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## MISCELLANEOUS

## **cIMPACT-NOW (the consortium to inform molecular and practical approaches to CNS tumor taxonomy): a new initiative in advancing nervous system tumor classification**

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The 2016 World Health Organization Classification of Tumors of the Central Nervous System (2016 CNS WHO) is a major shift in the way neuropathologists analyze and diagnose brain tumors as it incorporates molecular and histological information together to define many entities (1). While the 2016 CNS WHO thereby facilitates more precise diagnosis of well-understood entities and clearer designation of less-understood entities, it also presents a number of practical challenges for neuropathologists, requiring substantial shifts in their day-to-day practices (2). Nonetheless, neuropathologists will learn the system readily over time, and will adapt as needed to the new requirements.

For a variety of reasons, formal WHO classification updates such as the 2016 CNS WHO only occur every decade or so, meaning that such large diagnostic shifts will occur relatively infrequently. However, there has clearly been an acceleration in our understanding of the molecular characteristics of human nervous system tumors and in our appreciation of the clinicopathological correlates of these molecular changes over the past 10 to 15 years. This increased pace of change in the field creates a need to evaluate classification progress faster than is possible through standard WHO updates. For example, if major findings come along in the classification of a particular tumor type, does the diagnostic neuropathology community need to wait for the next WHO classification for guidelines, or is there a mechanism to provide a different type of update on an interim basis?

In response to this question, the International Society of Neuropathology (ISN) has sponsored an initiative to evaluate and recommend proposed changes to future CNS tumor classifications: cIMPACT-NOW, the Consortium to Inform Molecular and Practical Approaches to CNS Tumor Taxonomy. The goal of cIMPACT-NOW is to facilitate input and consensus review of novel diagnostically relevant data and determine how such information can be practically incorporated into future CNS tumor classifications. While it is understood that the major impact on international nervous system tumor classification comes about through the WHO classification update process, it is anticipated that this additional process will “see impact” in selected tumor types and in time

periods between the WHO classification updates. The cIMPACT-NOW updates are not intended to supplant the existing WHO classification, but to provide possible consensus recommendations for practicing diagnosticians and potential information for future WHO classification updates. This initiative is described in some more detail elsewhere (3).

Given the central role played by neuropathologists in brain tumor diagnosis and the substantial effect that new classifications play in the daily activities of neuropathologists, additional new interim recommendations may require additional explanation. It is expected that the cIMPACT-NOW group will publish its consensus recommendations promptly, and that the publications in *Brain Pathology* (the official journal of the ISN) will emphasize practical neuropathological aspects of the proposals, anticipating questions that diagnostic pathologists may have in implementing them. We are excited that the ISN is sponsoring cIMPACT-NOW, as it did the “ISN-Haarlem” guidelines (4), since these initiatives promise to move the field of neuropathology forward in a timely manner.

## REFERENCES

1. Louis DN, Ohgaki H, Wiestler OD, Cavenee WK World Health Organization Histological Classification of Tumours of the Central Nervous System. 4th edition update ed. International Agency for Research on Cancer: Lyon, France; 2016.
2. Louis DN, Perry A, Reifenberger G, von Deimling A, Figarella-Branger D, Cavenee WK *et al* (2016) The 2016 World Health Organization Classification of Tumors of the Central Nervous System: a summary. *Acta Neuropathol* **131**:803–820.
3. Louis DN, Aldape K, Brat D, Capper D, Ellison DW, Hawkins C *et al* (2017) Announcing cIMPACT-NOW: the consortium to inform molecular and practical approaches to CNS tumor taxonomy. *Acta Neuropathol*.
4. Louis DN, Perry A, Burger P, Ellison DW, Reifenberger G, von Deimling A *et al* (2014) International Society Of Neuropathology–Haarlem consensus guidelines for nervous system tumor classification and grading. *Brain Pathol* **24**:429–435.