

# Prevalence of Multifocal Primary Hyperhidrosis and Symptom Severity Over Time: Results of a Targeted Survey

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**BACKGROUND** There is a paucity of data on the prevalence of multifocal primary hyperhidrosis and changes in hyperhidrosis severity over time.

**OBJECTIVE** The goal of this study was to better understand multifocal primary hyperhidrosis, prevalence and distribution of hyperhidrosis by focal site, age of onset of symptoms by focal area, and change in hyperhidrosis severity over time and with seasons.

**MATERIALS AND METHODS** The International Hyperhidrosis Society, through an unrestricted research grant from Revance Therapeutics, conducted an online survey of registered visitors to its Web site. Participants identified as having “excessive sweating” and opted to participate in the survey (23 questions) after an e-mail invitation.

**RESULTS** The survey data illustrate that multifocal primary hyperhidrosis is more common than previously believed and that multifocal hyperhidrosis is more common than singular focal hyperhidrosis (81% of patients reported 3 or more focal hyperhidrotic sites). The data also show that sweating symptom severity does not improve with age but stays the same or gets worse and is “bothersome” throughout the year.

**CONCLUSION** Recognition of the chronic and multifocal nature of primary hyperhidrosis is useful for treating hyperhidrosis patients long term and illustrates a need for treatments or treatment combinations that are effective for multiple body areas.

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Primary idiopathic hyperhidrosis is a dermatologic disorder of bilateral, relatively symmetric, uncontrollable sweating beyond physiological needs. The pathophysiology of hyperhidrosis is not well understood, but it is hypothesized to result from hyperstimulation of eccrine, and possibly apoeccrine, sweat glands. Commonly reported primary focal hyperhidrosis includes palmar, plantar, axillary, and craniofacial hyperhidrosis.<sup>1,2</sup>

Hyperhidrosis is significant due to its physical, psychological, social, and occupational impacts on qual-

ity of life. An individual’s activities of daily living can be severely affected by excessive sweating with implications on personal relationships, education, and occupational activities.<sup>3,4</sup>

The impact of hyperhidrosis on quality of life has been found to be equal or greater than that of psoriasis, severe acne, Darier disease, Hailey–Hailey disease, vitiligo, and chronic pruritus.<sup>5</sup> Psychosocial ramifications can be severe because of the embarrassment and stigma associated with sweating. Patients with hyperhidrosis report, related to their hyperhidrosis,

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decreased confidence, unhappiness, and depression.<sup>6</sup> Patients with hyperhidrosis also report physical discomfort due to wet clothing.<sup>7</sup> Excessive sweating can stain and destroy clothing and shoes, requiring these things to be replaced frequently at personal cost.<sup>8</sup> It has been noted that patients may spend thousands of dollars dry-cleaning and purchasing new items.<sup>9</sup>

Occupational problems for those with axillary hyperhidrosis include needing to change clothes frequently (70% of patients)<sup>6</sup> and the embarrassment of having sweat-stained clothing. In some cases, patients avoid careers that would require frequent public speaking.<sup>10</sup>

Palmar hyperhidrosis can significantly interfere with daily tasks, including difficulty writing and drawing. Palmar hyperhidrosis can make it difficult for individuals to grip tools, play musical instruments, and use electronic devices.<sup>7,8</sup> Patients can experience electric shocks and drop objects.<sup>11,12</sup> Difficulty handling electronic devices, and device damage may be a bigger concern now than in the past due to common touch screen technology.

### **Multifocal Nature of Primary Hyperhidrosis**

There is existing data regarding the prevalence of primary hyperhidrosis and the distribution across the 3 most common focal sites, but more data are needed.

Strutton and colleagues<sup>13</sup> found that the prevalence of primary hyperhidrosis in the United States to be 2.8%. Among individuals reporting primary hyperhidrosis, 50.8% indicated that they experience axillary hyperhidrosis. But, among axillary hyperhidrosis patients, only 18.7% reported that this was their only focal area affected. From these results, it is extrapolated that the majority of axillary hyperhidrosis patients (81.3%) have additional focal area involvement.

Across different sources,<sup>14–16</sup> evidence was found that the most common primary focal hyperhidrosis sites in order from most frequently reported to least are axillae, palms, plantar surfaces, craniofacial regions, and groin. Commonly noted primary multifocal hyperhidrosis combinations include palmar/plantar with axillary and palmar/plantar.<sup>14</sup>

The objective of this study was to provide a clearer understanding of primary hyperhidrosis multifocal patterns, changes in condition severity over time, and changes across seasons. This information will be valuable for the diagnosis and care of hyperhidrosis patients and for directing the development of additional treatment options.

### **Methods**

The study was created by the International Hyperhidrosis Society (Charleston, SC) and reviewed by dermatologists experienced in the field. It was supported with an unrestricted research grant from Revance Therapeutics (Newark, CA). The data were collected via a Web-based survey of previously registered users of the International Hyperhidrosis Society Web site ([www.SweatHelp.org](http://www.SweatHelp.org)). Web site users were invited via e-mail to participate. E-mail recipients were restricted to those who had previously self-identified as having “excessive sweating” (physicians, media, and industry professionals were excluded). The survey included 23 multiple-choice questions, some of which allowed multiple responses.

The e-mail was sent to 28,587 residents of the United States, who are International Hyperhidrosis Society registrants. Possible responses were capped at 2,000. In response to the survey invitation, 5,042 recipients (17.9%) opened the e-mail and 1,985 (6.9%) completed the survey.

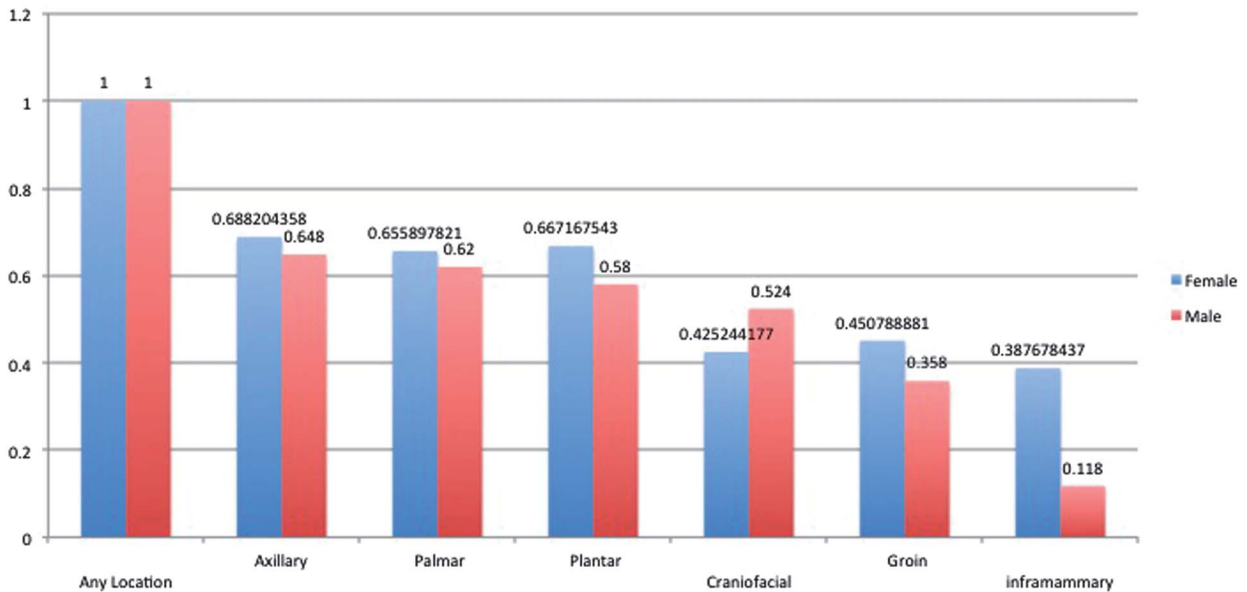
### **Demographics**

Survey respondents included 1,331 women (73%) and 500 men (27%); 154 respondents (7.76%) omitted their gender.

### **Results**

Axillary hyperhidrosis was the most prevalent type of hyperhidrosis in the study sample (68%) followed by palmar (65%) and plantar (64%). More than 30% of survey respondents reported craniofacial, groin, or inframammary hyperhidrosis (see Figure 1).

Only 11% of survey respondents reporting axillary hyperhidrosis indicated that they experience solely axillary hyperhidrosis with 81% and 46% indicating

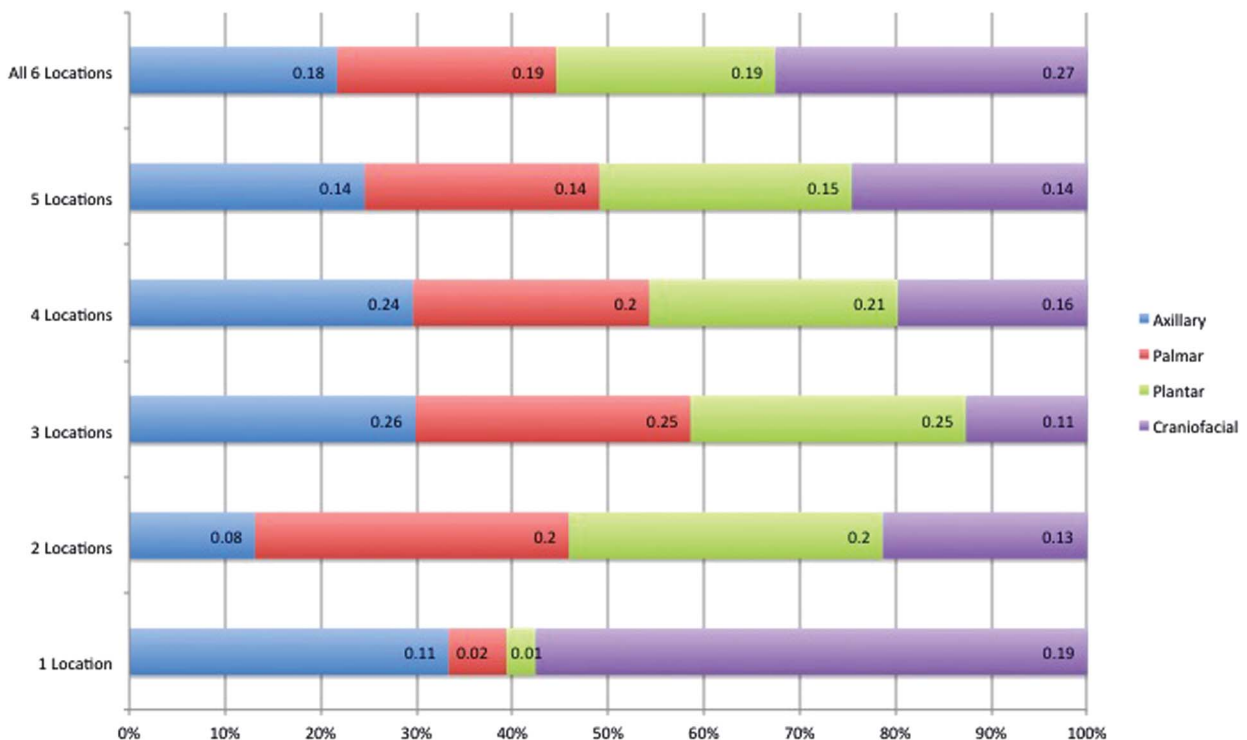


**Figure 1.** Hyperhidrosis involvement by focal area and gender. Q2: Where do you sweat excessively? Q22: What is your gender?

that they experience hyperhidrosis in 3+ or 4+ areas, respectively (see Figure 2).

In the study sample, axillary hyperhidrosis was most commonly reported *with* plantar hyperhidrosis (70%) or with palmar hyperhidrosis (69%). Groin

hyperhidrosis with axillary hyperhidrosis was reported in 53% of the time; craniofacial hyperhidrosis with axillary 44% of the time, and inframammary hyperhidrosis with axillary 38% of the time. Patients with groin excessive sweating were most likely to report 4 total body areas affected (32%).



**Figure 2.** Pattern of hyperhidrotic location(s) by focal area.

Inframammary excessive sweating was noted as the most common focal location of hyperhidrosis to overlap with 5 other focal locations: 39% of patients with inframammary excessive sweating reported 6 total body areas affected.

**Age of Onset**

Consistent with the previous studies,<sup>3,16</sup> data from the present study found that the majority of palmar/plantar primary hyperhidrosis patients reported childhood onset (less than 12 years). In contrast to other data, however, the authors saw an earlier age of onset for axillary hyperhidrosis. According to the research published in 2004, based on a survey of 150,000 households, the average age of onset for axillary hyperhidrosis was reported as 22 years.<sup>13</sup> In the study survey, one third of respondents reported that their primary axillary hyperhidrosis started before the age of 12 years, indicating that axillary hyperhidrosis may affect more young patients than previously thought (see Figure 3).

**Sweating Severity Over Time and Seasons**

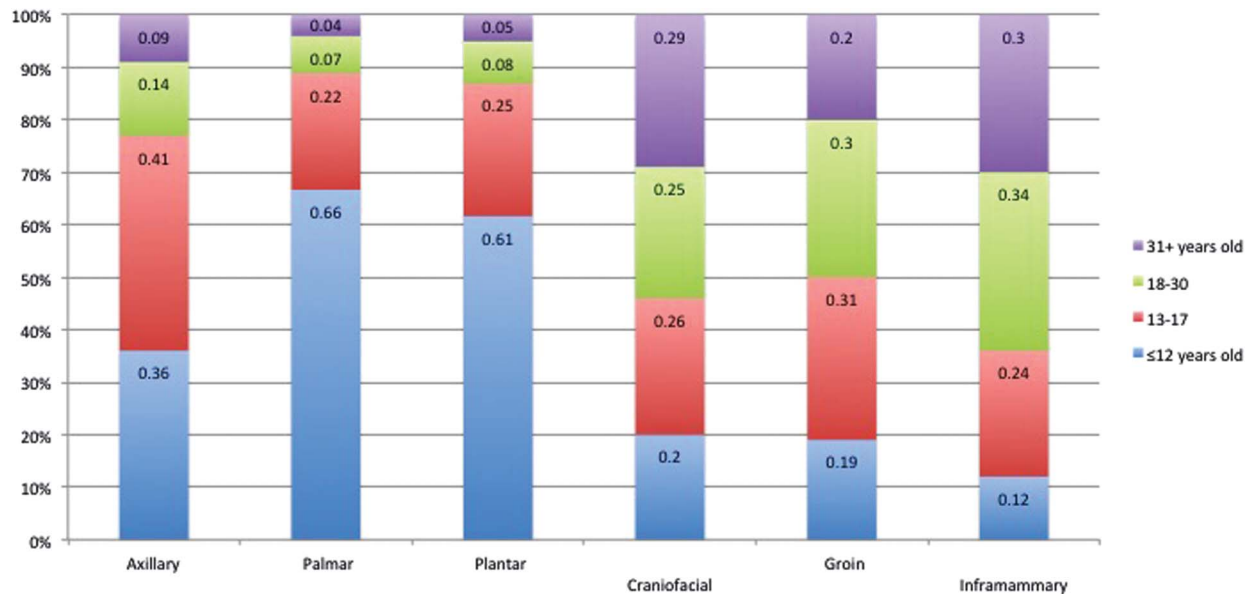
The survey results of the present study demonstrate that primary hyperhidrosis exhibits little change in severity over time. The majority of respondents

(88%) reported that symptoms have become worse or stayed the same over time. Lack of improvement in symptom severity was also consistent across the age groups with the majority of respondents indicating no improvement in their sweating severity over time (see Figures 4 and 5).

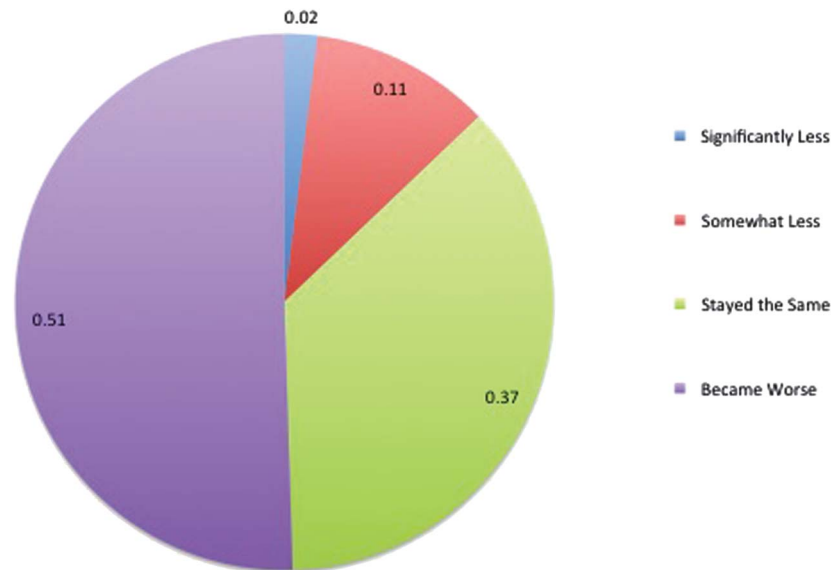
Results also indicate that primary hyperhidrosis is not solely dictated by the time of year. In the current survey, 65% of patients reported that their sweating bothers them equally throughout the year. If respondents indicated that hyperhidrosis did bother them more during a particular season, 32% indicated that it was during the June to August/summer time frame. The survey question was worded with “bother” to elicit a measurement of the quality of life rather than a measurement amount of sweat (see Figure 6).

**Discussion**

Primary hyperhidrosis is a disease of excessive sweating that can present at different focal areas of the body. The disease has multifaceted impacts on quality of life. There has been relatively little research to dimensionalize the multifocal nature of the disease or to confirm (or deny) perceptions that the severity of the disease tends to lessen over time and that the condition is seasonal.



**Figure 3.** Reported excessive sweating age of onset by focal area. Q2: Where do you sweat excessively and approximately how old were you when you first noticed it?



**Figure 4.** Sweating severity over time. Q3: Has your sweating lessened as you’ve gotten older?

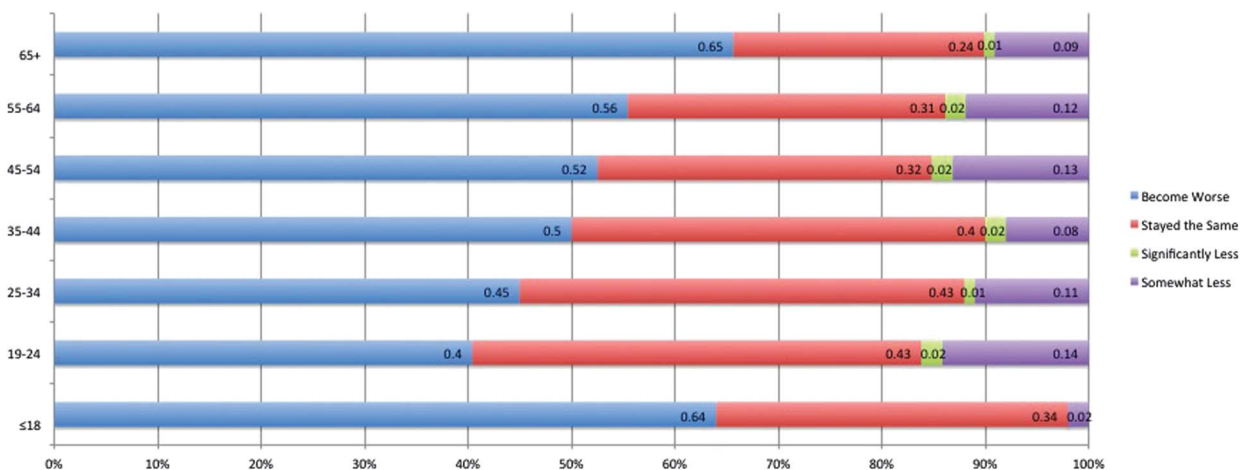
It was found that primary hyperhidrosis is most commonly a multifocal disease. The majority of patients (82%) experience in at least 2 focal areas and many in 3, 4, or more areas.

These data may help dispel the perception that primary hyperhidrosis regresses over time and that there is a relatively low prevalence among the elderly.<sup>15</sup> Eighty-nine percent of the study subjects aged 65+ years reported that their sweating severity has stayed the same or become worse (see Figure 5). This information can help providers develop treatment regimens that are safe, effective, and efficient across a patient’s life span.

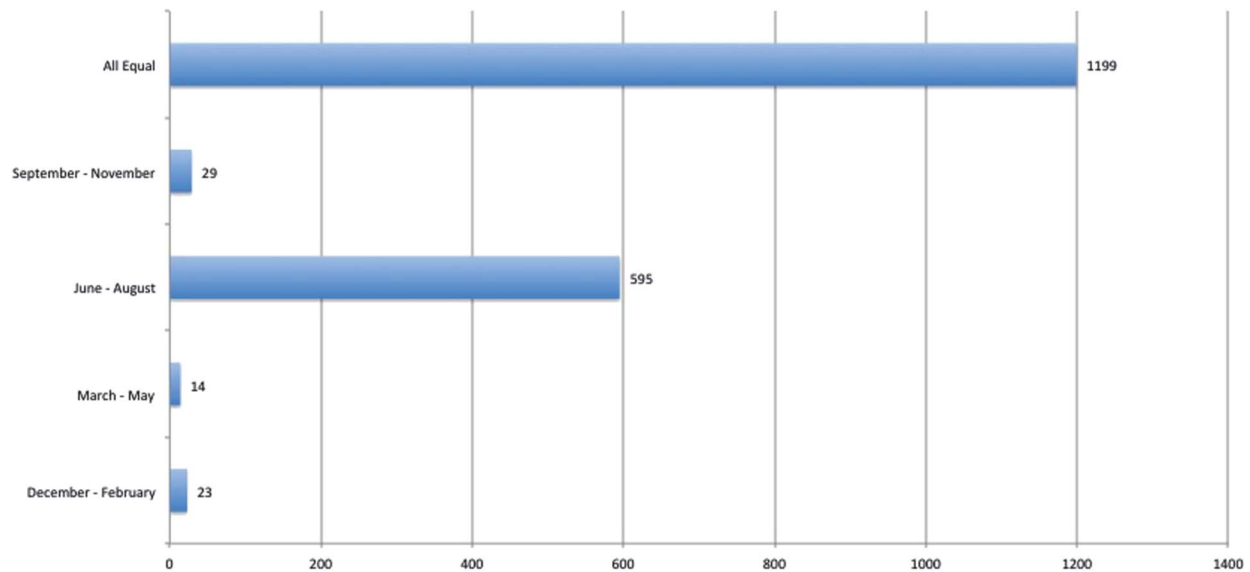
Separately understanding the childhood and adolescent onset for many patients is important so that diagnosis and treatment are not delayed. Currently, patients tend to wait 10 or more years before seeking treatment for primary hyperhidrosis.<sup>13</sup>

Finally, it was observed that the patients of primary hyperhidrosis report being “bothered” equally by their sweating despite the time of year, making the diagnosis and treatment a priority throughout the year.

It was recognized that the e-mail subscribers to the International Hyperhidrosis Society Web site are



**Figure 5.** Hyperhidrosis change over time by age group. Q4: Has your sweating lessened as you have gotten older? Q21: In what year were you born?



**Figure 6.** Seasonal impact of excessive sweating. Q6: What time of year does your sweating bother you the most?

likely to represent greater severity among hyperhidrosis patients and may not be representative of the population as a whole. It is possible that respondents to the present survey skew to greater hyperhidrosis severity as they represent patients who have been motivated to seek hyperhidrosis information online and thus ended up on the e-mail distribution list of the International Hyperhidrosis Society. It was also recognized that especially among older survey respondents who have experienced hyperhidrosis for many years, there may be recall bias in particular in regards to reports of age of symptom onset. Given these study limitations, further study would be valuable in validating the findings of the present study. In the meantime, it is believed that this study gives additional valuable insights into hyperhidrosis and helps direct further inquiry.

## Conclusion

Given that multifocal primary hyperhidrosis appears to be the norm, there is a need for clinicians and industry to provide patients with flexible treatment options that meet their needs across the entire disease state and patient life span.

These data confirm the marked prevalence of primary multifocal hyperhidrosis and the condition's long-term severity, with early onset across focal sites and

severity that tends to increase or stay the same rather than improve with age.

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