M.D., M.A.S., Department of Urology, University of California, San Francisco, School of Medicine, 400 Parnassus Avenue, Suite A-610, Box 0738, San Francisco, CA 94143-0738. E-mail: bbreyer@urology.ucsf.edu

Submitted: July 12, 2012, accepted (with revisions): August 14, 2012

complications, such as painful irritation, erythema, or folliculitis are not uncommon¹⁰; however, severe complications after pubic hair removal, such as bacterial sepsis,¹¹ have been reported. Our aim was to describe severe pubic hair grooming injuries that prompt a visit to the emergency department (ED). We hypothesized that certain grooming instruments might result in more severe injuries.

MATERIAL AND METHODS

Data Source

The National Electronic Injury Surveillance System (NEISS) is operated by the U.S. Consumer Products Safety Commission (CPSC) and is used to monitor injuries treated in hospital EDs. NEISS contains prospectively collected data from >100 hospital EDs, selected from those with ≥ 6 beds and open 24 h/d in the United States and its territories. Each of these hospitals collect patient information for every ED visit involving an injury and designates those associated with consumer products. Secondary and tertiary level review and quality control occurs after the data have been sent to the CPSC.¹² NEISS is a stratified probability sample, validated to provide national estimates of all patients who present to U.S. EDs with an injury, using weighted factors provided by the CPSC.^{13,14}

After the institutional review board exempted the present study, the NEISS was queried to identify those with genitourinary (GU) injuries related to use of personal grooming products for 2002-2010. Individualized, de-identified data on patient age, race, sex, injury type, location (organ) of injury, ED disposition, and product involved were obtained. Brief narrative descriptions in the form of 1 or 2 sentences on the mechanism and type of injury made by a healthcare provider were included in the data set. Each individual narrative was reviewed and classified by 3 of us (A.S.G., B.N.B., and C.E.M.). The narrative descriptions were reviewed to confirm the variables (ie, product, diagnosis, location) and to further designate product use as appropriate (manufacturer intended) or inappropriate (unintended or accident related).

Variables

The product codes for hair clippers, shaving razors (nonelectric and electric), scissors, and shaving cream were used to identify all GU injuries related to grooming products during 2002-2010. Age was categorized as 0-12, 13-18, 19-28, 29-45, 46-65, and >65 years. The NEISS database classifies race by the U.S. census and includes white, black, Asian, Native American, Pacific Islander, other or unknown. Disposition from ED was classified as treated and discharged, treated and admitted, treated and transferred, observed in ED, left without being seen or against medical advice, or death.

GU injury sites were identified as external female genitalia, female pubic not otherwise specified (NOS), penis, scrotum, male genital NOS, and male pubic NOS. The diagnosis codes used by NEISS are limited to the following: burn, amputation, ingestion, concussion, contusion, crush, foreign body, fracture, hematoma, laceration, nerve damage, internal injury puncture, strain/sprain, hemorrhage, poisoning, avulsion, dermatitis, and other.

Statistical Analysis

All analyses were performed with adjustments for sample weighting and the stratified survey design.¹⁵ The analysis

accounted for the small sample size from which the extrapolation was based. All data points described reflected national estimates, and 95% confidence intervals (CIs) are provided, unless specified as being the actual, unweighted case numbers. Proportions are described as estimated percentages, because these weighted averages accounted for the complex sample survey. Linear regression models of the estimation sample were used to describe the change in rate of incidents annually. Analyses were performed using Stata, version 12 (StataCorp, College Station, TX).

RESULTS

Demographic Features

From 2002 to 2010, 335 actual ED visits for GU injury secondary to grooming products were observed. This provided an estimated 11,704 (95% CI 8430-15,004) grooming-related GU injuries or 3.0% of the total 394,438 GU injuries estimated to occur during the study period.

The overall mean age of the patients with GU grooming product injuries was 30.8 years (95% CI 28.7-32.9). The mean age of the men was 38.3 years (95% CI 34.3-42.2) vs 25.2 years (95% CI 23.5-26.8) for the women. Close to one-half of the female injuries occurred in those aged 19-28 years, with 28.8% occurring in those ≤ 18 years old (Fig. 1). The injuries in men were more evenly distributed, with 16.3% of injuries occurring in those aged ≤ 18 years, 37.1% in those aged 19-28 years, 29.5% in those aged 29-45 years, 14.2% in those aged 46-65 years, and 2.9% in those aged >65 years. Race was unknown for a significant proportion of the cohort (38.1%). Of those for whom race was known, white and black was identified for 50.9% and 28.5% of the cohort, respectively.

The number of incidents increased approximately linearly during the study period, with more than one-third of actual injuries occurring in 2009-2010 (Fig. 2). The estimated increase was 274 cases annually (95% CI 110-384, $P = .001$). Although the number of incidents was similar for both sexes during each year, an estimated 1765 (95% CI 717-2813; actual 49) female injuries occurred in 2010. This represents a nearly sixfold increase, or an increase of 346 cases annually (95% CI 149-544, $P = .001$) since 2002.

Overall, the months with greatest injury rate were November (12.2%) and August (10.5%), and April had the least (4.5%). The month with greatest injury rate for women was August (13.0%), and October had the lowest (0.4%). In contrast, October was the month with the greatest rate for men (14.1%).

Injury Variables

The proportion of products involved in the injuries is presented in Table 1. Nonelectric razors were involved in 9600 (95% CI 6500-12,700; 278 actual) or 81.9% of the injuries. Electric razors were implicated in 0.7% of the injuries overall and were associated with laceration, rash, or unspecified injury diagnoses. Hot wax was involved in 1.4% of injuries, and a small proportion of these involved

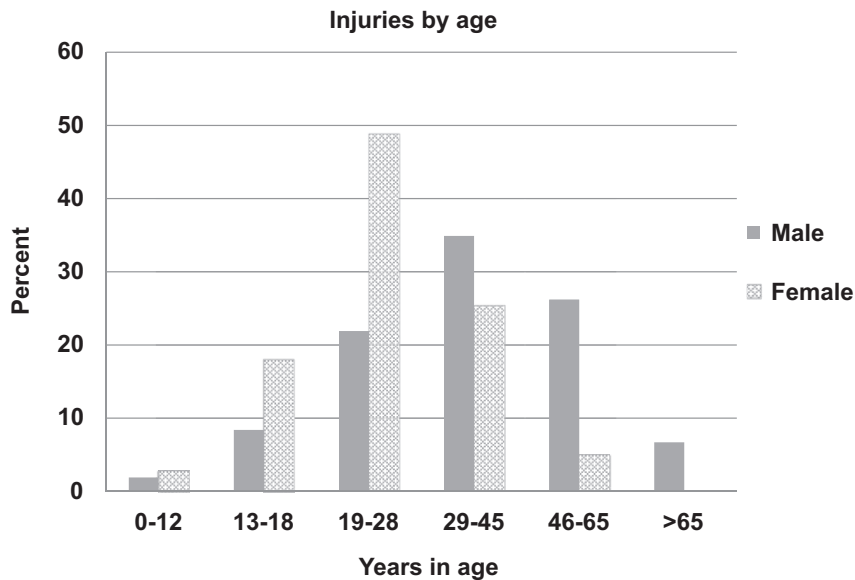


Figure 1. Percentage of grooming injuries stratified by age category.

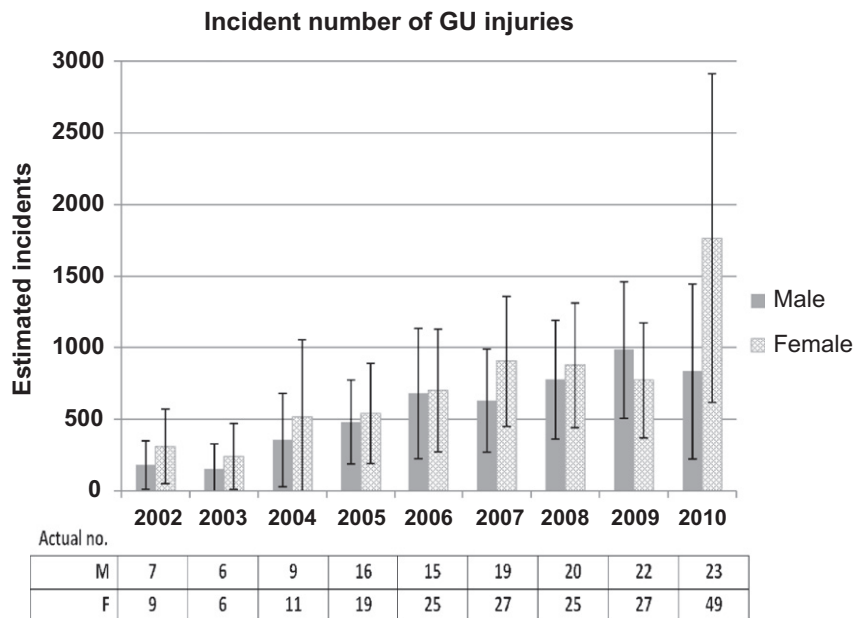


Figure 2. Actual and estimated incident number of genitourinary (GU) grooming injuries stratified by sex for 2002-2010.

the use of both hot wax and a nonelectric razor, which resulted in nonspecific pubic or external genital injury. The proportion of scissors-related injury was greater for men than for women (21.6% vs 6.7%). Furthermore, injury resulting from hair clippers was only reported for men, and injury from shaving cream and hot wax-related injuries was only reported for women.

The most common site of injury was the external female genitalia (36.0%; Table 2). Perineal/perianal injury was noted in 7 of the 132 (5%) actual cases of external female genital injury according to a review of narrative reports. External male genitalia constituted 34.5% of all GU injuries, reflecting a scrotal, penile, and genital NOS injury rate of 21.8%, 11.8%, and 2.0%,

respectively. No documentation of urethral or internal GU organ injury was found.

Laceration was the most common diagnosis, reported in 4278 (95% CI 3171-5384; 116 actual) or 36.6% of incidents. About one-half of all male injuries were lacerations, and this was the primary diagnosis in one-quarter of female injuries. Rash (including dermatitis, folliculitis, and cellulitis), abscess, and abrasion (including avulsion) accounted for 32.8%, 15.6%, and 10.4% of the injury diagnoses, respectively. Furthermore, burn and foreign body injuries were only identified in women (1.2% and 0.5%, respectively).

From the review of the short narratives, most injuries occurred as the result of appropriate or intended

Table 1. Number of product-associated injuries

Product	Men			Women		
	Actual	Estimate (%)	95% CI	Actual	Estimate (%)	95% CI
Razors (nonelectric)	100	3668 (72.3)	2440 to 4895	178	5914 (89.2)	3790 to 8038
Razors (electric)	3	47 (0.9)	−4 to 98	2	30 (0.5)	−11 to 71
Wax (with razor)	0	0 (0)	0 to 0	2	31 (0.5)	−30 to 91
Wax (without razor)	0	0 (0)	0 to 0	2	141 (2.1)	−59 to 342
Scissors	25	1097 (21.6)	622 to 1573	13	443 (6.7)	129 to 757
Hair clippers	9	262 (5.2)	60 to 463	0	0 (0)	0 to 0
Shaving cream	0	0 (0)	0 to 0	1	71 (1.1)	−70 to 213

CI, confidence interval.

manufacturer use of the grooming product. However, in 7 of the actual cases (2%), injury resulted after incorrect or unintentional application of the product. Examples, identified with our NEISS search term criteria, included the use of the shaving cream lid to control bleeding from a vaginal cut, self-circumcision with scissors, slip and fall on a razor with external genital injury, use of a razor to incise genital lesions, razor handle assault by another person, ritualistic genital cutting, and shaving skin over a spider bite.

Injury Management

Most patients (97.3%) were treated with subsequent discharge from the ED. An estimated 1% of the overall cohort or 90 women (95% CI −16 to 196, 9 actual) and 31 men (95% CI −12 to 74, 2 actual) were admitted for treatment. Information on the specific treatment intervention (ie, antibiotics, analgesics) was unavailable as either a NEISS variable or from the review of narratives. Additionally, 1.5% of the cohort left without being seen, although no patients were treated and transferred. No deaths were identified.

COMMENT

In the United States, the prevalence and nature of urologic injury from personal grooming products is largely unknown. In a national stratified probability sample of consumer product-related injuries presenting to U.S. EDs, we found a modest rate of GU injuries related to grooming product usage (3% of all GU injuries documented). Injuries occurred slightly more often in women (56.7%). When stratified by sex, differences in product type and injury diagnosis were observed. For both sexes, the number of incident cases increased approximately linearly during the study period but was most dramatic among women. From a public health perspective, pubic hair removal has been implicated in the spread of certain sexually transmitted infections; however, the evidence has largely been anecdotal or limited to case reports.^{1,4,10} Pubic hair removal has also been associated with a decreased incidence of pubic lice.¹⁶

At-home pubic hair removal is typically accomplished by shaving, waxing, trimming with scissors or clippers, or tweezing. Although minor adverse events, such as rash, folliculitis, pain, or irritation, have been reported after

Table 2. Injury incidents stratified by genitourinary site

Location	Actual	Estimate (%)	95% CI
External female genitalia	132	4208 (36.0)	2686-5729
Female pubic NOS	65	2347 (20.0)	1188-3506
Scrotum	64	2557 (21.8)	1676-3437
Penis	37	1385 (11.8)	690-2079
Male genitalia NOS	5	236 (2.0)	5-467
Male pubic NOS	32	972 (8.3)	425-1519

CI, confidence interval; NOS, not otherwise specified.

at-home hair removal techniques,¹⁰ case reports of subacute complications after pubic hair removal, such as methicillin-resistant *Staphylococcus aureus* infection¹⁷ or follicular keratosis requiring excision,¹⁸ have been reported. Abscess was the primary diagnosis identified in 15.6% of that cohort, with patients typically presenting a various number of days after grooming. Systemic or life-threatening injuries associated with grooming products have been reported in published studies. Dendle et al¹¹ described a 20-year-old Australian woman with poorly controlled type 1 diabetes who developed life-threatening sepsis with *Streptococcus pyogenes* and *Herpes simplex* after undergoing complete pubic hair removal with hot wax.

Body hair removal practices are potentially influenced by a variety of factors, including sex, age, partner and sexual activity status, sexual orientation, and body image.^{1,5,6} Not surprisingly, the demographic group largely purported to remove pubic hair—young women—had the greatest injury prevalence. We found that more than one-half of all GU injuries due to pubic hair removal were in women, who also had a younger age distribution, because about one-half were 19-28 years and 21% were ≤18 years old. One report, which surveyed women in a gynecologic clinic, found that >70% of adolescent girls aged 12-20 years routinely shaved or waxed their pubic hair.⁵ In an Internet-based survey completed by 2451 women aged 18-68 years, total pubic hair (vs partial) removal was associated with younger age.¹ Male injuries constituted a substantial portion of the cohort and were found to increase at a rate that paralleled female grooming injuries. This finding is congruent with contemporary studies that report relatively high pubic hair removal among men.^{6,7}

Although few published reports have described the effect of grooming practices on external genital injury, the CPSC issued a Hazards Screening Report in 2005,¹⁹ describing injuries related to “personal use” products from 1997 to 2003. Individual product categories included electric grooming devices, unpowered grooming devices, and grooming devices nonspecified, in addition to other categories such as clothing, eye glasses, and shopping carts. An estimated 506,650 injuries due to personal items occurred in 2003, with 5.0% requiring hospitalization and 370 deaths (none related to hair removal devices). Although the hazards report estimated 285.5 million electric grooming products were in use in U.S. households in 2003, it is unknown what portion were hair removal devices. Thus, because genital hair removal is a relatively common practice, the overall injury rate has been very low. Nevertheless, we found a sharp increase in the number of both men and women who presented to U.S. EDs with GU injury in recent years.

From our findings, urologists, ED, and urgent care providers who treat patients with grooming-related GU injury should advise patients on safe depilatory techniques. For example, hair clippers might be a superior tool, because they accomplish hair removal in a quick and economic fashion but pose less risk of microscopic lacerations or abrasions to the skin. In addition to preventing future harm, patient counseling potentially reduces the amount of healthcare resources spent on what are, arguably, preventable injuries.

This is the first study to describe the epidemiology of GU injuries secondary to hair removal practices. Its strengths included the large, nationally representative sample taken from a well-validated source; however, several limitations were present. The NEISS likely underestimates the effect of grooming product-related GU injury, because it does not capture injuries managed by primary care physicians or in urgent care settings. Furthermore, because these injuries are often “minor,” those not treated or patient self-treated are missed. We also only identified those injuries related to a limited number of depilation products codes and thus could not account for GU injuries due to other grooming products, such as soaps. However, we would expect this number to be very low.

CONCLUSION

Depilatory practices account for a small portion of GU injuries presenting to U.S. hospital EDs. Most injuries are related to nonelectric razors, are minor, and are managed with outpatient treatment. The demographics of patients with GU injuries from grooming products largely parallel observations about cultural changes and grooming practices in the United States. Although hair removal products account for a small proportion of GU injuries, the increasing number of incidents in both men and women is an

important concern for practitioners. Healthcare practitioners should consider counseling patients against nonelectric razor use in pubic hair grooming to help prevent injury.

References

- Herbenick D, Schick V, Reece M, et al. Pubic hair removal among women in the United States: prevalence, methods, and characteristics. *J Sex Med.* 2010;7:3322-3330.
- Tiggemann M, Hodgson S. The hairlessness norm extended: reasons for and predictors of women's body hair removal at different body sites. *Sex Roles.* 2008;59:889-897.
- Toerin K, Wilkinson S, Choi PYL. Body hair removal: the “mundane” production of normative femininity. *Sex Roles.* 2005;52:399-406.
- Schick VR, Rima BN, Calabrese SK. Evulvalution: the portrayal of women's external genitalia and physique across time and the current Barbie doll ideals. *J Sex Res.* 2011;48:74-81.
- Bercaw-Pratt JL, Santos XM, Sanchez J, et al. The incidence, attitudes and practices of the removal of pubic hair as a body modification. *J Pediatr Adolesc Gynecol.* 2011;25:12-14.
- Martins Y, Tiggemann M, Churchett L. Hair today, gone tomorrow: a comparison of body hair removal practices in gay and heterosexual men. *Body Image.* 2008;5:312-316.
- Boroughs M, Cafri G, Thompson JK. Male body depilation: prevalence and associated features of body hair removal. *Sex Roles.* 2005;52:637-644.
- Chang AC, Watson KM, Aston TL, et al. Depilatory wax burns: experience and investigation. *Eplasty.* 2011;11:e25.
- Zoumaras J, Kwei JS, Vandervord J. A case review of patients presenting to Royal North Shore Hospital, with hair removal wax burns between January and November 2006. *Burns.* 2008;34:254-256.
- Trager JD. Pubic hair removal—pearls and pitfalls. *J Pediatr Adolesc Gynecol.* 2006;19:117-123.
- Dendle C, Mulvey S, Pylis F, et al. Severe complications of a “Brazilian” bikini wax. *Clin Infect Dis.* 2007;45:e29-e31.
- U.S. Consumer Product Safety Commission. NEISS: National Electronic Injury Surveillance System, A Tool for Researchers 2000. Available at: <http://www.cpsc.gov/neiss/2000d015.pdf> Accessed July 11, 2012.
- Annest JL, Mercy JA, Gibson DR, et al. National estimates of nonfatal firearm-related injuries: beyond the tip of the iceberg. *JAMA.* 1995;273:1749-1754.
- Hopkins RS. Consumer product-related injuries in Athens, Ohio, 1980-85: assessment of emergency room-based surveillance. *Am J Prev Med.* 1989;5:104-112.
- Schroeder T, Ault K. The NEISS sample (design and Implementation): 1997 to present. Washington DC: US Consumer Product Safety Commission 2001. Available at: <http://www.cpsc.gov/neiss/2001d011-6b6.pdf> Accessed July 11, 2012.
- Armstrong NR, Wilson JD. Did the “Brazilian” kill the pubic louse? *Sex Transm Infect.* 2006;82:265-266.
- Begier EM, Frenette K, Barrett NL, et al. A high-morbidity outbreak of methicillin-resistant *Staphylococcus aureus* among players on a college football team, facilitated by cosmetic body shaving and turf burns. *Clin Infect Dis.* 2004;39:1446-1453.
- Roth LM, Look KY. Inverted follicular keratosis of the vulvar skin: a lesion that can be confused with squamous cell carcinoma. *Int J Gynecol Pathol.* 2000;19:369-373.
- Marcy N, Rutherford G. Hazards Screening Report: Personal Use Items. U.S. Consumer Product Safety Commission 2005. Available at: http://www.cpsc.gov/library/hazard_personal.pdf Accessed July 11, 2012.