

*Overlap of social phobia and  
excessive sweating or blushing:  
An internet-based study*

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# Background

- Physical symptoms are the principal reason for clinic visits in about half of all outpatient encounters (Kroenke, 2001).
- A clear cut diagnosis cannot be established for physical symptoms at least 30% of the time (Kroenke, Spitzer, Williams, Linzer et al., 1994).
- Although specific treatments for symptoms are often lacking, symptoms are still treated in many cases (Jackson & Kroenke, 2001).
- Psychiatric disorders like depression and anxiety cause a number of physical symptoms (e. g. sweating, blushing, dizziness ...)
- Treatment of psychiatric disorders often reduce or abolish physical symptoms.

# Background (cont.)

- Blushing and sweating are the most common physical symptoms of social phobia (Gerlach et. al., 2001).
- Self-reported blushing and sweating distinguish best between social phobia and other anxiety disorders (Fahlén, 1996; Reich et al. 1988).

# Background (cont.)

- Blushing and sweating are presented as chief complaints to general practitioners, dermatologists and internal medicine specialists.
- Münster: Medical doctors of the above mentioned specialties reported a mean of 10 patients (SD 34.7) presenting with chronic blushing and 28 patients (SD 47.4) presenting with chronic sweating (hyperhidrosis) per annum. *(30% mailed our questionnaires back, all practitioners listed in the yellow pages were addressed)*
- Specialists suspected in 77% of chronic blushing and in 45 % of chronic sweating primarily „psychogenic“ causes of these symptoms

# Background (cont.)

- Blushing and sweating are often treated symptom-oriented (Botox, Intophoresis etc.).
- The probably most drastic methodology: **sympathectomy** (Goh, 1990; Heckmann, Breit, Ceballos-Baumann, Schaller, & Plewig, 1998; van der Meer, 1985; Rex, Drott, Claes, Göthberg, & Dalman, 1998).

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## ESB, Endoscopic Sympathetic Block

By using specially designed clamps it is possible to block the transmission of the neural impulses in specific regions of the Sympathetic chain. These clamps function as totally blocking agents as long as they are kept in place, but after their removal, the nerve can again resume its function. This makes the procedure reversible, and thus safe for the patient. The clamps can be removed with returning function during two months after the surgery. Even thereafter some function is restored and many of the original symptoms remain absent.

### **The guidelines for clamping in individual cases:**

Sweating of the hands - T4

Sweating and FB - T3

Blushing of the face alone - T2

Social anxiety with FB - T2

Social anxiety without FB - T3 and T4 on the left side only

Heart racing and rhythm disorders - T3, T4, and T5 on the left side only

It must be emphasized that every patient has to be carefully evaluated before the final plan of the treatment. You should not try to evaluate yourself your own need-specific treatment, let us do it as experts in the field!

# Troubling questions: Is sympathectomy really harmless?

- Surgical sympathectomy, irrespective of approach, is accompanied by several potentially disabling complications. (Furlan, Mailis & Papagapiou, 2000).

## Troubling questions:

### Blushing and sweating: Disregulation of bodily functions?

- Harth und Linse (2001): 23.1% of cases presenting with the chief complaint of hyperhidrosis had a normal Minor sweat test.
- Gerlach, Wilhelm, Gruber und Roth (2001): Social phobics with a primary complaint of blushing did not blush more than social phobics without such a complaint.

# Focus of this study

- The most likely explanation for chronic blushing and a likely explanation for chronic sweating (hyperhidrosis) is social phobia
- Information is missing concerning the number of patients presenting with chronic blushing and sweating qualifying for a diagnosis of social phobia → goal of this study

# Chronic blushing and sweating: Patients interested in sympathectomy often have a medical model of their disorder

- I really think that blushing is a physical feature. People who do not blush at minimal social triggers do not have a better psychological status, they only have the LUCK that their sympathetic nervous system does not react with the same intensity than ours."

(Statement of a patient posted at <http://www.ctsnet.org>)

# Recruitment

- Internet-based questionnaire
- Two advertisements for participation in our study posted three months apart in newsgroups focusing on ETS.
- Incentive: Webpage with information material on blushing and sweating.

# Diagnostic procedure

- Questions based on the Anxiety Disorders Interview Schedule IV for DSM-IV\_ADIS-IV (Di Nardo et al., 1994)
- ***Participants diagnosed as social phobia patients had replied yes to the following questions:***
- Do you feel fearful, anxious or nervous in social situations where you might be observed or evaluated by others or when you are meeting new people?
- Have you ever been anxious in social situations or were you ever overly concerned about embarrassing or humiliating yourself in front of others?
- Are you overly concerned that you may do and/or say something that might embarrass or humiliate yourself in front of others, or that others may think badly of you?

# Diagnostic procedure (cont.)

- *Participants diagnosed as social phobia patients had replied yes to the following questions:*
- Do/did you experience(d) the anxiety **nearly every time** you encounter situations similar to those described above?
- Have your fears interfered with your life (e.g. daily routine, job, social activities)?
- Have your current job or educational attainment been influenced by the fears?
- Participants diagnosed with social phobia reported a mean anxiety of 3.6 (SD 0.6) for the most anxiety arousing social situation (Likert-type scale 0-4)

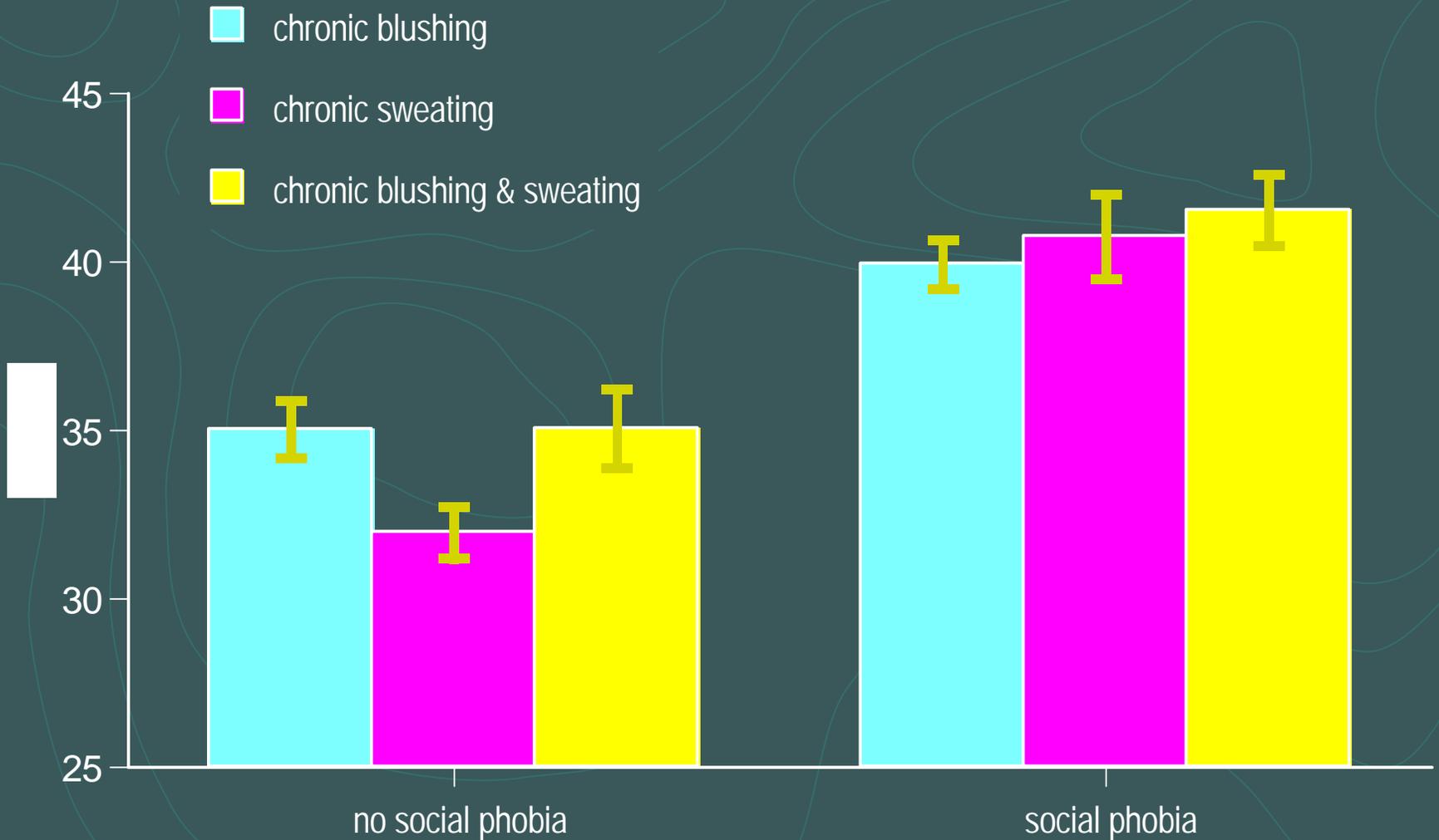
# Participants (self-selected)

- 372 people
  - 170 (45.7%) chronic blushing (chB)
  - 118 (31.7%) chronic sweating (hyperhidrosis) (chS)
  - 84 (22.6%) chronic blushing & sweating (chB&S)
- 212 (56.5%) men  
(chB: 103 (60.9%), chS:65 (52.8%), chB&S: 44 (53.1%).)
- Mean years of education: 14.0 years (SD: 3.9).
- Mean age: 27.7 years (SD: 10.0)  
(chS (24.7 SE: 1.0) < chB (29.2; SE: 0.8) ~ chB&S (29.0; SE:1.1))

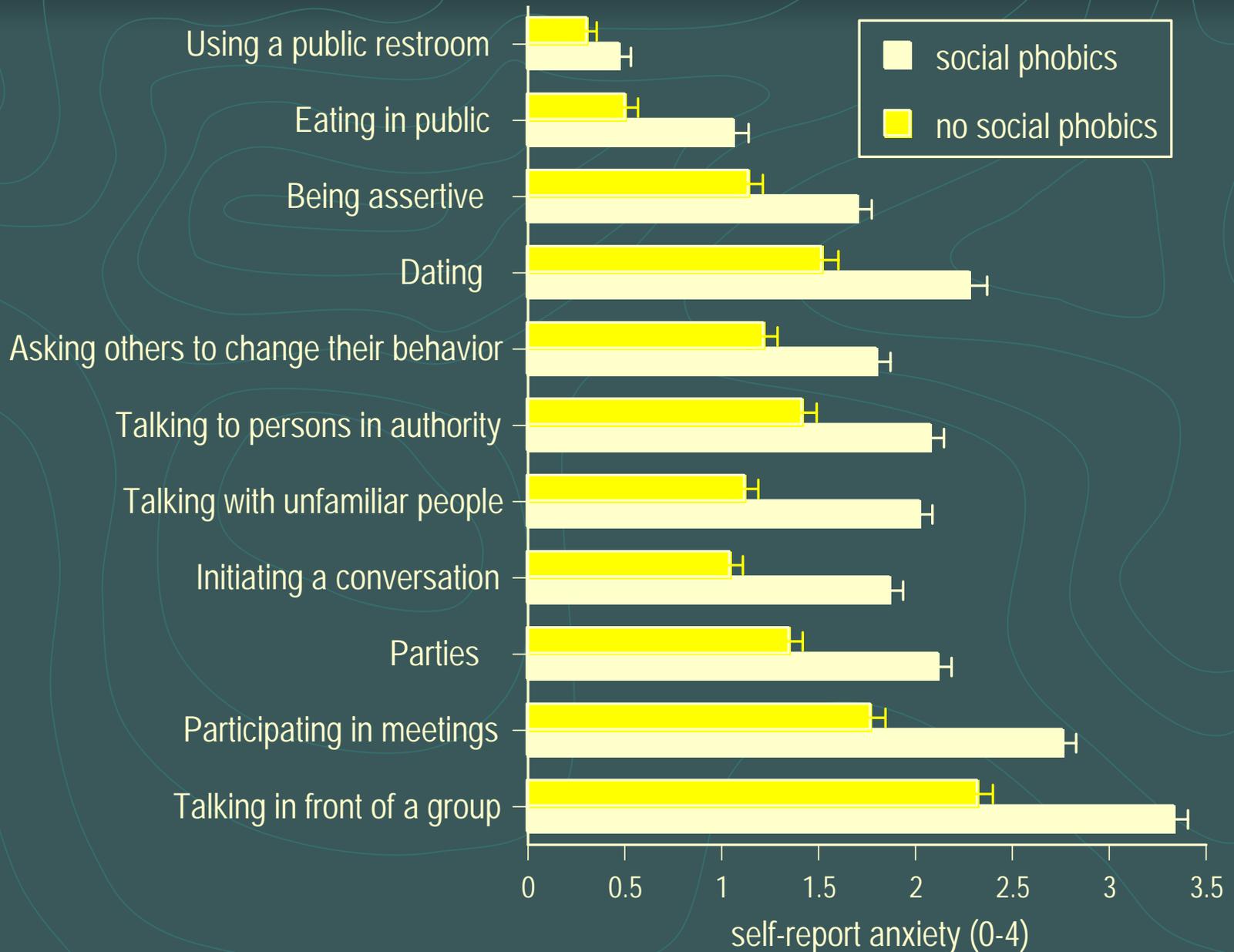
	Social phobia	
	no	yes
Chronic blushing	71/170 (41.8%)	99/170 (58.2%)
Chronic sweating	86/118 (72.9%)	32/118 (27.1%)
Chronic blushing & sweating	39/84 (46.4%)	45/84 (53.6%)

132 (77.6%) with chronic blushing, 63 (53.4%) with chronic sweating, and 63 (75%) with chronic blushing & sweating were diagnosed with *probable social phobia* if softer criteria for diagnosis of social phobia were applied)

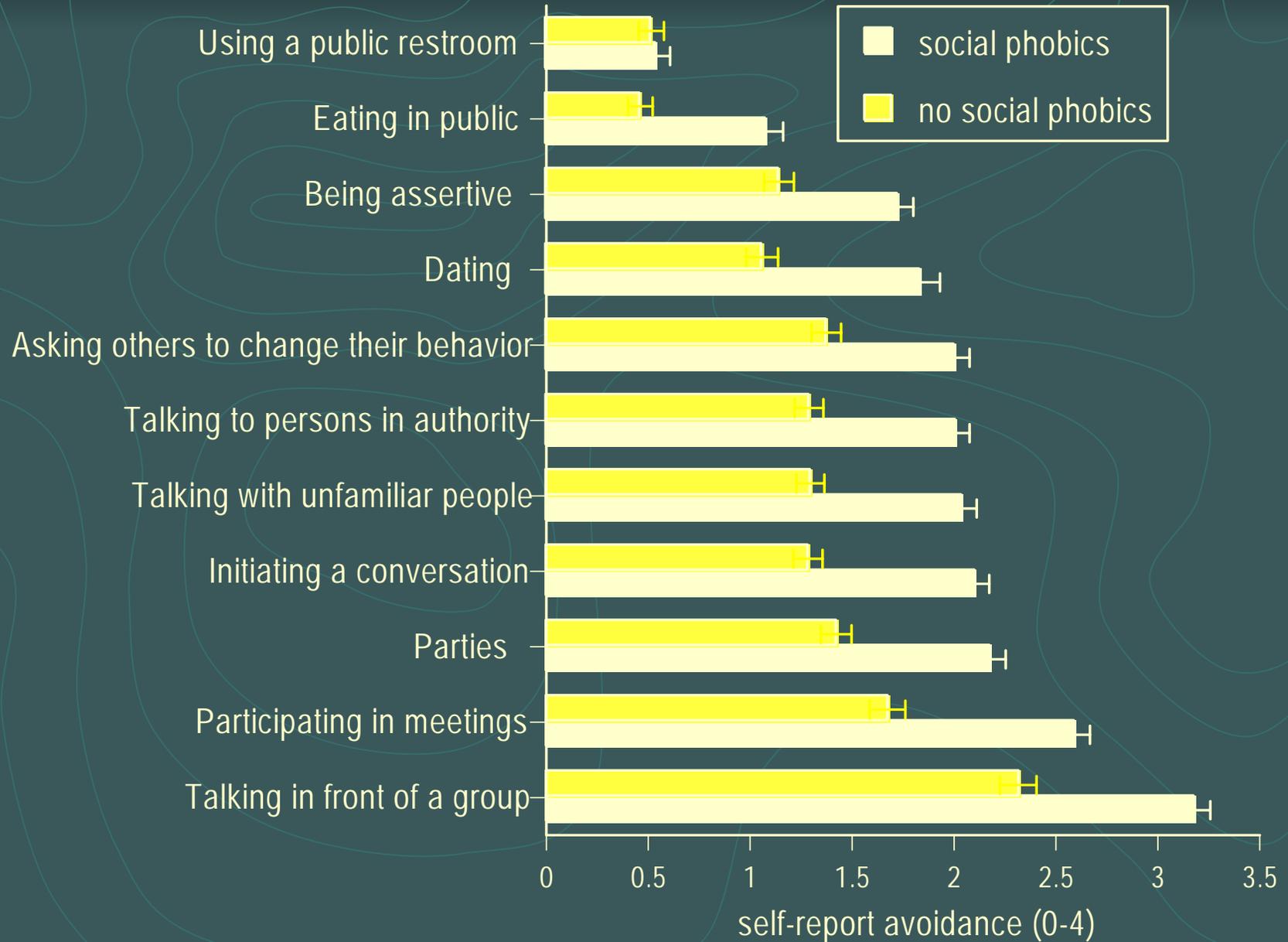
# Brief Fear of Negative Evaluation Scale



# Self-report anxiety typical social situations situations



# Self-report avoidance typical social situations situations



## Other bodily symptoms while blushing or sweating?

	Chronic blushing N=170	Chronic sweating N=118	Chronic blushing & sweating N=84	$\chi^2$ (df=2)
<b>Rapid heart beat</b>	<b>117 (68.8%)<sup>a</sup></b>	<b>52 (44.1%)<sup>b</sup></b>	<b>52 (61.9%)<sup>a</sup></b>	<b>18.0<sup>***</sup></b>
abdominal distress	68 (40.0%) <sup>a</sup>	37 (31.4%) <sup>a</sup>	35 (41.7%) <sup>a</sup>	3.0 <sup>n.s.</sup>
<b>Trembling</b>	<b>60 (35.3%)<sup>a</sup></b>	<b>26 (22.0%)<sup>b</sup></b>	<b>38 (45.2%)<sup>a</sup></b>	<b>12.0<sup>**</sup></b>
<b>Muscle twitching</b>	<b>62 (36.5%)<sup>a</sup></b>	<b>18 (15.3%)<sup>b</sup></b>	<b>36 (42.9%)<sup>a</sup></b>	<b>21.5<sup>***</sup></b>
<b>Shortness of breath</b>	<b>53 (31.2%)<sup>a</sup></b>	<b>7 (5.9%)<sup>b</sup></b>	<b>17 (20.2%)<sup>a</sup></b>	<b>27.1<sup>***</sup></b>
Dry mouth	39 (22.9%) <sup>a</sup>	17 (14.4%) <sup>a</sup>	17 (20.2%) <sup>a</sup>	3.2 <sup>n.s.</sup>
Choking	30 (17.6%) <sup>a</sup>	14 (11.9%) <sup>a</sup>	17 (20.2%) <sup>a</sup>	2.8 <sup>n.s.</sup>
Tense muscles	21 (12.4%) <sup>a</sup>	10 (8.5%) <sup>a</sup>	14 (16.7%) <sup>a</sup>	3.1 <sup>n.s.</sup>
<b>Numbness</b>	<b>5 (2.9%)<sup>a</sup></b>	<b>4 (3.4%)<sup>a</sup></b>	<b>11 (13.1%)<sup>b</sup></b>	<b>12.7<sup>**</sup></b>
Chest pain	8 (4.7%) <sup>a</sup>	5 (4.2%) <sup>a</sup>	4 (4.8%) <sup>a</sup>	0.04 <sup>n.s.</sup>

## Any treatment attempts before study participation?

	Chronic blushing N=170	Chronic sweating N=118	Chronic blushing & sweating N=84	$\chi^2$ (df=2)
<b>Any treatment?</b>	<b>89 (52.3%)<sup>a</sup></b>	<b>88 (74.6%)<sup>b</sup></b>	<b>56 (66.6%)<sup>b</sup></b>	<b>15.4<sup>***</sup></b>
Psychotherapy?	32 (18.8%) <sup>a</sup>	14 (11.8%) <sup>a</sup>	14 (16.7%) <sup>a</sup>	2.5 <sup>n.s.</sup>
Psychopharm. treatment?	44 (25.9%) <sup>a</sup>	27 (22.9%) <sup>a</sup>	32 (38.1%) <sup>b</sup>	6.1 <sup>*</sup>
Antiperspirants?	15 (8.8%) <sup>a</sup>	74 (62.7%) <sup>b</sup>	38 (45.2%) <sup>c</sup>	95.9 <sup>***</sup>
Other medication?	33 (19.4%) <sup>a</sup>	24 (20.3%) <sup>a</sup>	23 (27.4%) <sup>a</sup>	2.2 <sup>n.s.</sup>
Other treatment?	33 (19.4%) <sup>a</sup>	40 (33.9%) <sup>b</sup>	31 (36.9%) <sup>b</sup>	11.6 <sup>**</sup>

**37.4%** never tried another form of treatment! In addition, there is a trend that social phobics were less likely to have tried treatment before considering Surgery (42.6% with social phobia vs. 33.7% without social phobia)

# Conclusions

- Our study was designed to evaluate, how many sufferers of chronic blushing and sweating interested in neurosurgery as treatment of their ailment, may suffer from social phobia.
- Of 372 patients interested in ETS, 47% fulfilled criteria for social phobia (69.3% if less strict criteria were applied).
- The highest estimates for social phobia in the normal population is 16% (Lépine & Lellouch, 1995).

# Conclusions (cont.)

- Before treating blushing and sweating symptom-oriented (e. g. with surgery), all physical and psychological causes of these symptoms should be diagnosed and treated.
- Surgical sympathectomy, irrespective of approach, is accompanied by several potentially disabling complications. (Furlan, Mailis & Papagapiou, 2000).