



# Epidemiology of erectile dysfunction: results of the 'Cologne Male Survey'

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The last few decades have seen a marked increase in mean life expectancy in Central Europe. This has made elderly people and their quality of life a matter of ever-increasing medical concern. Available data from the United States and Scandinavia relating to erectile dysfunction (ED) do not enable us to draw valid conclusions about the current situation in Germany. The aim of the present study was to evaluate the epidemiology of male sexuality in Germany, and the proportion of men who need medical treatment because of increased suffering from this.

A newly developed and validated questionnaire on male erectile dysfunction was mailed to a representative population sample of 8000 men, 30–80 y of age in the Cologne urban district.

The response included 4489 evaluable replies (56.1%). The response rates in different age groups ranged from 49.2% to 68.4%. Regular sexual activity was reported by 96.0% (youngest age group) to 71.3% (oldest group). There were 31.5%–44% of responders who were dissatisfied with their current sex life. The prevalence of ED was 19.2%, with a steep age-related increase (2.3–53.4%) and a high co-morbidity of ED with hypertension, diabetes, pelvic surgery and 'lower urinary tract symptoms'. When treatment need was defined by co-occurrence of ED and dissatisfaction with sex life, 6.9% men required treatment for ED. Oral treatment of ED was preferred by 73.8% of respondents. There were 46.2% respondents who were willing to contribute more than DM 50 (25 Euro) per month for ED treatment.

We conclude that regular sexual activity is a normal finding in advanced age. ED is a frequent disorder, contributing to dissatisfaction with sex life in a considerable proportion of men. The high burden of ED is reflected in willingness to pay for treatment. ED is frequently associated with chronic diseases. Therefore adequate diagnostic workup is essential, to offer patients individually adapted treatment. General non-reimbursability of treatment for ED appears to be unacceptable. *International Journal of Impotence Research* (2000) 12, 305–311.

**Keywords:** erectile dysfunction; epidemiology

## Introduction

Erectile dysfunction (ED) is defined as the inability to attain and/or maintain penile erection sufficient for satisfactory sexual performance.<sup>1</sup> In Central Europe, and specifically in Germany with its 80 million inhabitants, the prevalence of ED is unknown.<sup>2</sup> The introduction of Sildenafil in Germany, changed the therapeutic options for masculine sexual disorders and led to a change in the numbers of patients seeking medical help.<sup>3</sup> Meanwhile there has been a lot of research focusing on graduated diagnosis and treatment options.<sup>4–7</sup> There are only a small number of epidemiological investigations

with differential results. Sexuality underlies socio economic and cultural fluctuations, and it is not surprising, that studies which have been carried out at different times and in various cultures, produce differential results.<sup>8–12</sup> Study populations are frequently small in number and biased towards a certain characteristic, eg smokers.<sup>13,14</sup> The aim of the present study was to analyse the epidemiology of sexual activity, ED and its co-morbidities as well as treatment demands from ED in an age-stratified population sample of German men.

## Materials and methods

An age-stratified population, reflecting German male age structure between 30 and 80 y of age, of 8000 men in the Cologne district was approached by letter with a recently developed and validated questionnaire for male ED (the 'Kölner Erfassungsbogen der

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Erektile Dysfunktion' [Cologne ED Questionnaire], KEED).<sup>15</sup> The questionnaire was sent by post and non-responders were twice requested (by mail) to complete the questionnaire. After a description of the study had been given and data protection regulations were guaranteed, the subjects' addresses were provided by the Cologne Municipal Registry of Inhabitants. To obtain a population based cohort, several criteria were selected. The primary distinction was the men's age, and secondly the marital status was considered. The 'Cologne-area' contains an urban portion as well as rural areas. By selecting men from both areas, the German city/country (6900/1100 ~87% urban to 13% rural inhabitants) distribution was matched (information from the Federal Government).

The questionnaire consisted of four parts: first, a cover-sheet with demographic and socio-economic data; second, the set of questions on sexuality (KEED); third, data on micturation; 'lower urinary tract symptoms' (LUTS); and fourth, the treatment preference was ranked (drugs, erection devices, self injection therapy, vascular surgery, prosthesis implants).

### KEED

The KEED is an 18-item questionnaire for the evaluation of ED, developed and validated in Germany that is aimed to identify symptoms of ED and its effects on quality of life. Questions 1–8 assess sociodemographic characteristics, medical history, and medication, smoking and alcohol consumption habits. Questions 9 and 10 assess for sexual desire and frequency of sexual activities. Questions 11–16 assess erectile and orgasmic function on a 5-point Likert scale, allowing calculation of an 'ED-score'. Men were scored as impotent, when they reached more than 17 points on the ED-rating scale. Satisfaction with sex life and general well-being are covered by the last two questions. In this point of view, men were dissatisfied with the current sex life, if they answered with 'mixed' or worse (Appendix 1).

### LUTS

Lower urinary tract symptoms (LUTS) were assessed by using IPSS-questions (International prostate symptom score) without any scale rate. Presence of LUTS was defined by a positive response to at least two IPSS items (Appendix 2).

### Statistical methods

Crude prevalences, means and 95% confidence intervals (CIs) were calculated for each age group

separately. For prevalences, exact Clopper-Pearson CIs were calculated for taking into account low prevalence rates. Multiple logistic regression analysis was performed to estimate the odds ratios of ED in relation to potential risk factors and age. The calculations were performed using the Statistical Analysis System SAS 6.12.

## Results

A total of 4883 men replied (61.0% response rate), with 4489 questionnaires (56.1%) completed and evaluable. The response rates for different age groups ranged between 49.2% and 68.4% (Table 1). The responders' mean age was 51.8 y. Two-thirds (66.1%) of the men were married or lived in a stable relationship with a partner, 21.1% were single, 9.2% divorced, and 3.5% widowed (Table 1). Overall, the men had a mean of 2.2 family members. The mean family income (without tax rates) was 3750 DM (appr. 1900 Euro) per month (Table 1). These results are comparable with the German socio-economic data. There was only a slight difference between the response rate of the rural area and the urban area. In Germany, 87% of the inhabitants are living in urban areas; in contrast only 9.3% (427 men) of our respondents live in rural areas.

Ninety-six per cent (youngest age group) to 71.3% (oldest group) reported regular sexual activity, including auto-erotic activity and exchange of caresses without sexual intercourse. Although frequency of sexual activity decreased with age, 66.1% of men aged 60–69 and 41.5% of those aged 70–80 y reported at least weekly sexual activity. There were 11.1–19.4% of responders who were dissatisfied with their current sex life, with the highest prevalence for men aged 60–69 (Table 1).

The prevalence of ED was 19.2%, with a steep age-related increase (2.3–53.4%) (Table 1). The increase was linear in the age-groups from 30 to 59 y, while the age-groups from 60 upwards showed an exponential increase in prevalence. When treatment need was defined by co-occurrence of ED and dissatisfaction with sex life, 6.9% of men required urological treatment for ED. The proportion of men requiring such treatment for ED was highest in the age group 60–69 (14.3%, Table 1).

The 'Massachusetts Aging Male Study' identified hypertension, diabetes mellitus and pelvic surgery as associates of erectile disorders. Our study replicated the significant co-morbidity of ED with these disorders. Additionally we found a 72.2% prevalence of 'lower urinary tract symptoms' (LUTS) in patients with ED as compared with a 37.7% prevalence of LUTS in non-ED patients (Table 2). Drinking alcohol and smoking was not significantly more often found in the group of men with ED. The age-adjusted odds ratios are presented in Table 3.

**Table 1** Study population, basic data

Age groups		30-39	40-49	50-59	60-69	70-80	Total
Responders	%	50.8	49.2	56.8	68.4	60.4	56.1
Married	%	46.7	63.8	72.2	76.5	81.7	66.1
	95% CI	(43.7-49.6)	(60.5-67.0)	(69.2-75.0)	(73.9-79.0)	(77.7-85.3)	(64.7-67.5)
Divorced	%	5.9	13.8	12.7	8.4	3.0	9.2
	95% CI	(4.6-7.4)	(11.6-16.3)	(10.7-15.0)	(6.9-10.2)	(1.6-5.1)	(8.4-10.1)
Widowed	%	0.4	1.0	3.4	6.4	9.4	3.5
	95% CI	(0.1-1.0)	(0.5-2.0)	(2.4-4.8)	(5.1-8.0)	(6.8-12.5)	(3.0-4.1)
Single	%	47.0	21.4	11.7	8.6	5.9	21.1
	95% CI	(44.1-50.0)	(18.7-24.3)	(9.7-13.9)	(7.0-10.4)	(3.8-8.5)	(19.9-22.3)
Family members	mid.	2.2	2.7	2.3	1.9	1.9	2.2
	95% CI	(2.16-2.33)	(2.63-2.83)	(2.23-2.39)	(1.84-1.93)	(1.80-1.94)	(2.19-2.27)
Family income	mid.	3674	3963	3990	3527	3498	3750
	95% CI	(3584-3763)	(3852-4074)	(3890-4090)	(3429-3624)	(3347-3649)	(3703-3797)
Sexual activity	%	96.0	91.9	88.7	83.6	71.3	88.3
	95% CI	(94.7-97.1)	(89.9-93.7)	(86.5-90.6)	(81.2-85.7)	(66.7-75.5)	(87.3-89.2)
Weekly sex. active	%	92.9	85.3	80.9	66.1	41.5	77.5
	95% CI	(91.2-94.4)	(82.8-87.6)	(78.2-83.3)	(63.2-69.0)	(36.7-46.4)	(76.2-78.7)
Sex. unhappy*	%	34.8	32.3	31.5	41.1	44.0	36.7
	95% CI	(32.1-36.4)	(30.7-35.3)	(29.6-33.9)	(39.1-43.8)	(30.8-49.5)	(33.8-39.9)
ED	%	2.3	9.5	15.7	34.4	53.4	19.2
	95% CI	(1.5-3.4)	(7.6-11.7)	(13.4-18.1)	(31.6-37.3)	(48.4-58.3)	(18.1-20.4)
Therapy necessity <sup>†</sup>	%	1.4	4.3	6.8	14.3	7.7	6.9
	95% CI	(0.8-2.3)	(3.1-5.9)	(5.3-8.6)	(12.3-16.5)	(5.3-10.7)	(6.2-7.7)

\*Responder is unhappy with his current sex life.

<sup>†</sup>Responder suffers from ED and is unhappy with his current sex life.

**Table 2** Risk factors for erectile dysfunction (ED)

Age groups		30-39	40-49	50-59	60-69	70-80	Total
ED (n = 853)							
Diabetes mellitus	%	0.0	11.1	22.8	22.1	20.8	20.2
	95% CI	(0.0-13.2)	(5.2-20.0)	(16.3-30.4)	(18.0-26.7)	(15.7-26.8)	(17.5-23.0)
Hypertony	%	11.5	17.3	37.6	33.3	33.9	32.0
	95% CI	(2.4-30.2)	(9.8-27.3)	(29.8-45.9)	(28.6-38.4)	(27.7-40.6)	(28.9-35.3)
Pelvic surgery	%	30.8	12.3	8.7	17.6	28.5	18.8
	95% CI	(14.3-51.8)	(6.1-21.5)	(4.7-14.5)	(13.9-21.8)	(22.7-34.9)	(16.2-21.6)
LUTS	%	38.5	43.2	71.8	79.5	74.7	72.2
	95% CI	(20.2-59.4)	(32.2-54.7)	(63.9-78.9)	(75.0-83.4)	(68.3-80.3)	(69.0-75.2)
Smoker	%	26.9	60.5	40.9	28.3	12.8	29.6
	95% CI	(11.6-47.8)	(49.0-71.2)	(33.0-49.3)	(23.8-33.1)	(8.7-18.0)	(26.5-32.8)
Regular alcohol	%	57.7	28.2	39.6	35.3	40.8	37.5
	95% CI	(36.9-76.6)	(18.6-39.5)	(31.7-47.9)	(30.4-40.4)	(34.2-47.7)	(34.2-40.9)
No ED (n = 3581)							
Diabetes mellitus	%	0.6	1.9	2.7	9.0	2.6	3.2
	95% CI	(0.3-1.3)	(1.1-3.2)	(1.7-4.1)	(7.0-11.3)	(0.8-5.9)	(2.6-3.8)
Hypertony	%	4.7	8.0	18.4	25.6	22.8	13.6
	95% CI	(3.5-6.1)	(6.2-10.2)	(15.7-21.2)	(22.4-29.0)	(17.1-29.4)	(12.5-14.8)
Pelvic surgery	%	1.7	1.0	2.6	3.1	8.4	2.4
	95% CI	(1.0-2.6)	(0.4-2.0)	(1.6-4.0)	(1.9-4.6)	(4.9-13.2)	(1.9-2.9)
LUTS	%	19.9	30.8	40.7	61.6	64.2	37.7
	95% CI	(17.6-22.4)	(27.6-34.2)	(37.3-44.2)	(57.9-65.2)	(57.0-71.0)	(36.1-39.3)
Smoker	%	44.4	41.3	30.8	22.0	14.7	34.6
	95% CI	(41.4-47.4)	(37.8-44.9)	(27.6-34.1)	(19.0-25.2)	(10.0-20.5)	(33.0-36.2)
Regular alcohol	%	43.3	42.1	46.2	39.4	33.2	42.4
	95% CI	(40.4-46.3)	(38.6-45.7)	(42.7-49.7)	(35.8-43.1)	(26.6-40.3)	(40.7-44.0)

These range from 1.58 (hypertension) to 6.03 (pelvic surgery) and are in accordance to previous findings. Compared with the youngest age group the oldest age group has a 22-fold higher risk for ED. The risk for the 40-49 age group is still nearly 4-fold higher (Table 3).

Oral treatment was indicated to be preferred by 73.8% of the respondents (Figure 1). In the total sample 46.2% of respondents were willing to contribute more than DM 50 (25 Euro) monthly, 8.1% were even ready to pay any amount. The burden, associated with ED, is reflected in the

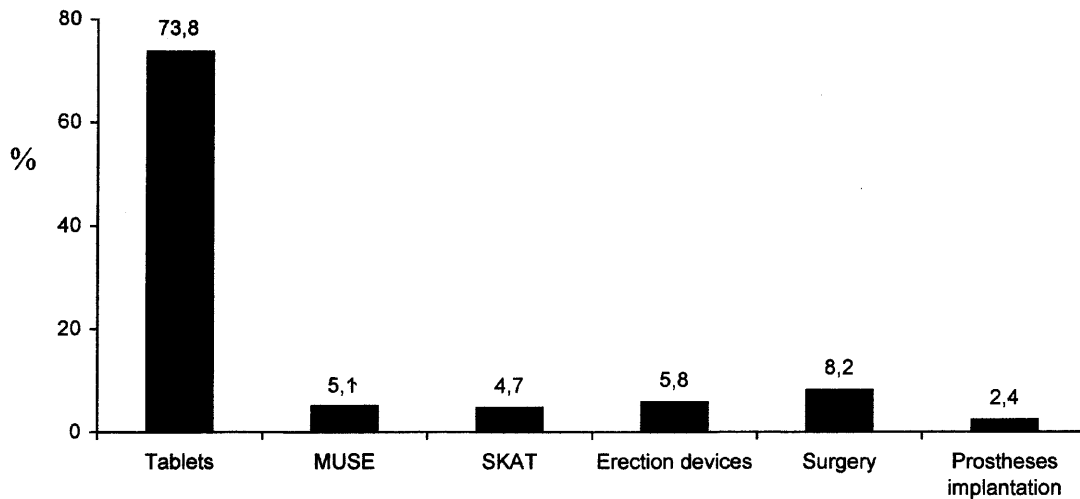
**Table 3** Odds ratios (OR) with 95% confidence intervals (CI) for erectile dysfunction associated with age group, pelvic surgery, lower urinary tract symptoms (LUTS), hypertension, and diabetes mellitus. All odds ratios are significantly different from 1  $P < 0.0001$

	OR	95% CI
Age 40–49 y vs 30–39 y	3.72	(2.37–5.86)
Age 50–59 y vs 30–39 y	5.16	(3.35–7.95)
Age 60–69 y vs 30–39 y	11.02	(7.26–16.75)
Age 70–80 y vs 30–39 y	22.42	(14.35–35.02)
Pelvic surgery	6.03	(4.37–8.31)
LUTS	2.11	(1.75–2.55)
Hypertension	1.58	(1.29–1.93)
Diabetes mellitus	3.95	(2.98–5.23)

willingness to pay for effective treatment. The willingness to pay for effective treatment was slightly higher in the non-ED group as compared to the ED group (cf, Table 4). In ED sufferers willingness to pay was not significantly correlated with household income.

### Discussion

The great advances in diagnosis and basic research on ED over the last 10 years have provided an exemplary demonstration, of the need for



**Figure 1** Preferred treatment for erectile dysfunction.

**Table 4** Willingness to pay for effective treatment

Age groups		30–39	40–49	50–59	60–69	70–80	Total
<b>With ED (n = 853)</b>							
Medical aid	%	46.2	42.5	62.6	40.3	31.2	42.3
	95% CI	(26.6–66.6)	(31.5–54.1)	(54.2–70.4)	(35.3–45.5)	(25.0–37.8)	(38.9–45.7)
No costs	%	12.0	33.8	23.5	31.7	39.3	31.5
	95% CI	(2.5–31.2)	(23.4–45.4)	(16.7–31.6)	(26.7–36.9)	(32.0–47.0)	(28.2–35.0)
< 50 DM	%	40.0	31.2	26.5	35.8	23.1	30.8
	95% CI	(21.1–61.3)	(21.1–42.7)	(19.3–34.7)	(30.7–41.2)	(17.1–30.1)	(27.5–34.3)
50–100 DM	%	24.0	23.4	25.7	21.3	8.1	19.4
	95% CI	(9.4–45.1)	(14.5–34.4)	(18.6–33.9)	(17.1–26.1)	(4.5–13.2)	(16.6–22.4)
> 100 DM	%	16.0	7.8	19.1	7.7	15.0	11.7
	95% CI	(4.5–36.1)	(2.9–16.2)	(12.9–26.7)	(5.1–11.1)	(10.1–21.2)	(9.5–14.3)
All	%	8.0	3.9	5.1	3.6	14.5	6.5
	95% CI	(1.0–26.0)	(0.8–11.0)	(2.1–10.3)	(1.8–6.1)	(9.6–20.6)	(4.9–8.6)
<b>Without ED (n = 3581)</b>							
Medical aid	%	59.6	51.9	61.0	51.4	45.1	55.9
	95% CI	(56.6–62.6)	(48.3–55.5)	(57.5–64.4)	(47.7–55.2)	(37.7–52.6)	(54.2–57.5)
No costs	%	19.1	21.1	25.0	35.7	52.3	25.6
	95% CI	(16.8–21.6)	(18.2–24.4)	(21.9–28.4)	(32.0–39.6)	(44.1–60.4)	(24.2–27.2)
< 50 DM (< 25 €)	%	25.4	26.6	31.0	22.6	20.3	26.1
	95% CI	(22.8–28.2)	(23.3–30.0)	(27.6–34.5)	(19.4–26.1)	(14.2–27.5)	(24.6–27.7)
50–100 DM (25–50 €)	%	29.1	22.1	20.9	18.9	5.9	22.7
	95% CI	(26.3–31.9)	(19.1–25.4)	(17.9–24.0)	(15.9–22.2)	(2.7–10.9)	(21.2–24.2)
> 50 DM (> 50 €)	%	21.4	19.3	15.4	10.3	13.1	17.1
	95% CI	(19.0–24.1)	(16.4–22.4)	(12.9–18.3)	(8.0–12.9)	(8.0–19.5)	(15.8–18.4)
All	%	5.0	10.9	7.6	12.5	8.5	8.5
	95% CI	(3.8–6.5)	(8.7–13.4)	(5.8–9.8)	(10.0–15.4)	(4.6–14.1)	(7.5–9.5)

interdisciplinary, sex-specific research. At the same time there has been a radical change from the view that this disorder was almost exclusively psychogenic, to an acceptance of a predominantly organic, multifactorial aetiology.<sup>17</sup> Until 20 years ago, in the absence of appropriate morphological diagnostic techniques, the diagnosis and treatment of ED was provided by psychologically and psychosomatically oriented physicians. The development of intracavernous injections to induce erections led to the acceptance of organically caused erectile disorders.<sup>16,17</sup> Over the past 20 years, therefore, a new field of activity has been opened up for the urologist.

The degree of expression of sexual disorders is subject to social and cultural variation, and it is all the more surprising that the Kinsey Report, published as early as 1948, for many years represented the only source of reliable data on the subject.<sup>7</sup> In that study, the prevalence of ED rose from less than 1% among men aged under 30 years to over 75% in 80-year-old men. The wide variance in prevalence data can be clearly seen by looking at the studies carried out in Scandinavia and the Netherlands. Diemont, for example, questioned 331 men aged 20–65 y and reported an ED rate of 2.7%.<sup>11</sup> Lendorf *et al* came to a similar conclusion, reporting an ED rate of 4% in 272 men with ages ranging from 30 to 79 y. The ED rate of men aged 60 upwards in this study, however, differed markedly from that found by Kinsey, with a figure of 10–11% as compared to 25–75%.<sup>8</sup> The study published by Feldmann *et al* referred to at the beginning of this report showed an overall prevalence of 20% for complete ED, while a significantly higher proportion of men suffered from mild to moderate degrees of disturbance of sexual function. Also the correlation with concomitant diseases and medication was calculated. Thus, it was shown that patients with cardiac disease, diabetes mellitus or hypertension had a higher prevalence of symptoms of ED than the total sample. There was a correspondingly above-average prevalence among men treated with vasodilators, cardiac drugs, antihyperglycaemic and antihypertensive agents.<sup>9</sup> These data were supported by a survey in France, which also reported an overall prevalence rate of 20% amongst men aged from 18 to 69 y.<sup>12</sup> If we apply these data to the population of the German Federal Republic, we would have to reckon on some 6–8 million men (approximately 20% of the total German male population) suffering from erectile disorders.

Our data agree with these studies in showing a similar prevalence of erectile disorders. We also identified the classical diseases and treatments in our population — arterial occlusive disease, diabetes mellitus and pelvic surgery. However, a new element was the pronounced and statistically highly significant relationship between ED and LUTS. Although there is as yet no pathogenetic explanation to account for this, further scientific research on this

concurrency of two major urological symptoms appears to be urgently required.

A crucial assumption of our study is that the results are not affected by the selection of responders from the target population. In order to detect a possible response bias, we compared the basic characteristics (ie family status, family members, and family income) of the study participants with those from the target population. The response rate did not show an age-specific shape. In addition, we compared the findings of our study between subjects responding quickly and those responding after reminders. None of these findings suggest that our results were affected or produced by response bias.

A major aspect of our study, as compared with those cited above, is the differentiation made between men with ED and those who suffer specific distress because of this condition. If we take impairment of erectile function and the presence of distress caused by it as the indication for symptomatic treatment, then the importance of diagnostic tools and algorithms for the correct identification of men with sexual dysfunction becomes apparent. It has been possible, with the help of KEED ('Kölner Erfassungsbogen der Erektile Dysfunktion'), to identify those men who had erectile impairment and at the same time, were distressed by it.<sup>15</sup> Thus we were able to show that approximately 19% of respondents reported demonstrable erectile impairment, while only 6.8% required urological treatment. Shabisigh and Solstad made the same findings, in smaller studies.<sup>18,19</sup>

The new era of development in medico-pharmacological technology is making it increasingly possible to intervene therapeutically in degenerative ageing processes which used previously to be taken for granted. The pharmaceutical industry has adjusted to this need, and coined the very appropriate concept of 'lifestyle drugs'. Our questionnaire thus showed that a high percentage of the male population is prepared to pay out significant sums of money every month (about 50–100 DM, 25–50 €) in order to obtain drug treatment for potency disorders with an effective 'potency drug'; the slight correlation with family income is no surprise.

Although the importance of quality of life in the elderly is rated very highly, the — at least partial — identification of sexuality with quality of life in old age is readily made a taboo subject. At the same time, the protective effects of sexual fulfilment on general health, even in the elderly, cannot be denied, and approximately 60% of men aged over 65 possess sexual desire (libido). In spite of this, many people have a sceptical attitude towards the maintenance of physical sexual function, which is required in both men and women for sexual intercourse.<sup>20</sup> The creation of a taboo in this context is partly a consequence of the way the older generations were brought up, and is further promoted by the lack of attention paid to ED by even the

medical profession. It will be necessary in future to investigate similar questions in women, so as ultimately to make it possible to draw some conclusions to guide health policy in relation to the quality of life of our older fellow-citizens, with particular reference to their sexuality.

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## Appendix 1

1. Are you	single	married	divorced	widowed	
2. Do you permanently live with a partner?	yes	no			
3. How old are you?	— Years				
4. Do you smoke?	no	yes	how many?		
5. Do you drink alcohol regularly?	no	yes	how many?		
6. Do you suffer from any of these diseases?	Diabetes mellitus			Arteriosclerosis	
	Heart insuffency			Hypertony	
	Hernia			Others:	
7. Do you regularly take any medication? IF YES, which types and how many do you take on a daily basis?	no	yes			
8. Have you undergone any surgery? IF YES, which surgeries did you have?	no	yes			
9. Do you have regular desires for sexual activity?	yes	no			
10. IF YES, how often do you have sexual activities (including masturbation)?	never	once a month	once a week	three times a week	more than 3 times a week
11. Do you have problems with your erections (hard penis)?	never (0%)	a few times (less than half the time)	some-times (for about half the time)	often (for more than half the time)	always (100%)
12. How often do you have waking erections?	always (100%)	often (for more than half the time)	some-times (for about half the time)	a few times (for less than half the time)	never (0%)

13. Are your erections hard enough for penetrating your partner?	always (100%)	often (for more than half the time)	some-times (for about half the time)	a few times (for less than half the time)	never (0%)
14. Are your erections sufficient for the duration of intercourse?	always (100%)	often (for more than half the time)	some-times (for about half the time)	a few times (for less than half the time)	never (0%)
15. Do you lose your erection during intercourse?	always (100%)	often (for more than half the time)	some-times (for about half the time)	a few times (for less than half the time)	never (0%)
16. Is it possible for you to reach orgasm?	always (100%)	often (for more than half the time)	some-times (for about half the time)	a few times (for less than half the time)	never (0%)
17. How would you feel, if your current sex life did not change?	excellent	content	mixed	unhappy	very bad
18. How did you feel generally during the last 4 weeks?	excellent	content	mixed	unhappy	very bad

Value

11. Do you have problems with your erections (hard penis)?	1	2	3	4	5
12. How often do you have waking erections?	1	2	3	4	5
13. Are your erections hard enough for penetrating your partner?	1	2	3	4	5
14. Are your erections sufficient for the duration of intercourse?	1	2	3	4	5
15. Do you lose your erection during intercourse?	5	4	3	2	1
16. Is it possible for you to reach orgasm?	1	2	3	4	5
17. How would you feel, if your current sex life did not change?	1	2	3	4	5

Questions 14/15 (controlling)

Both items focus on the same subject, only the answering scheme has changed!

Question 11-16

Score sum ≤ 17: No evidence of decreased erectile function.

Score sum > 17: Decreased erectile function.

Question 17

Score ≤ 2: Satisfied with sex life.

Score > 2: Dissatisfied with sex life.

## Appendix 2

Please consider your urination during the last four weeks	Yes (for more than half the time)	No (never or less than half the time)
Do you have a sensation of incomplete emptying of your bladder after urinating?		
Do you have to urinate again less than two hours after you have urinated?		
Do you often have stop and start again several times when you urinate?		
Do you often find it difficult to postpone urination?		
Do you often have a weak urinary stream?		
Do you often have to push or strain to begin urination?		
Do you typically often have to get up to urinate from the time you went to bed at night until the time you get up in the morning?	Yes (more than once)	No (never, or only once)