

# N ON-SUICIDAL SELF-INJURIOUS BEHAVIOR

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## Introduction

Non-suicidal self-injurious behavior (NSIB) is defined as “deliberate, direct destruction or alteration of body tissue, without conscious suicidal intent but resulting in injury severe enough for tissue damage to occur” (Gratz, 2003). NSIB has many names, including self-injury, self-harm, deliberate self-harm, parasuicide, and self-mutilation. NSIB poses a dire risk for adolescents because of its link to suicide, which ranks as the third most common cause of death among adolescents (Miller, Rathus & Linehan, 2007). The information contained in this section addresses self-injurious behavior without the intent to die. For additional information on self-inflicted injury which accompanies a specific intent to die, see the “Youth Suicide” section of the *Collection*.

NSIB occurs without regard for age, gender, ethnicity, or socioeconomic status; however, much research is centered on adolescents, as this behavior tends to begin during teen years (Boesky, 2002). The rate of NSIB is reported to be between 12 and 35% among older adolescents and college students (Miller, Rathus & Linehan, 2007). The rate of NSIB in a sample of adolescents from the United Kingdom is reported to be 11.2% for females and 3.2% for males (James, Taylor, Winmill & Alfoadari, 2008). There is also evidence that these rates may be rising (Muehlenkamp, 2006). Self-injurious behavior typically lasts five to ten years, but may persist for longer periods if not properly treated (Conterio & Lader, 1998).

It is not always clear whether an act of self-harm should be categorized as NSIB or as a suicide attempt because the intended outcome is not certain. Suicide attempts are not always lethal and NSIB may be lethal (Miller, Rathus & Linehan, 2007). Furthermore, this distinction may not be important since NSIB is one of the strongest predictors of future suicide attempts (Miller, Rathus & Linehan). As a result, many suicide researchers consider NSIB along with suicidal ideation, suicide attempts, and completed suicide to be occurring along a spectrum and group these behaviors into the category of suicidal behavior (Miller, Rathus & Linehan). This can be misleading and problematic when it comes to treatment, since suicide attempts and NSIB are thought to serve different functions, with suicide being used as a way to escape from pain and NSIB used to regulate emotion (Miller, Rathus & Linehan).

## Causes and Risk Factors

Researchers have identified many risk factors associated with NSIB. These risk factors are outlined in Table 1.

Concerning gender, in a study of adolescents in a community sample, females reported more self-harm ideation than males (53% versus 28%) and more NSIB (20% versus 9%) than males (Laye-Gindhu & Schonert-Reichl, 2005).

### **Associated Psychopathology**

Adolescents with depressed mood and high anxiety are at higher risk for NSIB (DiFilippo et al., 2003). Adolescents diagnosed with oppositional defiant disorder (ODD), major depressive disorder, and dysthymia are also significantly more likely to engage in NSIB than adolescents without these particular psychiatric diagnoses (DiFilippo et al.).

Research conducted on adults indicates that NSIB also occurs in 80% of those diagnosed with Borderline Personality Disorder (BPD) (Miller, Rathus & Linehan, 2007). The characteristics of individuals with BPD and those who engage in repeated acts of NSIB overlap substantially. For example, Linehan (1993) asserts that adults diagnosed with BPD are particularly prone to hopelessness and may see suicidal behavior, with or without intent to die, as the only option for managing their chaotic and distressing lives. For some adolescents who engage in NSIB, development of BPD may carry over into adulthood (American Academy of Child & Adolescent Psychiatry [AACAP], 1999), although some youth will outgrow their self-injurious behavior.

Table 1

**Risk Factors Associated with NSIB**

Childhood Sexual Abuse	Parental Illness or Disability
Childhood Physical Abuse	Emotional Reactivity
Neglect	Emotional Intensity
Family Violence During Childhood	Hopelessness
Family Alcohol Abuse	Loneliness
Childhood Separation and Loss	Anger
Poor Affective Quality and Security with Childhood Attachment Figures	Risk Taking and Reckless Behavior
Single Parent Family	Alcohol Use

Sources: Gratz, 2003; DiFilippo, Esposito, Overholser & Spirito, 2003; Laye-Gindhu & Schonert-Reichl, 2005.

**Familial and Biological Causes**

In a review of the literature on NSIB and BPD, Crowell, Beauchaine and Lenzenseger (2008) indicate that there is a clear familial component to NSIB, but point out that it is still uncertain whether this is due to genetics, environment, or both. Relatives of individuals who have engaged in NSIB are three times more likely to engage in such behavior themselves (Crowell, Beauchaine & Lenzenseger). Additionally, Linehan (1993) states that patients diagnosed with BPD often grow up in environments where emotional expression goes unrecognized or is punished, the outcome being that emotional regulation skills are underdeveloped. The significant overlap between those who engage in NSIB and those diagnosed with BPD suggests that invalidating childhood environments put youth at risk for NSIB.

There is consistent evidence to support a genetic component for impulsivity, affective instability, and aggression—all risk factors for NSIB (Crowell, Beauchaine & Lenzenseger, 2008). Research conducted on the possible causes of NSIB has focused on the neurotransmitters serotonin and dopamine; however, these studies have largely focused on adult populations (Crowell, Beauchaine & Lenzenseger). One study of self-injuring adolescents found reduced levels of peripheral serotonin and others have found decreased dopamine level in suicide attempters (Crowell, Beauchaine & Lenzenseger). Additionally, studies have supported the role of the neurotransmitters acetylcholine and norepinephrine in emotional stability (Crowell, Beauchaine & Lenzenseger).

**Assessment**

There is no diagnosis for NSIB included in the American Psychiatric Association’s *Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*. Nevertheless, assessment of NSIB is a critical and important component of any psychological assessment (Lloyd-Richardson, 2008; Nock, Teper & Hollender, 2007). Recent years have seen the development of a number of questionnaires and semi-structured and structured interviews that aid in the assessment of the prevalence, frequency, severity and function of self-injurious behavior (e.g., Self-Injurious Thoughts and Behaviors Interview, Self-harm Behavior Questionnaire, Lifetime-Suicide Attempt Self-Injury (L-SASI) Interview) (Lloyd-Richardson). While parents are an important source of information, research has shown that parents tend to underreport their child’s suicidal ideation and NSIB, making direct assessment critical (Nock, Holmburg, Photos & Michel, 2007). Mental health professionals should inquire about suicide ideation, suicide attempts, and NSIB with all adolescents in high-risk groups. Individuals who engage in NSIB do so for a wide variety of reasons and understanding these reasons is an important step in effective treatment, particularly since such analysis guides treatment (Lloyd-Richardson). Suggested assessment tools for NSIB are included in Table 2.

Table 2

**Suggested Assessment Tools for Non-suicidal Self-Injurious Behavior**

Measure Type	Name of Measure	What is Measured
Structured Interview	Self-Injurious Thoughts and Behaviors Interview	The presence and frequency of suicidal behavior, including NSIB
Self-Report	Suicidal Behavior Questionnaire (SBQ-14, a 14-item version for adolescents, and SBQ-C, a 4-item version for children)	Suicidal ideation & behavior and NSIB
Self-Report	Functional Assessment of Self-Harm	Frequency, type and intent of NSIB

Sources: Nock Holmburg, Photos & Michel, 2007; Goldston & Compton, 2007.

**Treatment**

NSIB represents a pattern of behavior, rather than a single isolated event, and is perpetuated through both positive and negative reinforcement (Linehan, 1993; Gratz, 2003; Miller, Rathus & Linehan, 2007). For example, NSIB is positively reinforced when the adolescent experiences a sense of control or relaxation following self-harm (Gratz). NSIB is negatively reinforced when the adolescent experiences distressing or unpleasant emotions and or thoughts—for example, sadness, loneliness, emptiness, emotional pain and self-hatred—following self-harm (Gratz, Linehan). Therefore, Miller, Rathus, and Linehan suggest that interventions aimed at reducing NSIB should focus on strengthening emotion regulation skills. This approach varies from interventions aimed at reducing suicidal behavior, which instead helps the adolescent identify reasons for living. Proper assessment is critical to effectively treating NSIB.

**Promising Treatment Approaches**

Historically, youth who self-harm, chronic suicide attempters, and individuals with BPD have been considered highly resistant to treatment (Muehlenkamp, 2006). In recent years, however, there have been major developments for adolescents diagnosed with these disorders. A review of the literature outlining treatment for suicidal behavior (suicide ideation, suicide attempts, and NSIB) shows that treatments which address the problem behaviors directly consistently outperform treatments that conceptualize suicidal behavior as a symptom and treat the underlying psychopathology (Miller, Rathus & Linehan, 2007). The treatments outlined in the following paragraphs have shown promise in treating NSIB. Table 3 lists these interventions.

Table 3

**Treatments for Non-suicidal Self-Injurious Behavior**

What Works	Description
Currently no treatments meet these criteria.	
What Seems to Work	Description
Cognitive Behavioral Therapy (CBT)	CBT involves providing skills designed to assist youth with affect regulation and problem solving
Dialectical Behavior Therapy (DBT)	DBT is similar to CBT but also involves an emphasis on acceptance strategies.

Sources: Commission on Youth Graphic of references listed in text.

Cognitive Behavioral Therapy (CBT) is one treatment for NSIB that has been tested. Two promising types of CBT have been studied in greater depth: Problem Solving Therapy and Dialectical Behavioral Therapy (DBT) (Muehlenkamp, 2006). Research on the effectiveness of Problem Solving Therapy in treating NSIB shows promise, but the study results are too sparse to support a strong conclusion regarding its effectiveness (Muehlenkamp). DBT has been demonstrated as effective for the treatment of BPD, suicidality, and NSIB among adults and thus has received a lot of attention. When treating adolescents who

engage in suicidal behavior, with and without intent to die, practitioners should note that DBT has consistently led to significant reductions in self-injurious behavior, but has not demonstrated significantly better outcomes than those in the comparison group (Nock, Teper & Hollender, 2007). Thus, although DBT is an effective treatment for adults with NSIB and BPD, its effectiveness for children and adolescents is still being tested.

### **Pharmacological Treatment**

Medications such as selective serotonin reuptake inhibitors (SSRIs) and opiate antagonists have been studied, but evidence which supports their effectiveness is inconclusive (Martinson, 1998). To date, it appears that the most promising treatments are high-dose SSRIs and, in some cases, atypical neuroleptics (Martinson). Because evidence is so limited, pharmacological treatment of NSIBs is not considered an evidence-based treatment at this time. A more detailed discussion of the use of antidepressants in treating children and adolescents is included in the "Antidepressants and the Risk of Suicidal Behavior" section of this *Collection*.

### **Hospitalization**

Historically, hospitalization has been the standard treatment for NSIB, but it is the most expensive option, and evidence of its effectiveness has not been consistently demonstrated (Muehlenkamp, 2006). Research focused on suicidal ideation and suicide attempts indicates that the most dangerous time for youth following hospitalization for suicidal behavior is between six months to a year, during which 10 to 18% of youth will attempt suicide (Prinstein, Nock, Simon, Aikins, Cheah, & Spirito, 2008). As a result, outpatient mental health providers are the most likely choice for youth, with hospital admissions typically reserved for adolescents with NSIB who express intent to die (Muehlenkamp).

### **Recommended Elements of Treatment**

Clinical researchers have identified treatment components for NSIB that recur in the research. While these treatment elements do not have the clinical trials and studies that classify them as evidence-based, they do represent an emerging clinical consensus. These treatment elements are described in this section.

An important treatment element for youth who have engaged in NSIB is the establishment of a strong therapeutic alliance between the youth and the service provider. Once the alliance is formed, an important treatment goal is to reduce and ultimately eliminate NSIB by replacing them with healthier coping skills (Muehlenkamp, 2006). Another recommended component is the establishment and maintenance of meaningful connections between adolescents and their families (Muehlenkamp). However, the treatment trials of DBT for adolescents have not consistently included a family component and, to this point, there has not been a study comparing DBT for adolescents with and without the family therapy component. Thus, data regarding the importance of family involvement in the treatment of adolescents who engage in NSIB is still being gathered.

## **Cultural Considerations**

In a review of the literature on ethnic differences among self-harming adolescents, researchers in Great Britain found no significant difference between the rate of NSIB among Asian and Caucasian adolescents (Goddard, Subotsky & Fombonne, 1996). A study comparing the ethnic and racial distribution of adolescents who reported NSIB and the ethnic and racial distribution in the population found no significant difference between the rates at which adolescents from various ethnic groups were referred to for psychiatric services following acts of deliberate self-harm (Goddard, Subotsky & Fombonne). In the United States, there are studies which have reported that African American and Latino adolescents have higher rates of suicide attempts than Caucasian adolescents, but it is unclear whether this holds true for NSIB (Spirito, 2003). Overall, the data is too sparse to reach any conclusions regarding differential rates of NSIB among adolescents of different racial and ethnic groups.

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### **Additional Resources**

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<http://www.cripsib.com/documents/Dev%20Psych%20Dis.pdf>.

### **Organizations**

#### **American Self-Harm Information Clearinghouse (ASHIC)**

<http://www.selfinjury.org/indexnet.html>

#### **American Academy of Child & Adolescent Psychiatry (AACAP)**

Self-Injury in Adolescents

[http://www.aacap.org/cs/root/facts\\_for\\_families/selfinjury\\_in\\_adolescents](http://www.aacap.org/cs/root/facts_for_families/selfinjury_in_adolescents)

#### **Cornell Research Program on Self-Injurious Behaviors (CRPSIB)**

[www.cripsib.com](http://www.cripsib.com)

#### **The Cutting Edge: Non-Suicidal Self-Injury in Adolescence**

[www.actforyouth.net/documents/NSSI-Dec09.pdf](http://www.actforyouth.net/documents/NSSI-Dec09.pdf)

#### **Focus Adolescent Services**

<http://www.focusas.com/SelfInjury.html>

#### **Mental Health America (MHA) (formerly National Mental Health Association)**

2000 N. Beauregard Street, 6th Floor - Alexandria, VA 22311

<http://www.mentalhealthamerica.net>

#### **S.A.F.E. Alternatives (Self-Abuse Finally Ends)**

800-DON'T CUT (366-8288)

<http://www.selfinjury.com/index.html>

#### **Self-Injury Foundation**

P.O. Box 952 – South Haven, MI 49090

<http://www.selfinjuryfoundation.org>