

American Heart
Association



Learn and Live

Promoting Self-Care in Persons With Heart Failure

A Scientific Statement From the American Heart Association

Riegel B, Moser DK, Anker SD, Appel LJ, Dunbar SB, Grady KL, Gurvitz MZ, Havranek EP, Lee CS, Lindenfeld J, Peterson PN, Pressler SJ, Schocken DD, Whellan DJ; on behalf of the American Heart Association Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Nutrition, Physical Activity, and Metabolism, and Interdisciplinary Council on Quality of Care and Outcomes Research. State of the science: promoting self-care in persons with heart failure: a scientific statement from the American Heart Association. *Circulation* 2009: published online before print August 31, 2009, 10.1161/CIRCULATIONAHA.109.192628.

Background

- **Heart failure (HF) is associated with:**
 - **Poor quality of life**
 - **Early death**
 - **>3 million ambulatory care and emergency department visits and >1 million hospitalizations for HF in the U.S. annually**
 - **Exorbitant costs**
- **Outcomes are better in patients who engage in consistent self-care**



Outline of the Scientific Statement

- **Highlights concepts and evidence important to understanding and promoting self-care in persons with HF**

Specifically addresses:

- a) The self-care behaviors required of HF patients**
 - b) Factors that make self-care challenging for patients**
 - c) Interventions that promote self-care**
 - d) The effect of self-care on HF outcomes**
- **Provides evidence-based recommendations for clinicians and direction for future research**

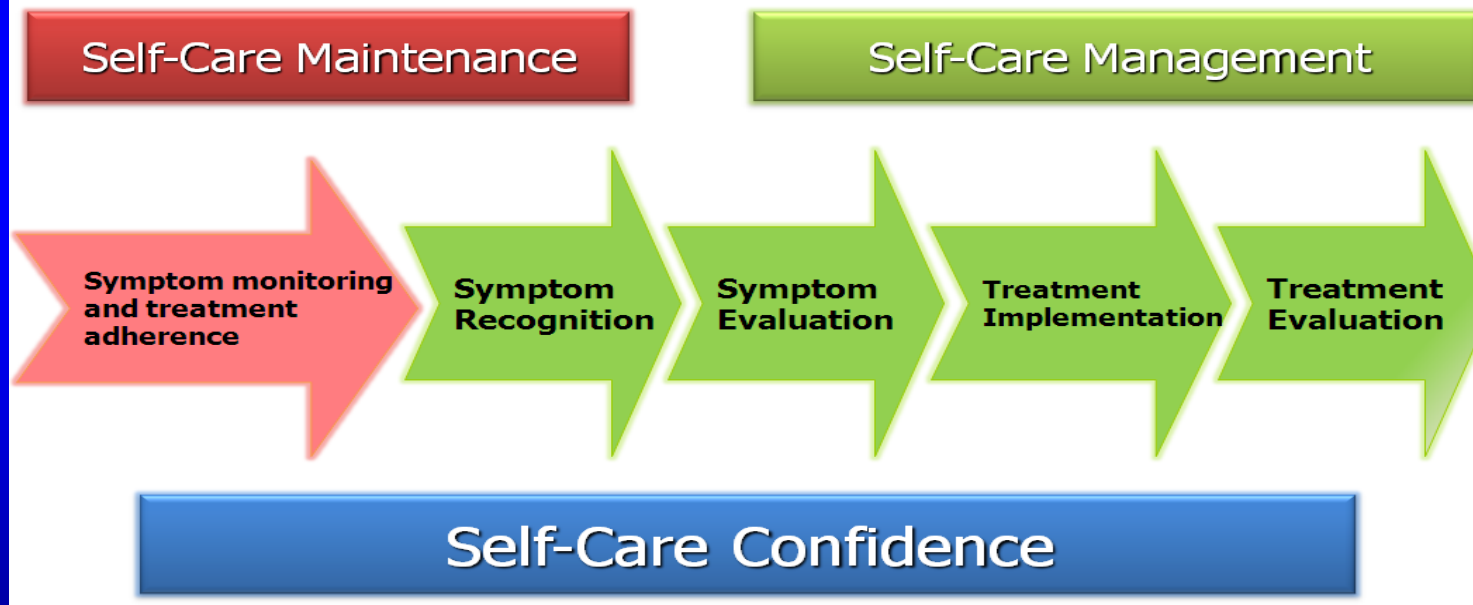
What is Heart Failure Self-Care?

- **Self-care is defined as a naturalistic decision-making process that patients use in:**
 - **The choice of behaviors that maintain physiological stability (symptom monitoring and treatment adherence)**
 - **The response to symptoms when they occur**



HF Self-Care is a Process of Maintenance and Management

Self-Care of Heart Failure Model



Model illustrating that symptom monitoring and treatment adherence are a function of self-care maintenance. Self-care management requires the ability to recognize symptoms, evaluate those symptoms, implement an appropriate self-help remedy, and evaluate the effectiveness of that treatment's effect. Confidence is believed to mediate or moderate the effect of self-care on outcomes.

HF Self-care *Maintenance*

- Take medications as prescribed
- Eat a low sodium diet
- Exercise
- Actively monitor for signs and symptoms
- Engage in preventive behaviors:
 - Quit smoking
 - Limit alcohol
 - Avoid illness (immunizations, hand washing, dental hygiene)



HF Self-care *Management*

- **Decision-making in response to signs and symptoms requires that patients:**
 - **Recognize a change such as increasing edema**
 - **Evaluate the change**
 - **Decide to take action**
 - **Implement a treatment strategy (e.g., take an extra diuretic dose)**
 - **Evaluate their response to the treatment implemented**



Routine HF Self-Care Behaviors

- Medication taking
 - Widely varying rates of medication adherence (2% to 90%)
 - $\geq 80\%$ adherence presumed to be adequate
 - Depression, cost, attitudes, side-effects, and confusion about hospital discharge instructions contribute to nonadherence
- Non-Prescription Medications
 - Non-prescription medicines (herbal remedies, alternative medicines, and over-the-counter (OTC) drugs) are commonly taken by HF patients
 - NSAIDS (often taken for comorbid arthritis) cause fluid retention
 - Currently no good substitute for NSAIDS
 - Routine querying about herbal, OTC, alternative, complementary therapies is essential



Routine HF Self-Care Behaviors

- Dietary Adherence
 - Excess sodium intake is associated with an acute hospitalization
 - Guidelines recommending sodium intake are inconsistent
 - HF guidelines recommend 2-3 g sodium/day
 - USDA and AHA Nutrition Committee recommend \leq 2.3 g sodium per day for healthy adults
 - *Why can HF patients eat more salt than healthy adults?*
 - Sodium intake in the general population is high:
 - 95% of men and 75% of women eat $>$ 2,300 mg sodium/day
 - Sodium intake in HF patients is high:
 - Mean sodium intake 1,398 to 5,807 mg
 - 58% ate $>$ 2 g sodium daily



Routine HF Self-Care Behaviors

- Symptom Monitoring

- Few HF patients routinely monitor their symptoms
 - Fewer than half of HF patients weigh themselves daily
 - Common misconception is that weighing is to monitor adipose tissue loss (“dieting”)
- If symptoms are monitored, patients delay for days before seeking care for symptoms of HF
- Many are unable to recognize and interpret symptoms when they occur
- Those adept at early symptom recognition are more likely to initiate a treatment strategy
 - Restrict fluid
 - Decrease salt intake
 - Take an additional diuretic dose, etc.



Routine HF Self-Care Behaviors

• Fluid Restriction

- Two U.S. HF guidelines recommend < 2 liters fluid per day
 - Especially in patients with severe hyponatremia or persistent or recurrent fluid retention despite sodium restriction and diuretics
- Common misconception is that drinking water is helpful
- *In select patient groups*, dietary fluid and sodium restrictions can help balance sodium and water and minimize the risk of acute congestive episode



• Alcohol Restriction

- Traditional recommendation, which is not based on data
- Current guidelines recommend limiting alcohol to $\leq 1-2$ glasses (6-8 oz per glass) of wine/day
- Patients with alcoholic cardiomyopathy should not drink any alcohol
- Low to moderate amounts of alcohol may help prevent heart disease, but because of other detrimental effects, alcohol should not be recommended as a self-care therapy

Routine HF Self-Care Behaviors

- Routine Exercise
 - Benefits
 - Improves oxygen delivery
 - Decreases inflammation
 - Decreases depression
 - Improves quality of life
 - In spite of the evidence of benefit, few HF patients engage in exercise
 - What should we recommend?
 - At least 3-5 bouts of exercise each week
 - 10-15 minute warm up
 - Regimens of varied intensity (50%, 70%, 80%) have been tested
Waltz dancing (1 hr 3 x/week)
 - Cool down
 - Tailor to suit patients' needs and abilities



Routine HF Self-Care Behaviors

- **Smoking Cessation**
 - Advise on smoking cessation is a Joint Commission national quality measure for HF
 - Smoking cessation reduces adverse outcomes and decreases mortality in HF
 - But, a surprising number of persons with HF continue to smoke
 - Tobacco quit rates increase as the number of interventions provided increases
- **Preventive Behaviors**
 - Infection increases the risk of an acute exacerbation
 - Routine hand washing, dental health, and immunizations may limit inflammation and infection, which may decrease tissue ischemia in HF



HF Self-Care Behaviors in Question

- Weight Loss
 - In HF, dieting is potentially harmful
 - Obesity signifies an intact appetite and a functioning metabolism
 - Weight loss may reflect cachexia, the clinically important and terminal phase of body wasting found as a complication of several chronic illnesses, including HF
 - In HF, if BMI > 40, weight loss should be encouraged to get BMI < 40
 - In HF, if BMI < 30, we do not encourage weight loss
 - Encourage patients to monitor for loss of appetite, unexpected weight loss, and muscle wasting
 - Weight loss is a powerful independent predictor of mortality in patients with chronic HF



Factors that Make Self-Care Difficult for Patients

- **Comorbid Conditions**
 - Affects medication taking, dietary adherence, symptom monitoring, and decision-making about how to manage multiple conditions
- **Depression and Anxiety**
 - May affect patients' willingness and ability to engage in self-care because impairs cognition, energy, and motivation
- **Age-related issues**
 - Immature HF patients (e.g., those with congenital heart disease) may make poor decisions about taking care of themselves
 - Mildly impaired cognition is found in 25-50% of adults with HF
- **Sleep Disturbances**
 - Poor sleep is associated with deficits in sustained attention, memory, executive function, psychomotor speed, and treatment adherence
- **Poor Health Literacy**
 - Low health literacy appears to be a fundamental barrier to effective self-care
- **Problems with the Health Care System**
 - Poor systems for assuring continuity of care

Interventions that Promote Self-Care

- Skill Development
 - Adequate self-care requires skill in performing routine self-care maintenance behaviors (e.g., meal preparation, ordering low salt food in a restaurant) and skill in the self-care management behaviors of recognizing signs and symptoms, making decisions about them, and evaluating decisions
 - Individuals' deficits in "how to" tactical skills and "what to do when" situational skills need to be evaluated and addressed
- Behavior Change
 - Self-care requires concerted behavior change
 - Counseling techniques such as motivational interviewing that incorporate both Social Cognitive Theory and the Stages of Motivational Readiness for Change model are potentially promising in improving HF self-care



Interventions that Promote Self-Care

- Family Support
 - Evidence for the beneficial effects of social support on outcomes of cardiovascular disease and HF is growing along with evidence that social isolation and living alone are associated with poor self-care
- Systems of Care
 - Systems of care such as disease management and care coordination can promote self-care
 - Several studies have demonstrated that using advanced practice nurses to facilitate the transition from hospital to home can improve outcomes and decrease cost in persons with HF



Ways in Which Families can Promote Heart Failure Self-care

- Provide support by making low sodium foods available, preparing low sodium meals, quitting smoking or smoking elsewhere, reducing alcohol intake, and joining in the patient's exercise regimen
- Be sensitive to the need for a particularly strong support network in adolescents, young adults, and older adults with HF
- Assist the patient to develop a system for taking all medications as prescribed. Periodically check on the success of the system and modify as needed. Assist with refills, reminders, and other cues as needed
- Watch for changes in HF symptoms and help patients monitor for these changes. Help HF patients practice the decision-making skills needed to plan what to do when symptoms occur
- Watch for changes in cognition, depression, and anxiety that can occur with chronic HF. Patients may not notice these changes
- Watch for changes in appetite, weight loss, muscle wasting, and worsening HF
- Request referral to home care or an advanced practice nurse after discharge from the hospital or if the treatment regimen changes significantly. Consider enrolling the patient in a HF disease management program if such a program is available

Ways in Which Healthcare Providers can Promote HF Self-care

- Provide structured and individually reinforced education during all clinical encounters. Consider literacy level and cultural background
- Teach skills (e.g., how to choose a low sodium diet, how to monitor and evaluate symptoms when they occur) rather than simply providing information
- Simplify the medication regimen whenever possible. Use once daily medicines and fixed dose combinations whenever possible
- Assess for OTC medications and herbal remedies; involve a pharmacist if necessary to determine if drug interactions are a problem
- Discourage NSAID use and help patients to identify alternatives
- Treat comorbid conditions aggressively
- Individualize treatment based on prognosis and quality of life. For example, alcohol intake may be acceptable for a HF patient in hospice
- Screen routinely for depression and anxiety. Treat depression and anxiety immediately, without waiting for symptoms to wane on their own

Ways in Which Healthcare Providers can Promote HF Self-care

- Screen routinely for barriers to self-care (e.g., inability to afford medicines) so that solutions can be developed before poor self-care is evident
- Encourage dental hygiene by inquiring about routine flossing and dental cleaning
- Ask about sleep quality. Refer patients who report poor sleep, who are obese, and whose bed partner reports snoring for screening for sleep disordered breathing
- Strongly encourage use of CPAP in patients with sleep disordered breathing
- Eliminate medications with daytime sleepiness as a side effect when possible (including as needed medicines, OTC and herbal remedies)
- Assess cognitive abilities on an ongoing, routine basis using an approach that is sensitive to known defects in memory, executive function, and processing speed
- Include family and friends in education and counseling activities
- Refer to social worker if social isolation is a problem
- Consider ways to create a more seamless system from inpatient to outpatient care

Effects of Self-Care on Outcomes

Surprisingly little empirical evidence of the direct relationship between HF self-care and health outcomes exists

- **All Cause Hospitalization**
 - Two systematic reviews of self-care related interventions concluded that self-care reduced HF hospitalizations and all cause hospitalizations; however, little or no actual measurement of self-care was included in these studies
- **Mortality**
 - Survival rates for HF patients has increased but is likely due to more efficacious therapies
 - No measurable effect of self-care on mortality alone was observed in the two systematic reviews of self-care related interventions
- **Composite Risk of Mortality, Hospital Admission**
 - A few studies provide evidence of an advantageous relationship between HF self-care and reduced risk of death or hospitalization
- **Cost of Care**
 - One study showed HF patients who were more engaged in HF self-care and confident in their self-care skills had markedly lower direct HF inpatient costs than those who practiced poor self-care or who lacked confidence in their self-care skills
- **Quality of Life**
 - A recent review of the literature found that a predominance of studies reported a QOL benefit, however the quality and design of these actual studies was lacking so, thus, no conclusion about the effect of self-care on QOL can be made at this time

Further research is needed in several key areas

- Development of accurate and consistent methods of symptom monitoring
- Establishing guidelines for the dietary advice given to persons with HF
 - Sodium intake
 - Alcohol intake
 - Appropriate Weight/BMI goals
 - Proinflammatory foods (simple sugars, saturated fats, excess alcohol)
 - Foods that counteract inflammatory response (fish oil, olives, walnuts, fruits and vegetables, garlic, ginger, sunflower seeds, herring, and nuts)
- The role of depression and anxiety in self-care and the effect of interventions addressing these emotions on self-care behavior
- Identifying the mechanisms responsible for diminished cognitive function in HF



Further research is needed in several key areas

- Establishing the direct effect of HF self-care on clinical outcomes, including survival and quality of life
- Establishing the mechanism by which HF self-care influences outcomes using measures of neurohormonal, inflammatory, and hemodynamic function
- Developing and testing HF Interventions
 - Cost-effectiveness of interventions
 - Interventions for special populations (e.g., those with low health literacy)
 - Usefulness of technology such as telehealth



Conclusions and Implications

- **Self-care is extremely challenging for HF patients to master**
- **A more seamless health care system from inpatient to outpatient care is greatly needed**
 - **Self-care may improve when patients begin learning self-care in the hospital and then are supported with consistent messages about self-care during the transition to the outpatient setting**