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How research in Ottawa can

IMPROVE THE TREATMENT OF DEPRESSION

in Russia

Brilliant researchers.
Brilliant research.

Hymie Anisman, PhD
Carleton University's Canada Research Chair in Neuroscience

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Research snapshot

Purpose
To assess the effects of stressors on chemical and hormonal activity in the brain.

Scope
To determine how acute and chronic stressful life events can induce anxiety, depression, post-traumatic stress disorder (PTSD) and other pathological states.

Thesis
Individuals with particular genetic predispositions might be more prone to pathology in a response to stressful experiences.

Outcome
The development of new therapeutic strategies for depression, anxiety, and other stress related conditions.

Selected publications

- Anisman, H. and K. Matheson (2005) Anhedonia and Depression: Caveats Concerning Animal Models. *Neuroscience Behaviour Review* 29, 525-546
- Merali, Z., L. Du, P. Hrdina, M. Palkovits, G. Faludi, M.O. Poulter, and H. Anisman. Dysregulation in the suicide brain: mRNA expression of Corticotropin Releasing Hormone Receptors and GABA A Receptor subunits in Frontal Cortical Brain Region. *Journal of Neuroscience* 24, Feb. 2004, 1478-1485

Grad student projects
Reno Gandhi,
second-year master's in neuroscience
Synergy between stressors and immune activation
Renate Ysseldyk,
second-year PhD in health psychology
Forgiveness and the appraisal coping process in response to relationship conflicts: Implications for depressive affect

Honours
- Ontario Mental Health Senior Research Fellow
- Fellow of the American Psychological Association
- Fellow of the Canadian Psychological Association

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Stressed out: the connection between stressful life events, illness, and effective treatment

When someone develops a psychiatric problem, family members may ask themselves whether they, too, are vulnerable to the illness. Neuroscientist and Carleton's Tier I Canada Research Chair in Neuroscience Hymie Anisman believes that while we may be similar to our family in important ways, each person's response to stressful events is the result of a very unique interaction between our bodies and our brains.

"Given enough stress, everyone will exhibit some negative reaction because our brain will produce an excessive amount of certain chemicals (e.g., serotonin). This overproduction will ultimately overload certain physiological and psychological systems and make us vulnerable to illness. Although certain people may be particularly prone to depression, a genetic predisposition is not necessarily enough to explain why one person reacts very severely (e.g., by taking his or her own life) and another does not—there are other psychological factors involved."

HOW WE APPRAISE, HOW WE COPE

For more than thirty-six years, Anisman has researched the processes by which stressors affect the chemical and hormonal activity in the brain that may be related to the development or worsening of psychological illnesses such as depression and post-traumatic stress disorder.

In collaboration with colleagues at Carleton and other universities, he has studied the neurochemical and immunological changes associated with acute and chronic stressors, and evaluated reactions of people experiencing a wide range of stressors including physical and psychological abuse, caring for an autistic child, and early life traumas. He has found that, in addition to physiological mechanisms, there are two major psychological factors that also link stress and disease: how we appraise the world; and how we cope with difficult situations.

As he explains, appraisal of a situation refers to our interpretation of a given event. If, for example, a company shuts down and all the employees are put out of work, one person may see this event as a sign of personal failure while another individual will see it as an opportunity to begin a new career.

Likewise, people have different ways of coping. Some individuals react to traumatic events by withdrawing from their friends and families to "lick their wounds" alone, whereas others lean on those around them for solace, support, and advice.

"What we have found is that how a person deals with either an acute or chronic problem offers us some good clues as to whether or not their system will become sufficiently overloaded to promote a psychological disturbance. A generally appropriate appraisal and/or coping mechanism that includes reaching out to others might very well protect some people against illness. This has enormous implications not only for diagnosis, but also for treatment and even prevention."

TAILOR-MADE TREATMENTS

According to Anisman, the myriad of biological and psychological differences between individuals are significant enough that mass-marketed therapies for diseases such as depression and anxiety are bound to have limited success.

"Not every depressed patient has the same symptoms, for the same reasons, or because of the same biology," he states. "Despite the perceived cost, it might be more appropriate to assess patients according to their individual characteristics and then tailor the therapy accordingly. This might be more efficient and less costly than trying to treat everyone the same and potentially offering the wrong treatment."

"...it might be more appropriate to assess patients according to their individual characteristics..."

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