

## Temporomandibular Disorders (TMD)

The agreement directs NIH to include updates on the following research, projects, and programs in the fiscal year 2022 Congressional Justification: gastric cancer; psycho-social distress in cancer research; the Office of Cancer Survivorship; progress in treating rare cancers; the Surveillance, Epidemiology, and End Results [SEER] Registry; Temporomandibular Disorders; diabetes, Rapid Acceleration of Diagnostics; 7q1 1.23 Duplication Syndrome; and Hereditary Spastic Paraparesis 49 (TECPR2). (Joint Explanatory Statement, p. 45)

### **Action Taken or to be Taken**

The National Institute of Dental and Craniofacial Research (NIDCR) continues to collaborate with several National Institutes of Health (NIH) Institutes, Centers, and Offices (ICOs) and other federal agencies on research into temporomandibular disorders (TMDs). NIDCR works with the NIH Pain Consortium,<sup>339</sup> the NIH Interagency Pain Research Coordinating Committee,<sup>340</sup> the NIH Common Fund's Acute to Chronic Pain Signatures program,<sup>341</sup> the U.S. Food and Drug Administration Temporomandibular Joint (TMJ) Coordinated Registry Network (CRN)<sup>342</sup> (formerly the TMJ Patient-Led RoundTable), and the NIH Blueprint for Neuroscience Research.<sup>343</sup> Notably, the Blueprint collaboration has resulted in several funding opportunity announcements (FOAs) to better understand pain, including orofacial pain,<sup>344</sup> and a soon-to-be published NIH perspective paper in *Trends in Neuroscience*. In addition, in May 2020, NIDCR announced an initiative to study gene and protein expression in thousands of individual cells simultaneously to better understand the molecular mechanisms underpinning TMD pain.<sup>345</sup>

NIDCR is actively participating in the NIH Helping to End Addiction Long-term<sup>SM</sup> (HEAL) Initiative. Several HEAL-funded projects to enhance pain management are focused on TMD – one is investigating the role of neuronal proteins called ion channels in TMD pain, with the hope that these proteins could be targeted as a non-opioid pain treatment.<sup>346</sup> In another, researchers are validating a predictive biomarker to identify individuals at risk of developing severe and persistent pain, in order to promote early intervention that could halt the transition to chronic pain.<sup>347</sup> Further, in September 2020, NIDCR helped plan the trans-NIH HEAL workshop titled “Quantitative Evaluation of Myofascial Tissues: Potential Impact for Musculoskeletal Pain Research,” which brought together a multidisciplinary group of researchers and clinicians to develop strategies to improve diagnostic imaging of soft tissues involved in musculoskeletal pain, including TMDs.<sup>348</sup> Lastly, NIDCR is participating in trans-NIH FOAs soliciting research

<sup>339</sup> [www.painconsortium.nih.gov/](http://www.painconsortium.nih.gov/)

<sup>340</sup> [www.iprcc.nih.gov/](http://www.iprcc.nih.gov/)

<sup>341</sup> [www.commonfund.nih.gov/pain](http://www.commonfund.nih.gov/pain)

<sup>342</sup> [www.mdepinet.net/tmj](http://www.mdepinet.net/tmj)

<sup>343</sup> [www.neuroscienceblueprint.nih.gov/](http://www.neuroscienceblueprint.nih.gov/)

<sup>344</sup> [www.grants.nih.gov/grants/guide/rfa-files/RFA-AT-21-003.html](http://www.grants.nih.gov/grants/guide/rfa-files/RFA-AT-21-003.html)

<sup>345</sup> [www.nidcr.nih.gov/grants-funding/funding-priorities/future-research-initiatives/deconstructing-tmjd-classifiers-single-cell-level](http://www.nidcr.nih.gov/grants-funding/funding-priorities/future-research-initiatives/deconstructing-tmjd-classifiers-single-cell-level)

<sup>346</sup> [www.projectreporter.nih.gov/project\\_info\\_description.cfm?aid=9998160&icde=46779633&ddparam=&ddvalue=&ddsub=&cr=1&csb=default&cs=ASC&pbll=](http://www.projectreporter.nih.gov/project_info_description.cfm?aid=9998160&icde=46779633&ddparam=&ddvalue=&ddsub=&cr=1&csb=default&cs=ASC&pbll=)

<sup>347</sup> [projectreporter.nih.gov/project\\_info\\_description.cfm?aid=9828948&icde=50220962&ddparam=&ddvalue=&dds=ub=&cr=1&csb=default&cs=ASC&pbll=](http://projectreporter.nih.gov/project_info_description.cfm?aid=9828948&icde=50220962&ddparam=&ddvalue=&dds=ub=&cr=1&csb=default&cs=ASC&pbll=)

<sup>348</sup> [www.nccih.nih.gov/news/events/nih-heal-initiative-workshop-on-myofascial-pain](http://www.nccih.nih.gov/news/events/nih-heal-initiative-workshop-on-myofascial-pain)

relevant to TMD, including two on chronic overlapping pain conditions<sup>349</sup> and two on a broad array of pain research, including the transition from acute to chronic pain.<sup>350</sup>

As the Committee is aware, the NAM report *Temporomandibular Disorders: Priorities for Research and Care*<sup>351</sup> was released in March 2020 and included 11 recommendations to improve TMD research and care, four of which are research-focused and align with NIH's mission. NIDCR is using the report to identify a roadmap of research and training priorities within NIH's TMD portfolio and recommend plans to implement them. To develop this roadmap, in July 2020, NIDCR launched a TMD Multi-Council Working Group made up of members of the advisory councils of NIDCR and seven NIH ICOs that support TMD-related research. Experts from those seven ICOs are participating to ensure that that the roadmap will be developed with trans-NIH engagement and input so that the future of TMD research and training will be a collaborative effort across ICOs. The working group will report their recommendations to NIDCR's advisory council and the advisory councils of other select ICOs in 2021.

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<sup>349</sup> [www.grants.nih.gov/grants/guide/pa-files/PA-18-937.html](http://www.grants.nih.gov/grants/guide/pa-files/PA-18-937.html); [www.grants.nih.gov/grants/guide/pa-files/PA-18-939.html](http://www.grants.nih.gov/grants/guide/pa-files/PA-18-939.html)

<sup>350</sup> [www.grants.nih.gov/grants/guide/pa-files/PA-18-141.html](http://www.grants.nih.gov/grants/guide/pa-files/PA-18-141.html); [www.grants.nih.gov/grants/guide/pa-files/PA-18-159.html](http://www.grants.nih.gov/grants/guide/pa-files/PA-18-159.html)

<sup>351</sup> [www.nap.edu/catalog/25652/temporomandibular-disorders-priorities-for-research-and-care](http://www.nap.edu/catalog/25652/temporomandibular-disorders-priorities-for-research-and-care)