Reading List for High-altitude Biology & Medicine (BIL 261/661)

Introduction

Storz, J. F., & Scott, G. R. (2019). Life ascending: mechanism and process in physiological adaptation to high-altitude hypoxia. *Annual Review of Ecology, Evolution, and Systematics*, *50*, 503-526.

Luks, A. M., Ainslie, P. N., Lawley, J. S., Roach, R. C, & Simonson, T. S. (2021). High altitude medicine and physiology, Pp. 1-22 *in* Chapter 1 - History of high altitude medicine and physiology. CRC Press, Boca Raton, Florida, USA.

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Beall, C. M. (2006). Andean, Tibetan, and Ethiopian patterns of adaptation to high-altitude hypoxia. *Integrative and Comparative Biology*, *46*(1), 18-24.

Kooyman, G.L. & Ponganis, P.J. (1998). The physiological basis of diving to depth: birds and mammals. *Annual Review of Physiology*, *60*(1), 19-32.

Ponganis, P. J. (2015). Challenges of the breath hold and the environment. Chapter 2 *Diving physiology of Marine Mammals and Seabirds*. Cambridge University Press.

High-altitude Flight

Hawkes, L. A., Balachandran, S., Batbayar, N., Butler, P. J., Frappell, P. B., Milsom, W. K., ... & Takekawa, J. Y. (2011). The trans-Himalayan flights of bar-headed geese (*Anser indicus*). *Proceedings of the National Academy of Sciences*, *108*(23), 9516-9519.

Bishop, C. M., Spivey, R. J., Hawkes, L. A., Batbayar, N., Chua, B., Frappell, P. B., ... & Takekawa, J. Y. (2015). The roller coaster flight strategy of bar-headed geese conserves energy during Himalayan migrations. *Science*, *347*(6219), 250-254.

Breathing & Pulmonary O_2 Diffusion

Avian Respiration by Gary Ritchison (http://people.eku.edu/ritchisong/birdrespiration.html)

Lague, S. L., Chua, B., Alza, L., Scott, G. R., Frappell, P. B., Zhong, Y., ... & Milsom, W. K. (2017). Divergent respiratory and cardiovascular responses to hypoxia in bar-headed geese and Andean birds. *Journal of Experimental Biology*, *220*(22), 4186-4194.

Meir, J. U., York, J. M., Chua, B. A., Jardine, W., Hawkes, L. A., & Milsom, W. K. (2019). Reduced metabolism supports hypoxic flight in the high-flying bar-headed goose (*Anser indicus*). *eLife*, *8*.

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Maina, J. N., McCracken, K. G., Chua, B., York, J. M., & Milsom, W. K. (2017). Morphological and morphometric specializations of the lung of the Andean goose, *Chloephaga melanoptera*: A lifelong high-altitude resident. *PloS One*, *12*(3), e0174395.

Ponganis, P. J. (2015). Respiratory gas exchange. Chapter 3 *Diving Physiology of Marine Mammals and Seabirds*. Cambridge University Press.

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Circulatory O_2 Delivery

Storz, J. F. (2018). Principles of protein structure. Chapter 1 *Hemoglobin: insights into protein structure, function, and evolution*. Oxford University Press.

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Meir, J. U., & Ponganis, P. J. (2009). High-affinity hemoglobin and blood oxygen saturation in diving emperor penguins. *Journal of Experimental Biology*, *212*(20), 3330-3338.

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Hall, F. G. (1935). A spectro-comparator for the study of hemoglobin. *Journal of the Elisha Mitchell Scientific Society*, *51*(2), 289-292. [additional related article]

Simonson, T. S., Wei, G., Wagner, H. E., Wuren, T., Qin, G., Yan, M., Wagner, P. D. and Ge, R. L. (2015). Low haemoglobin concentration in Tibetan males is associated with greater high-altitude exercise capacity. *The Journal of Physiology*, *593*(14), 3207-3218.

Stembridge, M., Williams, A. M., Gasho, C., Dawkins, T. G., Drane, A., Villafuerte, F. C., Levine, B. D., Shave, R. and Ainslie, P. N. (2019). The overlooked significance of plasma volume for successful adaptation to high altitude in Sherpa and Andean natives. *Proceedings of the National Academy of Sciences*, *116*(33), 16177-16179.

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Wearing, O.H., Ivy, C.M., Gutiérrez-Pinto, N., Velotta, J.P., Campbell-Staton, S.C., Natarajan, C., Cheviron, Z.A., Storz, J.F. and Scott, G.R. (2021). The adaptive benefit of evolved increases in hemoglobin-O2 affinity is contingent on tissue O2 diffusing capacity in high-altitude deer mice. *BMC Biology*, *19*(1), pp.1-15.

Pamenter, M.E., Hall, J.E., Tanabe, Y. and Simonson, T.S. (2020). Cross-species insights into genomic adaptations to hypoxia. *Frontiers in Genetics*, p.743.

Hall, J.E., Lawrence, E.S., Simonson, T.S. and Fox, K. (2020). Seq-ing higher ground: functional investigation of adaptive variation associated with high-altitude adaptation. *Frontiers in Genetics*, *11*, p.471.

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Tissue O_2 Diffusion & Utilization

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Reactive Oxygen Species

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