

# Indoor Fire Ant Sting Attacks: A Risk for Frail Elders

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**ABSTRACT:** *Objective:* We have previously reported 10 indoor sting attacks by imported fire ants, most of which involved frail elderly people in the Southeastern United States. Since the range of these insects is expanding and attacks often attract media attention, we hypothesized that additional attacks of which we were unaware may have occurred and were reported in local newspapers. *Methods:* We searched the archives from 1989 until 2004 of 182 US newspapers in fire ant endemic areas in 10 states. *Results:* Ten additional cases of indoor fire ant sting attacks were reported in local newspapers between 1991 and 2004. This brings the total to 16 attacks on adults and four on infants. Most adult attacks occurred in long-term care facilities, but three involved hospitalized

patients. Morbidity ranged from nightmares to death in seven adults. One of the infants died and two suffered long-term morbidity. Six of the 20 sting victims died within 1 week of the attack. Seven of the 10 attacks reported in newspapers did not result in significant medical consequences, as compared with only two of the 10 attacks in previously published reports. *Conclusion:* Increasing numbers of indoor fire ant sting attacks are occurring in the United States, and frail elderly people and infants are at risk. They should be removed from indoor areas where ants are present until the ants are eradicated. **KEY INDEXING TERMS:** Imported fire ant; Fire ant attacks; Infant death; Frail elders death. [Am J Med Sci 2006;331(3):134–138.]

**F**ire ants (*Solenopsis invicta*, *Solenopsis richteri*, and *Solenopsis invicta* X *richteri*) entered the United States from South America through the Port of Mobile, Alabama in the 1930s.<sup>1,2</sup> The expanding commercial nursery industry in South Alabama facilitated the expansion of the ant habitat, both locally and throughout the coastal United States. Fire ants are now pests in most southern states, Puerto Rico, and California.<sup>3</sup> Some of these areas are now under quarantine for transport of agricultural material. (Figure 1)

Since the natural predators that control the density of fire ants in South America such as the phorid fly and the microorganism *Thelohania solenopsae* are absent in the United States, the ants have expanded not only their habitat but also their density.<sup>2,4,5</sup> This expansion has resulted in increased contact with humans and extensive agricultural damage. In an attempt to control these insects, the Department of Agriculture has released natural

predators from South America into the United States.<sup>5</sup>

Many references suggest that 30% to 60% of the population in fire ant endemic areas is stung per year.<sup>6–9</sup> A study from New Orleans in the 1970s suggested that 29% of residents were stung within a 3-month period.<sup>10</sup> That study showed a 55% sting rate in children. A more recent study in Texas suggested that a 3-week stay in an endemic area was associated with a 51% sting rate.<sup>11</sup> Another study reported that 89% of patients or family members in endemic areas were stung in a year.<sup>2</sup> This number is significantly higher than other reported studies. These data suggest that an increasing number of individuals are at risk for medical consequences of fire ant stings. Those previously reported include local and systemic allergic reactions.

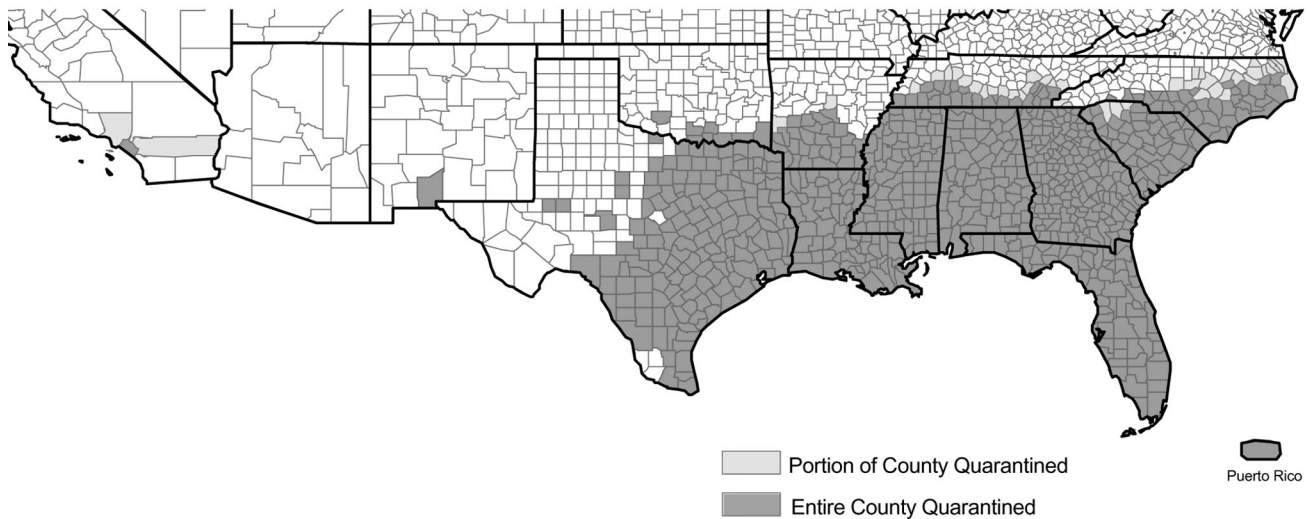
Over the last several years, our group has reported a new phenomenon that may reflect the increasing density of these ants: fire ant sting attacks on individuals indoors.<sup>12</sup> For the most part, we compiled our reports from lawsuits as they came to public disclosure. In this process, we found that some fire ant attacks have not been otherwise disclosed because of settlement agreements that follow lawsuits. We hypothesized that additional attacks may have been reported in local newspapers and, if present, would reflect an even greater risk for sting attacks than reflected by our original reports.

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**Figure 1.** Map of states and counties where fire ant quarantine is currently in effect. This map is current to April of 2004. (Adapted from the USDA web site.)

## Methods

We performed searches of all available on-line archives of US newspapers in areas known to have the highest levels of fire ant infestation. These included searches from 1989 until 2004 of 42 newspapers in Texas, 34 in Florida, 26 in Georgia, 15 in Tennessee, 14 in Arizona, 12 in Alabama, 12 in Mississippi, 10 in Louisiana, 10 in South Carolina, and 7 in Arkansas. Ants are known to be present in smaller numbers in states not under quarantine.<sup>13</sup> Care was taken to compare each new case identified to previously reported cases to ensure that no duplication of reporting occurred.

## Results

The search identified 10 cases of fire ant sting attacks indoors that occurred between 1991 and 2004 that have not been previously reported in the medical literature (Table 1).<sup>14–34</sup> Reports from the newspapers contained substantially less clinical detail than existing reports in the medical literature (Table 2).<sup>7,12,35–39</sup> There were four attacks in Alabama, four in Florida, and one each in Texas and

**Table 1.** Newspaper Reports of Indoor Fire Ant Stings

Case	Age	Sex	Health Status	Location	Clinical Consequence	Report
1	Neonate	M	Normal	Private apartment, Anniston, AL	Facial scarring, permanent brain damage	Associated Press <sup>14</sup>
2 <sup>a</sup>	77 y	F	Unknown	Hospital ICU, West Palm Beach, FL	Nightmares	Kidwell <sup>15</sup> , Jackson <sup>16</sup> , Associated Press <sup>17</sup>
3 <sup>a</sup>	87 y	F	Heart disease, dementia	Nursing home, North Port, FL	Death 1 day later	Krueger <sup>18</sup> , Chachere <sup>19</sup> , Associated Press <sup>20</sup> , Associated Press <sup>21–24</sup> , Chachere <sup>25</sup> , Associated Press <sup>26</sup> , Chachere <sup>27</sup>
4	83 y	M	CVA, dementia	Nursing home, Palm Beach, FL	None Reported	Isger <sup>28</sup>
5	79 y	F	Not reported	Assisted living facility, Hunstville, AL	None Reported	Associated Press <sup>29</sup>
6 <sup>a</sup>	91 y	F	Fractured hip	Nursing Home, Tyler, TX	None reported	Associated Press <sup>30,31</sup>
7	83 y	M	CVA, fractured hip	Hospital, Port Charlotte, FL	None reported	Mearns <sup>32</sup>
8	3 mo	F	Normal	Private home, Phoenix, AZ	Death	Carroll <sup>33</sup>
9	36 y	F	Rhett syndrome	Residential care facility, Mobile, AL	None reported	Curet <sup>34</sup>
10	Adult	F	Not reported	Hospital ICU, Mobile, AL	None reported	Curet <sup>34</sup>

<sup>a</sup>These cases were reported in multiple newspapers.

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