

# Behaviour after Cardiosurgery

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## ABSTRACT

*Aim of this study was to estimate behavioral changes after cardiac surgery (CS). A questionnaire was sent by mail to 74 women and 122 men during May 2004 and the answers were collected by phone. For statistical analysis, the  $\chi^2$ -test was used. A common unhealthy habits before CS were inappropriate diet (80% of all responders), addictions to alcohol (62%) and nicotine (54%). Significantly fewer patients after CS continue with fatty diet ( $\chi^2=39.069$ ;  $p<0.001$ ), smoking ( $\chi^2=90.286$ ;  $p<0.001$ ) and alcohol drinking habits ( $\chi^2=60.667$ ;  $p<0.001$ ). A significant worsening of sexual life ( $\chi^2=91.533$ ;  $p<0.001$ ) and significantly less negative influence of weather changes ( $\chi^2=20.821$ ;  $p<0.001$ ) was found after CS. Men drink more ( $\chi^2=16.299$ ;  $p<0.001$ ) and smoke more ( $\chi^2=19.635$ ;  $p<0.001$ ), have better sexual life ( $\chi^2=17.317$ ;  $p<0.001$ ), fewer sleeping disorders ( $\chi^2=17.334$ ;  $p<0.001$ ) and better oral health ( $\chi^2=38.632$ ;  $p<0.001$ ) than women. These results can be useful for setting up preventive measures for CVD.*

**Key words:** *unhealthy habits, Croatian society of patients who underwent cardiac surgery, health-related quality of life, heart surgery, cardiovascular diseases*

## Introduction

Cardiac surgery (CS) is a very dramatic event, after which probably every patient decides to change all his unhealthy habits. At the same time, patients learn about new troubles and fears such as need for social support, retirement, expensive medical check ups, sex troubles etc<sup>1</sup>. We wanted to estimate how many patients changed risk habits and continue with healthy behavior two or more years after CS.

The risk factors for cardiovascular diseases (CVD) are common throughout the Western developed world. In the first place is the high animal fat diet, »fast food« type of diet and sedentary lifestyle, whereas in other regions the next most common risk factors are addictions to alcohol and nicotine<sup>2-9</sup>. In some societies in eastern and central Europe that have recently gone through dramatic societal transitions, the cardiovascular mortality reached levels of five times the EU average<sup>10</sup>.

Recent findings introduced infections as a new risk factor for cardiovascular diseases. Infections are frequently present in immunodeficient patients<sup>11</sup>.

Usually, patients in their fifties and older undergo CS<sup>12-14</sup>. At that time, patients of both genders have gone through a period of changes called menopause and andropause for women and men, respectively. Abdominal fat deposition, due to the hormonal changes and high caloric food and decreasing physical activity, leads to obesity. The sedentary style of everyday life speeds up fat deposition. Some of the cardiovascular risk factors are twice as high in men compared to women until this age, but after they have reached their fifties both gender become more equalized in risk<sup>13-15</sup>. Older people are more often depressed, show negativistic behavior and neglect healthy habits<sup>15</sup>.

USA and Scandinavian countries have recently succeeded in reducing the CVD-related mortality by introducing broad prevention programs that promote healthy life style<sup>2-16</sup>. The death rate from coronary heart diseases has decreased in Denmark and Sweden by over 50% since 1980 (16). On the other hand, CVD-s are the most common cause of mortality in Croatia, accounting for 53% of

all deaths, and for even 87% of deaths among patients older than 65 years of age<sup>4,17</sup>.

In this study, patients who underwent CS were used as representatives of a segment of population that is at high risk of CVD. They were interviewed about changes in their life style in general, and practicing unhealthy habits in particular, after the surgery. A questionnaire was distributed with the quarterly journal of the »Croatian society of patients who underwent cardiac surgery« (HUOSB), and answers were collected by phone. Using this questionnaire, we wanted to estimate which risky habits were changed by the patients after CS and which health-related disorders became more or less serious.

### Subjects and Methods

A questionnaire was sent to 330 members of »HUOSB«. In this study we included only 196 responders, 74 women and 122 men, which answered to all questions. The response rate was 59%. They differed with respect to the period after cardiac surgery, to the surgical procedures, and were older than fifty years of age. 77 responders were younger than 65 years of age (31 women, 46 men), 79 were between 65 and 75 (27 women, 54 men), and 35 were older than 75 (16 women, 22 men). There were 101 cases of valve repair (41 women, 60 men), 84 case of coronary artery bypass grafting (33 women, 51 men), and 11 cases of other procedures (11 men). The majority of patients (179 or 91%) underwent CS two or more years ago.

»HUOSB« publishes a quarterly journal and we included questionnaire in one issue. The members were interviewed about changes in their life style after the cardiac surgery. The main questionnaire included seven questions about diet, alcohol consumption, nicotine addiction, sexual, oral health and sleeping disorders, and sensibility to changes of weather conditions. Another part of same questionnaire contained four questions more specifically focused on sexual disorders. For each question, up to four answers were offered to interviewers, enabling rough estimation of the seriousness of disorders.

A week after they had received the questionnaire, answers of patients were collected by phone.

Statistical analysis was performed by the McNemar-Bowker test.

### Results

The behavioral changes after surgery were significant in all categories, except for oral health hygiene and sleeping disorders, as are shown in Table 1.

About 80% responders declared good oral health before CS and still had it thereafter.

About 60% patients with heart disease had sleeping disorders after CS.

12% patients before CS and 15% patients after CS had insomnia habitually. This problem was more common among women.

**TABLE 1**  
THE SIGNIFICANCE OF BEHAVIORAL CHANGES AFTER CARDIAC SURGERY

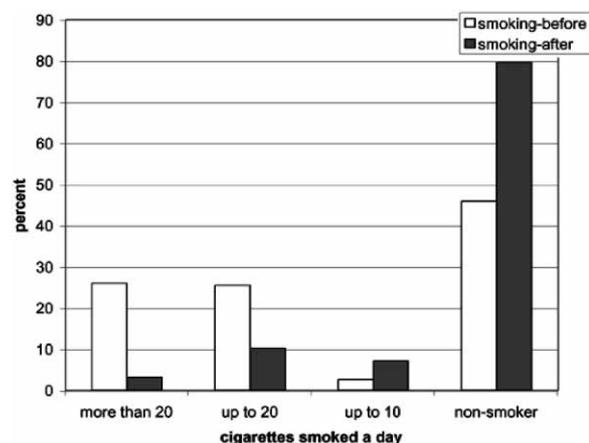
Variable	Before	After	Significance
Smoking	54%	20%	p<0.001
Alcohol	62%	50%	p<0.001
Sexual life	87%	50%	p<0.001
Diet rich with animal fat	80%	49%	p<0.001
Sensibility to weather changes	67%	57%	p<0.001
Sleep disturbances	62%	61%	p=0.598
Oral health	85%	84%	p=0.026

More than half of responders smoked cigarettes before CS, but only 20% (p<0.001) continued to smoke afterwards (34 men and 4 women). 67% men and 21% women smoked before CS. Only 27% men smoked after CS. The percentage of nonsmokers increased after CS from 30% to 71% men and from 73% to 95% women (Table 2).

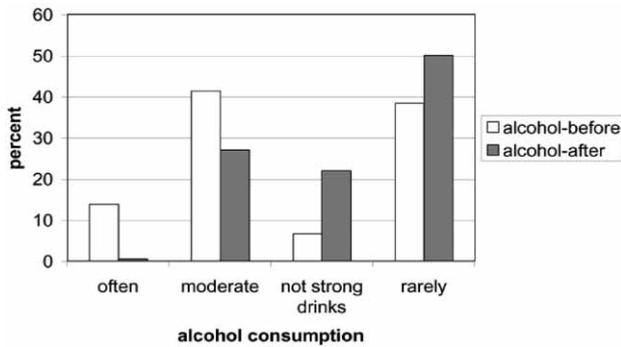
54% responders consummated alcohol frequently before CS, and this percentage fell after CS when just 28% drunk moderately (p<0.001). There were 22% abusers of alcohol consumption among men before CS. Men have drunk 77% before and 36% after. Women have drunk 37% before and 14% after (Table 3).

Male responders declared their sexual life before CS as excellent in 43%, but 39% of them had problems after surgery! 39% men and 69% women had difficulties in their sexual life after CS (Table 4). Among the patients with sexual disorders after CS (98 responders), 28 of them (22 men and 6 women) referred to fear, 12 to impotence (10 men and 2 women) and 58 to loss of interest (15 men and 43 women) as presented in Table 5. About 80% responders had a high-fat diet before CS and majority (about 60% of men and 50% of women) continued with the same diet after CS! 20% men and 8% women have

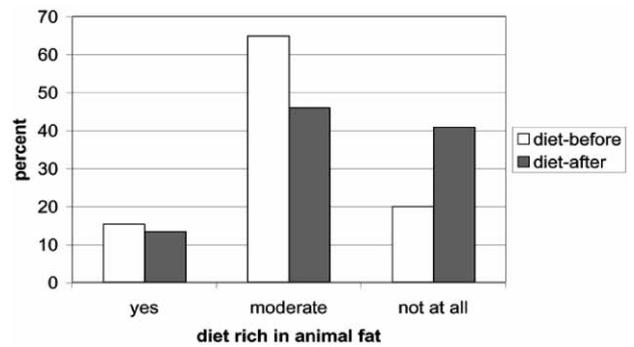
**TABLE 2**  
SMOKING HABITS BEFORE AND AFTER CS



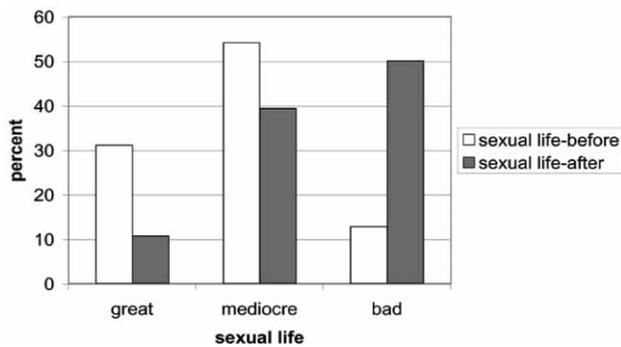
**TABLE 3**  
ALCOHOL CONSUMPTION BEFORE AND AFTER CS



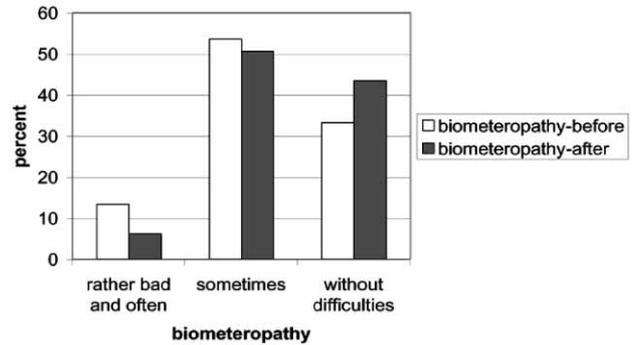
**TABLE 6**  
DIETARY HABITS BEFORE AND AFTER CS



**TABLE 4**  
SEXUAL LIFE BEFORE AND AFTER CS



**TABLE 7**  
BIOMETEROPATHY BEFORE AND AFTER CS



regularly eaten fatty meals everyday before CS, and 15% men and 11% women continued to do so afterwards (Table 6).

About 13% cardiologic patients usually had problems connected with weather changes before CS, and only about 6% ( $p < 0.001$ ) were still sensible after CS. Women experienced troubles more often (88%) than men (54%) (Table 7).

There were only 30% nonsmokers cardiac patients among men and 73% nonsmokers among women before CS, and 71% men and even 95% women afterwards ( $p < 0.001$ )!

22% men and no woman were alcoholic abusers before CS. More men than women are addicted to alcohol, smoking and fatty diet. Women drink less and live longer.

**TABLE 5**  
THE SEXUAL DISORDERS AFTER CS (N=98)

	Men	Women	%
Fear	22	6	28 (28.57%)
Impotence	10	2	12 (12.24%)
Lack of interest	15	43	58 (59.18%)
Total	47	51	98 (100.00%)

Moderate drinking after CS stated 60% men and 33% women.

An outstanding sex life before CS was declared by even 43% men and 11% women.

Women more often (88%) than men (54%) had troubles and were more sensible to different weather conditions ( $p < 0.001$ ).

A regular frequent sleeping disorders had 10% men and 15% women before CS and after CS 11% men and 22% women.

Men, evidently from their answers, drink and smoke more than women. We found the identical relations between genders from before the surgery. We conclude that men live more risky and not as good as women what means that they will change their unhealthy behavior after CS more difficult (Table 8 and 9).

## Discussion

The results confirmed our expectation that cardiac patients after CS in significant numbers abandoned risky habits and kept on healthy behavior two or more years after surgery.

Only two habits (oral status and sleep disorders) were not significantly changed two or more years after CS.

**TABLE 8**  
BEHAVIORAL CHANGES AFTER CARDIAC SURGERY

		Total		Men		Women	
		Before CS	After CS	Before CS	After CS	Before CS	After CS
Diet rich in animal fat	yes	30 (15.3%)	26 (13.3%)	24 (19.7%)	18 (14.8%)	6 (8.1%)	8 (10.8%)
	moderate	127 (64.8%)	90 (45.9%)	71 (58.2%)	59 (48.4%)	56 (75.7%)	31 (41.9%)
	not at all	39 (19.9%)	80 (40.8%)	27 (22.1%)	45 (36.9%)	12 (16.2%)	35 (47.3%)
	often	27 (13.8%)	0	27 (22.1%)	0	0	0
Alcohol	moderate	81 (41.3%)	54 (27.6%)	61 (50.0%)	44 (36.4%)	20(27%)	10 (13.5%)
	not strong drinks	13 (6.6%)	43 (21.9%)	6 (4.9%)	29 (24.0%)	7 (9.5%)	14 (18.9%)
	rarely	75 (38.3%)	98 (50.1%)	28 (23.0%)	48 (39.7%)	47 (63.5%)	50 (67.6%)
Smoking	more than 20	51 (26%)	6 (3.1%)	46 (37.7%)	6 (4.9%)	5 (6.8%)	0
	up to 20	50 (25.5%)	20 (10.2%)	35 (28.7%)	20 (16.4%)	15 (20.3%)	0
	up to10	5 (2.61%)	14 (7.1%)	5 (4.1%)	10 (8.2%)	0	4 (5.4%)
	nonsmoker	90 (45.9%)	156 (79.6%)	36 (29.5%)	86 (70.5%)	54 (73.2%)	70 (94.6%)
Sexual life	great	61 (31.8%)	21 (10.7%)	53 (43.4%)	15 (12.3%)	8 (11.4%)	6 (8.1%)
	mediocre	106 (55.2%)	77 (39.3%)	49 (40.2%)	60 (49.2%)	57 (81.4%)	17 (23%)
	bad	25 (13.0%)	98 (50.0%)	20 (16.4%)	47(38.5%)	5 (7.1%)	51(68.9%)
Oral health	good	81 (41.5%)	94 (48.0%)	65 (53.3%)	23 (18.9%)	16 (71.9%)	19 (25.7%)
	moderate	85 (43.6%)	71 (36.2%)	33 (27.0%)	24 (19.7%)	52 (71.2%)	47 (63.5%)
	bad	29 (14.9%)	31 (15.8%)	24 (19.7%)	8 (10.8 %)	5 (6.8%)	8 (10.8 %)
Biometeropathy	without difficulties	65 (33.2%)	85 (43.4%)	56 (45.9%)	58 (47.5%)	9 (12.2%)	27 (36.5%)
	sometimes	105 (53.6%)	99 (50.5%)	55 (45.1%)	58 (47.5%)	50 (67.6%)	41 (55.4%)
	rather bad and often	26 (13.3%)	12 (6.1%)	11 (9.0%)	6 (4.9%)	15 (20.3%)	6 (8.1%)
Sleeping disorders	often	23 (11.7%)	29 (14.9%)	12 (9.8%)	13 (10.7%)	11 (14.9%)	16 (21.9%)
	sometimes	98 (50.0%)	90 (46.2%)	46 (37.7%)	48 (39.3%)	52 (70.3%)	42 (57.5%)
	not at all	75 (38.3%)	76 (39.0%)	64 (52.5%)	61 (50.0%)	11 (14.9%)	15 (15.5%)

The absence of significant difference (since even 80% of responders declared a healthy oral status) after CS imply, including their low level of education, that they were incompetent for estimation. A strong association of CVD with severe periodontal status is known and dental health is a risk factor for CVS, and for death due to CVD<sup>11</sup>. It is difficult to find patients in their sixties with a complete dental arch and the dental hygiene is of utmost importance at the time of CS, but also in the patient's future life.

Sleeping habits were also not significantly changed after CS. About 60% of our cardiac patients had sleeping disorders before as well as after CS. It is more than 20–40%, a percentage that was found among all older people in USA and greater frequency may be the influence of the heart disease<sup>15</sup>. 12% patients before CS and 15% patients after CS had habitual insomnia, which is comparable to a study which found 12–20% sufferers among the whole population of old people<sup>15</sup>. The depression is the most common risk factor for insomnia among elders<sup>13–15</sup>. Women, in particular after CABG, often had long-term health-related quality of life not as good as men. Even 88% women had troubles connected with changes of weather conditions. They are at greater risk for increased cognitive difficulties, anxiety and depres-

sion than men because more women than men had insomnia as in our study and depressive mood is in connection with insomnia<sup>13,14</sup>. Comparable result was found in a study among all older people, without CS in their history<sup>15</sup>.

About 53% (71% men, 27% women) of our responders smoked before CS. In contrast, 25% men and 21% women in US smoked in 2001, in Germany 39% and 31%<sup>5,6,18</sup>. Fear was a strong trigger for changing this habit and patients quit smoking in a significant number. Noncompli-

**TABLE 9**  
GENDER DIFFERENCE ABOUT CHANGED HABITS AFTER CS

	$\chi^2$	Significance	Toward
Smoking	19.635	p<0.001	Men
Alcohol	16.299	p<0.001	Men
Sexual life	17.317	p<0.001	Men
Sleeping disorder	17.334	p<0.001	Women
Oral health	38.632	p<0.001	Men
Fatty diet	2.183	p=0.336	/
Weather sensibility	2.628	p=0.269	/

ance to smoking and alcohol restrictions, risky habits which are amenable to change, dramatically increases the risk for hospital readmissions among patients with heart failure<sup>6,7</sup>.

More than half of examinees quit with extensive drinking habit after CS, with only about 28% still drinking. They declared that they now drink »moderately« (10 women and 44 men). Drinking alcohol in small quantities protects the heart. However, alcohol abuse ruins the heart and chronic alcoholics experience much more complications postoperatively. About 30% hospital patients in western countries are alcohol abusers<sup>3,4</sup>. Severe infections are three to four times more frequent among chronic alcoholics than among occasional drinkers and non-drinkers<sup>3</sup>.

A diet rich in animal fats probably is the most frequent unhealthy habit among our examinees. Every second woman that underwent cardiac surgery, among those responsible for cooking, usually prepare fatty meals. Only 37% men and 47% women take care about their diet two or more years after CS. The period of cardiac rehabilitation after CS should be used in a better way to educate the patients about their diet, since they are keen to learn about healthy diet in that period. In rehabilitation centers patients should learn to combine two important hab-

its for their future life, a correct diet and the exercise. This combination was indicated in many studies as a very effective way to reduce hyperlipoproteinemia. Mediterranean diet seems to be the most efficient in the secondary prevention of CVD<sup>8,9,16</sup>.

The answers about excellent sexual life before CS are probably aggravated (43% of men), because other studies found that even younger groups of examinees without CS in their history, referred sexual problems in a respectable percentage<sup>19,20</sup>. A half of all patients had sexual disorders after CS (98 responders). About 50% women and 13% men were widowed among people older than 75 years of age, and they were usually indifferent to social activities<sup>15</sup>. Many men had serious trouble with the prostate gland. Chronic diseases as diabetes mellitus and hypertension or drugs, i.e. antidepressants, can also induce loss of libido or impotence. A lot of patients, after CS, have fear of any vehement physical activity at all, connected with possible tachyarrhythmia. The poverty of retired elders depressed their self-consciousness and deprived them of trying to be well dressed and well-looking, and using up-to-date cosmetics. Other studies found that age no limit quality of life as can inadequate social functioning<sup>18,21</sup>.

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## PONAŠANJE NAKON OPERACIJE SRCA

### SAŽETAK

Cilj je ove studije ispitati neke životne promjene srčanih bolesnika nakon operacije srca. Članovi Hrvatske udruge operiranih srčanih bolesnika dobili su putem svojeg glasila upitnik. Na sva pitanja odgovorio je 196 ispitanik. Bilo je 122 muškarca i 74 žena. Svi su stariji od 50 godina i skoro svima (91%) su prošle najmanje dvije godine od operacije. Za statističku analizu korišten je McNemar-Bowker test. Ispitanici su u značajnom broju promijenili sve ispitane navike

nakon operacije srca, osim stanja zubala i poremećaja spavanja. Oko 80% ispitanika smatra kako ima dobro sredeno zubalo i prije i nakon operacije. Oko 60% ispitanika, srčanih bolesnika ima poremećen san i prije i nakon operacije, što je više od postotka zdravih ljudi iste dobi (20–40%), te smatramo da je to utjecaj srčanih bolesti. Uglavnom nesanicu ima 50% muškaraca i 80% žena. 38% muškaraca i 69% žena ima seksualne poteškoće nakon CS. Više od polovice ispitanika bili su pušači, dok nakon operacije samo 20% puši. Prije je 54% ispitanika konzumiralo alkoholna pića, a nakon operacije samo 27%. Oko 80% ispitanika obilno jede životinjske masnoće, pa čak i nakon operacije još oko 60% muškaraca i 50% žena i dalje nije na nemasnoj dijeti. Oko 13% ispitanika ima tegobe u vezi vremenskih promjena prije, a 6% nakon operacije srca. Značajne razlike među spolovima su slijedeće: muškarci više puše ( $\chi^2=19,635$ ;  $p<0,001$ ), više uživaju alkoholna pića ( $\chi^2=16,299$ ;  $p<0,001$ ), imaju bolji seksualni život ( $\chi^2=17,317$ ;  $p<0,001$ ), imaju rjeđe nesanice od žena ( $\chi^2=17,334$ ;  $p<0,001$ ) i imaju kvalitetnije zubalo od žena ( $\chi^2=38,632$ ;  $p<0,001$ ). Ispitanici su uglavnom promijenili rizične životne navike nakon operacije srca, ali ne svi i ne sve. Srčane bolesti su većinom preventabilne i ovi rezultati mogu koristiti u planiranju prevencije.

## ABBREVIATIONS

HUOSB = »Croatian Society of Patients Who Underwent Cardiac Surgery Procedures«, Zagreb, Croatia

CS = cardiac surgery

CVD = cardiovascular disease