While there is already adequate research on the correlation between positive affect and general health benefits, little has been done to discover the link between the cognitive qualities of optimism and physiological reactivity to stress. It is believed that dispositional optimists appraise stressful situations differently and hold a multitude of coping schemas, granting them a diverse variety of functional molds to adopt effective coping strategies to a number of stressful situations. The attempt is thus to discover whether physiological reactivity to stress is affected by having an optimistic outlook and how the cognitive processes and constructs associated with optimism affect one's physiology.

The biopsychosocial model of health observes the individual as a system of biological genetic predispositions, cognitive beliefs, and sociocultural situations that cooperate to result in the health of the individual. With this in mind, the health risk of stress will be viewed in the context of one's biology and cognitions, specifically the biological underpinnings of stress responses and the cognitive aspects of optimism.

Humans, of all species, react to the widest range of stressors, being that we may, unlike other species, imagine them (Killer Stress). Physiologically and psychologically, people react the same to all kinds of stressors. The same biological symptoms of stress can occur when one fears they will fail a test, and if they actually do fail the test, for example. The sympathetic nervous system, necessary for automatic, non-conscious bodily functions, prepares the individual for the well-known "fight-or-flight" reaction regardless of whether the stressor is imagined or real. The brain arouses the individual, increases blood pressure, and releases stress hormones such as norepinephrine and cortisol to excite and invigorate the body for evasive actions.

While short-term, acute stress is beneficial to our survival (e.g. in the case of physically avoiding a life-threatening situation or becoming more alert for a task), chronic stressors are damaging. Long-term or constant exposure to stress hormones is corrosive toblood vessels and also dampens immune system effectiveness (CITE). In this way, high and persistent stress harmfully influences health and makes diseases such as “type 2 diabetes, gastrointestinal disorders, impaired growth in children, failure to ovulate in females, and erectile dysfunction in males” (Sapolsky 96).

Optimism, however, is a “significant predictor” of better health and less occurrences of diseases or illness (Rasmussen et al.), and has been said to be associated with longevity (“Optimistic”). In addition, optimists who are diagnosed with a disease or serious illness have high instances of physical recovery (Iwanaga et al. 1-2). When taking a pessimistic outlook, though, recovery was slow and illness developed more quickly. In patients with breast cancer, pessimism was couple with high levels of distress both before and months after surgery (Carver et al. ##). In another study by Reed et al, those who were HIV-positive who had more pessimistic expectations developed symptoms associated with the virus more rapidly and more commonly died of AIDS (##). Overall, a longitudinal study spanning 35 years found that pessimists at age 25 were unhealthier later in life than those who were optimists. “Pessimistic explanatory style predicted physical illness two and three decades later…even when initial physical health and initial emotional health [were] controlled” (Peterson et al. ##).

A clear, significant link can therefore be established between positive, optimistic thinking and immunology. For many patients dealing with a stressful disease, optimism seems to play a role in boosting the immune system in order to lessen the reactivity to the stressors accompanying the disease. Although not all ill health is derivative of an overload of stress, these findings certainly give heed to optimism being a strong contributing factor. Yet, this leads to the question of what aspects of optimism lead to the improvement of health.

As optimism can be described as a life orientation, it essentially comes down to the explanatory styles and coping mechanisms used by optimists in regard to stressors. An explanatory style is the “cognitive personality variable that reflects how a person habitually explains the causes of bad events” (Peterson and Seligman ##). Optimists tend to attribute the causes of bad events as “external, unstable, and specific causes,” while pessimists would explain bad events as having “internal, stable, and global causes” (Peterson and Avila 1). …..