WE THANK DR. SHORT (2) for taking the time to respond to our recent Perspectives article on the determination of mitochondrial biogenesis (1). We are pleased that Dr. Short has appreciated the argument we put forth for the use of mitochondrial protein synthesis as a true measure of mitochondrial biogenesis. Furthermore, we thank Dr. Short for advocating for the use of long-term measurements, as space limitations prevented us from developing this concept in the original article. Dr. Short has advocated the use of multiple methods for a “comprehensive assessment of mitochondrial function and regulation.” Of course, we agree with Dr. Short on this point. The intent of our Perspectives was not to limit these assessments but simply to more closely distinguish what “mitochondrial biogenesis” is. We believe that, although the assessment of such outcomes of mRNA content and signaling (e.g., PGC-1α) are important for the making of new mitochondria, they are not a measure of biogenesis by themselves and, in the absence of a determination of biogenesis, could lead to erroneous conclusions. Certainly, as advocated by Dr. Short, well-designed studies will include the measurement of mitochondrial biogenesis as well as the mechanisms that result in the increased rate of mitochondrial protein synthesis.

DISCLOSURES
No conflicts of interest, financial or otherwise, are declared by the author(s).

AUTHOR CONTRIBUTIONS
Author contributions: B.F.M. and K.L.H. drafted manuscript; B.F.M. and K.L.H. edited and revised manuscript; B.F.M. and K.L.H. approved final version of manuscript.

REFERENCES

Address for reprint requests and other correspondence: B. F. Miller, Colorado State University, 220 Moby B Complex, Fort Collins, Colorado 80523 (e-mail: Benjamin.F.Miller@ColoState.edu).