**AI for truth, facts, evidence, and better health**

According to the Global Risks Report 2024 by World Economics, misinformation and disinformation emerge as the most severe global risks anticipated over the next two years, followed by climate change, geopolitical conflict, and economic uncertainty. Health misinformation poses a significant threat to public health, causing confusion, harming health outcomes, and eroding public trust. In 2021, the US Surgeon General called on all Americans to help curb health misinformation, declaring it as a moral and civic duty requiring collective action.

Artificial Intelligence (AI) technologies are reshaping society, medicine, popular culture, policy, and economics in both exciting and concerning ways. Generative AI tools like ChatGPT reached mass adoption in record time and offer many promises across modern society, however, they carry a significant risk for the mass generation of infinite health disinformation. A 2023 Australian study demonstrated that in just 65 minutes, ChatGPT produced 102 coercive blog posts containing over 17,000 words of vaccine and vaping misinformation including fake patient and clinician testimonials targeting vulnerable groups. I believe the most effective way to combat misinformation is through the active and responsible use of AI to generate and disseminate accurate information.

In 2023, the weight-loss drug semaglutide (marketed as Ozempic and Wegovy) was celebrated as the breakthrough of the year. Although it is one of the greatest successes in medical history, it also brings uncertainties, unknowns, and complexities, including issues related to misinformation. In July 2023, I started a summer research project at Case Western Reserve University (supervised by the late Dr. Nathan Berger) in response to growing concerns raised by anecdotal reports of suicidal ideations in individuals taking semaglutide. These reports prompted investigations by both the FDA and European Medicines Agency (EMA).

Suicide is among the top ten leading causes of death in theUS and the second leading cause of death for children ages 10 to 14; In 2021, 48,183 individuals died by suicide in the US, including one of my schoolmates and the father of one of my friends. With millions of people using Ozempic and Wegovy, it is crucial to gather comprehensive, real-world, science-based data to evaluate the potential suicide risk linked to semaglutide.

I performed rigorous emulation target trials using advanced AI analytics to analyze health data of millions of patients in the US. My research findings do not support an increased risk of suicidal ideations with Ozempic and Wegovy. On the contrary, my findings reveal a substantial 49% to 73% reduction in suicidal ideations in people taking these medications. As the lead author, I published the findings in *Nature Medicine* on January 5, 2024. Subsequently, on January 11, 2024, the FDA cleared the suicide risk warning for Wegovy and Ozempic. On April 12, 2024, the Europen Medicine Agency also cleared warning of suicide risk, citing my study as a significant contributor to this decision.

While rapidly evolving AI is being used to enable massive misinformation and disinformation, my research project during my high school years showcases the efficacy of employing AI and advanced analytics to provide science-based health evidence. In the future, I will continue to develop and utilize advanced AI technologies to produce and distribute health information, empowering patients, clinicians, and policymakers to make informed decisions.