

## EDITORIAL

## Exploring the Biofield

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Those of us who have been in the field of integrative health and medicine for a decade or two vividly recall the era when there was great enthusiasm and hope for therapeutic approaches that fell into the realm of complementary and alternative medicine. Healthcare clinicians and scientists worried about unsubstantiated claims and so-called therapeutic approaches—historically popular among consumers but largely untested by scientists—that might not be helpful and may even be harmful. Much has changed over the decades. The field was more controversial than it is today due to growing public and private funded research showing both what has promise and what does not. Thirty years ago, there was little to no research on acupuncture and mind-body approaches. If it had been proposed that meditation could impact neurological and immune function and literally change the structure and function of the brain, the idea would have been considered ill informed and even outlandish. Science has caught up in this case, and breakthroughs in neuroscience have well documented the impact of meditation on the brain.

The field of integrative health and medicine is still relatively new, and the evidence base, while growing, is not mature. Though there is strong evidence for some therapeutic approaches including acupuncture and mind-body therapies, there is very modest evidence in other areas such as the biofield. *Global Advances in Health and Medicine* is very committed to inquiry, discovery, and open discourse. While this special issue will be heralded by many as capturing breakthrough thinking and ideas, we acknowledge that others may find the evidence base weak or even implausible. This strikes us as not unlike the reaction to acupuncture and mind-body approaches in the 1980s and early 1990s.

This special issue of *Global Advances in Health and Medicine* brings together many of the experts in the nascent area of biofield theory. Articles cover a range of topics including foundational concepts from physiology and physics, preclinical and clinical research, diagnostic and therapeutic devices, and opportunities and barriers to mainstream integration. For example, Rubik and colleagues provide an overview of the history of biofield theory and the evolving terminology used to describe it. The term originated out of a group convened by the National Institutes of Health (NIH) Office of Alternative Medicine in the early 1990s in an attempt to provide an organizing schema for a wide range of healing practices, often referred to as energy medicine or bioenergetic therapies. Reiki, therapeutic touch, and *qigong* are several examples. Originally defined as a

“massless field, not necessarily electromagnetic, that surrounds and permeates living bodies and affects the body,” the biofield has evolved to a “multi-scale concept that offers a broader context for understanding biological regulation and information flow.” Gronowicz et al summarize preclinical studies attempting to measure the impact of healing intentions from experienced biofield practitioners. Suggestions on how future research can address methodological challenges, such as designing the best in vitro and in vivo models, standardizing interventions, and improving reproducibility, are addressed. Jain and colleagues summarize research studies on the clinical effects of biofield therapies, defined as “noninvasive, practitioner-assisted therapies that explicitly work with the biofield of both the practitioner and client to stimulate a healing response in the client.” Pain and cancer are the conditions most studied, with a few studies in the areas of arthritis, dementia, and heart disease. The authors call for larger, more rigorous interdisciplinary trials to allow better understanding of clinical impact, cost-effectiveness, and mechanism.

Complex interactions involving transfer of energy abound in daily life, medical care, and health. Many of these can be explained by well-established concepts in biochemistry and physics. For example, photosynthesis uses light to help convert carbon dioxide and water into carbohydrate and oxygen. Animals require food to manufacture energy in the form of adenosine triphosphate to carry out vital functions involving motility and brain activity. Well-established diagnostic techniques in medicine measure the electrical activity of the heart and brain. Advanced imaging technology takes advantage of differential effects of magnetic fields on water and tissue. Radiation is used to effectively treat cancer. Transcranial magnetic stimulation is now being found to be effective for a wide range of neurological and psychiatric conditions. Deep brain electrical stimulation has had remarkable effects on movement disorders.

Other interactions are more challenging to explain. We all have had the experience of having our wellbeing impacted by the actions of others. The impact can be negative, such as when a patient encounters a healthcare provider who is stressed, distracted, or unnecessarily pessimistic. Conversely, we experience an improvement in our wellbeing when we are in the presence of a compassionate, caring person who holds our needs as most important. Some less common phenomena are even more difficult to explain scientifically: someone not well known “reads our mind”; love that grows between two people; feeling “connected” to complete

strangers following a group meditation; and spiritual experiences when one feels communion with a divine force or being. Though our understanding of how these interactions occur is increasing through diverse disciplines such as social psychology, neuroscience, and psychoneuroimmunology, much more remains to be explained.

Can all of these complex interactions—especially those involving energy healing modalities—be explained by current well-established mechanisms? The biofield theory suggests provocatively that these phenomena may be mediated, at least in part, by forces and processes yet to be discovered and well-characterized. In this way, biofield theory may become like many examples in the history of science and medicine where theories once considered implausible become accepted through research and practice. Proponents of hand washing to prevent maternal sepsis, the role of bacteria in the pathogenesis of peptic ulcer disease, and utility of beta blockers in congestive heart failure were all looked upon incredulously. As several of the contributors to this issue point out, perhaps rather than identifying a new heretofore undiscovered subtle field of energy that can be manipulated for healing, we can look upon the biofield theory as a unifying concept to encompass the wide variety of physical, emotional, social, and spiritual forces and factors that contribute to health and wellbeing.

We hope this collection of papers will stimulate discourse and research that over time will ultimately lead to a better understanding of how to promote health and wellbeing.

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