

# Sexual function of patients with heart failure: facts and numbers

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## Abstract

Approximately 60% to 87% of patients with heart failure (HF) report sexual problems, and numbers as low as 31% of HF patients younger than 70 have normal sexual function. When compared with healthy elders, the amount of perceived sexual dysfunction might be similar (around 56%), but patients with HF are reporting more erectile dysfunction (ED) and also perceive that their HF symptoms (20%) or HF medication (10%) is the cause for their problems. The prevalence of ED is highly prevalent in men with cardiac disease and reported in up to 81% of cardiac patients, compared with 50% in the general older population. In total 25–76% of women with HF report sexual problems or concerns.

The physical effort related to sexual activity in cardiac patients can be compared to mild to moderate physical activity. The related energy expenditure of sexual activity falls in the range of three to five metabolic units (METs), which can be compared to the energy needed to climb three flights of stairs, general housework, or gardening.

Information about sexual activity is often overlooked by health care professionals treating HF patients. Advice and counselling about this subject are needed to decrease worries of patients and partners, avoid skipping medication because of fear for side effects, or prevent inappropriate use of potency enhancing drugs or herbs.

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## Introduction

Heart failure (HF) is known to have consequences for physical function affecting daily life of the patient and his/her partner. Patients with HF may report a decrease in sexual performance, a loss of sexual pleasure or satisfaction, a decrease of sexual interest, and a decrease in the frequency of sex.<sup>1–4</sup> For a lot of HF patients, sexual health is important, with 52% of the men and 38% of the women with HF reporting that sex was important and sexual health was impacting their quality of life.<sup>5,6</sup>

Although not every patient with HF suffers from sexual problems and the relationship between the patient and the partner is not always affected,<sup>7</sup> several patients and partners have questions and worries. They may have questions about when to resume sexual activity, about possible dangers and what to do in case symptoms occur. In the American Heart Association (AHA) scientific statement on sexual Activity and Cardiovascular Disease,<sup>8</sup> sexual activity is described to be reasonable for patients with compensated and/or mild

[New York Heart Association (NYHA) class I or II] HF (Class IIa; Level of Evidence B). Sexual activity is not advised for patients with decompensated or advanced HF (NYHA class III or IV) until their condition is stabilized and optimally managed (Class III; Level of Evidence C).

Although the majority of health care professionals feel a certain responsibility to discuss patients' sexual health, in practice, they seldom address sex with their patients, even during cardiac rehabilitation or in general practice.<sup>9–11</sup>

From the patient side, patients also experience barriers to discuss their worries or questions around sexual function. Some feel embarrassed to address the topic, others do not want to embarrass the health care providers, or others fear that their health care provider is not experienced enough to understand his/her problems.<sup>9,11</sup>

Not discussing sexual concerns with patients might lead to unnecessary worries or sadness of patients. Some patients even might skip their medication because they fear for side effects of their cardiac medications. Some patients start using substances that might help increase their potency or sexual

desire, without knowing the possible consequences such as interaction with cardiac medications, vasoactive or sympathomimetic effects, and elevating or reducing systemic blood pressure (BP).<sup>8</sup>

This short summary article addresses the prevalence of sexual problems in HF patients and factors that are related to sexual problems and provides some basic information on energy, risk, and treatment. This information might help health care providers to address sexual health in their consultation.

## Prevalence of sexual problems in heart failure patients

Approximately 60% to 87% of patients with HF report sexual problems.<sup>8</sup> These problems include a marked decrease in sexual interest and activity, and one quarter of patients with HF report that they have stopped sexual activity altogether.<sup>1,12</sup> Other studies have found that normal sexual activity was observed only in 31% of patients younger than 70.<sup>5</sup> When HF patients ( $n=438$ ) were compared with healthy elders ( $n=459$ ), the self-reported amount of sexual dysfunction was similar, at 59% and 56%.<sup>2</sup> However, HF patients reported significantly more often ED (37% vs. 17%).<sup>2</sup> Sexual problems include a lack of interest in or fear for having sex, orgasmic difficulties, or erectile dysfunction (ED) in men.

ED occurs also in the general population, with increasing prevalence with age. The prevalence is estimated to be 50% in 60-year-old men.<sup>13,14</sup> But ED is reported in up to 81% of cardiac patients<sup>14</sup> across different cultures and ethnic groups.<sup>15</sup> Although in most studies more male patients report sexual problems, also women with cardiac disease are known

to have more frequent sexual problems compared with women in the general population.<sup>16,17</sup> Women may experience other types of sexual dysfunction than men, including decline in sexual interest or desire, decline in sexual arousal, orgasmic disorder, or painful sexual intercourse.<sup>17</sup> In a general population, 27% of women (age 50–59) reported lack of interest in sexual activity, and 23% of women were not able to have an orgasm.<sup>18</sup> In a HF population, 80% of the female HF patients reported reduced lubrication and 76% reported frequent unsuccessful intercourse.<sup>16</sup>

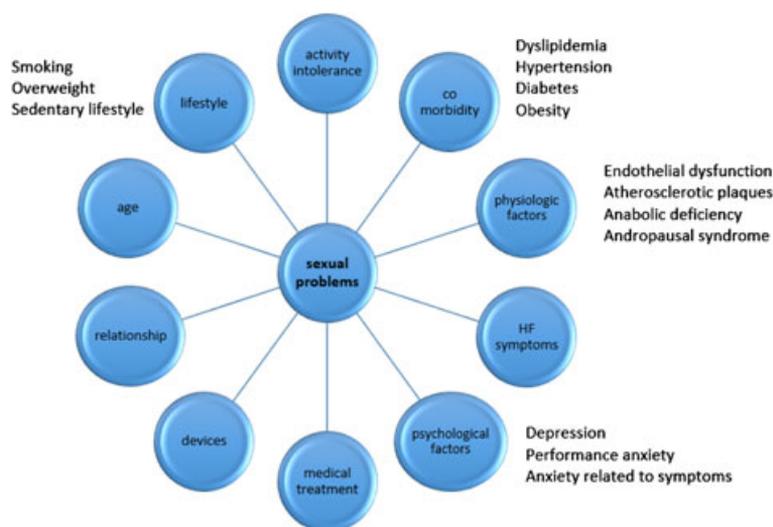
Some sexual problems already are present prior to the onset of HF, but such problems also can develop during different phases in the HF trajectory.<sup>6</sup> In a previous study, 27% of the patients without sexual problems at 1 month after discharge developed sexual problems over time. In 70% of the patients who had difficulties at 1 month after discharge, the sexual problems remained. At the same time, 30% of the patients, who reported sexual problems at 1 month after discharge, did not report difficulties in sexual activity at follow-up.<sup>6</sup>

## Factors related to sexual problems in heart failure patients

Most patients attribute their sexual problems to their HF symptoms; they perceived that shortness of breath (20%), fatigue (20%), medication use (10%), and limited circulation (11%) are causing their sexual problems.<sup>2</sup>

However, the mechanism behind sexual problems is complex. Sexual problems can be related to various demographic, clinical, and treatment factors<sup>5</sup> (Figure 1).

**Figure 1** Factors related to sexual problems in heart failure patients.



HF specific factors that are related to sexual problems are HF symptoms such as dyspnea, fatigue, and activity intolerance. In addition, HF patients often suffer from comorbidity; up to 35% of HF patients suffers from COPD,<sup>19</sup> and the overall prevalence of diabetes in HF is 20–25%.<sup>20</sup> These comorbid conditions are known to be closely related to sexual problems.<sup>5</sup> There is an over threefold increased risk of ED in diabetic vs. nondiabetic men,<sup>21</sup> and diabetic women are more likely to report problems with lubrication (OR[95%CI]=2.37 [1.35–4.16]) and orgasm (OR[95%CI]=1.80[1.01–3.20]) than nondiabetic women.<sup>22</sup>

## Medication and device therapy

HF medications are often perceived to cause problems with sexual performance or libido, although newer generations of drugs appear to have fewer sexual side-effects. On top of HF medication, other medication is prescribed for co-morbid or underlying conditions, which might be the underlying reason for sexual problems.

In particular, thiazide diuretics may impact erectile function.<sup>23</sup> Thiazide diuretics can cause endothelial dysfunction and increased vascular oxidative stress, as well as hyperlipidemia, insulin resistance, a new onset of diabetes mellitus, and stimulation of the sympathetic system and the renin–angiotensin–aldosterone system. Digoxin and mineralocorticoid receptor antagonist are also described to have an effect on sexual performance or

libido.<sup>23</sup> Furthermore, the use of beta blockers can reduce sexual function;<sup>8,23</sup> however, data on third generation beta blockers currently used for HF treatment are inconsistent.<sup>23</sup> HF patients have even reported an improvement of sexual performance with beta blockers, which is likely to be a result of both a reduction of HF severity and the ancillary properties of some of the third generation beta blockers.<sup>17</sup> In addition, a placebo effect, in which a patient's knowledge that a drug has been associated with ED, is often at least as important a contributing factor to a patient's ED as any physiological effect, particularly with contemporary blockers.<sup>8</sup> In patients who develop sexual problems as a result of medication therapy, it can be helpful to switch to another drug from the same class or find a reasonable alternate strategy.<sup>8</sup>

Sexual problems can be related to other HF treatment such as device therapy or heart transplantation.<sup>24,25</sup> In a small study of 31 patients, 29% left ventricular assist device (LVAD) patients and 71% heart transplant patients reported being content with sexual activity; however, satisfaction with sex life was lower in transplant patients compared with HTx patients (7.6±3.1 for HTx on a visual analogue scale vs. 3.9±4.0 for LVAD patients,  $P=0.017$ ).<sup>24</sup>

In addition to HF symptoms, comorbidity, and HF treatment, several other factors such as psychological factors (depression, anxiety) can contribute to sexual problems.<sup>5</sup> More general factors that are related to sexual function might be relevant to consider in the HF population as well, such as age, lifestyle, or problems in a relationship.<sup>5,26</sup>

**Table 1** Issues to consider when advising heart failure patients on sexual activity

General issues
<ul style="list-style-type: none"> <li>• Choose appropriate setting</li> <li>• Consider that sexual concerns are normal</li> <li>• Discuss sexual activity for example within the context of exercise, during uptitration or initiation of medication</li> <li>• Adapt terminology to the patients and partner</li> </ul>
Assessment
<ul style="list-style-type: none"> <li>• Use open-ended questions</li> </ul>
Examples:
General
<ul style="list-style-type: none"> <li>○ Many people with heart failure (or with symptoms like you have) have concerns about resuming sex. What concerns do you have?</li> <li>○ Some people report sexual problems as a result of prescribing medication. How is this for you?</li> </ul>
More specific
<ul style="list-style-type: none"> <li>○ Have you noticed any changes in your sexual performance such as problems with erections or orgasm, vaginal dryness, or decreased desire for sex? If so, how often has this occurred?</li> <li>• Consider using questionnaires such as Multidimensional Sexual Self-concept Inventory (MSSI) or International Index of Erectile Function (IIEF) for men or International Index of Erectile Function (IIEF) for women</li> <li>• Assess more than once if needed during the HF trajectory</li> </ul>
Consider the right level of information and support needed
<ul style="list-style-type: none"> <li>○ Permission</li> <li>○ Limited information</li> <li>○ Specific suggestion</li> <li>○ Intensive therapy</li> </ul>
Referral
<ul style="list-style-type: none"> <li>• Refer to special trained counsellor, urologist, sexual therapist if needed</li> <li>• Refer to cardiac rehab</li> </ul>

## Energy consumption and risk related to sexual activity

Most studies on the actual energy consumption of sexual activity is performed in healthy young couples or normotensive men.<sup>27,28</sup> The energy required for sexual activity depends on its intensity and a person's physical condition. In the AHA statement, the physical effort related to sexual activity in cardiac patients is described to be considered as mild to moderate physical activity and the related energy expenditure in the range of three to five metabolic units (METs).<sup>8</sup> The amount of energy needed for sexual activity is often compared with the energy needed to climb three flights of stairs, general housework, or gardening. At the same time, it was found that patients with HF had a  $VO_2 < 10 \text{ mL/kg/min}$  (i.e. 2.8 MET) and had an impaired sexual function.<sup>5</sup>

BP and heart rate (HR) can increase mildly during foreplay, with increases occurring transiently during sexual arousal and the greatest increases occur during the 10 to 15 s of orgasm, and a quick return to baseline BP and HR.<sup>8,27</sup> In HF patients, it was also found that they had an increased HR, right ventricular pressure, and diastolic pulmonary pressure during sexual activity (especially during orgasm).<sup>29</sup>

There is not a lot of data on the risk for exacerbation in patients' HF as a result of sexual activity. For patients deemed to be at high risk, sexual activity should be deferred until their condition is optimally managed and stabilized.<sup>8</sup> Although some patients approach their physical limit during sexual activity, patients might still be able to have sex by their partner actively ensuring that they practice passive sex or sex helped by drugs or implants.

## Counselling and treatment for sexual problems in heart failure patients

Some patients with HF might need specific information about activities they can undertake, as well as clear information and treatment to help cope with sexual problems.<sup>30</sup> Because sexual problems might occur during the disease trajectory, sexual concerns need to be discussed more than once during treatment and should become an integral part of HF management and patient education. First, HF to be optimally managed and patient's condition should be stabilized before they resume sex.<sup>8</sup> Furthermore, there are several practical advices that can help patients to optimally enjoy their sex life and intimacy (Table 1).

Figure 2 The PLISSIT model to guide education and counselling.<sup>32</sup>



This information needs to be adapted to the personal situation of patients, sexual preferences, and culture.<sup>30,31</sup> One of the approaches that can be used to guide health professionals in determining needs of patients and in providing information related to sexuality is the so-called PLISSIT model<sup>32</sup> (Figure 2).

The basic idea of this approach is that all patients with HF should be given the opportunity to talk about sexual health in a more general way by informing them that this is an issue that patients might worry about and that they are welcome to discuss this with the health care provider. Some patients might need more information (Limited Information) that explains some basic facts and general information. From those, some patients might wish more detailed and specific information (Specific Suggestion), and even a smaller group might be in need of referral to specialist (Intensive Therapy) (Figure 2). Some patients might wish to be treated in case of ED. Phosphodiesterase type 5 (PDE-5) inhibitors are generally safe and effective for the treatment of ED in patients with systemic arterial hypertension, stable coronary artery disease, and compensated HF.<sup>8</sup> However, PDE-5 inhibitors should be used with caution in cases of intermediate cardiac risk and should be avoided in patients with high cardiac risk or patients who are concurrently being treated with nitrates.<sup>8</sup>

## Concluding remarks

Sexual problems are common in men and women with HF and should be addressed to avoid possible fears and worries, to proactively prevent problems such as medication nonadherence or using medications or herbs that might endanger the health, and to prevent problems in the relationship between patient and partner.

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