

Benefit Finding and Health

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Is Benefit Finding Good for Your Health?

Pathways Linking Positive Life Changes After Stress and Physical Health Outcomes

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**ABSTRACT**—After experiencing a stressful or traumatic event, many individuals report positive changes in their lives, or *benefit finding*. Preliminary evidence suggests that benefit finding may lead to improvements in physical health. However, the mechanisms linking benefit finding to physical health outcomes have not been determined. This article describes an integrative model that identifies specific psychological and physiological pathways through which benefit finding may affect physical health. The underlying premise of the model is that benefit finding leads to more adaptive, efficient responses to future stressors, limiting exposure to stress hormones that may have damaging effects on long-term health.

**KEYWORDS**—benefit finding; stress; health; enhanced allostasis

There are two Lance Armstrongs, pre-cancer, and post. Everybody's favorite question is "How did cancer change you?" The real question is how didn't it change me? I left my house on October 2, 1996, as one person and came home another. . . . The truth is that cancer was the best thing that ever happened to me. I don't know why I got the illness, but it did wonders for me, and I wouldn't want to walk away from it. Why would I want to change, even for a day, the most important and shaping event of my life?—Lance Armstrong (2000)

Although researchers have typically focused on negative effects of stressful life events, the last decade has seen a growing interest in positive effects of stressful experiences. Individuals who have undergone stressors ranging from diagnoses of serious medical conditions to bereavement to war or terrorism report that these experiences have changed their lives in positive ways. Typical changes include positive changes in views of the self (e.g., feeling stronger and wiser), in relationships with others (e.g., feeling closer with friends and family), and in priorities and goals (e.g., reordering goals and priorities to emphasize enjoyment of life, relationships, and personal growth). In addition, positive changes in health behaviors are frequently reported by individuals facing health-related stressors. Various terms have been used to describe these positive changes, including post-traumatic growth, stress-related growth, or benefit finding; we use the term benefit finding here to refer to the variety of positive changes that can accompany stressful life events.

The literature on benefit finding has evolved from a descriptive account of positive changes in various stressed populations to an examination of predictors and

correlates of benefit finding. In this article, we briefly review the literature on benefit finding and mental health. We then focus on the association between benefit finding and physical health and specifically the psychological and physiological mechanisms through which benefit finding may “get under the skin” to influence health outcomes.

### **BENEFIT FINDING AND MENTAL HEALTH**

There is evidence from both cross-sectional and longitudinal studies that benefit finding is associated with increases in measures of positive well-being, particularly positive affect (Algoe & Stanton, 2009; Helgeson, Reynolds, & Tomich, 2006). Positive affect is an umbrella term for positively valenced emotions and moods that includes subjective feelings such as happiness, contentment, joy, and excitement. Effects on negative psychological states are more mixed. Although a handful of longitudinal studies have found that benefit finding is associated with decreases in depressive symptoms and distress, these effects have not been consistently observed and may depend on sample characteristics, measures used to assess benefit finding, and timing of assessment (acute vs. years after the event). Of note, theoretical models do not predict that benefit finding will lead to reductions in distress (Tedeschi & Calhoun, 2004). Benefit finding is thought to be prompted by more severe and threatening events that challenge one’s assumptions about oneself and the world, creating an opportunity for re-evaluation and positive change. These types of events also cause more severe distress, which may co-occur with benefit finding, particularly when benefit finding is measured closer to the event.

### **BENEFIT FINDING AND PHYSICAL HEALTH**

There is growing interest in the effects of positive psychological states, including benefit finding, on physical health. Although this literature is still limited in size, results

have consistently shown a positive association between benefit finding and objective measures of physical health. One of the first studies in this area was conducted with 287 men who had recently experienced their first heart attack (Affleck, Tennen, Croog, & Levine, 1987). Over 50% of men reported benefits from the attack, including changes in philosophy of life or values. Those who perceived benefits were significantly less likely to have a subsequent heart attack and exhibited less morbidity 8 years later, controlling for age, socioeconomic status, and disease severity.

Subsequent studies have shown positive effects of benefit finding on physical health and related physiological systems in individuals with HIV. For example, in a sample of 40 HIV-positive men who had recently lost a close friend or partner to AIDS, those who reported finding some benefit from the loss, including greater appreciation for loved ones, increased value in and enjoyment of life, and new growth goals, showed a less rapid decline in CD4 T-cells over a 2- to 3-year follow-up period. CD4 T-cells are a critical part of the immune system and their loss is associated with faster disease progression in the context of HIV/AIDS. Indeed, benefit finding was associated with a lower rate of AIDS-related mortality in this sample (Bower, Kemeny, Taylor, & Fahey, 1998). Benefit finding, in combination with other positive psychological resources, was also associated with slower CD4 T-cell decline and lower AIDS-related mortality in a sample of 773 HIV-positive women (Ickovics et al., 2006). Importantly, both of these studies controlled for disease status and other biobehavioral factors that might account for effects of benefit finding on physical health outcomes. Benefit finding has also been associated with positive changes in neuroendocrine function in HIV-positive individuals,

including decreased production of the stress hormone cortisol in a sample of 264 men and women (Carrico et al., 2006).

Studies conducted with cancer patients show similar associations between benefit finding and physiological systems relevant for physical health, including decreases in cortisol and increases in certain aspects of immune function (McGregor & Antoni, 2009). In a rare experimental study of benefit finding, breast cancer patients who were randomly assigned to write about benefits of the cancer experience had fewer medical appointments for cancer-related problems than those who wrote about the facts of the experience (Stanton et al., 2002).

These studies provide compelling initial evidence for beneficial effects of benefit finding on physical health, including disease-related morbidity, physiology, and mortality. Neural correlates of benefit finding have recently been identified, specifically increased activity in the left frontal cortex, a brain area linked to positive affect and enhanced immune function (Rabe, Zollner, Maercker, & Karl, 2006). It is notable that these effects have been observed across patient populations and methods for assessing benefit finding, as well as in longitudinal studies that control for potential confounds such as health status. This is a growing area of research, and many of the studies reviewed utilized small samples. Thus, the plausibility of a connection between benefit finding and health requires additional empirical support, as well as a delineation of mechanisms through which benefit finding might have salutary health effects.

## **PATHWAYS LINKING BENEFIT FINDING AND PHYSICAL HEALTH**

What are the psychological and physiological pathways that link benefit finding and physical health? We have developed an integrative conceptual model to address this question (Fig. 1). At the broadest level, the model suggests that benefit finding is associated with the development of intra- and interpersonal resources that promote more adaptive responses to future stressors. This leads to reduced activity in the body's stress response systems, minimizing the deleterious effects of excessive or prolonged exposure to stress hormones on the body. In addition, benefit finding may reduce physiological arousal at rest by increasing activity in the body's restorative systems (e.g., parasympathetic nervous system, sleep).

We begin with the hypothesis that the construct of benefit finding can be broken down into changes in particular aspects of psychological functioning, including changes in people's perceptions of future stressors (appraisal processes); their ability to manage these stressors (coping strategies and resources); their relationships with others; and/or their priorities and goals. All of these changes fall within the broad conceptual umbrella of benefit finding, but unpacking this construct may be helpful in identifying mechanisms for its effects. We focus on these components of benefit finding because they have each been linked to positive changes in physical health and physiology.

A handful of studies conducted with individuals undergoing major stressors have demonstrated associations between reports of benefit finding and changes in scales assessing several of these component parts, supporting a close conceptual link. For example, benefit finding in response to cancer was associated with higher ratings on a scale assessing intrinsic goals (e.g., personal development, relationship building, and community enhancement; Ransom, Sheldon, & Jacobsen, 2008). Further, reporting

benefits (as well as costs) during the SARS outbreak was associated with increases in measures of social support and self-esteem (Cheng, Wong, & Tsang, 2006).

Another proposed psychological pathway linking benefit finding and physical health is positive affect. Unlike the other constructs included in the model, positive affect is not considered a component of benefit finding but rather a mediator. Specifically, benefit finding may increase positive affect, which has demonstrated beneficial effects on disease onset, progression, and mortality (Pressman & Cohen, 2005). Of note, the mechanisms through which positive affect influences health have not been determined, but may include positive changes in health behaviors as well as reduced activity in stress response systems, as outlined below.

## **/h2/Physiological Responses to Stress and Enhanced Allostasis**

The constellation of psychological changes described above portrays an individual who, as part of finding benefit from a previous stressor, has had a shift in life priorities and goals that allow him or her to more easily put things into perspective, as well as marshal effective coping strategies and resources, draw on social support networks, and maintain positive affect when confronting future stressors. The next step of our model predicts that this individual will also show more efficient and effective physiological responses to future stress. We have termed this stress response profile “enhanced allostasis” (Bower, Low, Moskowitz, Sepah, & Epel, 2008; Epel, McEwen, & Ickovics, 1998). Allostasis refers to normal fluctuations in the body’s physiological systems that are required to maintain homeostasis in a changing environment. Although these changes are adaptive in the short-term, if they occur too frequently or persist for too

long, they may create wear and tear on the body, leading to “allostatic load” and eventual declines in physical health (McEwen, 1998).

Several different stress response profiles are associated with allostatic load. These include repeated “hits” from multiple stressors, a lack of adaptation or habituation to the same stressor, and a prolonged stress response, all characterized by increased activity of the body’s stress response systems, including the sympathetic nervous system (SNS) and the hypothalamic pituitary adrenal (HPA) axis. Allostatic load may also result from an inadequate or blunted stress response. In contrast, enhanced allostasis describes stress responses that minimize excessive and inappropriate activation of the SNS and HPA axis (see Fig. 2). Profiles of enhanced allostasis include fewer “hits,” or fewer physiological responses to minor stressors (Fig. 2, Panel 1), more rapid habituation to the same stressor (i.e., a decrease in response magnitude with repeated exposure; Panel 2), and more rapid recovery to baseline following termination of the stressor (Panel 3). In addition, enhanced allostasis includes a profile of lower arousal at rest (in nonstressful conditions), increased activity in restorative systems such as the parasympathetic nervous system (PNS), and greater levels of restorative sleep. Given that increased activity of the SNS and HPA axis have been associated with negative health outcomes (e.g., Seeman, McEwen, Rowe, & Singer, 2001), reduced activity in these systems may have beneficial consequences for physical health, especially in tandem with greater restorative activity.

What is the evidence for enhanced allostasis among individuals who have found benefit from stressful life events? Studies suggest that benefit finding may buffer against the deleterious effects of stress on psychological outcomes. For example, among women living with HIV/AIDS, those who reported more benefits from the illness were protected

against the negative effect of physical symptoms on psychological distress (Siegel & Schrimshaw, 2007). One study has directly tested the effect of benefit finding on physiological systems. Epel and colleagues found that women who reported finding benefit from a previous life stressor showed more rapid HPA habituation to repeated laboratory stress (Epel et al., 1998). On the first day of stress exposure, high- and low-benefit-finding groups showed similar cortisol responses. However, on the second and third days of stress exposure, women who had found benefit showed lower levels of cortisol production, potentially protecting against the damaging effects of excessive cortisol on bodily systems.

Indirect evidence for the enhanced allostasis model comes from studies that have examined constructs similar to those included under the umbrella of benefit finding. For example, self-esteem and other coping resources are associated with reduced HPA reactivity to experimental stress, as is affirmation of personal values (Creswell et al., 2005). Effects of benefit finding on physiological responses may be mediated by positive affect, which is associated with lower inflammatory responses to experimental stress and also promotes more rapid cardiovascular reactivity and recovery. Moreover, there is preliminary evidence that positive affect is associated with increased heart rate variability (a measure of PNS activity), better sleep (Steptoe, O'Donnell, Marmot, & Wardle, 2008), and release of anabolic hormones, which may counter stress hormone effects.

## **CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH**

The possibility for positive life changes after trauma has long been recognized in religion, philosophy, and literature, and empirical research on this topic has burgeoned over the past decade. We focus here on benefit finding effects on physical health and

propose a model that specifies mechanisms through which benefit finding may affect health outcomes. Several caveats are in order. Although studies have consistently shown positive effects of benefit finding on measures of physiological well-being, conclusions must be tempered by the small size of this literature (11 published reports to date). There is also evidence that effects of benefit finding may be moderated by dispositional, disease-related, and sociodemographic characteristics, highlighting the importance of considering contextual factors when evaluating links between benefit finding and both mental and physical health outcomes.

Further, key aspects of our model have not been thoroughly tested. In particular, few studies have investigated whether benefit finding is associated with resource enhancement—for example, do individuals who report finding benefit also show positive changes in coping processes, as predicted by the model? This issue is particularly important in light of recent controversy about whether reports of benefit finding reflect true or illusory change. Another key question is the link between benefit finding and physiological processes, and specifically whether people who perceive that they have changed in positive ways show more adaptive physiological responses to stress and increased activity in restorative systems. Along with changes in the autonomic nervous system (ANS) and the HPA axis, future research should examine benefit finding effects on inflammation, which is influenced by ANS and HPA activity and may serve as a central link between these systems and physical health. Finally, mediation tests are required to determine whether the proposed psychological pathways account for effects on physiological and physical health outcomes.

The risk of emphasizing the possible benefits of stressful events is that it may appear to minimize the pain and serious psychological and physical consequences of stressful life experiences. We are not advocating a simplistic “don’t worry, be happy” approach. Indeed, there is evidence that individuals who consider both the positive and negative aspects of stressful experiences may have the best outcomes (Cheng et al., 2006). Rather, our point is that the human response to stress is complex and often includes perceptions of benefit, which, in turn, may have positive effects on physical health. Continued research in this area will uncover the pathways linking benefit finding and health and suggest ways to improve health and well-being among individuals experiencing serious life stress.

### **Recommended Reading**

Epel, E., McEwen, B., & Ickovics, J. (1998). (See References). Describes anabolic and catabolic stress hormones and introduces the idea of enhanced allostasis.

Park, C., Lechner, S.C., Stanton, A.L., & Antoni, M.H. (Eds.), *Medical illness and positive life change: Can crisis lead to personal transformation?* Washington, DC: American Psychological Association. An in-depth examination of conceptual, methodological, and empirical issues in benefit-finding research.

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**Fig. 1.** Model of psychological and physiological pathways linking benefit finding and physical health. Benefit finding includes changes in appraisal and coping processes, social relationships, and/or priorities and goals. These changes are hypothesized to lead to more adaptive responses to future stressors, thereby reducing inappropriate or prolonged activity in the body's stress response systems and minimizing harmful effects of excessive stress hormone exposure. Effects of benefit finding on health may also be mediated by positive affect.

**Fig. 2.** Physiological profiles illustrative of enhanced allostasis, based on the allostatic load model (McEwen, 1998). We hypothesize that enhanced allostasis may be a consequence of benefit finding and accompany changes in cognitive, affective, social, and motivational domains. While allostatic load profiles (depicted in red) describe patterns of excessive responding to stress that can lead to disease, enhanced allostasis profiles (depicted in green) describe optimal physiological responses to stress that may lead to improved physical health. Panel 1 depicts a pattern of fewer physiological responses ("hits") to external events, Panel 2 depicts rapid habituation to repeated stressors, and Panel 3 depicts a peak response with faster recovery to baseline following termination of a stressor. (Figures created by Eli Puterman.)