



# Medical Assessment And Management Of Self-Injurious Behavior In The Person With Mental Retardation and Developmental Disabilities (MR/DD)

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## 1. Overview of Self-Injurious Behavior (SIB)

Self-injurious behavior occurs in three common situations: 1) behavioral complication of mental retardation, 2) as a symptom of Cluster “B” personality disorders, and 3) suicidality involved with depression. Cluster “B” personality disorders include borderline, histrionic or antisocial individuals who manifest problems with impulse control or emotional instability.

The clinician must manage this symptom according to the clinical situation of the person with SIB using a biomedical psychosocial approach. Some patients may exhibit all criteria, e.g., a mildly mentally retarded, depressed person with borderline personality disorder. The number of comorbidities may increase the difficulty of achieving therapeutic success. SIB is not limited to persons with mental retardation as persons with Cluster “B” personality disorders and normal intellect will engage in self-harm as a coping mechanism or as manipulative behavior.

## 2. Neurobiology of SIB

The neurobiology of SIB is undetermined although serotonergic systems have been implicated in producing these symptoms. Animal models do not exist for SIB that mimic human behavior. Suicide, the ultimate SIB, occurs in persons with diminished serotonergic markers in the neocortex. Functional and structural brain imaging studies fail to document specific lesions that produce SIB. This syndrome is not related to specific etiologies for mental retardation, e.g., Down’s syndrome, Wilson’s disease, etc., but rather is a behavioral consequence of the reduced intellectual capacity (1).

## 3. SIB in Persons with Intellectual Disability

**Incidence.** Self-injurious behavior is not a common problem in persons with mental retardation, i.e., less than 4% of all residents; however, these symptoms can produce serious patient injury and family distress (2), (3). Among persons with challenging behaviors, one-fourth will have SIB (28%). Although SIB can occur more

frequently in specific syndromes, e.g., Lesch-Nyhan, this behavior can occur in any developmental syndrome. Injuries to extremities, cauliflower ear from striking the head, facial injury and other wounds are evidence of old SIB. SIB occurs mostly in moderate to severely retarded persons. The appearance of SIB in mildly retarded persons suggests personality disorder or substance abuse including stimulants and hallucinogens.

**Etiology of SIB in Persons with MR/DD.** The causes of SIB include behavioral, psychiatric, and medical. The behavioral aspects of SIB are divided into three broad categories: 1) self-stimulation, 2) stress avoidance, and 3) learned behavior. Regardless of the psychological/behavioral antecedents to SIB, the clinician must exclude medical, psychiatric, and neurological causes for this behavior. Patients with MR/DD and SIB should have a meticulous evaluation by a psychiatrist, as well as a behavioral specialist to assess behavioral causes of the symptoms. The psychopharmacological model should be used in conjunction with the behavioral approach.

**Evaluation of Self-Injurious Behavior.** A detailed medical, psychiatric, and neurological evaluation is indicated for new onset SIB, reoccurrence of previous SIB, or dramatically increased symptoms of SIB (4). Common medical causes of SIB include pain, seizures, delirium, GI distress, bowel irregularity, menstrual pain or other medical problems. Age-dependent medical problems can produce SIB, including angina, nerve route pain, peripheral neuropathy, degenerative joint disease, menses-related discomfort, irritable bowel, sinusitis, allergies, and others. Medication-induced complications, such as gastritis from NSAIDs or myalgias from statins, can produce irritability and SIB. Therapy for minor medical problems, e.g., antihistamines, can worsen confusion and behavioral abnormalities. Pain produced by ear infections, sinus infections, dental disease, headaches, e.g., migraine; eye pain, e.g., glaucoma; can produce self-injurious behavior that targets the head, face, and neck (**See Head-Striking SIB Handout- DDMED 29**). Pain elsewhere in the body such as colonic distention, peptic ulcer disease, angina, degenerative joint disease, etc., may provoke or promote SIB of all types. Any patient with SIB requires a careful, complete medical evaluation. Individuals who strike the face or mouth require a dental exam. Individuals who pick at their eyes require a visit to the ophthalmologist.

The frequency, intensity, and targeting conditions of SIB provide helpful clues to etiology. Head banging may result from headaches, sinus pain, toothaches or hallucinations. Gouging at orifices suggests pain in that region, e.g., rectal digging

produced by hemorrhoids or rectal impaction. Paroxysmal SIB may result from angina, spasm or some other paroxysmal pain.

New onset of SIB requires a medical evaluation that includes vital signs, physical examination, and basic laboratory assessments that may include blood count, therapeutic medication levels, and urinalysis. Women of childbearing age need a careful review of menstrual history to exclude pregnancy and gynecological problems.

Neurological problems can provoke SIB. Simple or complex partial seizures can produce auras or post-ictal confusion that worsens SIB. Migraines, headaches, trigeminal neuralgia and other sources of neurological pain can provoke these symptoms. Chronic back disease, disc disease, or neuropathic pain will produce distress and anxiety that manifests as SIB. Elevated levels of antiepileptic medications can produce confusion and SIB (5).

Psychiatric problems can produce or worsen SIB. Depression, mania, distressing hallucinations, generalized anxiety, and other symptoms of anxiety disorders can exacerbate SIB. SIB can be produced by physical or sexual abuse that produces post-traumatic stress disorder in severely retarded individuals.

SIB is more common in moderate or severely retarded persons and the clinical assessment of these patients is complicated by their inability to communicate and their non-compliance with medical interventions. Common health conditions can evolve into serious or uncommon medical problems that produce significant distress and behavioral abnormalities because some individuals with intellectual disabilities do not report early symptoms. Dental abscesses, rectal impaction, sinusitis, etc., can develop in mentally retarded persons because they fail to report early symptoms to clinicians.

After the initial evaluation, chronic, persistent SIB requires medical re-evaluation when the frequency or intensity of the symptoms changes. Patients with chronic SIB should undergo periodic medical evaluation, i.e., at least yearly, to exclude other new treatable causes that may promote this behavior.

**Treatment of SIB.** The treatment of SIB combines behavioral management strategies along with treatment of potential underlying health problems. Empirical uses of medications including antibiotics, non-narcotic analgesics, etc., are appropriate when clinical conditions may exist that benefit from safe effective interventions, such as suspect sinusitis, pain etc. Antipsychotics and antidepressant

medication can be used when empirical data suggest the possibility of psychosis or depression. Benzodiazepines should be used with great caution because they have the potential for significant delirium (7).

The consensus therapeutic guidelines suggest second generation antipsychotics, anticonvulsants, and antidepressants as first line medications (8). Antipsychotic medications should be used when medications like valproic acid and sertraline are not effective. The SSRI's are recommended as a primary treatment option (9), (10).

Sedating medications rarely prevent or diminish SIB. First generation antipsychotics, benzodiazepines, and other sedatives should not be used for chronic treatment of SIB unless specific psychiatric diagnoses are identified. Behavioral interventions become the treatment of choice in persons with no treatable medical or psychiatric causes.

#### **4. Suicidality in Persons with MR/DD**

Suicidality is a form of SIB that occurs in depression and Cluster B personality disorders. Suicidality is seen in depression, mania, schizophrenia, and generalized anxiety disorders and about 10% of normal intellect individuals with these disorders will take their life over 20 years. The management of suicidality is treatment of underlying psychiatric disease or psychopathology. Suicidality is most likely in persons with mild or moderate MR. Any threat of self-harm should be carefully evaluated. Patients with a past history of suicide attempts are at greater risk for suicidal behavior. Suicidal gestures such as superficial slashing, tying ropes around the neck, attempting to leap from moving vehicles, require immediate evaluation for possible hospitalization.

#### **5. SIB in Persons with Personality Disorders**

The B Cluster personality disorder that includes borderline narcissistic and antisocial is associated with self-injurious behavior. Self-mutilation or impulsive self-injury is common in persons with borderline personality and to a lesser extent, those with antisocial personality disorders. Borderline personality disorder is more common in women while antisocial personality disorder is more common in males; especially men with a childhood history of conduct disorder. The borderline personality will self-mutilate to self-stimulate, while the antisocial personality disorder may self-injure to manipulate their circumstances, e.g., get out of jail. The presence of self-injurious does not suggest a personality disorder but rather the behavior is present in those individuals with other clinical features of Cluster B personality disorders. Persons with mild mental retardation have sufficient intellectual development to

warrant the diagnosis of personality disorder; however, those with moderate to severe mental retardation are unlikely to have sufficient intellectual development to produce these syndromes. Clinicians should avoid the diagnosis of personality disorders in persons with moderate or severe mental retardation because this diagnosis implies a certain degree of volition and controls that is rarely present in persons with moderate to severe mental retardation. The types of complex, psychological and interpersonal processes that produce personality disorders are rarely operational in persons with this level of intellectual disability.

Personality disorders are chronic conditions that require long-term psychotherapy and training. Completed suicide is frequent in these individuals with normal intellect. Therapy for personality disorders in a person with MR/DD can be quite challenging.

**Table 1**  
**Common Types of SIB in Persons**  
**with Moderate to Severe MR**

1. Slapping
2. Biting or Chewing
3. Punching
4. Pinching
5. Digging
6. Gouging

**Table 2**  
**Evaluation of Slapping Head or Face**

- Complete ENT\* and Eye Exam
- Nasal Sinus Films
- Dental Exam
- Ophthalmology consult if targeting eyes

\*Ear, Nose and Throat

## REFERENCES

1. Aman MG, Arnold LE, Armstrong SC. Review of serotonergic agents and perseverative behavior in patients with developmental disabilities. *Ment Retard and Devel Dis Research Reviews* 1999;5:279-289.
2. Ghaziuddin M. Behavioral disorder in the mentally handicapped: the role of life events. *British Journal of Psychiatry* 1998;152:683-686.
3. Bouras N, Drummond C. Behavior and psychiatric disorders of people with mental handicaps living in the community. *Journal of Intellectual Disability Research* 1992;36:349-357.
4. Ryan R, Sunada K. Medical evaluation of persons with mental retardation referred for psychiatric assessment. *General Hospital Psychiatry* 1997;19:274-280.
5. Kalachnik JE, Hanzel TE, Harder SR, et al. Antiepileptic drug behavioral side effects in individuals with mental retardation and the use of behavioral measurement techniques. *Mental Retardation* 1995;33(6):374-382.
6. Reiss S, Aman MG. The international consensus process on psychopharmacology and intellectual disability. *Journal of Intellectual Disability Research* 1997; 41(6):448-455.
7. Osman OT, Loschen EL. Self-injurious behavior in the developmentally disabled: pharmacologic treatment. *Psychopharmacol Bull.* 1992;28:439-449.
8. Special Issue. Expert Consensus Guidelines Series: Treatment of psychiatric and behavioral problems in mental retardation. *American Journal on Mental Retardation* 2000;105(3):165-188.
9. Ricketts RW, Goza AB, Ellis CR, et al. Fluoxetine treatment of severe self-injury in young adults with mental retardation. *J Am Acad. Child Adolesc. Psychiatry* 1993;32(4):865-869.
10. Ruedrich S, Swales TP, Fossaceda C, et al. Effect of divalproex sodium on aggression and self-injurious behavior in adults with intellectual disability: a retrospective review. *Journal of Intellectual Disability Research* 1999;43(2):105-111.