The National Academies of
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Committee on Temporomandibular Disorders (TMD): From Research Discoveries to Clinical Treatment

Project Context and Issues:

Temporomandibular disorders (TMDs) are a diverse and poorly understood set of painful conditions that affect between 5 – 10% of the U.S. population, with females at somewhat greater risk for TMD onset and at significantly greater risk for persistence of symptoms. These disorders are highly complex, affecting tissues of the temporomandibular joint (TMJ) including muscles, bones, soft connective tissue, nerves, vasculature, and central and peripheral nervous systems. TMDs have long confounded medical and dental health care providers and researchers, largely due to within-condition heterogeneity, poor correlation between overt signs of injury and pain intensity ratings, and a lack of animal models that faithfully recapitulate human pathophysiology. This is further exacerbated by anatomic and functional complexities of the temporomandibular joint.

These challenges have precluded the development of and clinical implementation of safe and effective evidence-based treatments for TMD. As a result, patients are often exposed to a variety of treatment modalities including appliance therapy, physiotherapy, surgical procedures, and pharmacotherapies. Many of these treatments carry significant health risks, are often used off-label, and exhibit mixed results, leaving some patients with unremitting pain and a less than desirable quality of life.

While research has resulted in some advances in our understanding of the biological, psychological, and sociological factors that increase risk of developing acute and chronic TMDs, significant research gaps remain.

To address these issues, the National Institutes of Health (NIH) – Office of the NIH Director and the National Institute of Dental and Craniofacial Research (NIDCR) – have requested that the National Academies of Sciences, Engineering and Medicine (the National Academies) produce a consensus report addressing the current state of TMD research and care. The findings, conclusions, and recommendations from this study will inform the development of policies related to evidence-based treatment and clinical management of TMD patients.

Abbreviated Statement of Task:

An ad hoc committee of the Health and Medicine Division of the National Academies will convene to address the current state of knowledge regarding TMD research, education and training, safety and efficacy of clinical treatments of TMD, and burden and costs associated with TMD. The ad hoc committee will identify approaches to advance basic, translational, and clinical research in the field. The committee will:

- Review and estimate the public health significance of TMDs, including prevalence, incidence, burden and costs; and review challenges to data collection and reliability.
- Evaluate the evidence base for assessment, diagnosis, treatment, and management of acute and chronic TMD. Recognizing that TMDs are diverse and multifactorial conditions influenced by genetics, sex and gender, environmental, physiological, and psychological factors.
- Identify barriers to appropriate patient-centered TMD care, in the presence and absence of an evidence base, and strategies to reduce these barriers along the continuum of TMD pain.
- Review the state of science for TMD and provide an overview of basic, translational, and clinical research for TMD.
- Identify opportunities and challenges for development, dissemination, and clinical implementation of safe and effective clinical treatments for TMD.
- Identify scientific and clinical disciplines needed to advance TMD science and the development, dissemination, and implementation of safe and effective treatments; as well as strategies to enhance education and training in these disciplines.
- Identify multidisciplinary/interdisciplinary research approaches necessary in the short- and long-term to advance basic, translational, and clinical TMD research and improve the assessment, diagnosis, treatment, and management of TMDs.

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STUDY TIMELINE

- **January 29 – 30, 2019**: Committee meeting 1; Washington, DC (including sponsor public session)
- **March 28 – 29, 2019**: Committee meeting 2; Washington, DC (including public workshop)
- **May – October 2019**: Committee meetings 3, 4, and 5 (committee only)
- **March 2020:** Prepublication report released
- **May 2020:** Final report released

STUDY STAFF

- **Cathy Liverman, M.L.S.**, Study Co-Director
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