

# Chapter 14

## Yoga and Lifestyle Factors in Heart Disease

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### ABSTRACT

*This chapter reviews cardiovascular risk factors and presents a comprehensive yoga-based intervention for impacting on heart health. Lifestyle interventions and yoga have been shown to positively impact on heart disease, stress levels, inflammation, vagal tone, and homeostasis. The Cardiac Medical Yoga Lifestyle Change program along with the five-point model for heart health (BREAD) provides heart patients with a comprehensive approach for impacting on their disease process and assists patients in developing the necessary strategies and skills for changing their lifestyle.*

### INTRODUCTION

Sir William Osler (1849-1919), is considered the founding father of modern medicine. He taught that “the good physician treats the disease; the great physician treats the patient who has the disease” (Brainy Quote, Osler, 2018). Osler was an early proponent of lifestyle medicine and viewed the mind as an important factor in understanding the etiology and progression of disease. The concept of focusing on “treating the patient who has the disease” is of particular importance in working with heart patients. It has long been established that the factors of stress, personality and lifestyle all play an important role in the development and progression of heart disease. Healthcare providers and patients working together to include psychosocial and lifestyle interventions will enable a more informed decision on treatment options for positively impacting on and potentially reversing heart disease.

Lifestyle risk factors that contribute to coronary heart disease include smoking, lack of physical activity, obesity, diet, high blood pressure, high cholesterol, high blood sugar, diabetes, and excessive alcohol (Steptoe et al., 2007; Klainin-Yobas et al., 2015). Specific behavioral and emotional characteristics such as social isolation, chronic stress, depression, anxiety, and hostility also have the potential to impact on the development and progression of heart disease (Su & Chang, 2018). Medical interventions such as drugs and surgery are certainly important interventions in dealing with acute and chronic symptoms of

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cardiovascular disease (CVD), but it is also critical for heart patients to address their lifestyle, behavioral, and psychosocial risk factors, and to participate in strategies for decreasing risks contributing to heart disease.

In developing guidelines and strategies for the reduction of risk factors both lifestyle factors and over-activation and under-activation of the autonomic nervous system (stress) are important to assess. When looking at the autonomic nervous system through the lens of the yogic concept of the *gunas* (qualities) there are similarities that emerge. Sullivan et al. (2018) describe the yogic *gunas* in correlation to Porges' (2009) Polyvagal Theory (PVT) and the autonomic nervous system. According to the yogic conceptualization of the *gunas*, chronic over-activation of the *rajasic* quality (sympathetic nervous system) or over-activation of the *tamasic* quality (parasympathetic nervous system) causes a lack of homeostasis (*sattvic* quality) within the system (Sullivan et al., 2018). *Rajas* (the innate tendency or quality that drives motion, in Sanskrit) is one of the three *gunas* or attributes, a philosophical concept developed by Indian philosophy; the other two qualities being *sattva* (goodness, balance) and *tamas* (destruction, chaos). Any over-activation of the sympathetic and parasympathetic nervous system contributes to a neurobiological process that stimulates stress-related hormones and chemicals within the body including excess cortisol and glucose (Sullivan et al., 2018). Co-morbid risk factors such as smoking, stress, obesity, diabetes, dyslipidemia and hypertension can contribute to a cascade of events that potentially impact on endothelial dysfunction and an inflammatory response that lead to the development of CVD (Tawakol et al., 2017). Emotional and psychological stress factors are critical components that can contribute to various coronary problems such as arrhythmias, myocardial ischemia, and left ventricular contractile dysfunction. The American Heart Association supports the practice of yoga for lowering blood pressure, improving circulation, muscle tone, respiration and stress (Healthy Living, 2018). As such, the relationship between the yogic conceptualization of the *gunas* and Porges' Polyvagal Theory provides a foundation for understanding how yoga therapy can impact on and influence neurobiological mechanisms and contribute to increased healing, self-regulation and resiliency through physical, psychological and behavioral changes (Porges, 2009).

## **RISK FACTORS**

The term cardiovascular disease is an umbrella term used to describe the various conditions affecting the heart and circulatory system, i.e. coronary artery disease, stroke, heart attack and aortic disease. Such conditions are affected by risk factors. There are two kinds of risk factors - modifiable and non-modifiable. Modifiable risk factors include lifestyle and behavioral choices that can be impacted on through changes in diet, exercise, stress, and smoking. Non-modifiable risk factors such as family history, sex, age, and ethnicity can't be changed but can be impacted upon. The development and progression of cardiovascular disease increases in relation to the number of risk factors that are present (McCarthy, 2015). Participating in a healthy lifestyle and reducing risk factors becomes critical in the management of cardiovascular disease.

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