

## **Description of the Hamilton Depression Rating Scale (HAMD) and the Montgomery-Asberg Depression Rating Scale (MADRS)**

The Hamilton Depression Rating Scale (HAMD) and the Montgomery-Asberg Depression Rating Scale (MADRS) are the two most commonly-used rating scales that assess the range of symptoms that are most frequently observed in patients with major depression. They are not diagnostic instruments, but are methods of comprehensively surveying the type and magnitude of symptom burden present, and are therefore considered to be measures of illness severity. Both scales have undergone a considerable amount of psychometric study and are accepted as valid standards of symptom outcome assessment in studies of major depression. Of the two scales, the HAMD was constructed earlier (1960) and the MADRS was more recently developed (1979).

Both of these scales were primarily developed as measurement tools to assess symptom change in studies of psychopharmacologic agents. Of the two scales, the HAMD has been more commonly used in antidepressant trials for pharmaceuticals, ECT and TMS, to assess change with acute treatment.

Each scale assesses a constellation of symptoms. In the case of the HAMD, the original scale proposed by Hamilton contained 17 items that were considered most consistent in detecting change. Other HAMD items were developed and added over time by Hamilton and other researchers. In general, the most commonly used forms of the HAMD are the original 17-item version and the later 24-item version. In the case of the MADRS, a smaller symptom set is used which is composed of only 10 items. Inspection of the attached “Comparison Table of MADRS and HAMD Depression Rating Scales” shows that there is overlap in the phenomenology of the symptom survey conducted by the HAMD and MADRS but there are also some differences. For instance, the HAMD gives more representation to the area of anxiety and physical symptom distress than the MADRS. The HAMD also surveys a wider range of purely psychiatric symptoms than are seen in the MADRS. Nevertheless, it is generally accepted that the HAMD and the MADRS are well correlated with each other. In the Neuronetics studies, the correlation coefficients for the MADRS and the HAMD instruments were large. In the all-randomized study population (N=325) at baseline the correlation coefficient for the MADRS and HAMD24 was **0.6199**, and for the MADRS and the HAMD17, it was **0.6347**.

The HAMD and the MADRS are each conducted as a semi-structured clinician-rated interview, however, the method of item scaling differs between the two instruments. The MADRS has a fixed scaling of seven points (from 0 through 6), while the scoring on the HAMD ranges across a smaller number of anchor points, and varies from item to item. Because of these differences, as might be expected, the MADRS generally reports a slightly greater variance than the HAMD for the total score. This was observed in the Neuronetics studies: in Study 44-01101, for the Active TMS groups, MADRS baseline SD = 5.99, HAMD24 baseline SD = 5.04, and HAMD17 baseline SD = 3.30, and for the sham TMS groups, MADRS baseline SD = 5.69, HAMD24 baseline SD = 4.85, and HAMD17 baseline SD = 3.54.

**Comparison Table of MADRS and HAMD Depression Rating Scales**

Symptom Domain	MADRS (10 Items)	HAMD (24 Items)
<b>Mood</b>	Depression (apparent) - 1 item Depression (reported) – 1 Item Loss of interest – 1 Item Suicidal ideation – 1 Item	Depression - 1 item Suicidal ideation – 1 Item
<b>Anxiety</b>	Tension – 1 Item	Psychic Anxiety – 1 Item Somatic Anxiety – 1 Item
<b>Sexual Function</b>		Reduced libido – 1 Item
<b>Appetite</b>	Reduced Appetite – 1 Item	Reduced Appetite – 1 Item Loss of weight – 1 Item
<b>Sleep</b>	Insomnia – 1 Item	Insomnia – 3 Items
<b>Functional Status</b>	Difficulty in activities – 1 Item	Work/Activities – 1 Item Agitation – 1 Item Retardation – 1 Item
<b>Ability to Think</b>	Concentration – 1 Item	
<b>Physical Symptoms</b>		Fatigue/Pain – 1 Item
<b>Hypochondriasis</b>		Physical complaints – 1 Item
<b>Diurnal variation</b>		**Diurnal symptoms – 1 Item
<b>General Psychiatric Distress</b>	Pessimism – 1 Item	**Depersonalization – 1 Item **Paranoid feelings – 1 Item **Obsessional symptoms – 1 Item **Helplessness – 1 Item **Hopelessness – 1 Item **Worthlessness – 1 Item Feelings of Guilt – 1 Item Insight into Illness – 1 Item

\*\* Additional items contained in the HAMD24 Item Scale and not in the HAMD17