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**New neuro-technologies to assess and treat addiction: Neuro-ethical issues, challenges and responsibilities**

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Large scale federal agendas such as the war on drugs, decade of the brain (1990-99), decade of pain control and research (2000-2009) and most recently the ongoing Brain Research through Advancing Innovative Neuro-technology (BRAIN). Initiative have prompted research aimed at elucidating neurological substrates and mechanisms of addiction that may be targeted for preventive and therapeutic intervention. Yet, the current opioid crisis, and epidemiological prevalence of addiction disorder(s) imply that efforts of these programs, while impressive, have been less than successful in reducing the burden of addictive illness and care on patients, families, medicine and society. This has prompted renewed interest in, and calls for the translation of emerging techniques and technologies of brain science to applications in clinical care. However, such calls and incentives evoke a dilemma of pacing and prudence: On one hand, is the pressing need for assessments and interventions that enable more capable assessment, prevention and treatment of addictive disorders. While on the other are concerns for the safety, cost and legal issues that could be incurred by early, if not premature translation into clinical contexts. In this lecture, neuroscientist and neuro-ethicist James Giordano of Georgetown University Medical Center provides an overview of new techniques and technologies in brain science that are being developed for assessing and treating addiction. Technical, ethical, legal and social issues arising from the use of such approaches will be addressed, with emphasis upon articulating solution paths to enable prudent provision of new tools and methods via an ethical risk assessment and mitigation approach. Key elements of healthcare policy and economics that are important, if not necessary for the implementation of such translational enterprises will be defined and discussed.

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