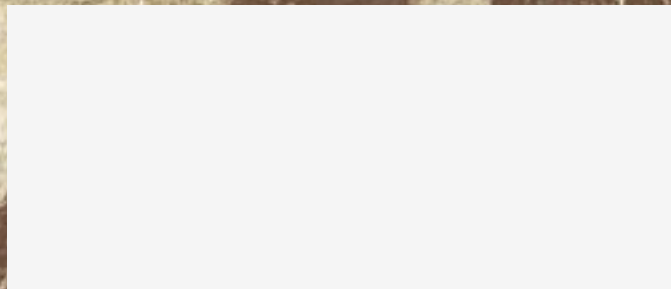




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HE MANA'O: THOUGHTS FROM THE EDITOR

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Doctoris: We are all Teachers

No doubt we all remember that the Latin word *doctoris* means teacher, not personal healthcare provider, and not primary care (or other) physician. Arguably among the most important functions we can perform is to teach our patients how to best care for their own health. Not only is it our calling, it is fun; it is rewarding. We might tend to forget the power we have as doctors when we're trying to complete our patient charts in



S. Kalani Brady MD, MPH, FACP
Editor, Hawai'i Medical Journal

the most recently required format, avoid HIPAA violations and infringements of the latest "illegal" abbreviations in hospital records, prove our current clinical competence to credentialing authorities who police us, learn yet another unwieldy computer system for "improving" our patients' care, and fight for our patients' needed

medication or timely consultation. In the increasingly complex world of modern clinical medicine, it is easy to feel battered and defensive, and lose of the sense of our personal worth. But out there in the real world, people still highly respect doctors, and if we comport ourselves with appropriate dignity, a message we share can have great impact.

Last month in this column, I addressed the importance of continuing medical education. I have devoted a significant part of the past two decades of my life to developing and teaching the process of C.M.E. But I have also derived great satisfaction from participating in a large number of educational forums with the general public as the target audience. These have included small public screenings such as one last month in Lana'i City, where I sat with people singing songs with the 'ukulele and teaching them about preventing and caring for diabetes. They have included seminars with target audiences as varied as residents of nursing homes, employees of the O'ahu Transit

Service, Rotary Clubs, conventions such as the Association of Hawaiian Civic Clubs, and larger gatherings such as Akamai Living, Prime Time Gold, and the Straub Foundation's public education days, which reach up to a thousand attendees at a time.

And then, understanding that people's attention to learning is as varied as the people themselves, one can expand into mass media such as radio and television. As a frequent guest on health radio shows, I intend to reach a different listener than at live events. With weekly television medical talk shows such as 'Olelo's "Health in Paradise" and the PBS series "UH on Call", we were able to stimulate increased awareness of personal health to a viewing audience by using graphics and action footage in addition to local health experts. Finally, the "soundbites" of the "Ask the Doctor" segment, which has run weekly on the KHON 2 Morning News for more than a decade, have probably reached the largest audience, an estimated 100,000. You, my colleagues, would not believe how easy the show is! For any primary care practitioner such as myself, there is always some simple teaching point for each question that one can share with the viewers to increase their knowledge of and commitment to health. Frequently, I have invited my students from the third year outpatient internal medicine course to the station, and their answers are just as appropriate as my own.

As you wrestle with the complexity and intensity of modern medicine, I invite you to step out and spend some simple time teaching. The opportunities (and need) for volunteers are numerous. One can choose limited appearances for the American Heart Association, the American Cancer Society, the American Lung Association, the American Diabetes Association, the National Kidney Foundation, and a host of other organizations. One can join the speakers bureau of the Hawai'i Medical Association, any of the specialty societies or medical centers, or civic organizations. Your reward will be an eager group of people ready to receive your wisdom, and it is indisputable that primary prevention is much more cost effective than the efforts we expend on patient rescue in the intensive care unit. Feel again the respect that is drained by so many of our daily duties in medicine. And when you are called **doctor**, remember what it means!



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Pediatric Obesity: Are We Under-diagnosing?

Assessing pediatric obesity at an urban community health clinic

Liora Noy MPH, Michael Walter MD, Doris Segal Matsunaga MPH, and Jay E. Maddock PHD



Liora Noy MPH



Michael Walter MD



Doris Segal Matsunaga MPH



Jay E. Maddock PHD

"We must...intensify efforts for early identification and early prevention of overweight and obesity, or we are going to have the first generation of children who are not going to live as long as their parents."

(Dr. G. Blackburn, Associate Director of Division of Nutrition at Harvard Medical School)

Abstract

Pediatric care providers are often discouraged by the scope and magnitude of our current childhood overweight epidemic. Numerous studies have shown the adverse consequences of pediatric obesity, ranging from short-term physical and psychosocial consequences to long-term consequences that manifest in adulthood. In this study, we investigated rates of overweight and at-risk for overweight children in a community health center in urban Honolulu, Hawai'i which serves a large multi-cultural and multi-ethnic population with a large presence of Asians and Pacific Islanders. This was done by conducting a chart review of the pediatric patients in the clinic. Twenty-four children had been formally diagnosed and recorded in their charts as obese/overweight during the last 2 years, out of 4,640 pediatric patients seen (less than 0.5%). However, according to this study, roughly 140 overweight children are seen monthly at this clinic, indicating a prevalence of more than 50%. Samoan and Micronesian children were found to be primarily impacted.

Introduction

Obesity is one of the most difficult challenges currently facing pediatric primary care providers in the United States. The prevalence of overweight in children ages 6-11 years in the United States has more than tripled in less than 30 years, increasing from 4% to 15% in 2001.¹ It is also estimated that an additional 15% of children are at risk for becoming overweight.² These data together imply that providers have more than a quarter of their patients as overweight or at risk for becoming overweight.³ In Hawai'i, according to the 2003 Hawai'i Youth Risk Behavior Survey, 27.3 percent of high school students were classified as overweight or at-risk for overweight and 48.6 percent of students were trying to lose weight.⁴

Numerous studies have shown the adverse consequences of pediatric obesity, ranging from short-term physical and psychosocial consequences to long-term consequences that manifest in adulthood. These include diabetes,⁵ hypertension, orthopedic complications,⁶ asthma, sleep apnea,⁷ eating disorders⁸ and psychosocial problems.⁹ One study of school age and teen children found that obese children rated their quality of life as comparable to that of children with cancer.¹⁰ As adult obesity contributes to 4 of the 10 leading causes of death among U.S. adults including coronary heart disease, stroke, type 2 diabetes, and cancer, adult obesity is perhaps the most notable adverse outcome of childhood overweight.¹¹ It has been estimated that at least one-third of overweight preschool children and one-half of overweight school age children remain overweight as adults.¹²

It is predicted that with no successful intervention, the present generation of children could have shorter life spans than their parents.¹³ Treatment of overweight that is already established is more difficult, more costly, and less effective than preventing weight gain; therefore, prevention may be the best intervention.^{14,15} When looking for evidence-based successful preventive interventions, practitioners are faced with the fact that no long-term (longer than two years) evidence is available and no evidence-based overweight prevention guidelines exist.¹⁶

Pediatric care providers can easily become discouraged by the scope and magnitude of this problem as the childhood overweight epidemic continues to grow. The main interaction between pediatric caregivers and their patients typically occurs in brief visits to the clinic, which might preclude the possibility of addressing a complex issue thoroughly. At a busy community health center, these are often sick-child visits, where acute care is the priority, as opposed to well-child visits, which allow for greater emphasis on preventive care. Nevertheless, as a first basic step in preventive intervention and in treatment of existing obesity, the American Academy of Pediatrics recommends that patients' BMI should be calculated and plotted once a year for all children

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and adolescents, and change in BMI should be used to identify rates of excessive weight gain.

To our knowledge, only two studies to date have tried to assess pediatric providers' performance in identifying obesity in their patients. One, in North Carolina, using voluntary surveys of physicians, revealed that although BMI charts are useful and provide a clear measuring stick in observing obesity, they are underused.¹⁷ The second study, in Children's hospital in Pittsburgh, revealed that obesity was underdiagnosed in pediatric charts patients by 50%.¹⁸ In this case, the results were based on examinations of patients' charts in a primary care practice located in an urban tertiary-care, academic, pediatric hospital serving an urban, poor, mostly African-American population.

For the study reported here, we investigated rates of overweight children in a community health center in Honolulu, Hawaii by conducting a chart review of the pediatric patients in the clinic.

Study Design

The study was conducted at an inner-city community health center in Honolulu, Hawai'i which serves a large multi-cultural and multi-ethnic population with a large presence of Asians and Pacific Islanders. In the summer of 2004, a series of key-informants interviews with the pediatric providers revealed a need for interventions focused on overweight among their patients. The providers reported a large number of overweight children, some of them already suffering from weight-related complications such as hypertension and high levels of cholesterol; however, neither the magnitude of the problem nor the effectiveness of diagnosis and intervention were known. Therefore, a chart review was conducted in order to assess the needs in the clinic as pertains to pediatric obesity.

The data used in this analysis were collected using two different methods: First, we reviewed all the charts of patients that were formally diagnosed as overweight anytime in the last two years. The patient list was generated using the health center's Medical Manager System, designed primarily as an automated billing system. Second, we reviewed charts of all the pediatric patients seen on two separate, randomly chosen, days. The CHC's medical records are not automated; therefore chart review was the most accurate method of obtaining the data.

Findings

Results for Chart Review of Patients Diagnosed as Overweight

Twenty-four children had been diagnosed and recorded in their charts as overweight during the last two years, while in 2004 a total 4,640 pediatric patients were seen (less than 0.5%). None of these charts included a BMI record. We therefore computed patients' BMIs based

on recorded height and weight and verified that all of them were correctly classified as overweight using the American Academy of Pediatrics definition (BMI more than the 95 percentile according to age and gender).¹⁹ The average BMI for these 24 patients, computed according to gender and age, was 36.2 while the 95% BMI threshold, computed according to gender and age, is 22.7. Only one patient had a BMI slightly lower than the threshold (22.6) while the highest BMI measured in this group of overweight pediatric patients was 57.4. This group of identified overweight patients included: 12 female and 12 males, with an average age of 11.2. Ethnically, there were eight Micronesians, six Samoans, five Filipinos, three Hawaiians, one Laotian and one Caucasian.

Results for Chart Review of Pediatric Patient Sample:

Among 60 patients seen on two different days, 31 were infants and young toddlers, less than 2 years old. In our study we excluded children less than 24 months old as according to the American Academy of Pediatrics, BMI needs to be charted only for children older than 2. Among the 29 patients who were older than 2, 14 were not overweight but 15 (52%) were overweight (BMI higher than the 95th percentile according to gender and age). This overweight rate is significantly higher than the only other similar study currently available that found an obesity rate of 9.7% for children 3 months to 16 years old. None of the patients in our sample that were found to be overweight based on their BMI was formally diagnosed and/or recorded as overweight by the providers nor was his/her BMI recorded. For the 15 overweight children we found an average BMI of 31.8 (95% average BMI=23.3), ranging from a low of 20.5 to a high of 43.1. Of these patients, 10 were female and five males; and their average age was 11.3. Nine of these 15 patients were Samoan. The rest were three Hawaiians, and one Micronesian, Tongan and Chinese, respectively.

Discussion

As we see, the children in the second group were as significantly overweight as the children who were formally diagnosed as overweight, but this group was not diagnosed and not recorded as overweight/obese. According to the first chart review, one child a month is diagnosed in the clinic as overweight. If findings from the second review of patients over a two-day period are representative, then roughly 140 overweight children are seen monthly at this clinic. These are serious findings, clearly showing the need for (1) systematic identification of overweight children and documentation of BMI for all pediatric patients, and (2) an urgent need for culturally tailored obesity prevention programs targeting especially Samoan and Micronesian populations.

In response to these findings, the pediatric provid-

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ers at the health center implemented protocols to routinely assess and document BMI for all pediatric patients, and are committed to finding resources to more effectively address obesity prevention.

Study Limitations

Our main limitation is clearly the small size of our sample. But another limitation is the population served at this Community Health Center: first of all, we found higher rates of overweight among Samoan and Micronesian children and we might want to be cautious with this finding, as BMI charts might not be appropriate to measure children from these populations that may tend to have bigger and heavier bodies than the populations on which the BMI is standardized. BMIs may therefore have to be used in conjunction with height and weight charts and a thorough physical assessment in determining overweight among these populations. Furthermore, the study might be biased as the population served in this clinic is primarily low-income. Although childhood obesity is prevalent across all population groups in America, low socioeconomic status might be a risk factor for overweight in young children. An analysis of data from NHANES III (1988-1994) showed that the prevalence of overweight was higher in low-income children (15.4%), than in higher-income children (8.8%). Since the population served at this clinic consists mostly of lower-income families, the reported results might not reflect the prevalence of the problem in other income groups.

Conclusion

While the multiple adverse consequences of childhood obesity are abundantly clear, many apparently efficacious interventions are beyond the scope of primary care practitioners, and for now there are limited resources for prevention and treatment. A systems approach that more fully integrates the child with family, school, health professionals and community is therefore recommended.²⁰ This system approach becomes clear when we observe that school-based prevention programs studied to date have not been successful in reducing the prevalence of obesity²¹ and when we understand that the barriers for healthier weight are all around us: in vending machines at school, media targeting children, lack of walking/bicycle paths and the amounts of inexpensive, fast and unhealthy food that surround us. It seems that only an environment that is conducive to physical activity and healthy diet will succeed in better obesity prevention. But, until policies change to make this happen, all medical practitioners must do their part by documenting BMI according to APA guidelines, making accurate diagnoses, raising patient and family awareness and actively guiding them towards a healthier lifestyle.

References

- Ogden CL, Flegal KM, Carroll MD, Johnson CL. (2002) Prevalence and trends in overweight among US children and adolescents. *JAMA*, 288:1782-32.
- Fowler Brown A, Kahwati LC (2004) Prevention and Treatment of Overweight in Children and Adolescents. *American Family Physician*, 2004;69:2591-8.
- Obrein, 2004.
- Saka S, Bunao V. Highlights of the 2003 Hawaii Youth Risk Behavioral Surveys. Hawaii Department of Health, Honolulu, HI. Accessed on-line on August 5, 2005 at <http://www.state.hi.us/doh/>
- Pinhas Hamiel O, Dolan LM, Daniels SR, Standiford D, Khoury PR, Zeitler P (1996) Increased incidence of non insulin dependent diabetes mellitus among adolescents *Journal of Pediatrics* 128: 608-15.
- American Obesity Association, Accessed on-line on September 29th, 2004 from www.obesity.org/subs/childhood
- Dietz WH (1998) Health consequences of obesity in youth: childhood predictors of adult disease. *Pediatrics* 1998: 101:518-25.
- Fowler Brown A, Kahwati LC (2004) Prevention and Treatment of Overweight in Children and Adolescents. *American Family Physician*, 2004;69:2591-8.
- Braet C, Mervielde I, Vandereycken W (1997). Psychological Aspects of Childhood Obesity. *J Pediatric Psychology* 22:59-71.
- Schwimmer, J. B., Burwinkle, T., M., & J. W. Varni (2003 April). Health-related quality of life of severely obese children and adolescents. *JAMA*, 289 (14), 1813-1819.
- World Health Organization, Controlling the Global Obesity Epidemic, Accessed on-line on September 5th, 2004 from <http://www.who.int/nut/obs.htm>
- Serdula MK, Ivery D, Coates RJ, Freedman DS, Williamson DF, Byers T (1993) Do obese children become obese adults? A review of the literature. *Preventive Medicine* 22:167-177.
- National alliance for Nutrition and Activity, retrieved September 24th from <http://www.cspinet.org/nutritionpolicy/nana.html>
- International Obesity Task Force, Accessed on-line on September 25th from <http://www.iotf.org>
- Gottesman MM, (2003) Healthy Eating and Activity Together: Weapons against Obesity. *Journal of Pediatric Health Care* 17 (4) :210-215.
- Fowler Brown A, Kahwati LC (2004) Prevention and Treatment of Overweight in Children and Adolescents. *American Family Physician*, 2004;69:2591-8.
- Perrin EM, Flower KB, Ammerman: Body mass index charts: useful yet underused. *J Pediatr* 144:455-460, 2004, 2004.
- OBrien SH, Holubkov R, Reis EC: Identification, evaluation, and management of obesity in an academic primary care center. *Pediatrics* 2004, 114:154-159
- We use the AAP definition. This definition excludes children less than 24 months old. Obrein, Holubkov and Reis, 2004, use a different definition for children bigger than two months and under five years old (weight >120% of 50th percentile BMI).
- Ritchie L, Crawford P, Woodward-Lopez G, Ivey S, Masch M, Ikeda J (2001) Prevention of Childhood Overweight – What should be done? Center for Weight and Health UC Berkeley.
- Fowler Brown A, Kahwati LC (2004) Prevention and Treatment of Overweight in Children and Adolescents. *American Family Physician*, 2004;69:2591-8.



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Evaluation of Secondhand Smoking Characteristics in Asthmatic Children

Presenting to Four Emergency Departments on O'ahu, Hawai'i

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Abstract

Exposure to secondhand smoke causes adverse health outcomes particularly in vulnerable groups like children. This multi-centered prospective study examined the household exposure to secondhand smoke among asthmatic children presenting to emergency departments on O'ahu, Hawai'i. Findings revealed that asthmatic children of Samoan, Micronesian, Filipino, Part/Native Hawaiian and Other/Mixed Ancestry had a greater proportion of high exposure to secondhand smoke in the home compared to Japanese, Chinese and Caucasian ethnic groups. Asthmatic children with no insurance or with Medicaid had a greater frequency of high exposure to secondhand smoke in the home than those with private insurance. Additionally, an inverse relationship between caregiver educational level and exposure to secondhand smoke in the home was observed. Recommendations are provided to improve health outcomes and address the disproportionate burden of asthma in such children.

Introduction

Over the past quarter century, numerous scientific studies have established the damaging health effects resulting from exposure to secondhand smoke.¹⁻³ Secondhand smoke (also called environmental tobacco smoke (ETS) or passive smoke) is a mixture of the smoke given off by the burning end of tobacco products and the smoke exhaled by smokers.^{4,5} This smoke contains a complex mixture of more than 4,000 chemicals, more than 50 of which are known or probable human cancer-causing agents.^{1,2} Secondhand smoke is responsible for about 35,000 deaths from heart disease and 3,000 deaths from lung cancer each year.⁶ Every year nearly 300,000 cases of bronchitis and pneumonia in children under 18 months of age are directly linked to secondhand smoke, which is also responsible for increased risk for ear infections and Sudden Infant Death Syndrome. Secondhand smoke triggers or exacerbates 200,000 to 1 million cases of childhood asthma.^{3,4} In 1992 the U.S. EPA concluded

that sufficient evidence was available to demonstrate secondhand smoke's causal association with additional episodes and increased severity of asthma in children who already have the disease.³ Exposure to secondhand smoke has also been identified as a risk factor for the onset of asthma in children who did not previously have symptoms.⁷

The prevalence rate of smoking among adults in Hawai'i is 21.1% compared with the national median prevalence rate of 23.1% [2002-CDC estimate].⁸ But smoking prevalence in Hawai'i continues to be higher in some ethnic groups than in others as demonstrated by Maskarinec et. al. who reported that Native Hawaiians reported the highest smoking prevalence, Japanese the lowest, and Caucasians intermediate levels.⁹ These high prevalence rates by adults may result in increased risk of secondhand exposure to children in the home. The effects of secondhand smoke on the health of children are particularly concerning because they are an extremely susceptible group. Children are vulnerable to secondhand smoke exposure for several reasons: (1) they are still developing physically, (2) they have higher breathing rates than adults, and (3) they have little control over their indoor environments.¹⁰ Children exposed to high doses of secondhand smoke, such as those whose mothers smoke, run the greatest relative risk of experiencing damaging health effects.

The dangers of secondhand smoke prompted an investigation by the Hawai'i State Department of Health in 2003 to measure the population at risk of secondhand cigarette smoke from adults inside Hawai'i households.¹¹ The report estimated that 14% of Hawai'i children under 18 years of age (n=40,200) were at risk for exposure to second hand smoke inside the home. The study also determined that the exposure was approximately the same regardless of whether the children were asthmatic or not. While the study provided insight concerning the exposure to secondhand smoke

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among children representing Hawaii's general population, little is known about the characteristics of household smoke exposure among asthmatic children presenting to an Emergency Department (ED) with acute asthma symptomatology. Such children have been shown to be at greater risk for increased morbidity secondary to the lack of knowledge of asthma and its triggers, lack of appropriate asthma medications and absence of written asthma action plans resulting in repeated emergency visits and hospitalizations.^{12,13} This current article will describe the secondhand smoke exposure of 897 asthmatic children (age 1-17) presenting to four major EDs on Oahu with an acute wheezing episode. We hypothesize that asthmatic children who visit the EDs have higher exposures to secondhand smoke in the home compared to asthmatic children representing the general population. A second hypothesis of this study is that ED asthmatic children of Part/Native Hawaiian will have a higher exposure of secondhand smoke exposure in the home compared with other ethnic groups. This is based on a previous investigation that indicated the high incidence of smoking in the Native Hawaiian ethnicity.⁹

Because secondhand smoke exacerbates asthma in children, identification of such exposure in the home will help target environmental remediation activities to help decrease asthma morbidity in this group. In addition, this article will also characterize other household exposures identified by the parents as being responsible for triggering the child's asthma. Since asthma is a multi-factorial disease, exposures to such irritants and/or allergens and viral infections may also be responsible for consequent morbidity.

Methods

Study Subjects

Patients older than 12 months and younger than 18 years presenting to the EDs with asthma, wheezing or bronchospasm were eligible to participate in the study from 10/1/2002 to 8/1/2004. All research was conducted in accordance with appropriate institutional review boards.

Study Design

This was a multi-centered prospective cohort study that included four Oahu emergency departments: 1) Kapiolani Medical Center for Women and Children (KMCWC)-a tertiary care children's and women's medical center in urban Honolulu, 2) Kaiser Permanente Medical Center (KPMC)-a general hospital in a residential community of Honolulu serving Kaiser plan patients, 3) Castle Medical Center (CMC)- a general hospital in a rural/residential community of northern Oahu, and 4) Waianae Coast Comprehensive Health Center (WCCHC)- a 24/7 emergency care center in a rural community of West O'ahu.

Informed consent for participation was obtained during the ED visit when the following assessment data were collected: patient age, gender, ethnicity, medical insurance, asthma medication use prior to ED visit, the number of past ED/hospital/healthcare provider visits, medications administered/prescribed in the ED, hospitalization following the ED visit, possession of a written asthma action plan, asthma chronic severity classification, S_pO_2 , heart rate, respiratory rate, number of days experiencing symptoms prior to coming to the ED, and signs present in the ED such as the use of accessory muscles and/or retractions.

Ethnicity

Ethnicity was categorized into Native and Part Hawaiian, Filipino, Samoan, Micronesian, Caucasian, Chinese, Japanese and Other/Mixed Ancestries. The Other/Mixed Ancestries category included African American, Asian/Pacific Islanders not otherwise specified, Hispanic, Korean, Laotian, Malaysian, Portuguese, Tongan and Vietnamese since these groups were too small in number to be categorized individually.

Asthma chronic severity classification was based on the National Institute of Health asthma guidelines, which categorized asthma severity based on daytime and nighttime frequency of symptoms including coughing, wheezing and trouble breathing. Our investigators developed and validated a simplified algorithm to assess NIH-based asthma chronic severity classification for all ED patients.¹⁴ Written asthma action plans were defined as "written plans made by you and your [child's] doctor to help care for your [child's] asthma."

Follow-up data were collected by phone interviews three weeks and three months after the ED encounter. Data were collected by project and ED staff, including research assistants, project coordinators, respiratory therapists, nurses and physicians. Follow up data elements included demographics; quality of life indicators; pattern of medical care (including prescription pick-up, PCP follow-up, current medication use); and home environment (including household smoking and exposure to allergens and triggers). The child was defined as being exposed to second hand smoke in the home if the caretaker reported that someone in the home smokes. Children categorized as exposed were further stratified into a low exposure and high exposure group. The low exposure group included smokers who reported intermittent smoking both in the home and/or just outside or on the lanai of the home. The low exposure group also included children who lived with separated families in which one of the parents smoked in one of the homes. The high exposure group included children living with one or more smokers (range = 1-5 smokers) who reported always smoking inside the home. These smokers included mothers, fathers, siblings, grandparents, aunts and uncles of the asthmatic children.

All data was obtained in a standardized fashion at each ED, recorded on a standardized paper data form, and entered into a database for subsequent analysis. Data were analyzed using chi-square analysis as appropriate.

Results

ED child asthmatics demonstrated a threefold higher, overall exposure to indoor smoke than child asthmatics in the general Hawai'i population (table 1). Significant differences were found among the ethnic groups and child exposure to secondhand smoke in the home (table 2). Asthmatic children of Samoan, Micronesian, Filipino, Part/Native Hawaiian and Other/Mixed Ancestry had a greater proportion of high exposure to secondhand smoke in the home compared with Japanese, Chinese and Caucasian ethnic groups ($p<0.001$). Asthmatic children with no insurance or with Medicaid had a greater frequency of high exposure to secondhand smoke in the home than those with private insurance (table 3). The caregivers (i.e. parents and/or guardians) of the asthmatic children completing fewer years of education had a significant, elevated frequency of high exposure to secondhand smoke in the home than those completing more years of education ($p<0.001$). Within our sample of

asthmatic caregivers, 57.1% who completed grades 1-11, 37.7% who completed a GED or 12th grade, 36.5% who completed other (foreign) schooling, 27.5% who completed 1 or 2 years of college/technical/vocational training, 16.6% who completed three or four years of college/technical/vocational training, and 16.0% who completed 5 or more years of college/technical/vocational training of their children had a high exposure to secondhand smoke in the home (n=897) [table 4]. When assessing the environmental exposures recognized by parents as being responsible for triggering their child's asthma, we found that 57.0% were uncertain and did not know. Of the parents that were able to recognize the environmental exposures responsible for triggering their child's asthma, weather (43.0%), sickness (32.4%), allergies (20.1%), tobacco smoke (15.2%), and exercise (13.2%) were the most frequently reported followed by miscellaneous (4.3%), outdoor triggers (3.7%), emotional factors (2.1%), ingested (cold) items (1.3%), chemicals (0.9%) and existing conditions (0.8%) [table 5]. The percentages will not equal 100% because the parents were not limited in their responses for trigger identification. For instance, one parent may have indicated three asthma triggers including sickness, exercise, and emotional factors.

Discussion

ED child asthmatics are three times more likely to be exposed to secondhand smoke in the home.

Approximately 42.7% of Hawai'i child asthmatics visiting the ED were exposed to secondhand smoke in the home—this percentage is more than three times that of asthmatic children representing the general population of Hawai'i (table 1). It is also similar to the 48.2% of asthmatic children representing a national sample of inner-city whom were exposed to secondhand smoke in the home.¹⁵ Previous studies have indicated that high-risk asthmatic children in the inner-city are exposed to elevated levels of allergens, indoor air pollutants and are differentially affected by asthma when compared to non-inner-city children.^{15,16} While our ED patients account for a mixture of rural and urban child asthmatics in distinct geographic regions of Oahu, they share similar characteristics of other high-risk children disproportionately burdened with this chronic disease. High-risk households include groups with (1) a low socioeconomic status (2) a lack of awareness and understanding of appropriate actions to reduce asthma trigger exposures, (3) poor understanding of asthma, including management techniques, which result in increased symptoms, severity, recurrent exacerbations and repeat asthma-related emergency department visits and hospitalizations.^{12,13,15}

The high exposures to household smoke in our ED asthmatics indicate that secondhand smoke is a significant target for environmental remediation activities to

Table 1.— Comparison of exposures to secondhand smoke between asthmatic children representing the general population of Hawaii and asthmatic children who visit the Emergency Department.

	General Population of Hawaii Child Asthmatics (n=40,200)	Hawaii Child Asthmatics visiting the Emergency Department (n=897)
Percent Exposed	14 %	42.7 %*

* Children under 12 months of age were excluded.

Table 2.— Ethnicity and the number of asthmatic children with no, low-, and high exposure to secondhand smoke in the home.

P < 0.001	none	low exposure	high exposure	Total
Ethnicity				
Chinese	10	2	1	13
Japanese	27	9	5	41
Caucasian	35	5	11	51
Part/Native Hawaiian	124	36	70	230
Filipino	84	19	48	151
Micronesian	35	5	20	60
Samoan	42	10	36	88
Mixed/Other Ancestry	150	31	82	263
Total	507	117	273	897

Table 3.— Medical insurance status and the number of asthmatic children with no, low-, and high exposure to secondhand smoke in the home.

P < 0.001	none	low exposure	high exposure	Total
Private	269	38	15	322
Medicaid	226	74	234	534
No Insurance	12	5	24	41
Total	507	117	273	897

Table 4.— Caregiver educational level and the number of asthmatic children with no, low-, and high exposure to secondhand smoke in the home

P < 0.001	none	low exposure	high exposure	Total
<u>Completed</u>				
Grades 1-11	9	3	16	28
GED or 12th grade	149	49	120	318
1 or 2 years of college/ technical/vocational training	177	45	84	306
3 or 4 years of college/ technical/vocational training	119	12	26	157
5+ years of college/ technical/vocational training	21	0	4	25
Other	32	8	23	63
Total	507	117	273	897

Table 5.— Environmental exposures recognized by parents as being responsible for triggering child asthma (n=897).

Uncertain/don't know	57.0%
Weather	43.0%
Kona winds (3.6%)	
Air Conditioning (3.3%)	
Sickness (viral infection)	32.4%
Acquired from other children including siblings (5.4%)	
Allergies	20.1%
Dust (12%)	
Food and other (6.3%)	
Pets (4.7%)	
Mold (1.8%)	
Smoke	15.2%
Exercise	13.2%
Miscellaneous	4.3%
Outdoor triggers	3.7%
Emotional Factors	2.1%
Ingested (cold) items	1.3%
Chemicals	0.9%
Existing Condition	0.8%

reduce asthma morbidity in this population. The National Asthma Education and Prevention Program guidelines recommend remediation activities to reduce the detrimental effects of secondhand smoke exposure to asthmatics in addition to other environmental exposures and allergens in sensitive patients.

Their recommendations¹⁷ include:

For Allergens:

1. Animal dander: Remove animal from the house or, at a minimum, keep the animal out of patient's bedroom and seal or cover with a filter air duct that lead to the bedroom.
2. House-dust mites:
 - a. Essential: Encase mattress in an allergen-impermeable cover; encase pillow in an allergen-impermeable cover or wash it weekly; wash sheets and blankets on the patient's bed in hot water weekly (water temperature $\geq 130^{\circ}\text{F}$ is necessary for killing mites).
 - b. Desirable: Reduce indoor humidity to less than 50 %; remove carpets from the bedroom; avoid sleeping or lying on upholstered furniture; remove carpets that are laid on concrete
3. Cockroaches: Use poison bait or traps to control. Do not leave food or garbage exposed.
4. Pollens (from trees, grass or weeds) and outdoor molds: To avoid exposures, adults should stay indoors with windows closed during the season in which they have problems with outdoor allergens, especially during the afternoon.
5. Indoor mold: Fix all leaks and eliminate water sources associated with mold growth; clean moldy surfaces. Consider reducing indoor humidity to less than 50%.

Indoor/Outdoor Pollutants and Irritants:

6. Discuss ways to reduce exposures to the following:
 - a. Wood-burning stoves or fireplaces
 - b. Un-vented stoves or heaters
 - c. Other irritants (e.g., perfumes, cleaning agents, sprays)

Tobacco Smoke:

7. Tobacco smoke: advise patients and others in the home who smoke to stop smoking inside the home or to smoke outside the home. Discuss ways to reduce exposure to other sources of tobacco smoke, such as from day-care providers and the workplace.

Because exposure to household smoking is so widespread in our ED child asthmatics, we recommend avoidance of smoking altogether including outside of the home. A previous study demonstrated that environmental tobacco smoke (ETS) contamination and ETS exposure were 5–7 times higher in households of outdoor smokers as compared with households of non-smokers.¹⁸ Although these “outdoor” smokers were attempting to protect their infants by smoking outdoors the data clearly demonstrated this was not effective. The investigators summarized that infants of smokers are at risk of ETS exposure in their homes through dust, surfaces and air. Furthermore, they concluded that although smoking outside the home reduced ETS (in comparison to households of indoor smokers), it does not protect a smoker's infant from ETS exposure or contamination of the smoker's home.

Additional studies support the recommendation and benefit of banning indoor smoking. A study on asthmatic children who were exposed to environmental tobacco smoke (ETS) in homes where at least one person smoked demonstrated that absolute smoking restrictions in the home by parents were associated with lower reported levels of smoking, ETS exposure, and air nicotine and urine cotinine concentrations.¹⁹ Another study demonstrated that banning smoking in the home has a small but significant effect on urinary cotinine levels in infants, independent of household cigarette consumption, housing tenure, and overcrowding, whereas less strict measures (i.e., permitting smoking in the home but placing restrictions on smoking near the baby or ‘airing-out’ the room after smoking), had little or no effect on the infants' exposure to ETS as indicated by cotinine levels.²⁰

Previous studies of other populations indoor exposures

Some interventions to reduce secondhand smoke exposure in children have been promising. A randomized trial to reduce passive smoke exposure in racially and ethnically diverse low-income families demonstrated

that a motivational interviewing session with follow-up counseling calls by health educators that emphasized personal responsibility for change, enhancement of self-efficacy, and objective feedback in the context of a supportive relationship was successful in significantly lowering objective measures of passive smoke exposure (nicotine levels) in households.²¹ Reductions were also demonstrated in another controlled trial through coaching sessions to reduce ETS exposure among asthmatic Latino children.²² A randomized controlled trial of an ETS reduction intervention in low-income asthmatic children (ages 3-12) involving a cotinine-feedback, behaviorally based education by nurses demonstrated a significant reduction in asthma health care utilization.²³

However, other investigations have been less successful or unsuccessful alluding to the difficulty in addressing the addictive nature of cigarettes (nicotine) and behavioral change. A controlled study assessing the effect of feedback regarding urinary cotinine and brief tailored advice on home smoking restrictions among low-income parents of children with asthma noted no significant differences between groups in the mean reduction from baseline in total daily consumption or consumption in front of the child, children's urinary cotinine level, or parental smoking cessation.²⁴ Since the intervention did not change parents' tendency to ban smoking in their homes or otherwise change smoking habits to reduce their children's exposure to ETS, more intensive interventions were recommended by investigators.

Because asthma is a multi-factorial chronic disease, a more comprehensive approach has a higher likelihood for improved outcomes. A study conducted by the National Cooperative Inner-City Asthma Study indicated reduced complications of asthma after conducting an individualized, home-based, comprehensive environmental intervention using a culturally sensitive approach with modules built on behavioral change theory that address the allergen and smoking exposures in inner city child asthmatics (age 5-11). Successful teaching points specific to household smoking included: (1) providing caretaker education the importance of avoiding smoking exposure at home and in public places (2) reminder signs for the home and child's bedroom (e.g. "No Smoking/Lungs at Work), (3) shared decision-making strategies with the parent/caretaker to eliminate or reduce child's exposure at home, primarily to keep smoke out of the child's bedroom (4) providing a list of local smoking cessation programs if the parent/caretaker assessed as ready to change and (5) giving families a HEPA air purifier for child's room and instructions in its use.^{15,25} However, a similar home intervention addressing environmental allergens and tobacco smoke tailored to low-income wheezing infants age 9 to 24 months did not reduce respiratory symptoms or medical use relative to a control group.²⁶ This is particularly important because the majority of childhood asthma onset, manifested as wheezing illness, occurs during the first 2-3 years of life.^{27,28,29}

More studies are needed to determine ways to improve outcomes in this younger age group. Although some asthma triggers are reasonably controllable (e.g. reduction of animal dander, dust mites, food allergens etc.) certain ones are more difficult for parents and health care providers to control such as viral infections/colds.

Ethnicity, Socioeconomic Status

The demographics of Hawai'i children at risk for repeated asthma-

related ED visits were previously characterized.^{10,11} In addition to behavioral practice, cultural beliefs and barriers to asthma care, socioeconomic factors were identified among the asthmatics. In this current investigation we specifically assessed the association between ethnicity and asthmatic child exposure to secondhand smoke in the home. Within our sample of asthmatic children, the percentage exposed to secondhand smoke in the home by ethnic classification included 52.3% Samoan, 46.1% Part/Native Hawaiian, 44.4% Filipino, 41.7% Micronesian, 34.1% Japanese, 31.4% Caucasian, 23.1% Chinese and 43.0% of Other/Mixed Ancestries (n=897). Significant differences were found among the ethnic groups and child exposure to secondhand smoke in the home. Asthmatic children of Samoan, Micronesian, Filipino, Part/Native Hawaiian and Other/Mixed Ancestry had a greater proportion of high exposure to secondhand smoke in the home compared with Japanese, Chinese and Caucasian ethnic groups (p<0.001). A study assessing ethnic differences in trends and determinants of cigarette smoking in the state of Hawai'i demonstrated that Native Hawaiians reported the highest smoking prevalence, Japanese the lowest, and Caucasians intermediate levels in a combined data set of 158,629 subjects representing 40.0% Japanese, 30.3% Caucasian, 14.3% Hawaiian, 8.1% Filipino and 3.0% Chinese. Our previous investigation with our child asthma ED cohort demonstrated an unequal burden of repeated asthma-related emergency visits in Native and Part Hawaiians, Filipinos, Samoans and Micronesians and our current findings demonstrate a high exposure to secondhand smoke further support the observation that ED child asthmatics represent a skewed population that is particularly different from the general population of asthmatic children in Hawaii. They also emphasize the importance of examining specific ethnic subgroups as opposed to single categories such as Asians or Pacific Islanders. This is especially important in regions comprised of ethnically diverse communities like Hawaii. While Native Hawaiians have been known to have the highest smoking prevalence levels, our study indicates that other groups also demonstrate high levels of smoking in the home, particularly persons of Samoan, Micronesian, Filipino and Other/Mixed descent. Few studies have characterized smoking prevalence in these ethnic subgroups. One study did examine the prevalence and predictors of smoking behavior among Samoans in three geographical regions including American Samoa, Hawai'i and Los Angeles.³⁰ The study indicated that approximately one-fourth (26.6%) of Samoans were current smokers, with 22.5% of women and 31.4% of men currently smoking (n=1834). More current smokers were found in American Samoa (28.9%), followed by Hawai'i (26.9%) and Los Angeles (24.1%, P<.001). At each site, Samoan men compared with the women were significantly more likely to smoke, initiate smoking earlier and smoke more cigarettes. Predictors of smoking among Samoans included being younger, male, married, less educated, with lower income, and more acculturated. The study concluded that the high smoking and low cessation rates signify that smoking-related diseases will be significant causes of morbidity and mortality for Samoans for many years.

Another surveillance study conducted in Hawai'i—the Hawai'i Behavioral Risk Factor Surveillance System—determined that smoking prevalence had been approximately 15% for Japanese, close to 20% for Filipinos and Caucasians, but as high as 30% for Native Hawaiians during 1991-2004. At this time data regarding smoking

prevalence and behavior among other Pacific Islander groups has only been collected via secondary research activities. Reported smoking rates among Guamanians, Palauans, and Chuukese were between 38.0 % and 58.3 %. Ethnic differences in smoking must be addressed using culturally sensitive interventions. We re-emphasize a need to characterize smoking behavior among subgroups in Hawaii by sociodemographic and other factors as a means to further identify and focus efforts on preventing a problem from getting worse.

Our findings also demonstrated that asthmatic children with no insurance or with Medicaid had a greater frequency of high exposure to secondhand smoke in the home than those with private insurance. Additionally, we found an inverse relationship between the educational level of the caregivers of the asthmatic children and the high exposure to secondhand smoke in the home. Caregivers of the asthmatic children completing fewer years of education had a significant, elevated frequency of high exposure to secondhand smoke in the home than those completing more years of education. This type of relationship has been noted in previous studies.^{31,32,33} Future interventions must take into account other factors associated with smoking behavior in addition to ethnicity and indicators of socioeconomic status. These include age, marital status, and nicotine dependency.^{34, 35, 36, 37, 38}

The Hawai'i State Department of Health's Tobacco Prevention and Education Program (TPEP) continues to focus on four key goals: (1) prevent tobacco use initiation among youth; (2) promote quitting among adults and youth; (3) eliminate exposure to environmental tobacco smoke and (4) identify and eliminate disparities among populations.³⁹ Our sample ED data suggest an alarmingly high exposure to secondhand smoke among ED asthmatic children who have been previously shown to be unequally burdened by this disease, as indicated by increased asthma chronic severity, repeated asthma-related emergency visits and hospitalizations.¹² While we continue to commend the effort by TPEP and associated programs which plan and implement community-level education and training programs that address tobacco control in focus areas, we suggest that more attention and investigation should be pursued among the ethnic subgroups, lower socioeconomic status households, lower education households and medical insurance disposition of the children we have identified. This includes those asthmatic children on the outer Hawaiian Islands. Furthermore, we agree with recommendations by previous investigators (Mishra et. al.) who have indicated that a focus on ethnic subgroups would require tailored tobacco awareness and cessation programs, an understanding of the complex interactions between social, cultural, and psychological determinants of smoking and cessation behaviors; and the development of policies to limit availability of tobacco, environmental exposure from tobacco, and increase cessation efforts.³⁰

Other Exposures and the Serious Need for Education

Whereas approximately 77% of all people with asthma nationwide are aware of at least one personal asthma trigger,³² only 43% of our cohort could identify at least one trigger. Our results suggest that important need for more basic asthma education, environmental remediation to prevent exposure to pollutants and allergens, written action plans outlining appropriate medication use, and management for families of ED child asthmatics. It must be noted that in the general population, less than 30% of people with asthma are taking all the

essential actions recommended to reduce their exposure to indoor environmental asthma triggers. We suspect that this percentage is lower in our ED child asthmatic population based on the lack of awareness of environmental triggers and associated socioeconomic and psychosocial challenges.

Of the parents that were able to recognize the environmental exposures responsible for triggering their child's asthma, weather (43.0%), sickness (32.4 %), allergies (20.1 %), tobacco smoke (15.2 %), and exercise (13.2%) were the most frequently reported. While weather and sickness are difficult to control, the impact of from these exposures on asthma symptoms and severity may be minimized through preventive steps that include the appropriate use of medications, in particular—the long term use of controller medications (such as inhaled corticosteroids) for persistent asthmatics and quick relief medication as needed for symptoms for both intermittent and persistent asthmatics. Exercise-induced asthma could also be prevented by using beta-agonist (bronchodilator) 5-30 minutes prior to engaging in physical activities. A warm-up period before exercise may also help. If asthma symptoms occur regularly with usual activities or exercise, increasing or (adding) daily long-term control medications may help. Identification and avoidance of food allergies would provide a means of prevention in sensitized patients while home environmental remediation activities would prevent allergen (cockroach, dust-mite, cat, rodent, dog, mold) and indoor pollutant exposures including secondhand smoke. These would include reinforcement of basic concepts that center around vacuuming as optimal form of dust removal, keeping pets away, using pillow and mattress coverings and no smoking. Prevention for smoking should continue to be vigorously pursued through public policy and started early in schools and communities as part of the comprehensive effort.

Change is possible

What is evident is that change is possible particularly for asthmatic children presenting to the ED. Our participating Oahu EDs have provided a multi-faceted ED-based educational program that has demonstrated improvement in the use of written asthma action plans, increases in the appropriate use of controller medications, subsequent decreases in chronic severity level and improved quality of life.^{13,40} Having been involved in ED asthma research for the past four years, our efforts along with selected academic centers across the nation and experts in the field of child asthma and allergy have culminated in updated recommendations for the care for ED asthmatic children including but not limited to the following:

- The ED expansion of childhood asthma management role beyond treatment of the acute exacerbation. This includes the initiation of some of the elements of long-term care for children who have persistent asthma or recurrent exacerbations which can allow the ED to serve as a bridge between the acute and long-term care settings.
- The ED serves as a bridge between the acute and comprehensive asthma care through initiating patient and family asthma education.

Finally, we recommend further studies in home based environmental interventions particularly among our high-risk asthmatic children in Hawaii including those under the age of 5, on Medicaid and of Samoan, Part/Native Hawaiian, Micronesian, Filipino and Other/Mixed Ancestry. A focus on this group will provide the greatest likelihood for making substantial improvements and observing positive health outcomes. Furthermore, the efforts will help to address the disproportionate burden of asthma on such children


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References

- Center for Disease Control and Prevention. 1986 Surgeon General Report: The Health Consequences of Involuntary Smoking. Accessed: October 2005: http://www.cdc.gov/tobacco/sgr/sgr_1986
- Environmental Tobacco Smoke. Measuring Exposures and Assessing Health Effects. Committee on Passive Smoking. Board on Environmental Studies and Toxicology. National Research Council. National Academy Press. Washington, D.C. 1986. Accessed: October 2005: <http://www.nap.edu/books/0309037301/html/R1.html>
- Respiratory Health Effects of Passive Smoking (Also known as Exposure to Secondhand Smoke or Environmental Tobacco Smoke ETS). U.S. Environmental Protection Agency, Office of Research and Development, Office of Health and Environmental Assessment, Washington, DC, EPA/600/6-90/006F, 1992
- National Cancer Institute. Health Effects of Exposure to Environment Tobacco Smoke. Smoking and Tobacco Control Monograph No. 10 (PDF - 71k). Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute; 1999. NIH Pub. No. 99-4645. Accessed: October 2005.
- National Toxicology Program. 10th Report on Carcinogens. Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program, December 2002. Accessed: October 2005.
- CDC. Annual smoking-attributable mortality, years of potential life lost, and economic costs—United States, 1995–1999 (PDF - 225k). Morbidity and Mortality Weekly Report 2002;51(14):300–303. October 2005.
- Environmental Protection Agency. Setting the Record Straight: Secondhand Smoke is a Preventable Health Risk. Office of Air and Radiation, Office of Radiation and Indoor Air, Indoor Environment Division (6609J). EPA Document Number 402-F-94-005, June 1994. Accessed October 2005 <http://www.epa.gov/smokefree/publications.html>
- Center for Disease Control and Prevention. State-Specific Prevalence of Current Cigarette Smoking Among Adults ---United States, 2002. January 9, 2004 / 52(53):1277-1280. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5253a1.htm>
- Maskarinec G, Dhakal S, Pagano I, Carlin L, Goodman MT, Le Marchand L, Nomura A, Wilkens LR, Kolonel LN. Ethnic differences in trends and determinants of cigarette smoking in Hawaii. *Ethn Dis*. 2005 Spring;15(2):316-23.
- Environmental Protection Agency. Health Effects of Exposure to Secondhand Smoke. September 25, 2005. Available at: <http://www.epa.gov/smokefree/healtheffects.html> Accessed October 18, 2005.
- Salvail F. Exposure to Secondhand Cigarette Smoke Special Report. July 2003 Department of Health. Available at: <http://www.hawaii.gov/health/statistics/brfss/reports/2ndhandsmoke02.pdf> Accessed October 15, 2005.
- DeMesa C, Boychuk R Demographics and characteristics of wheezing/asthmatic children with repeat emergency department visits in Oahu, Hawaii. *Hawaii Medical J* 2005 In press.
- Boychuk RB, DeMesa CJ, Kiyabu KM, Yamamoto FY, Pang CKS. The Change in Approach and Delivery of Medical Care in Pediatric Asthmatic Patients: Results from a Multi-Center Emergency Department Educational Asthma Management Program. *Pediatrics*. 2005. In press.
- Boychuk RB, Kiyabu KM, DeMesa CJ, Yamamoto LG. A Simple Algorithm to Rapidly Determine Asthma Severity Classification (SC) in the Emergency Department (ED). Supplement to the *Journal of Allergy and Clinical Immunology* Volume 115 No.2 February 2005. p S6.
- Crain EF, Walter M, O'Connor GT, Mitchell H, Gruchalla RS, Kattan M, Malindzak GS, Enright P, Evans R 3rd, Morgan W, Stout JW. Home and allergic characteristics of children with asthma in seven U.S. urban communities and design of an environmental intervention: the Inner-City Asthma Study. *Environ Health Perspect*. 2002 Sep;110(9):939-45.
- Breyse PN, Buckley TJ, Williams D, Beck CM, Jo SJ, Merriman B, Kanchanaraks S, Swartz LJ, Callahan KA, Butz AM, Rand CS, Diette GB, Krishnan JA, Moseley AM, Curtin-Brosnan J, Durkin NB, Eggleston PA Indoor exposures to air pollutants and allergens in the homes of asthmatic children in inner-city Baltimore. *Environ Res*. 2005 Jun;98(2):167-76.
- U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program Science Base Committee and Expert Panel in the Management of Asthma. Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma: NIH Publication No. 97-4051, 1997.
- Matt GE, Quintana PJ, Hovell MF, Bernert JT, Song S, Noviani N, Juarez T, Floro J, Gehrman C, Garcia M, Larson S. Households contaminated by environmental tobacco smoke: sources of infant exposures. *Tob Control*. 2004 Mar;13(1):29-37.
- Berman BA, Wong GC, Bastani R, Hoang T, Jones C, Goldstein DR, Bernert JT, Hammond KS, Tashkin D, Lewis MA. Household smoking behavior and ETS exposure among children with asthma in low-income, minority households. *Addict Behav*. 2003 Jan-Feb;28(1):111-28.
- Blackburn C, Spencer N, Bonas S, Coe C, Dolan A, Moy R. Effect of strategies to reduce exposure of infants to environmental tobacco smoke in the home: cross sectional survey. *BMJ*. 2003 Aug 2;327(7409):257.

- Emmons KM, Hammond SK, Fava JL, Velicer WF, Evans JL, Monroe AD. A randomized trial to reduce passive smoke exposure in low-income households with young children. 1: *Pediatrics*. 2001 Jul;108(1):18-24.
- Hovell MF, Meltzer SB, Wahlgren DR, Matt GE, Hofstetter CR, Jones JA, Meltzer EO, Bernert JT, Pirkle JL. Asthma management and environmental tobacco smoke exposure reduction in Latino children: a controlled trial. *Pediatrics*. 2002 Nov;110(5):946-56.
- Wilson SR, Yamada EG, Sudhakar R, Roberto L, Mannino D, Mejia C, Huss N. A controlled trial of an environmental tobacco smoke reduction intervention in low-income children with asthma. *Chest*. 2001 Nov;120(5):1709-22.
- Wakefield M, Banham D, McCaul K, Martin J, Ruffin R, Badcock N, Roberts L Effect of feedback regarding urinary cotinine and brief tailored advice on home smoking restrictions among low-income parents of children with asthma: a controlled trial. *Prev Med*. 2002 Jan;34(1):58-65.
- Morgan WJ, Crain EF, Gruchalla RS, O'Connor GT, Kattan M, Evans R 3rd, Stout J, Malindzak G, Smartt E, Plaut M, Walter M, Vaughn B, Mitchell H; Inner-City Asthma Study Group. Results of a home-based environmental intervention among urban children with asthma. *N Engl J Med*. 2004 Sep 9;351(11):1068-80.
- Klennert MD, Liu AH, Pearson MR, Ellison MC, Budhiraja N, Robinson JL. Short-term impact of a randomized multifaceted intervention for wheezing infants in low-income families. *Arch Pediatr Adolesc Med*. 2005 Jan;159(1):75-82.
- Cserhati E, Mezei G, Kelemen J. Late prognosis of asthma in children. *Respiration*. 1984;46:160-165.
- Falliers C. Treatment of asthma in a residential center. *Ann Allergy*. 1970;28:513-521.
- Yunginger JW, Reed CE, O'Connell EJ, Melton LJ, O'Fallon WM, Silverstein MD. A community-based study of the epidemiology of asthma: incidence rates, 1964-1983. *Am Rev Respir Dis*. 1992;146:888-894.
- Mishra SI, Osann K, Luce PH. Prevalence and predictors of smoking behavior among Samoans in three geographical regions. *Ethn Dis*. 2005 Spring;15(2):305-15
- Escobedo LG, Zhu BP, Giovino GA, Eriksen MP. Educational attainment and racial differences in cigarette smoking. *J Natl Cancer Inst*. 1995 Oct 18;87(20):1552-3.
- Environmental Protection Agency. Health Effects of Exposure to Secondhand Smoke. September 25, 2005. Available at: http://www.epa.gov/smokefree/pdfs/survey_fact_sheet.pdf
- Siahpush M, Heller G, Singh G. Lower levels of occupation, income and education are strongly associated with a longer smoking duration: Multivariate results from the 2001 Australian National Drug Strategy Survey Public Health. 2005 Aug 4;
- Ma GX, Shive SE, Tan Y, Toubbeh JI, Fang CY, Edwards RL. Tobacco use, secondhand smoke exposure and their related knowledge, attitudes and behaviors among Asian Americans. *Addict Behav*. 2005 May;30(4):725-40.
- Ma GX, Shive S, Tan Y, Toubbeh J. Prevalence and predictors of tobacco use among Asian Americans in the Delaware Valley region. *Am J Public Health*. 2002 Jun;92(6):1013-20.
- Cavelaars AE, Kunst AE, Geurts JJ, Crialesi R, Grovted L, Helmert U, Lahelma E, Lundberg O, Matheson J, Mielck A, Rasmussen NK, Regidor E, de Rosario-Giraldez M, Spuhler T, Mackenbach JP. Educational differences in smoking: international comparison. *BMJ*. 2000 Apr 22;320(7242):1102-7.
- Fernandez E, Garcia M, Schiaffino A, Borrás JM, Nebot M, Segura A. Smoking initiation and cessation by gender and educational level in Catalonia, Spain. *Prev Med*. 2001 Mar;32(3):218-23.
- Public Health Service. Women and smoking: A Report from the Surgeon General. Executive Summary. MMWR Recomm Rep. 2002; 51(RR-12):i-iv
- Hawaii State Department of Health website. Tobacco Prevention & Education Program 2005. Available at: <http://www.hawaii.gov/health/healthy-lifestyles/tobacco/index.html> Accessed October 15, 2005.
- Boychuk RB, Yamamoto LG, DeMesa CJ et al. Emergency Department Discharge Asthma Action Plans Modestly Improve Controller Medication Compliance in Persistent Asthmatics. *Pediatric Emergency Care*. November 2004, Volume 20, Issue 11.



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Serial Sonographic Evaluation of Achilles Tendons in Patients Taking Fluoroquinolone Antibiotics

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Editor's Note:

This paper was presented at the 2005 Annual Scientific Session of the American College of Physicians Hawai'i Chapter.

Abstract

We performed a prospective study to determine if subclinical tendinopathy occurs in asymptomatic adults treated with fluoroquinolone antibiotics. Thirty-eight adults were enrolled. Serial ultrasounds of the Achilles tendons were performed. A board certified musculoskeletal radiologist interpreted the images in a blinded fashion. No changes were identified. Subclinical tendinopathy does not appear to exist in asymptomatic adults treated with fluoroquinolone antibiotics.

Introduction

Fluoroquinolone-associated musculoskeletal disorders have been published in case reports and retrospective reviews. Since the accidental discovery of nalidixic acid from chloroquine in 1962 and the subsequent development of fluoroquinolone antibiotics in the 1980s the incidence range for such complications has been listed from 0.5 percent to 6% in the literature.¹ These complications range from benign myalgias to clinically significant tendinopathy, including tendon rupture. Given the shear mechanical force and demand placed upon the Achilles it tends to be the most affected tendon and often is bilateral with an onset within the first two weeks of initiating therapy.²

Objective

Our objective was to perform a prospective study using serial sonograms to determine if subclinical Achilles tendinopathy occurs in asymptomatic adults treated with fluoroquinolone antibiotics.

Materials and Methods

Our study protocol received approval by the Human Use Committee at our institution and adhered to the policies for protection of human subjects as prescribed in 45 CFR 46. We enrolled 38 adult subjects who were prescribed a fluoroquinolone antibiotic by their physician, and they were consented. The subject's age, gender,

inpatient or outpatient status at the time of initiating therapy, name of the antibiotic prescribed, including dose, route of administration, indication for use as well as any identifiable risk factors for tendinopathy were recorded. The study was a paired design with the subject's baseline study serving as their control. A repeat study was performed 10-14 days after initiating therapy. The study was prospective and single-blinded with sonographic images interpreted by a board-certified musculoskeletal radiologist. Exclusion criteria included age less than 18 and pregnancy.

Tendon changes were staged based upon a previously published grading scale, with stage 0 = normal, stage 1 = tendon thickening, stage 2 = thickening with loss of lines between tendons, and stage 3 = partial or complete tear.³ Under standard conditions, two dimensional grey scale images were obtained using an Acuson Sequoia 512 Ultrasound. Using a 15 mega hertz linear transducer, sagittal and axial images were viewed under a Picture Archives Communication System. A normal proximal, middle and distal sagittal image of the Achilles tendon with its respective axial images were recorded (Figure 1).

Results

We obtained baseline studies on 38 subjects or 76 tendons. There were 18 subjects excluded from analysis as they failed to return for repeat study due to geographic barriers, lack of transportation and time constraints. This resulted in post-antibiotic studies on 20 subjects or 40 tendons. The clinical characteristics of our subjects are listed in Table 1. There were 13 males and 7 females, with a mean age of 50 years with a range of 23 to 82. fourteen were inpatients and 6 were outpatients. Gatifloxacin was used in 19 subjects and levofloxacin for one subject, with the average duration of fluoroquinolone therapy of 12.8 days.

The majority of our subjects were diagnosed with pneumonia and urinary tract infection, with smaller numbers having upper respiratory infection, post-urologic procedures and folliculitis. Approximately a third of our subjects had diabetes mellitus and had an age

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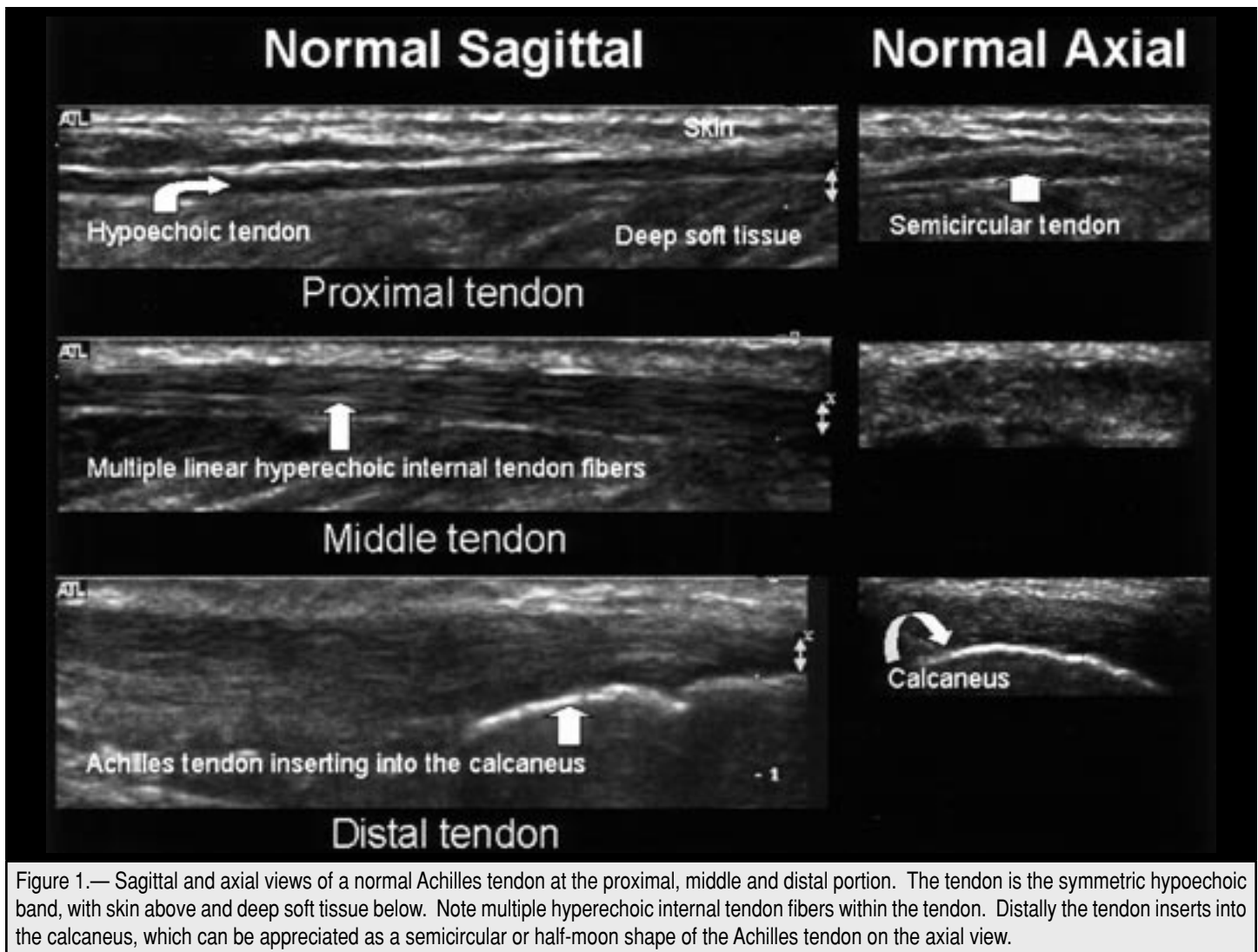


Figure 1.— Sagittal and axial views of a normal Achilles tendon at the proximal, middle and distal portion. The tendon is the symmetric hypoechoic band, with skin above and deep soft tissue below. Note multiple hyperechoic internal tendon fibers within the tendon. Distally the tendon inserts into the calcaneus, which can be appreciated as a semicircular or half-moon shape of the Achilles tendon on the axial view.

greater than 60. Others risk factors in our subjects included renal disease, concomitant steroid use, recent sporting activities and a prior history of musculoskeletal injury. About half of the subjects had no identifiable risk factors for tendinopathy, but one-fourth had one risk factor and another one-fourth had at least two risk factors.

There were 38 stage 0 tendons at baseline study and all of these remained at stage 0 on the follow-up study. One subject had a stage 1 tendon which was unchanged on follow-up study. Another subject had a stage 2 tendon at baseline but again was unchanged on the follow-up study (Figure 2). This subject had a known history of Achilles tendon tear greater than 10 years before entering the study. There were no stage 3 tendons identified. None of our subjects developed tendon symptoms during the study period.

Discussion

A large retrospective study was performed in the Netherlands from 1995 to 1996, where a total of 1841 subjects treated with fluoroquinolone antibiotics were reviewed to identify clinically supported symptomatic tendinopathy. An overall incidence of 1.2% was found, with most complications occurring with ofloxacin, ciprofloxacin and norfloxacin.⁴ To date there have been no prospective studies performed to assess for subclinical tendinopathy in asymptomatic subjects using imaging modalities.

Animal histopathologic studies of fluoroquinolone-induced tendinopathy have shown multiple cytoplasmic vacuoles causing swelling and dilation of organelles resulting in cellular debris and detachment.⁵ Risk factors for fluoroquinolone associated tendinopathy include concomitant corticosteroid use, renal disease, organ transplant, sporting activities, prior history of musculoskeletal disorders and diabetes mellitus.⁶ Magnetic resonance imaging and ultrasound have both been used to identify and classify tendinopathy and detect risk of rupture, with apparent comparable sensitivities in detecting early enthesopathy of greater than 90%.⁷

In our study we were unable to detect the presence of subclinical Achilles tendinopathy in asymptomatic adults treated with a fluoroquinolone antibiotic. Our study limitations included a high subject number lost to follow-up. Also, our results may not encompass all fluoroquinolones as most of our subjects were on gatifloxacin. The rate of compliance with taking fluoroquinolone antibiotics was not explored and may have also contributed to these findings. Future study designs may include a larger number of subjects, including a more diverse group of fluoroquinolone antibiotics, monitoring for antibiotic compliance and perhaps performing additional ultrasound exams at a later time.

Table 1.— Clinical characteristics of subjects enrolled.

Subject Clinical Characteristics

- Gender
 - 13 males, 7 females
- Age
 - Mean of 50 years (range 23 – 82)
- Patient status
 - 14 inpatients, 6 outpatients
- Antibiotic used
 - Gatifloxacin (19 patients)
 - Levofloxacin (1 patient)
 - Average duration (12.8 days)
- Indication for Antibiotic
 - Pneumonia (n = 8)
 - Urinary tract infection (n = 7)
 - Upper respiratory infection (n = 2)
 - Post-urologic procedure (n = 2)
 - Folliculitis (n = 1)
- Underlying risk factors for tendinopathy
 - Diabetes mellitus (n = 7)
 - Age > 60 (n = 6)
 - Renal failure (n = 4)
 - Concomitant steroid use (n = 2)
 - Sporting activities (n = 2)
 - Musculoskeletal injury (n = 2)
 - Subjects with 0 risk factors (n = 9)
 - Subjects with 1 risk factor (n = 5)
 - Subjects with ≥ 2 risk factors (n = 6)

References

1. Ribard P, Kahn MF. Rheumatological side effects of quinolones. *Baillere's Clin Rheumatol* 1991;3:1-22.
2. Khaliq Y, Zhanell GG. Fluoroquinolone-associated tendinopathy; A critical review of the literature. *Clin Infect Dis* 2003;36:1404-10.
3. Gillet P, et al. Magnetic resonance may be an asset to diagnosis and classify fluoroquinolone-associated Achilles tendonitis. *Fundam Clin Pharmacol* 1994;9:52-6.
4. Van der Linden PD, et al. Achilles tendinitis associated with fluoroquinolones. *Br J Clin Pharm* 1999;48(3):433-7.
5. Shakibael M, et al. Ultrastructure of Achilles tendons of rats treated with ofloxacin and fed a normal or magnesium-deficient diet. *Antimicrob Agents Chemother* 2000;44(2):261-6.
6. Van der Linden PD, et al. Increased risk of Achilles tendon rupture with quinolone antibacterial use, especially in elderly patients taking oral corticosteroids. *Arch Intern Med* 2003;163:1801-7.
7. Kamel M, et al. Ultrasound detection of heel enthesitis: A comparison with magnetic resonance imaging. *J Rheumatol* 2003;30:774-8.

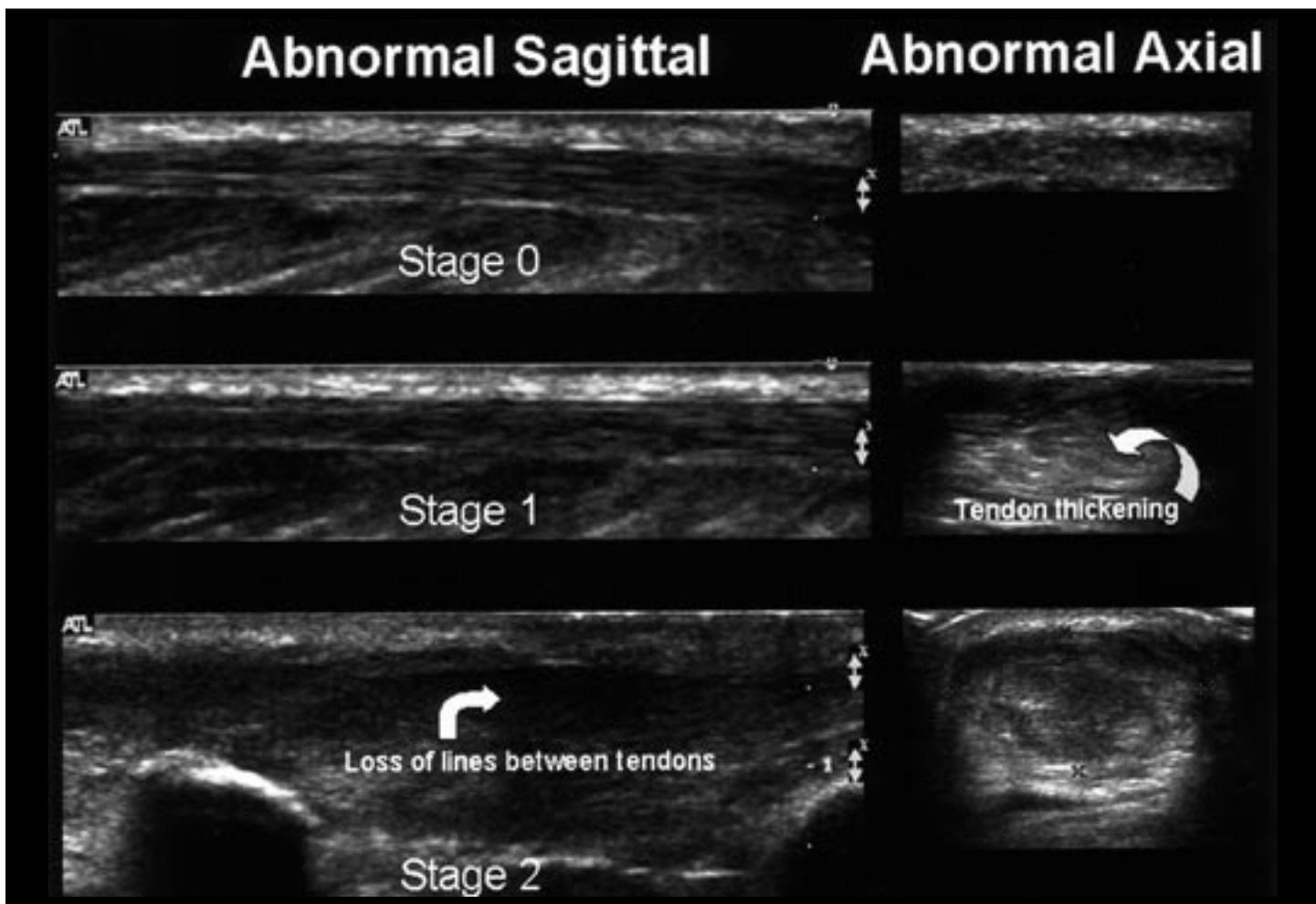


Figure 2.— Examples of stage 1 and stage 2 Achilles tendinopathy compared with normal tendon (stage 0). In stage 1 there is tendon thickening on axial imaging, while stage 2 shows separation of lines on sagittal imaging.



Authorship: Clarifying the Debate

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At the core of the ethical debate over authorship are conflicting views on what it means to be an author on a scientific paper. The guidelines of the International Committee of Medical Journal Editors (ICMJE) are often cited as the most generally accepted standard for authorship attribution. According to ICMJE, authorship is based on meeting all of the following three criteria:¹ 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data, 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Contributors who do not meet the criteria for authorship are listed in the acknowledgments section. Examples of contributions deserving an acknowledgment include scientific advising, data collection, or critical review of the study proposal. All persons who are eligible for acknowledgment must give their permission prior to inclusion. Despite widespread acceptance, critics have argued that the ICMJE guidelines are flawed because they fail to specify each author's individual contributions,² exclude certain meaningful contributions from qualifying for authorship,² and require unrealistic levels of involvement from each author to meet all three criteria.³

Three major scientific journals, the Journal of the American Medical Association (JAMA), Annals of Internal Medicine (Annals) and the British Medical Journal (BMJ) have attempted to address these problems by implementing variations of a hybrid model of authorship and contributorship.⁴⁻⁶ All three journals adhere to the ICMJE guidelines for authorship. In addition, JAMA requires authors to meet criteria in all four parts of a structured checklist. Part A asks for certification of the manuscript's validity, and assurance that the manuscript has not been published or is not being considered for publication elsewhere. Part A also states that the corresponding author will serve as the primary contact with the editorial office of JAMA, review the edited typescript and proof, and make decisions regarding release of information in the manuscript. Part B states that the author has given final approval of the manuscript in question; Part C allows authors to take responsibility for part of the content or the whole content of the manuscript; and Part D asks authors to check at least one option in each of three categories of contribution to the intellectual content of the manuscript.

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Hybrid models have the advantage of highlighting specific contributions and giving credit to people who contributed substantially to the research but do not qualify for authorship under ICMJE's stringent guidelines. Listing every person who has contributed in some capacity to an article can become unwieldy, and accepting this new model requires a complete reformulation of what "authorship" actually implies.⁷ This criticism cannot be disregarded when one considers the impact that this model would have on the citation indexes currently in place. In addition, criteria for promotion, tenure and other academic issues would need to be reexamined. Despite the existence of uniform guidelines, authorship issues have continued to escalate in both frequency and complexity.⁷

In clarifying the debate over authorship, three separate, yet intertwined questions emerge: First, what should authorship mean?; second, how should we quantify this meaning?; and third, how should we ensure adherence to this meaning?

The literature on the question of authorship provides sufficient evidence that "authorship" can have different meanings depending on factors including interpersonal relationships, the journal in which one is publishing, the position of the author's name in the byline and whether they are listed as corresponding author, and the national origin of the author and the particular research culture of that nation. For example, Mainous et al. found that junior faculty felt more obligated to include authors who did not meet ICMJE criteria when that person was in a position of administrative power.⁸ A survey of medical and surgical chairs⁹ found that when the first fictitious author

of a fictitious study title was also listed as the corresponding author, respondents felt that that author had been responsible for the study conception and design (82%), acquisition of data (95%), analysis and interpretation of data (100%), and drafting the manuscript (100%). The findings also indicated that respondents assumed that a first author who was also the corresponding author had contributed more to the study than an author who was not. Finally, Hama and Kusano¹⁰ found that there were significantly more abstracts with more than six authors from Japan (32%, $p < 0.001$) than from North America (United States and Canada) (11%, $p < 0.001$). Japanese researchers appear to place value on the act of contributing rather than on the nature of the actual contribution, which may explain this trend.¹¹

Although many papers about authorship begin by posing the question “what does authorship mean.” The answer is derived in a backwards fashion from an explication of existing guidelines. However, the above examples illustrate the point that authorship guidelines are not synonymous with what authorship does or should mean. Determining the meaning of authorship prior to establishing these guidelines is essential.

Uniform definitions and guidelines are possible. This “one size fits all” approach may lack the flexibility to acknowledge other equally legitimate formulations, and as such, may not adequately reflect the diversity of existing biomedical research communities. Examining the potential of a “community standard” for authorship is one possible alternative. Formulated along the lines of the 19th century “strict locality rule,” which held medical practitioners to the standard of care of the community in which they practiced rather than to national uniform standards, community standards of authorship would have the advantage of mitigating the difficulty of formulating one uniform guideline, thus acknowledging and validating different conceptions of “authorship.” This proposal is vulnerable to the contention that too many standards would be unmanageable. Each group would also need to be constrained by some baseline ethical standards (for example, a group would not be free to advocate outright plagiarism), and therefore would not be completely free to define authorship as they saw fit.

Regardless of the nature of the guidelines decided upon, the problem of enforcing adherence to authorship guidelines has increasingly taken center stage in recent years. Adherence to authorship guidelines requires first, that the guidelines accurately reflect an acceptable conceptualization of the meaning of authorship, and second, that each individual has the personal integrity not to falsify their contribution to the research in question.

In a field that values intellectual freedom and resists external policing, the potential for fraud will always exist. The individual remains the locus of ethical responsibility for authorship. Courses in research ethics may improve adherence to authorship guidelines through increased exposure to ethical issues and forums for open discussion.

Research in the 21st century increasingly relies on inter-disciplinary, multi-center collaborations. With the advent of multiple principle investigators on grants from the National Institutes of Health, it is clear that authorship disputes will continue. Fundamentally rethinking the structure of authorship is essential.

References

1. International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. *N Engl J Med.* 1997;336(4):309-15.
2. British Medical Journal. BMJ--Advice to contributors. Downloaded from www.bmj.com; Accessed 2005.
3. Biagioli M, Crane J, Derish P, et al. CSE Task Force on Authorship: Draft White Paper. Downloaded from http://www.councilscienceeditors.org/services/atf_whitepaper.cfm?printPage=1&; 1999.
4. Journal of the American Medical Association. JAMA Authorship responsibility, financial disclosure, copyright transfer, and acknowledgment. Downloaded from www.jama.com; Accessed 2005.
5. Annals of Internal Medicine. Information for authors. Downloaded from www.annals.org; Accessed 2005.
6. British Medical Journal. Authorship and contributorship. Downloaded from www.bmj.com; Accessed 2005.
7. Weeks WB, Wallace AE, Kimberly BC. Changes in authorship patterns in prestigious US medical journals. *Soc Sci Med.* 2004 Nov;59(9):1949-54.
8. Mainous AG, 3rd, Bowman MA, Zoller JS. The importance of interpersonal relationship factors in decisions regarding authorship. *Fam Med.* 2002 Jun;34(6):462-7.
9. Bhandari M, Busse JW, Kulkarni AV, et al. Interpreting authorship order and corresponding authorship. *Epidemiology.* 2004 Jan;15(1):125-6.
10. Hama Y, Kusano S. Geographic variation in the number of authors on scientific abstracts. *Can Assoc Radiol J.* 2001 Feb;52(1):25-8.
11. Fetters MD, Elwyn TS. Authorship. Assessment of authorship depends on culture. *BMJ.* 1997 Sep 20;315(7110):747.

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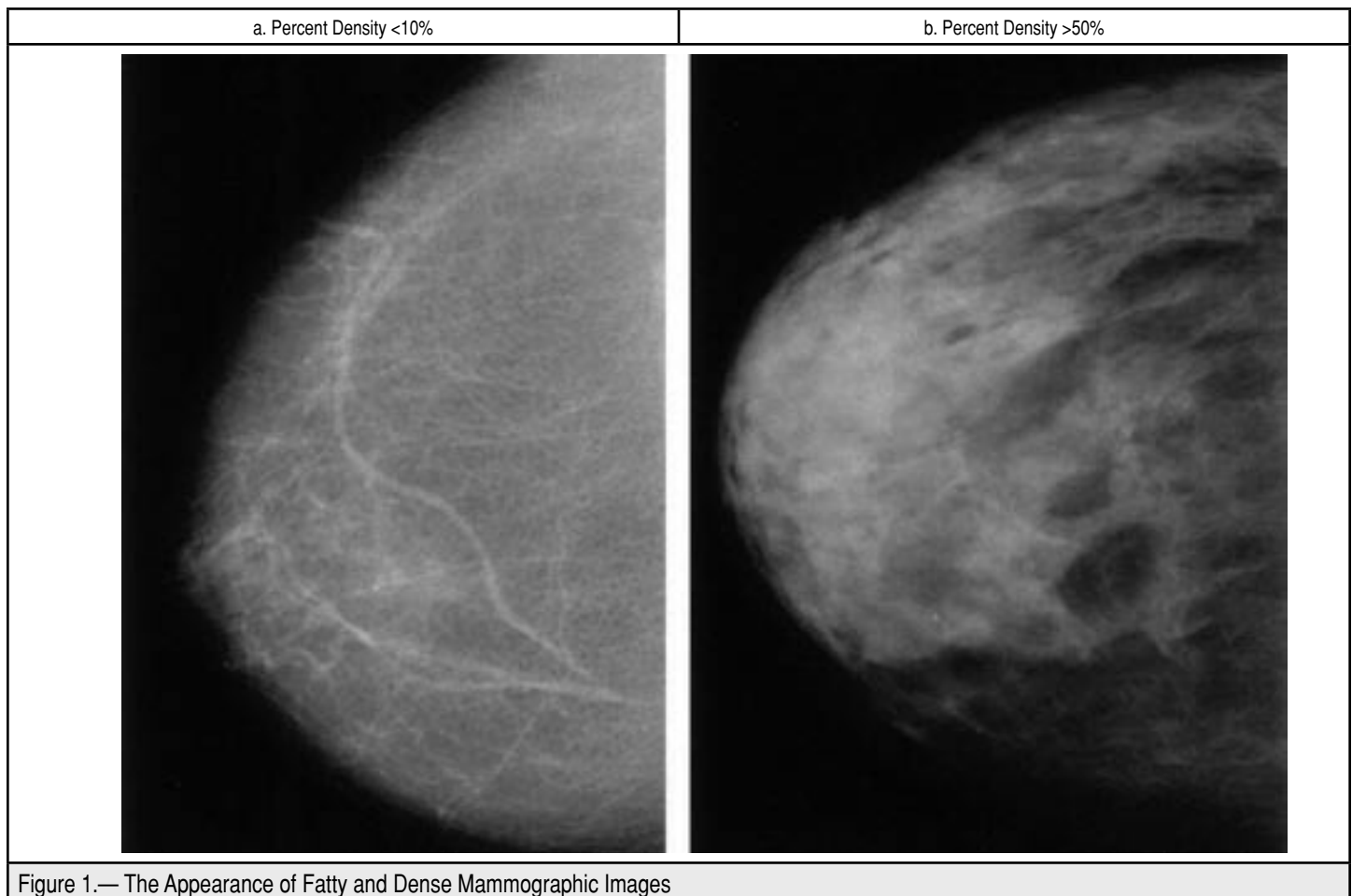
Mammographic Density as a Marker for Breast Cancer Risk

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Mammographic density refers to the distribution of fat, connective, and epithelial tissue in the female breast (Figure 1). The fatty tissue appears dark, whereas the radiographically light areas constitute epithelial and stromal tissue.¹ The densities are thought to reflect proliferative activity in the breast. When women in the same age group are compared, a high percentage of dense parenchyma on mammographic images confers an increased risk to develop breast cancer.¹ Although aging and menopause lead to a decrease in mammographic densities over time, the cumulative exposure to breast density results in a higher breast cancer risk among post- than premenopausal women. The concept of mammographic density patterns was introduced in the 1970s by Dr. Wolfe, a radiologist who evaluated breast density according to a four-level qualitative classification scheme.² Later on, quantitative approaches were developed using visual estimation, planimetric, and computer-assisted

methods.^{3,4} When the different assessments methods are compared, they all capture the associations with well known breast cancer risk factors, but the quantitative methods convey additional information over the qualitative methods.⁵

To perform quantitative mammographic density assessment at our center, films are scanned with a Kodak LS85 Film Digitizer (optical density range 0.001 to 4.1) at a resolution of 98 pixels per inch (pixel size equal to 260 μm). The 8-bit images are then displayed on the screen in 256 shades of gray. In populations who undergo digital mammography, the electronic images can be directly imported into the density assessment software. Using one of the available software packages,^{3,4} the reader determines a threshold for the edge of the breast and the edge of the dense tissue. Then, the computer calculates the total number of pixels in the digitized image that constitute the total area and the dense area and computes the ratio between the



two values. The pixels are converted into square centimeters using a factor of 0.000676. As a result, two measures of breast density are obtained: the size of the dense areas in square centimeters and percent density. While assessing the films, the reader is blinded to the identity and the group status of the subjects. A batch of mammograms contains cases and controls in random order and a sample of duplicates to assess reproducibility. In general, the correlation coefficients between repeated readings are above 0.95 indicating high reliability of the readings.

Women in the highest density category out of five or six levels experience a four to six-fold higher risk to develop breast cancer when compared to subjects in the lowest category.¹ The ability to predict breast cancer appears to be approximately equal for percent density and the size of the dense areas. The number of years between the mammogram and the breast cancer diagnosis also does not affect the risk estimates given appropriate age adjustment.⁶ So far, four case-control studies using quantitative assessment methods included substantial numbers of non-Caucasian women, primarily Asians and African-Americans.⁶⁻⁹ Whereas a study from California described a stronger association between mammographic densities and breast cancer among Chinese, Filipino, and Japanese than Caucasian women,⁸ two studies in Hawai'i suggested a slightly weaker association among Japanese than Caucasian women.^{6,7} However, in a recent Japanese study⁹ the strength of the association between breast density and breast cancer was similar as in previous reports from Caucasian women.¹ Cross-sectional studies have shown that women of Asian ancestry have higher percent densities than Caucasians because of their relatively small breast size.^{10,11} For example in a cross-sectional comparison in Hawai'i,¹⁰ the mean breast size was 140 cm² for Caucasians, 156 cm² for Native Hawaiians, 93 cm² for Chinese, and 91 cm² for Japanese, while the respective mean sizes of the dense areas were 34 cm², 36 cm², and 29 cm² (for Chinese and Japanese). The respective percent density measures were 29%, 26%, 35%, and 36%. On the other hand, percent densities were higher among Japanese-Americans in Hawai'i than among women in Japan (36% vs. 31%)¹² reflecting the three-fold difference in breast cancer risk between the two populations.¹³

Well established anthropometric and reproductive breast cancer risk factors are related to mammographic density.¹⁴ A strong genetic component of breast density was demonstrated in a twin study.¹⁵ In addition, a number of intervention studies indicate that hormonal and dietary factors may influence breast density. In a large clinical trial, mammographic density increased between 3% and 5% in women taking a hormone medication containing a progestin, whereas women in the estrogen only group experienced a non-significant increase of 1.3%.¹⁶ Treatment with tamoxifen¹⁷ or raloxifene¹⁸ improved mammographic densities. After a two-year low-fat dietary modification trial among pre- and postmenopausal women, the size of the dense areas decreased by 6.1% in the intervention group as compared with 2.1% in the control group,¹⁹ but a two-year randomized soy intervention in Hawai'i did not observe any significant changes in breast density by dietary treatment.²⁰

Mammographic density serves as convenient biomarker for breast cancer because of its strong and independent association with breast cancer.¹ Given the high mammography screening rates during recent years, large numbers of mammographic films are available for the majority of women in Western countries. The films can easily

be retrieved from clinics and digitized for computer-assisted density assessment. The comparative stability of breast density over time, despite a decline with age, also makes it a useful measure in longitudinal studies.²¹ Technical changes in mammography over time have surprisingly little effect on density readings because the reader primarily looks for differences in grey tones and adjusts to the variations in brightness and film quality. Although clinical trials have convincingly shown that breast density can be modified with certain treatments,^{16,17} the remaining question is whether a change in mammographic densities due to an intervention will also decrease breast cancer incidence in those women who experienced a change in mammographic densities. Only a few large intervention studies with a long observation period will be able to answer this question. Another potential use of breast density is improved risk prediction. Currently, the Gail model²² is the most common approach to identify women with a high risk to develop breast cancer, but the ability of this model to discriminate low and high risk women is relatively low. Adding breast density as an additional variable may improve the model and allow targeting of high-risk women for additional screening or preventive interventions.²³

For more information on the Cancer Research Center of Hawai'i please visit www.crch.org.

References

- Boyd NF, Rommes JM, Vogt K et al. Mammographic breast density as an intermediate phenotype for breast cancer. *Lancet Oncol* 2005;6:798-808.
- Wolfe JN. Risk for breast cancer development determined by mammographic parenchymal pattern. *Cancer* 1976;37:2486-2492.
- Boyd NF, Byng JW, Jong RA et al. Quantitative classification of mammographic densities and breast cancer risk: results from the Canadian National Breast Screening Study. *J Natl Cancer Inst* 1995;87:670-675.
- Ursin G, Astraхан MA, Salane M et al. The detection of changes in mammographic densities. *Cancer Epidemiol Biomarkers Prev* 1998;7:43-47.
- Gram IT, Bremnes Y, Ursin G, Maskarinec G, Bjurstam N, Lund E. Percentage density, Wolfe's and Tabar's mammographic patterns: agreement and association with risk factors for breast cancer. *Breast Cancer Res* 2005;7:R854-R861.
- Maskarinec G, Pagano I, Lurie G, Wilkens LR, Kolonel LN. Mammographic Density and Breast Cancer Risk: The Multiethnic Cohort. *Am J Epidemiol* 2005;162:743-752.
- Maskarinec G, Meng L. A case-control study of mammographic densities in Hawai'i. *Breast Cancer Res Treat* 2000;63:153-161.
- Ursin G, Ma H, Wu AH et al. Mammographic density and breast cancer in three ethnic groups. *Cancer Epidemiol Biomarkers Prev* 2003;12:332-338.
- Nagata C, Matsubara T, Fujita H et al. Mammographic density and the risk of breast cancer in Japanese women. *Br J Cancer* 2005;92:2102-2106.
- Maskarinec G, Meng L, Ursin G. Ethnic differences in mammographic densities. *Int J Epidemiol* 2001;30:959-965.
- Chen Z, Wu AH, Gauderman WJ et al. Does mammographic density reflect ethnic differences in breast cancer incidence rates? *Am J Epidemiol* 2004;159:140-147.
- Maskarinec G, Nagata C, Shimizu H, Kashiki Y. Comparison of mammographic densities and their determinants in women from Japan and Hawai'i. *Int J Cancer* 2002;102:29-33.
- Parkin DM, Whelan SL, Ferlay J, Teppo L, Thomas DB. *Cancer Incidence in Five Continents (Volume VIII)*. Lyon: International Agency for Research on Cancer, 2003.
- Vachon CM, Kuni CC, Anderson K, Anderson VE, Sellers TA. Association of mammographically defined percent breast density with epidemiologic risk factors for breast cancer (United States). *Cancer Causes Control* 2000;11:653-662.
- Boyd NF, Dite GS, Stone J et al. Heritability of mammographic density, a risk factor for breast cancer. *N Engl J Med* 2002;347:886-894.
- Greendale GA, Reboussin BA, Slone S, Wasilauskas C, Pike MC, Ursin G. Postmenopausal hormone therapy and change in mammographic density. *J Natl Cancer Inst* 2003;95:30-37.
- Brisson J, Brisson B, Cote G, Maunsell E, Berube S, Robert J. Tamoxifen and mammographic breast densities. *Cancer Epidemiol Biomarkers Prev* 2000;9:911-915.
- Freedman M, San Martin J, O'Gorman J et al. Digitized mammography: a clinical trial of postmenopausal women randomly assigned to receive raloxifene, estrogen, or placebo. *J Natl Cancer Inst* 2001;93:51-56.
- Boyd NF, Greenberg C, Lockwood G et al. Effects at two years of a low-fat, high-carbohydrate diet on radiologic features of the breast: results from a randomized trial. *J Natl Cancer Inst* 1997;89:488-496.
- Maskarinec G, Takata Y, Franke AA, Williams AE, Murphy SP. A 2-year soy intervention in premenopausal women does not change mammographic densities. *J Nutr* 2004;134:3089-3094.
- Boyd N, Martin L, Stone J, Little L, Minkin S, Yaffe M. A longitudinal study of the effects of menopause on mammographic features. *Cancer Epidemiol Biomarkers Prev* 2002;11:1048-1053.
- Gail MH, Benichou J. Assessing the risk of breast cancer in individuals. In: DeVita VTJ, editor. *Cancer prevention*. Philadelphia: JB Lippincott; 1992. 1-15.
- Tice JA, Cummings SR, Ziv E, Kerlikowske K. Mammographic breast density and the gail model for breast cancer risk prediction in a screening population. *Breast Cancer Res Treat* 2005;94:115-122.

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5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.



AMERICAN ACADEMY OF DERMATOLOGY

UPCOMING CME EVENTS

Date	Specialty	Sponsor	Location	Meeting Topic	Contact
April 2006					
4/18-4/20	P	Adult Mental Health Division, Department of Health, State of Hawai'i	Hawai'i Convention Center, Honolulu	3rd Annual Best Practices Conference -- Treatments That Work: Medication Algorithms and Assertive Community Treatment	Tel: (808) 539-3939 Web: www.amhd.org/best/
4/21-4/22	ORS	Hawai'i Orthopaedic Association & The Queen's Medical Center	Hawai'i Prince Hotel, Honolulu	21st Annual Combined Orthopaedic Spring Symposium	Tel: (808) 630-1586
4/26	ADM, ADP, P	Department of Psychiatry, John A Burns School of Medicine, University of Hawai'i	Queen's Conference Center, Queen's Medical Center	Alcohol and Other Addictions: A Cross-Cultural Perspective	Tel: (808) 586-2900
4/28-4/29	Primary Care Physicians, VS, R	Straub Foundation	JW Marriott Ihilani Resort & Spa Ko Olina, O'ahu	7th Hawai'i Vascular Scientific Symposium	Tel: (808) 524-6755
May 2006					
5/4-5/6	Multi	Department of Native Hawaiian Health, John A Burns School of Medicine, University of Hawai'i	JW Marriott Ihilani Resort & Spa Ko Olina, O'ahu	He Huliau - A Turning Point: Eliminating Health Disparities in Native Hawaiians & Pacific Peoples Cardiovascular Disease 2006	Tel: (808) 587-8563 Web: http://www.hawaiiexport-center.hawaii.edu/
June 2006					
6/22-6/24	OBG	American College of Obstetricians and Gynecologists	Fairmont Orchid, Kohala Coast	The Art of Clinical Obstetrics	Tel: (800) 638-8444 x2540 Web: www.acog.org
6/25-6/27	Multi	John A Burns School of Medicine, University of Hawai'i	Hawai'i Convention Center, Honolulu	2nd Annual Hawai'i BioScience Conference: The Molecular Basis of Disease	Web: www.hibiosci.org
July 2006					
7/23-7/29	OS	Department of Orthopaedic Surgery, Kaiser Honolulu	Grand Hyatt Resort, Poipu, Kauai	14th Annual Update in Ortho- paedic Surgery, Hawai'i 2006	Tel: (808) 432-2243
7/23-7/27	ORS	North American Spine Society	Ritz-Carlton, Kapalua, Maui	Spine Across the Sea	Tel: (877) 774-6337 Web: www.spine.org
August 2006					
8/17-8/18	Multi	St. Francis Medical Center -- Liliha	St. Francis Medical Center -- Liliha	Medical Malpractice: Understanding the Law, Managing the Risk	Tel: (808) 547-6140
October 2006					
10/12-10/16	R, N	Western Neuroradiological Society	Fairmont Orchid, Kohala Coast	38th Annual Meeting	Tel: (630) 574-0220 x226 Web: www.wnrs.org
10/20-10-22	Multi	Hawai'i Medical Association	Hawai'i Convention Center, Honolulu	2006 Annual Meeting; Leading the Way: Building on 150 years of Service	Tel: (808) 536-7702 Web: www.hmaonline.net
10/22-10/27	U	Western Section of the American Association of Urology	Hyatt Regency Resort, Maui	82nd Annual Meeting	Tel: (714) 550-9155 Web: www.wsau.org
November 2006					
11/8-11/11	OBG	American College of Obstetricians and Gynecologists	Hapuna Beach Prince Hotel, Kohala Coast	Obstetrical and Gynecological Pearls	Tel: (800) 638-8444 x2540 Web: www.acog.org

Interested in having your upcoming CME Conference listed? Please contact Nathalie George at (808) 536-7702 x103 for information.

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Classified Notices

To place a classified notice:

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❖ WHAT A GREAT VICTORY! FOR ONCE WE DIDN'T LOSE GROUND!

After considerable turmoil, sweat and some tears, both houses of Congress have agreed not to reduce Medicare physician reimbursement for 2006. By law, CMS had already imposed a 4.4 percent reduction, but that was eliminated and reimbursement was rolled back to 2005 levels. This time Congress was obviously impacted by the AMA's report that 38 percent of their members would reduce the number of Medicare patients they would care for if the reduction was not eliminated. This is good news for physicians, but really only for this year. To look at the larger picture, it's obvious that the flawed formula that is at the root of the reimbursement mayhem, remains in place. So far all attempts to replace the absurd "sustainable growth rate" (SGR) schedule with a formula based upon actual practice costs have failed.

❖ IED - INJURED EYE DISASTERS.

A compilation of American military ocular injuries in the Iraq war after the end of the ground offensive was published in the January 2006 issue of *Ophthalmology*, with reports limited to injuries in the first eight months of 2004. During this period, more than 500 soldiers were killed and 4,000 were injured. The ocular injuries were all prospectively examined and treated at the 31st Combat Support Hospital in Baghdad. Two hundred seven severe ocular and ocular adnexal injuries, including 132 open globes were cared for. While conventional weapons such as mortars, rockets, sniper rifles and automatic rifles were used effectively by the insurgents, the majority of the ugly injuries (51 percent) were from improvised explosive devices (IED). Of 41 eye removals, 24 resulted from IEDs. Many, but not all of these injuries would have been prevented with consistent use of ballistic protective lenses. This is one ugly war!

❖ COME ON, BABY, LIGHT MY FIRE...

At Swedish Hospital in Seattle, a 54-year-old woman was under sedation while undergoing a lymph node biopsy. She awoke with her hair and neck in flames, and suffered burns to her face and neck with significant scarring. How the ignition occurred is still a mystery, but the fire was largely due to an alcohol-based hair style product that had been recently applied. A law suit seeking unspecified damages has been filed citing the hospital as negligent. The hospital is altering its pre-surgical procedures to include screening for hair care products.

❖ SPEED KILLS! SLOW INFURIATES.

Everybody wants to avoid the airport congestion of long security lines. Now a program of "Registered Traveler" is being designed to permit those who have submitted personal data, been fingerprinted and issued a "smart card," to bypass the crowd through a special checkpoint. You can participate for a mere \$80 a year. Sounds wonderful, right? Maybe not. The Federal *Transportation Security Administration* (TSA) has said participants would still be subject to random secondary screening, would not be exempt from removing shoes and coats, or sending laptops through X-ray machines. Because the program will be run by a private company, the personal information must be submitted to the TSA for security clearance. TSA will verify identity, conduct background checks, criminal records, and terrorism watch lists. Initially in support, the airlines are now against the program since they would have to build a special gate and add kiosks for scanning cards. Another worthwhile idea crashing on the rocks and shoals of bureaucracy!!

❖ AGE DOESN'T ALWAYS BRING WISDOM. SOMETIMES AGE COMES ALONE.

Marilyn Albert, PhD, is director of the division of cognitive neuroscience at Johns Hopkins University School of Medicine. She has collected studies from the MacArthur Foundation Studies of Successful Aging, the Chicago Health and Aging Project, the Northern Manhattan Study, the Canadian Study of Health and Aging, and the Berlin Aging Study. The compilation of work identified a limited set of factors that appear to predict who will remain mentally sharp into their 70s and beyond. To summarize, these elements are physical activity, mental activity, social engagement and good cardiovascular health. Gender and genetics were not deemed to be as important.

❖ YOU NEED A CIGARETTE TO STEADY YOUR NERVES AFTER READING ABOUT THE DANGERS OF TOBACCO.

It has long been known that a large and disproportionate number of individuals with mental disorders are smokers. While the national average of smoking Americans is about 22 percent, those with schizophrenia, attention-deficit/hyperactivity disorder (ADHD) or other mental afflictions is

almost double the national average at 41percent. Reporting in the *Archives of General Psychiatry*, Kollins et al., theorize that these individuals get some benefits from tobacco that others do not. Using magnetic resonance imaging on the brains of rats, nicotine use increased activity in the reward centers in both controls and ADHD rodents, but those with ADHD-like symptoms also enjoyed temporal and auditory stimulation. In theory, the additional activation might help alleviate symptoms of ADHD. What is known is that anti-smoking campaigns have been effective in cutting the rate of tobacco use in the broad population, but have had no effect on the mentally ill.

❖ WHAT DO YOU MEAN HEADACHE? THIS IS FOR YOUR HEALTH CARE!

At the University of Florida, employees can now get health insurance to cover their domestic partners. The underwriters added one proviso: the applicant must swear that there was sexual contact with the partner for a minimum of one year in order to be covered. Kyle Cavanaugh, university vice president for human resources, stated that such "non-platonic" requirements are now commonplace in such significant other policies. No mention is made of married couples, who apparently don't need to swear to an active sexual relationship in the prior year (good thing .. perjury is a serious crime).

❖ HOPE IS GOOD COMPANY ALONG THE WAY, BUT GENERALLY A WRONG GUIDE.

Trading on hope, "alternative" medical clinics have attracted terminally ill North Americans across the border to Baja, Calif. in search of miracle cures. The practice gained notoriety in the 1970s when actor Steve McQueen went there where he was treated with coffee enemas and laetrile. Needless to say, he expired. Now (at last) authorities have closed the Santa Monica Health Institute where Coretta Scott King, widow of Dr. Martin Luther King, Jr. died. Citing improper and irregular treatment, unauthorized surgery, unsanitary conditions, and improperly trained personnel, Mexican health officials locked the door. The clinic director has a criminal history and was known for providing dubious medical care.

❖ THE EXCEPTION PROVES THE RULE, ESPECIALLY THE GOLDEN RULE.

In western New York state, a 10-year-old bat boy for a little league team was accidentally struck in the chest by a baseball bat. His heart stopped, he collapsed and became unconscious. Penny Brown, a nurse trained in CPR, was nearby and her prompt action revived the child. Now, seven years later, Ms. Brown was dining at a restaurant when a bolus of food lodged in her throat and she was unable to breathe. When patrons screamed for someone to help, a 17-year-old eagle scout and volunteer firefighter, Kevin Stephan, came to help. He performed an effective Heimlich maneuver and cleared the obstruction. Right! He was the boy she had saved at the ball park seven years before. And that's the rest of the story!

❖ WHATEVER HITS THE FAN WILL NOT BE DISTRIBUTED EVENLY.

In Paderborn, Germany, zookeeper Friedrich Riesfeldt wanted to help his constipated elephant. He fed the ailing animal 22 doses of cathartic and added a bushel of berries, figs and prunes. With still no action he was using an olive oil enema when the impaction suddenly broke. The zookeeper was struck by a huge dump of 200 pounds of pachyderm feces, fell to the ground, was knocked unconscious when he struck his head on a stone, and was buried as the elephant continued to empty its bowels. Undiscovered by other attendants for about an hour, he died by suffocation under the 'mountain do.' Which goes to prove what the bumper sticker has been telling us, "SHIT happens."

ADDENDA

- ❖ Due to rising (usually sagging) obesity, standard hypodermic needles are increasingly unable to penetrate fat and reach buttock muscle.
- ❖ The first canned beer in the United States was introduced in January 1935 by Pabst Brewing Company.
- ❖ Hillary Clinton is inscrutable, but I can't vouch for the rest of her.

ALOHA AND KEEP THE FAITH — rts■

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