

Testimony of Marc DePaul PhD

Before the State of Ohio House Finance Committee Wednesday, June 12, 2024 Support of HB434, relating to Ohio's TBITXL pilot program

Chairman Edwards, Vice Chair LaRe, Ranking Member Sweeney, and all members of the Ohio House Finance Committee, I am grateful for the opportunity to present testimony on HB434, The Traumatic Brain Injury Treatment Accelerator Pilot Program (TBITXL). I am Dr. Marc DePaul, the Director of Research at NervGen Pharma, with our US offices located in Cincinnati, Ohio. As an Ohio native, I earned a PhD in Neuroscience from Case Western Reserve University, focusing on repairing the central nervous system after trauma.

Traumatic brain injury is an urgent public health concern that profoundly impacts millions of Americans. The need for dedicated research and support is critical, especially considering that all attempts at treating this condition have failed.

Traumatic Brain injuries are an acute problem that when left untreated can leave individuals with enduring symptoms and impairments such as Alzheimer's Disease, Parkinson's Disease, seizures, and strokes. Given that TBIs are often implicated as the source for so many of these other debilitating conditions, the traumatic brain injury treatment accelerator pilot program aims to enhance our comprehension of multiple disease pathways.

However, our comprehension of the intricate biology behind traumatic brain injuries lags far behind that of many other therapeutic areas. The intricacies and complex nature of brain trauma have posed challenges for the private industry in developing effective treatments for decades. Many companies are now outsourcing key developmental activities due to the expertise and facilities required. Ohio has a unique opportunity to become a research hub for TBI, providing essential support and infrastructure for biotech companies and others developing treatments for TBI.

While the Department of Defense has made progress in preventing TBIs through measures like improved safety equipment as seen in automobile and military helmet technology, addressing injury-related disabilities remains a significant gap, underscoring the need for targeted research into therapeutics that can promote repair and recovery.

Regrettably, traumatic brain injury research funding is not proportionate to its impact on society. According to the National Council for Compensation Insurance, TBIs account for 5% of all lost-time paid claims. Deaths from traumatic brain injuries dwarf all other causes of death in the working population. Shockingly, TBI research constitutes only 0.44% of the National Institutes of Health's (NIH) budget, despite TBIs accounting for 8% of ALL years of potential life lost before age 75.

Translational research, the process of translating discoveries from basic science in the lab to therapies that benefit individuals, receives only a fraction of support. Within the

NIH, translational research accounts for merely 10% of all funded projects, the lowest of any type of research, while basic and clinical research accounts for nearly 90% of research funding.

In 2023, funding allocated by the NIH for treating traumatic brain injuries amounted to a mere \$41.8 million, ranking it as the 152nd most funded health condition that year. The NIH budget's meager 1.2% increase relative to GDP between 2003 and 2023 further accentuates the need to perpetually back this research. Innovative methods for financing medical research are imperative, considering that fewer than 20% of researchers who apply for grants at the NIH secure funding annually.

In addition to the NIH, the Defense Health Agency (DHA) is another significant funder of TBI research. In 2023 \$175M in funding was provided to the Psychological Health and Traumatic Brain Injury (PHTBI) program and divided into 3 focus areas: (1) *to understand*, (2) *to prevent*, and (3) *to treat* TBI and psychological health conditions. *To treat* is further broken down into several subcategories that include:

- Reducing barriers to TBI treatment access in rural communities
- Creating mobile health applications to deliver TBI care
- Developing interventions for complications caused by TBI
- Developing therapeutic candidates to treat TBI and psychological issues.

Of the \$175M in total funding, very little goes to fund new or repurposed drugs to treat TBI, highlighting the need to increase investment in pharmaceutical research and development for this condition.

Currently, the average cost to develop a new drug is \$460 million. A \$10 million dollar appropriation to start up TBITXL is a worthwhile investment that will attract small biotech companies to this state.

Moreover, in the absence of well-defined objectives and effective supervision, advancements are likely to be uncertain. Through sufficient funding and backing, Ohio has the opportunity to emerge as a frontrunner in translational TBI research by establishing itself as a central research hub. I urge you to endorse the proposed legislation aimed at financing translational TBI research in Ohio, thus facilitating progress, fostering innovation, and enhancing outcomes for all.

Chairman Edwards, Vice Chair LaRe, Ranking Member Sweeney, and all members of the Ohio House Finance Committee, thank you for allowing me to give testimony today. I am happy to answer any questions at this time.