

## **Translational research in psychiatry: new developments in Brazil**

## **Investigação translacional em psiquiatria: novos desenvolvimentos no Brasil**

The formation and inauguration of the National Science and Technology Institute for Translational Medicine (INCT-TM) is a major accomplishment for Brazil and for the field of psychiatry in general. Psychiatry has come of age, but relatively few in the press and in the general population are aware of it. The pathophysiology of the affective disorders - unipolar depression and bipolar illness - is gradually being revealed. It involves not only abnormalities of brain biochemistry, physiology, and the microanatomy of both neurons and glia, but also peripheral somatic symptoms and systems and their correlates in the rest of the body.

The INCT-TM, headed by Flavio Kapczinski, has pioneered the study of affective episode-related decrements in the neuro-protective factor, brain-derived neurotrophic factor (BDNF), and also increases in oxidative stress and inflammatory markers. This dual set of mechanisms endangers not only neurons and glia, but also multiple organ systems in the periphery. We now know that the major psychiatric illnesses are responsible for a catastrophic increase in years of lost life expectancy compared to the general population. At the same time, reciprocally, there is a major increase in medical morbidity and mortality in a wide range of illnesses (such as myocardial infarctions, stroke and diabetes) in those who also have comorbid depression.

Loss of neuroprotective factors and increases in an array of toxic factors, seen in those with primary or secondary affective disorders, could account for these increased medical problems. With the formation of the Translational Medicine Institute, measurement of a large array of both pathological and protective factors will be possible in those with primary psychiatric as well as other medical illnesses.

As the Translation Institute represents a large national consortium, data collection and interpretation, validation of these measures, and linkage to patient outcomes will enable the rapid accomplishment of a new series of advances in diagnostics, therapeutics, personalized medicine and prevention. We have seen how the reduction of cardiovascular risk factors through lifestyle changes and use of medicines leads to reduced blood pressure, cholesterol, triglycerides, weight and smoking, and concomitantly to better health outcomes, a reduction in cardiovascular events, and increased longevity. The Institute will now allow parallel advances both for psychiatric patients and for those with a wide array of medical illnesses.

Not only should the consortium be congratulated on this groundbreaking initiative, but those who funded it should be thanked for their wisdom, and will soon be found to have been prescient also. There is a crisis in healthcare costs and insurance in the USA and in much of the rest of the world. A renewed focus on prevention promises a major beneficial effect on both health and healthcare costs. The key to such early intervention and prevention efforts is the identification of vulnerability markers and pathological and

adaptive neurobiological alterations that can then be targeted for new and more effective interventions, including tertiary, secondary, and even ultimately primary prevention.

The two of us have had the privilege of hearing about the enormous productivity and creativity of the members of the consortium and their equally imaginative and exciting proposals for the future. We are impressed with these accomplishments to date and are confident that these groups of investigators will lead the way to many new discoveries which will have a direct impact on the health of the people of Brazil and many other parts of the world. The collaborative structure of the National Institute for Translational Medicine and the collegial interchanges of the host of scholarly and committed clinician scientists in the consortium are indeed most impressive.

When we had the opportunity to comment on some of the plans and preparations of the consortium, it was clear that this endeavor is a self-starter and already well on its way to rapid and multiple successes. We are appreciative of the opportunity to hear first-hand about this creative and pioneering effort. It has inspired us.

**Robert M. Post**

Bipolar Collaborative Network, Bethesda (MD), USA

**Trevor Young**

Department of Psychiatry, University of British Columbia, Vancouver, Canada

**Disclosures**

Writing group member	Employment	Research grant <sup>1</sup>	Other research grant or medical continuous education <sup>2</sup>	Speaker's honoraria	Ownership interest	Consultant/ Advisory board	Other <sup>3</sup>
Robert M. Post	-	-	-	Abbott* Astra Zeneca*** BMS*** Glaxo Smith Kline***	-	RP, Abbott* Astra Zeneca*** BMS*** Glaxo Smith Kline*** Pfizer**	-
Trevor Young	University of British Columbia	CIHR	-	Eli Lilly	-	Eli Lilly Astra Zeneca BMS Pfizer	-

\* Modest

\*\* Significant

\*\*\* Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.

Note: CIHR = Canadian Institutes of Health Research.