



Australia-wide Consensus on the Core Concepts of Physiology

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There are a set of core concepts ('big ideas') that are central to the discipline of Human Physiology and thus important for students to understand and demonstrate their capacity to apply the knowledge. However, a preliminary study indicated poor mapping of USA-derived core concepts to unit learning outcomes extracted from publicly available online sources, across physiology majors in undergraduate degree programs across 17 Australian universities (2), reinforcing the need for core concepts to be developed in the Australian Higher Education context.

To achieve Australia-wide agreement on the core concepts of physiology, we employed the Delphi protocol – an iterative process that explores agreement and disagreement amongst participants to achieve representative consensus. Physiology educators from 25 Australian universities agreed to be part of a Task force, which agreed on seven core concepts of physiology. National consensus was reached on the seven core concepts following a survey to physiology educators across Australian universities (n=151) (3). The seven adopted core concepts of Human Physiology were: *Cell Membrane*, *Cell-cell Communication*, *Movement of Substances*, *Structure and Function*, *Homeostasis*, *Integration* and *Physiological Adaptation*. Each of the agreed core concepts have been 'deconstructed' into subsidiary themes and sub-themes by Task force teams and validated by the whole Task force.

The core concepts will be incorporated into an Assessment Framework which can then be used to design assessments that measure conceptual knowledge achievement. In addition, embedding of the core concepts in physiology curricula will result in consistency and benchmarking across Australian universities and in improvements to teaching and learning.

1. Tangalakis, K., Julien, B., Lexis, L., Hryciw, DH., Thomas, CJ., Husaric, M., Towstoless, MK, MacKinnon, PJ., Miao, Y. and Hayes, A. Mapping the Core Concepts of Physiology Across Australian University Curricula. Submitted to *Advances in Physiology Education* 2022 (under review).

2. Tangalakis K., Lexis L, Hryciw D, Towstoless M, Bakker, T., Beckett, E., Brown, D., Cameron, M., Choate, J., Chopin, L., Cooke, M., Douglas, T., Estephan, S., Etherington, S., Gaganis, V., Moorhouse, A., Moro, C., Paravicini, T., Perry, B., Phillips, R., Scott, C., Todd, G., Uebergang, T., Wadley, G., Watt, M. and Hayes, A. Establishing Consensus for the Core Concepts of Physiology in the Australian Higher Education Context using the Delphi Method. Submitted to *Advances in Physiology Education* 2022 (under review).