



Letter to the Editor at Exercise Science

Song-Young Park PhD

School of Health and Kinesiology, University of Nebraska Omaha, Omaha, Nebraska, USA

The majority of biomedical related journals focus on the understanding, diagnosing, and treatment of human and other animal diseases using molecular biology techniques such as gene and protein-based approaches. However, I believe that physiological research remains the essential link between molecular approaches and clinical care. As such, translational research just cannot be accomplished without understanding the physiology.

A couple of years ago, Dr. Joyner, Vice chair for Research at Mayo clinic provocatively highlighted the shortcomings of the recent molecular revolution to deliver on its promises of cures, which contrasts with the field of physiology [1]. Not everybody will agree with his ideas, but there is no question that the genomic revolution has had a major effect on the discipline of physiology [1]. Additionally, former Directors of the NHLBI, Dr. Claude Lenfant, and Dr. Suzanne Hurd have suggested that both physiology and molecular biology should be balanced to improve our understanding for translational and clinical research [1]. However, to the best of my knowledge, the majority of manuscripts published in the Journal of Exercise Science are molecular biology based and it appears that there are not many physiology-based studies. Since I moved to the United States in 2007, I have recognized that physiology is a fundamental research area in the biomedical sciences in the United States, but not in South Korea. Furthermore, South Korean researchers in biomedical fields tend to primarily focus on molecular biology without much knowledge in physiology, which is unfortunate since physiology is an essential field of study to understand health and diseases. I admit that huge amounts of new knowledge are revealed by molecular biology, but many times that new knowledge does not reach our patients due to methodological limitations. Many researchers in biomedical fields in Korea have

become heavily dependent upon gene and protein assessments to address their research questions which do not always translate into clinical outcomes. Due to this reason, I believe that “Integrative Physiology”, and “Systemic Physiology” have recently drawn great interests in biomedical fields. Additionally, it seems that many of traditional physiology and biology related majors have changed their department name to “Integrative Physiology”. I believe that this provides good evidence for researchers in these fields who may also recognize that outcomes from molecular biology should be understood based on physiology in order to have better understandings about their outcomes and also apply them to clinical populations. Therefore, I believe that the molecular revolutionaries should be performed in conjunction with an understanding of physiology to have meaningful improvements and new developments of therapies in health and diseases. I also believe that the Journal of Exercise Science should encourage and showcase integrated studies which combine physiology and molecular biology to improve biomedical science fields in Korea. In this way, we can play a significant role in ensuring the future success of the discipline and, as a result, translate basic scientific discoveries into clinical care.

CONFLICT OF INTEREST

The authors declare that they do not have conflict of interest.

AUTHOR CONTRIBUTIONS

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Corresponding author: Song-Young Park **Tel** +1-402-554-3374 **Fax** +1-402-554-3693 **E-mail** song-youngpark@unomaha.edu

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ORCID

Song-Young Park

<https://orcid.org/0000-0001-7403-1334>

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