

## MODULE 10: MOOD AND BEHAVIOUR CHANGES



### Learning Objectives

Upon completion of this module, nurses will be able to:

- Understand the impact of stroke on the survivor's emotions, relationships and recovery
- Identify signs of post-stroke depression
- Name mechanisms linking depression to stroke risk
- Identify when to screen for depression
- Name validated tools that can be used to screen for depression



## 10.1 What is Depression?

Depression is more than sadness, ‘the blues’, or grief. A person may be experiencing a clinical depression when feelings of unhappiness become severe, endure for more than a couple of weeks, and begin to interfere with areas of that person’s life – such as thinking, emotions, relationships, physical health, and work.

Clinical depression – or major depression – is a complex disorder and one of Canada’s most misunderstood illnesses. It is caused by the interplay of a variety of factors including family history, personality, stress, and brain chemistry.

Depression is one of Canada’s most common conditions. Approximately 8% of Canadian adults will experience depression at some point during their life. Currently, about 5% of male and about 12% of female youth (aged 12–19) suffer from depression. It affects between 5% and 10% of the senior population. Sadly, up to 90% of individuals with depression don’t seek help despite the fact that depression is effectively treated in about 80% of the population.



Some of the more common signs and symptoms are:

- Feelings of sadness, patient may appear to be “be down in the dumps”
- Loss of interest in activities
- Apathy (e.g., loss of enjoyment of things that the patient once enjoyed)
- Decrease in concentration
- Feelings of anxiety
- Loss of appetite and/or increase in appetite
- Increase in physical complaints
- Isolation (e.g., avoiding people and avoiding socializing)
- Decrease in self-esteem
- Lack or change in confidence
- Suicidal ideation
- Lack of motivation
- Change in sleep patterns
- Decrease in energy and/or extreme fatigue

For those who have suffered a stroke, the occurrence of developing depression (post-stroke depression) has been reported to be as high as 30–60% within the first year after the stroke (Eskes G, Lanctot, 2015).

The risk factors associated with increased risk for post-stroke depression include:

- female sex
- past history of depression or psychiatric illness
- functional limitations
- cognitive impairment

(Salter, 2013)

## 10.2 Depression as a Stroke Risk Factor

Depression is increasingly identified as both a predictor and an outcome of a physical illness. That is, people who have depression are more likely to develop a physical illness and those with chronic health conditions have a high risk of developing depression.

A relatively new idea is depression putting people at risk of having stroke. Over the last 10–15 years, researchers have increasingly studied whether depression is a stroke risk factor.

The majority of the research shows a strong link between depression and stroke onset. This is independent of other risk factors such as lifestyle, hypertension and diabetes (Dong et al. 2011; Pan et al. 2011). Some authors have gone so far as to say that depression is as big a risk factor for stroke as hypertension (Hakim, 2011). More research is still needed to confirm whether depression actually causes a stroke.

The biological mechanisms linking depression and stroke risk are still emerging but there are several theories. According to Hakim (2011), the most relevant one involves the stimulation of the immune system. The presence of depression initiates an inflammatory response within the body; the risk of stroke is greater when the body is in a pro-inflammatory state. Inflammatory markers can lead to both neuronal and vascular injury, and inflammation is a major contributor to the development of atherosclerosis.

Another potential mechanism linking depression to stroke onset involves hemodynamics. Blood pressure tends to be sensitive and very responsive to the emotions a person experiences (Hakim, 2011). Depression tips the body towards stimulation of the sympathetic nervous system, which, through the fight-or-flight response, increases blood pressure. The brain appears very sensitive to increases in blood pressure, more so than the heart. Ongoing hemodynamic changes can lead to ischemic brain damage.

Other mechanisms are being explored but the two above are currently most supported by research.

## 10.3 Depression Screening



Because of the close link between depression and stroke, the *Canadian Stroke Best Practice Recommendations* state that:

1. All patients with stroke should be screened for depressive symptoms, given the high prevalence of depression poststroke, the need for screening to detect depression, and the strong evidence for treating symptomatic depression poststroke (Evidence Level B).
2. Screening should be undertaken using a validated tool to maximize detection of depression (Evidence Level B).
3. Stroke patient assessments should include evaluation of risk factors for depression, particularly a history of depression (Evidence Level C).
4. For patients who experience some degree of communication challenge or deficits following stroke, appropriate strategies for screening of possible Post Stroke Depression (PSD) should be implemented to ensure adequate assessment and access to appropriate treatment (Evidence Level C).

For screening for post-stroke depression specifically in acute care, the Canadian Stroke Best Practice Recommendations state that:

*Screening for depressive symptoms could be considered during acute care stay in patients at high risk for depression, particularly if evidence of depression or mood changes is noted. Stroke patients who are identified as at risk could be screened before discharge from acute care (Evidence Level C).*



Multiple screening points are recommended across the continuum of care to ensure that the onset of a post-stroke depression isn't missed as it can occur any time after a stroke (but most commonly within the first 3-6 months). There is also emerging thought and practice to screen for depression within the Secondary Stroke Prevention clinics due to the increasing research associating depression to stroke risk.

Currently, depression screening is not routinely done and there is often little follow-up beyond the hospital.

## Validated screening tools for depression

**The following are validated screening tools for depression as suggested by the Canadian Stroke Best Practice Recommendations:**

- Geriatric Depression Scale (GDS)
- Hamilton Anxiety and Depression Scale (HADS)
- Patient Health Questionnaire 9 (PHQ-9)

**Tools to consider for Aphasic patients:**

- Stroke Aphasic Depression Questionnaire-10 (SADQ-10)
- Aphasia Depression Rating Scale (ADRS)

## Depression Screening and Management



When a patient screens positive for depression this needs to be communicated to the *Physician* and *Social Worker* for full depression assessment and management:

- The *Physician* and *Pharmacist* on your team may be involved in determining the correct medication to treat post-stroke depression.

As per the 2015 *Canadian Stroke Best Practice Recommendations*:

*“There is now new literature evaluating the prophylactic use of antidepressants poststroke. Data from randomized placebo-controlled trials now exist and suggest a significant decrease in emergence of depression, and mortality in those treated with antidepressants [14, 15]. Despite the high-quality evidence, the expert writing group did not recommend all stroke survivors be treated prophylactically with antidepressants. Optimal timing and duration of interventions remain to be elucidated, and benefits may not outweigh risks in those who are not at increased risk for depression. Instead, careful monitoring particularly for those considered at increased risk for depression and individualized treatment was felt to be reasonable at this time.”*

(Eskes & Lanctot, 2015)

- The *Social Worker* can provide counseling and be a valuable source of information, resources, programs/services, support groups, and/or education sessions that should be part of your patient's recovery from depression. The patient and their family can be referred to social work as required. Consult with the *Social Worker* any time their involvement would be of value.

Treatment and management will be individualized to the needs of each individual stroke survivor, but they typically include:

- Antidepressant medication: start low and go slow, especially in geriatric population.
- Psychological therapies to assist the patient and family adjust to the loss of function and compromised self-image and self-esteem.

There are several ways that you can help:

- Observe and listen
- Watch for and note potential signs of post-stroke depression
- Encourage compliance with medication, especially advising how long medication can take to work
- Refer the stroke survivor to *Social Worker* or advise the *Physician* if you suspect a post-stroke depression



- Always educate patients and caregivers on post-stroke depression and available services, with the support of the *Social Worker* or physician

Remember, the timely identification and treatment of a depression is a critical component of stroke care due to the negative medical and rehabilitative outcomes associated with unmanaged depression.



## References

- American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Arlington, VA, American Psychiatric Association. Retrieved October 24, 2013 from [dsm.psychiatryonline.org](http://dsm.psychiatryonline.org).
- Canadian Mental Health Association. (2013). Depression. Retrieved November 18, 2013, from <http://www.cmha.ca/mental-health/understanding-mental-illness/depression/>.
- Canadian Mental Health Association. (2013) Depression in the Workplace. Retrieved November 18, 2013, from [http://www.cmha.ca/mental\\_health/depression-in-the-workplace/](http://www.cmha.ca/mental_health/depression-in-the-workplace/).
- Canadian Mental Health Association . (2013). Fast Facts about Mental Illness. Retrieved November 18, 2013 from <http://www.cmha.ca/media/fast-facts-about-mental-illness/>.
- Centre for Addictions and Mental Health (2012) What is Depression? [Brochure] Retrieved November 18, 2013, from [http://www.camh.ca/en/hospital/health\\_information/a\\_z\\_mental\\_health\\_and\\_addiction\\_information/depression/Pages/default.aspx](http://www.camh.ca/en/hospital/health_information/a_z_mental_health_and_addiction_information/depression/Pages/default.aspx).
- Dong JY, Zang YH, Tong J, and Qin LQ. (2011) Depression and Risk of Stroke: A Meta-analysis of prospective studies. *Stroke*. 43:32-37.
- Eskes G, Lanctot K on behalf of the Mood, Cognition and Fatigue following Stroke Writing Group. Mood, Cognition and Fatigue following Stroke Module 2015. In Lindsay MP, Gubitz G, Bayley M, and Smith EE (Editors), on behalf of the Canadian Stroke Best Practices and Advisory Committee. *Canadian Stroke Best Practice Recommendations, 2015*; Ottawa, Ontario Canada: Heart and Stroke Foundation.

Everett, B. (2009) What is Depression? Mood Disorders Society of Canada. Retrieved from <http://www.mooddisorderscanada.ca/documents/Consumer%20and%20Family%20Support/What%20is%20depression%20extended%20version%20English%20updated%200211.pdf>.

Hakim, AM. (2011) Depression, Strokes and Dementia: New Biological Insights into an Unfortunate Pathway. *Cardiovasc Psychiatry Neurol.* 2011; 2011: 649629. Published online 2011 December 15. doi: 10.1155/2011/649629 PMID: PMC3246693. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3246693/>.

Heart and Stroke Foundation of Ontario (2010). Tips & Tools for Everyday Living: A Guide for Stroke Caregivers. Retrieved from [http://www.heartandstroke.on.ca/site/c.pvl3leNWJwE/b.6194819/k.9B09/Tips\\_and\\_Tools.htm](http://www.heartandstroke.on.ca/site/c.pvl3leNWJwE/b.6194819/k.9B09/Tips_and_Tools.htm).

Mood Disorders Society of Canada (2011). Depression in the Elderly. Retrieved November 18, 2013 from <http://www.mooddisorderscanada.ca/page/resources>.

Pan A, Sun Q, Okereke O, Rexrode K, and Hu F (2011) Depression and Risk of Stroke Morbidity and Mortality: A Meta-analysis and Systematic Review. *JAMA*, Vol. 306, No. 11, pp. 1241–1249.

Salter, K., Mehta, S., Bhogal, S., Teasell, R., Foley, N., & Speechley, M. Post stroke depression. In R. Teasell, N. Hussein, R. Viana, M. Madady, S. Donaldson, A McClure, & M. Richardson (Eds.). (2013, August). *Stroke rehabilitation clinician handbook* (Section 18). London, ON: Evidence Based Review of Stroke Rehabilitation. Retrieved from [http://www.ebrsr.com/sites/default/files/chapter18\\_depression\\_final\\_16ed.pdf](http://www.ebrsr.com/sites/default/files/chapter18_depression_final_16ed.pdf)