

## What should be the Essence of Cardiac Rehabilitation?

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Cardiac rehabilitation was initially designed to reduce symptoms after a cardiac event, to increase physical tolerance of activities at home and work, and to improve quality of life. Therefore, cardiac rehabilitation programs have been mainly exercise-based [1]. However, in order to prevent another debilitating – or fatal – cardiac event in the future, we need to help our patients identify all risk factors and to make a life style change.

A person with optimal health is a person with healthy body and mind, supported by good social and natural environment. The Interheart Study [2] investigated 29,972 patients from 52 countries and identified 9 risk factors, accounting for 90% of attributable risk in men and 94% in women: elevated ApoB/ApoA1, smoking, psychosocial factors, diabetes, hypertension, abdominal obesity, alcohol consumption, physical activity, and consumption of fruit and vegetables. Summarizing these factors, we come to the same tripod support of good health.

For a healthier body rid of coronary artery stenosis, and elevated lipid profile, we have been focusing on mechanical (surgery) and chemical (medication) interventions so far. Nevertheless, the gain from coronary artery bypass grafting has been low, with only 2.1% improved mortality [3]; and, the multifold side effects from statin medications and unknown due time course of treatment has led to uncertainty of effect/risk ratio [4].

We need to go back to the basics. “Man is what he eats” [5]. Many medical traditions use food as basic medicine. Hippocrates had a famous quote, “Let food be thy medicine”. Dietary modification thus should be one of the cornerstones of primary and secondary cardiac prevention. Interestingly, our recommendations have not been consistent in the past years. After we read about the MRFIT study [6], we went for low fat diet, the lower the better. Then, we got surprises from the WHI study [7]: “a dietary intervention that reduced total fat intake and increased intakes of vegetables, fruits, and grains did not significantly reduce the risk of CHD, stroke, or CVD in postmenopausal women and achieved only modest effects on CVD risk factors”. If we read carefully into Framingham studies [8,9], we would have found that 80% of people who developed coronary artery diseases (CAD) had the same blood cholesterol levels as those who did not develop CAD; and a 26-year follow up study showed that 35% of CAD occurred in people with normal total cholesterol level [10]. Then, we swung towards low carbohydrate diet [11,12]. The reason why we are still debating over what kind of diet is the best for cardiac health is because we still want an easy way out. We are attempting “a pill to ill” model in the diet recommendation. The truth lies in the fact that there is no one perfect diet that cures all.

Most health-care professionals now agree on nutrient-dense, fiber-rich carbohydrates, healthy sources of unsaturated fats, low-fat dairy and lean sources of protein, which is reflected in the most recent USDA MyPlate [13]. The plate is divided into four colorful sections with half of the plate filled with antioxidant-rich fruits and vegetables. Lean protein fills less than a quarter of the plate and whole grains a little more than the remaining quarter. Time will prove it not being the perfect diet either for everyone. A healthy diet should be individualized, tailored

to genetic disposition, physical composition and life style, emphasizing diverse and organic components, with moderate intake in mind.

Same kind of problem exists when we debate over which is the most important factor in reducing cardiac event. It's as if the six blind men arguing about what an elephant is like. Cardiac health is an “elephant” to all of us and only when we integrate what we have all investigated, can it come to its full picture. If we isolate parts, as we have been trained to do from medical schools with reductionist's views, and using current research paradigm developed from pharmacological research, we get into big trouble. For the first time, Dr. Ornish led a group of clinicians and scientists to investigate the impact of life style change on a group of disorders, including CAD [14]. The power of life style change is unequivocal. His challenge to the conventional research paradigm proves to be a success as well. From there, I am not recommending exactly what needs to be done, but the wisdom we need to carry during cardiac rehabilitation: when we consider what to do in cardiac rehabilitation, we need to take into considerations of all components, mind, body and environment.

In Traditional Chinese Medicine, acute stress, mental restlessness, or extreme emotions can lead to “heart” dysfunction. Reports of life-threatening cardiac accidents increased after huge stress [15-17]. Many studies demonstrated the impact of stress reduction on cardiovascular mortality [18,19]. The linkage between mind and body has been illustrated by neurocardiology [20]. Meditation, Qigong, Taichi, biofeedback have all been shown to manage stress and reduce the risk of cardiovascular events [21]. While the topic is too extended for discussion in this short editorial, it is as well worth mentioning the importance of social and natural environment in cardiac health [22-25].

Although Western conventional medicine excels in saving people's lives after an acute cardiac event, it is restricted in secondary prevention limitations of reductionist view in health care. Rehabilitation medicine, as a much younger medical discipline and a field founded with integrative and holistic spirits, should be able to fully embrace patients afterwards as a whole and address all their risk factors in cardiac rehabilitation programs. Only when we are able to integrate all these components into cardiac rehabilitation, along with a good exercise program, can we truly reach the success.

“For many, an acute event such as a heart attack can mark a vital turning point toward a more healthful lifestyle,” writes Dr. Zaret in his book *Heart Care for Life*. “Along the way, many patients have gained a renewed sense of well-being and a better perspective of what is really important. These results are the essence of successful cardiac rehabilitation” [26].

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