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EATING DISORDER SYMPTOM SEVERITY SCALE

ADMINISTRATION MANUAL

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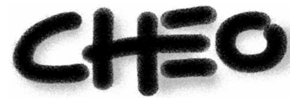

EATING DISORDER SYMPTOM SEVERITY SCALE (EDS^3)©

A TREATMENT MONITORING AND DECISION-SUPPORT TOOL

DESIGNED BY:

KATHERINE A. HENDERSON, PH.D.

ANNICK BUCHHOLZ, PH.D.

JULIE PERKINS, PH.D.

WENDY SPETTIGUE, M.D.

ADMINISTRATION MANUAL

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We would like to recognize the contribution of John S. Lyons, Ph.D., whose *Childhood Severity and Acuity of Psychiatric Illness Scales* (Lyons, 1998) and *Child and Adolescent Needs and Strengths Measure* (Lyons, 1999) were the inspiration for the design and structure of the EDS^3. Dr. Lyons graciously offered to review our measure and provided invaluable insight into its design and development.

We are excited to begin a partnership with treatment centres throughout the province in Ontario which will include the EDS^3 as a central measure for treatment monitoring and outcomes management.

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Katherine A. Henderson, PhD, C. Psych.
Annick Buchholz, PhD, C. Psych.
Julie Perkins, PhD, C.Psych. (Sup. Prac.)
Wendy Spettigue, M.D., FRCPC

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INTRODUCTION

While rates of disordered eating in youth are rising (Jones, Bennett, Olmsted, Lawson, & Rodin, 2001; Reijonen, Pratt, Patel, & Greydanus, 2003), there continues to be a dearth of information on the effectiveness of treatment for eating disorders. This is partly due to inadequate follow-up measurement of patients (Zipfel et al., 2002). Current measures are dominantly in a self-report or interview format [e.g., (the EAT; Garner, Olmsted, Bohr, & Garfinkel, 1982), (the EDE; Fairburn & Cooper, 1993), (the SIAB; Fichter & Quadflieg, 1999)], and are not well-suited to monitoring purposes. Interviews can require extensive training and be lengthy to complete (Carter, Stewart, & Fairburn, 2001). Self-report measures, though less time-consuming and better standardized, can be associated with underreporting due to the denial that is characteristic of eating disorders (Fairburn & Beglin, 1994). It is essential that an adequate measure of eating disorder behaviours and symptoms be developed for the regular monitoring of illness severity and treatment progress.

The *Eating Disorder Symptom Severity Scale* (EDS^3) was created for this purpose. It is modelled on the *Childhood Severity and Acuity of Psychiatric Illness Scales* (Lyons, 1998) and the *Child and Adolescent Needs and Strengths Measure* (Lyons, 1999) which have been demonstrated to be effective in reforming decision making for residential treatment (Lyons, Libman-Mintzer, Kisiel, & Shallcross, 1998) and in quality improvement in crisis assessment services (Lyons, Kisiel, Dulcan, Cohen, & Chesler, 1997). The EDS^3 is the first and only measure of its kind designed to achieve similar improvements in the field of eating disorders.

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Scale Overview

The *Eating Disorder Symptom Severity Scale (EDS^3)* is designed to be used by health care practitioners to assess the severity of a youth's eating disorder illness and to track treatment progress. It aims to function as a monitoring tool. It is not intended to be used as a means of assessing and/or diagnosing eating disorders. Rather, its purpose is to provide an overall description of eating disorder symptoms and their severity levels over a specific time period.

Certification is required in order to use the EDS^3. Certification involves the successful completion of a brief training session. Training must be provided for the EDS^3 in order to respect the copyright, and to ensure that the EDS^3 is administered accurately and consistently across health professionals and settings. The EDS^3 is available through a 'train the trainer model', and the manual, item booklet, and rating sheet can be found at the following website: www.praedfoundation.org. Please contact the lead author, Dr. Katherine Henderson, C.Psych., at Henderson_k@cheo.on.ca regarding training opportunities.

As the EDS^3 explores cognitive as well as behavioural symptoms, it relies heavily on the health professional's clinical judgment and knowledge of the youth in question. This judgment and knowledge should be derived from a variety of sources including casefile progress notes, assessment reports and measures, individual and/or group therapy sessions, parent interviews, etc. It is in the nature of eating disorders to be secretive and sometimes present contradicting information. For example, a youth often does not want to admit to bingeing or purging because of the shame associated with these behaviours. While s/he may deny doing either in an individual interview, parents might indicate that they suspect these behaviours are happening daily at home. It is up to the clinician to explore the issue thoroughly and ultimately decide which the most appropriate rating is. A clinician is expected to consider the input of a youth and his or her parents, but the clinician is the one ultimately responsible for the final rating. This version of the EDS^3 is designed to be completed by clinicians with expertise in eating disorders. Future research projects will explore the feasibility of a youth, adult, and parent measure.

The EDS^3 is meant to serve as a specialized tool for eating disorders and therefore does not replicate information collected within the *Childhood Severity and Acuity of Psychiatric Illness Scales* (Lyons, 1998).

The EDS^3 may be administered for the purpose of guiding treatment recommendations to ensure a good match between severity and level of care offered. The EDS^3 may also be administered repeatedly so that a health professional may monitor progress in eating disorder symptom severity. As symptoms can fluctuate significantly during the course of the illness, the EDS^3 has been designed with sufficient sensitivity to change so that it can be administered regularly, at an interval as short as one week.

The EDS^3 was conceptualized and validated as a monitoring instrument to be used with children and youth diagnosed with eating disorders and between the ages of 10 and 18 years. Future, research will determine the validity of this measure in an adult population.

The structure of the EDS^3 is described below. There are four general domains evaluated: (1) eating disorder behaviours, (2) eating disorder cognitions, (3) eating disorder anxiety, and (4) treatment progress. The first domain is designed to capture two separate types of behaviours: (a) behaviours consistent with a diagnosis of anorexia (AN-behaviours) and (b) behaviours consistent with a diagnosis of bulimia nervosa (BN-behaviours). The second domain reflects the thoughts and cognitions that are consistent with an eating disorder diagnosis. The third domain investigates several different forms of anxiety as they pertain to eating disorders. The final domain pertains to dimensions of treatment participation, motivation, and recovery. Item descriptions for each domain follow in the next section of the manual. All items employ a 4-point answer scale with the 4 ratings usually reflecting the following severity levels (there is some variance in how these levels are used for the treatment progress subscale): a rating of *0* indicates an absence of the specific behaviour or cognition, a rating of *1* reflects a mild degree of severity for the behaviour or cognition, a rating of *2* reflects a moderate degree of severity for the behaviour of cognition, and a rating of *3* reflects a severe degree of severity for the behaviour or cognition.

EATING DISORDERED BEHAVIOURS

1. Food restriction
2. Binge eating
3. Vomiting
4. Excessive exercise

EATING DISORDERED COGNITIONS

5 Body image dissatisfaction

6. Body image distortion

7. Fear of gaining weight and/or becoming fat

8. Importance of appearance to self-esteem

9. Preoccupation with food and weight

EATING DISORDER ANXIETY SUBSCALE

10. Food anxiety

11. Eating rituals

12. Social anxiety related to eating/body image

TREATMENT PROGRESS SUBSCALE

13. Motivation for treatment

14. Cooperation during treatment

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15. Distorted beliefs about treatment
16. Ability/Hope for recovery

ITEM DEFINITIONS

Below are the definitions for the EDS^3 items. The descriptions for the various item category levels are meant to guide the health professional. It is not expected that a youth's illness will conform perfectly to any given level.

SUBSCALE 1: EATING DISORDERED BEHAVIORS

1. Food Restriction

This item asks you to rate how much and how regularly the youth eats. When answering, compare the youth's eating habits to those of same-aged peers with similar activity levels. For example, a youth who is very athletic and regularly participates in sports needs to eat more than a youth with no athletic activities.

0 **No restriction.** Eats all meals. Does not have urges to restrict. May sometimes miss a meal but makes up for it throughout the day. Eats a wide variety of food without difficulty.

1 **Mild restriction.** May sometimes skip a meal and/or refuse certain foods (e.g., cuts out chips, ice cream). Has occasional urges to restrict, but is generally able to cope and resist them. Not hiding food. Pays attention to fat and/or caloric content of foods. May sometimes require support and supervision to be able to eat specific foods and/or finish required meals.

2 **Moderate restriction.** Often skips meals and/or refuses certain food groups (e.g., cuts out chips, ice cream, no longer eats meat). Strong urges to restrict but is sometimes able to cope and resist them. May often hide food. Diets, counts calories, etc. Often refuses or is unable to finish required meals. Requires support and supervision for all meals.

3 **Severe restriction.** Regularly skips most meals. Refuses a wide variety of food groups (e.g., cuts out chips, ice cream, meats, dairy, sugar, carbohydrates). Has strong urges to restrict which are constantly present. May be regularly hiding food. Extreme dieting and/or calorie counting. Regularly refuses or is unable to finish required meals. Restriction occurs even with required support and supervision.

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2. Binge Eating

This item explores binge eating, which is the tendency to eat large amounts of food within a short period of time (i.e., within two hours). The term *large* must be used carefully, as some youths with eating disorders consider eating a few cookies to be a large amount of food. Instead, consider it to be a large amount of food when the youth eats much more food than would typically be eaten by a peer of the same age, within the same time frame and under similar circumstances. Youths who binge can sometimes feel out of control, guilty and worthless.

0 **No binge eating.** Does not have any urges to binge and does not binge. Can eat food in varying portion sizes without much thought (i.e., may eat more or less depending on social setting, mood, hunger, etc.)

1 **Mild binge eating.** Has occasional urges to binge but is generally able to cope and resist them. May sometimes binge (i.e., less than weekly).

2 **Moderate binge eating.** Has strong urges to binge but is sometimes able to cope and resist them. The desire to stop binge eating comes and goes. Binges often (i.e., weekly). Requires support and supervision.

3 **Severe binge eating.** Has strong urges to binge, which are constantly present. Generally unable to resist them. Youth may not want to stop binge eating behaviours. Binges regularly (i.e., daily). Binges even with required support and supervision.

3. Vomiting

This item assesses vomiting: how often the youth makes him/herself throw up in order to control body weight. This includes rumination, which involves bringing food back up to spit it out or swallow it again.

0 **No vomiting.** Does not have any urges to vomit and/or ruminate and does not vomit and/or ruminate.

1 **Mild vomiting.** Has occasional urges to vomit and/or ruminate but is generally able to cope and resist them. May sometimes vomit and/or ruminate (i.e., less than weekly).

2 **Moderate vomiting.** Has strong urges to vomit and/or ruminate but is sometimes able to cope and resist them. The desire to stop vomiting and/or ruminating comes and goes. Vomits and/or ruminates often (i.e., weekly).

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3 **Severe vomiting.** Has strong urges to vomit and/or ruminate, which are constantly present. Generally unable to resist them. Youth may not want to stop vomiting and/or ruminating. Vomits and/or ruminates regularly (i.e., daily).

4. Excessive Exercise

This item looks at excessive exercise. Exercise is considered *excessive* when it is only about losing weight, when it is to maintain or create a certain body shape, when it occurs on a rigid schedule, and/or when it is no longer about enjoyment. (Note: an elite athlete may exercise a lot, but it is not for weight loss and includes enjoyment and so it is *not excessive.*)

0 **No Exercise.** Does not have any urges to exercise. Does not exercise to control body weight/shape

1 **Mild exercise.** Has occasional urges to exercise but is generally able to cope and resist them. May sometimes exercise to make up for eating or to control body weight/shape (i.e., less than weekly).

2 **Moderate exercise.** Has strong urges to exercise but is sometimes able to cope and resist them. The desire to exercise comes and goes. Exercises often to make up for eating or to control body weight/shape (i.e., weekly). Requires support and supervision.

3 **Severe exercise.** Has strong urges to exercise. These urges are constantly present. Generally unable to resist them. Youth may not want to stop exercising. Exercises regularly to make up for eating and/or to control body weight/shape (i.e., daily). Engages in excessive exercise even with support and supervision.

SUBSCALE 2: EATING DISORDERED COGNITIONS

5. Body Image Dissatisfaction

This item examines how much the youth likes his/her body's shape, size and/or appearance.

0 **No body image dissatisfaction.** Generally feels happy with body shape, size and/or appearance. Recognizes body's positive features and makes occasional positive comments about body.

1 **Mild dissatisfaction.** Sometimes feels unhappy with body shape, size and/or appearance. Recognizes body's positive features but makes occasional negative comments about body.

2 **Moderate dissatisfaction.** Often feels unhappy with body shape, size and/or appearance. Has strong difficulty identifying body's positive features, and makes frequent negative comments about body. May lead to changes in outward appearance (e.g., refusing to wear a bathing suit, suddenly dressing in baggy clothes, or at the other extreme wearing tight-fitting clothing to expose certain body parts).

3 **Severe dissatisfaction.** Consistently feels unhappy with body shape, size and/or appearance. Unable to identify any positive body features. Makes regular negative comments about body. Usually leads to changes in outward appearance (e.g., refusing to wear a bathing suit, suddenly dressing in baggy clothes, or at the other extreme wearing tight-fitting clothing to expose certain body parts). May lead to behaviours such as constant weighing and checking body in mirrors, as well as poking, prodding, and/or measuring body parts. May make extreme comments, i.e. desire to cut off fat body parts; fat dripping from body.

6. Body Image Distortion

This item explores the youth's ability to see his/her own body shape and size the same as it appears to others. When a youth's view of his/her body is distorted, this may be observed in various ways. For example, the youth might say s/he is "fat or obese" when s/he is in fact underweight or normal weight. S/he might comment on his/her "huge stomach" when it is actually flat or hollow. S/he might draw attention to the "fat that jiggles, bulges or drips off" when s/he is merely skin and bones or normal weight. Distortion can apply to the whole body or just to specific body parts (e.g., stomach, thighs).

0 **No body image distortion.** Sees whole body or specific body parts the same as they appear to others. For example, realises that s/he is extremely underweight. May like being underweight and fear gaining weight, but is truly able to see that s/he is extremely underweight.

1 **Mild distortion.** Sometimes sees whole body or specific body parts as slightly larger than they appear to others (i.e., distortion comes and goes).

2 **Moderate distortion.** More often than not, sees whole body or specific body parts as larger than they appear to others.

3 **Severe distortion.** Unable to see whole body or specific body parts the same as they appear to others. For example, sees whole body or specific body parts as very fat even though s/he is medically underweight.

7. Fear of Gaining Weight and/or Becoming "Fat"

This item investigates the youth's intensity of fears about gaining weight and/or becoming "fat".

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0 **No fear of gaining weight and/or becoming "fat".** Accepts body's natural size. Does not fear gaining weight and/or becoming "fat".

1 **Mild fear of gaining weight and/or becoming "fat".** Accepts need to gain weight and/or move toward/maintain normal weight range. Sometimes has passing fears about gaining weight and/or becoming "fat".

2 **Moderate fear of gaining weight and/or becoming "fat".** Sometimes accepts need to gain weight and/or move toward/maintain normal weight range. Often has intrusive fears of gaining weight and/or becoming "fat". Fears can trigger certain behaviours such as: panic, crying and anger (especially at meals).

3 **Severe fear of gaining weight and/or becoming "fat".** Unable to accept need to gain weight and/or move toward/maintain normal weight range. Almost always has intrusive and irrational fears of gaining weight and/or becoming "fat". Fears trigger certain behaviours such as: panic, crying and anger (especially at meals). May see all others as desiring to make them "fat".

8. Importance of Appearance to Self-Esteem

Self-esteem is the opinion a youth has about him/herself, how s/he values him/herself as a person. Sometimes when a youth has an eating disorder, the way s/he feels about him/herself depends a great deal on his/her appearance. At the extreme, nothing other than the way s/he look matters. When a youth does not have an eating disorder, how s/he feels about him/herself usually depends on many things: how s/he is at school, at work, with his/her family and friends, his/her talents and hobbies, etc. This item looks at the importance of appearance to self-esteem. **Do not rate** the youth's level of self-esteem: instead, rate how important appearance is to the youth's self-esteem.

0 **No importance of appearance to self-esteem.** The way the youth feels about him/herself depends on many things (e.g., school, friends, work, family, hobbies). Appearance is only one of those many things.

1 **Mild importance of appearance to self-esteem.** The way the youth feels about him/herself depends on many things (e.g., school, friends, work, family, hobbies), however appearance plays an important role.

2 **Moderate importance of appearance to self-esteem.** The way the youth feels about him/herself depends mostly on appearance. Still able to see some value in other things (e.g., school, friends, work, family, hobbies) but considers them mostly unimportant.

3 **Severe importance of appearance to self-esteem.** The way the youth feels about him/herself depends entirely on appearance. Unable to see value in other things (e.g., school, friends, work, family, hobbies).

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9. Preoccupation with (Constantly Thinking About) Food and Weight

Youths with eating disorders often struggle with thoughts about food and weight. For example, imagine a voice inside a youth's head telling him/her that s/he must not eat this, or that s/he is "too fat". This voice is harsh and criticizing. It compares his/her appearance to others and tells him/her that s/he is simply are not good enough. These thoughts are like a mean and cruel 'eating disorder voice' CD running on repeat in his/her head. Sometimes it runs constantly without stopping and makes it difficult to focus on anything else. It can trigger intense feelings of distress and failure.

0 **No preoccupation with food and weight.** Does not have thoughts about food and weight unless in the normal context of everyday life (e.g., thinks about eating when hungry). Thoughts about food and weight do not interfere with daily functioning.

1 **Mild preoccupation with food and weight.** Sometimes has thoughts about food and weight. Thoughts last a short period of time and do not usually interfere with daily functioning (e.g., still able to push thoughts aside to focus on other activities). Youth has significant relief from the thoughts (i.e., the 'eating disorder voice' CD plays sometimes, more often than not it is off).

2 **Moderate preoccupation with food and weight.** Often has thoughts about food and weight. Thoughts may last for a long period of time and may interfere with daily functioning (e.g., not always able to push thoughts aside to focus on other activities). Youth has moments of relief from the thoughts (i.e., the 'eating disorder voice' CD is sometimes on pause).

3 **Severe preoccupation with food and weight.** Consistently has thoughts about food and weight. Thoughts are so intense, irrational, and last for such long periods of time that youth has difficulty functioning in everyday life (e.g., cannot think about anything else). Thoughts are a constant pressure on the youth. There is no relief from the thoughts (i.e. the 'eating disorder voice' CD is always running).

SUBSCALE 3: EATING DISORDER ANXIETY

10. Food Anxiety

This item investigates challenging thoughts and anxious behaviours specifically related to planning meals and eating food. When a youth has an eating disorder, planning meals and eating meals may sometimes trigger anxiety, rigidity about type/quantity of food, fear, and anger.

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0 **No food anxiety.** Comfortable eating. Views food and meals as positive experiences (i.e., enjoys eating food in public, at social gatherings). Flexible about the amount and type of food eaten (i.e., normal eating that does not require following a meal plan).

1 **Mild food anxiety.** Sometimes feels anxious when required to plan meals and/or eat food. May be rigid or structured about quantity and/or type of food eaten. For example, may still need to follow a meal plan on occasion for reassurance. Or, may sometimes worry about eating specific foods (e.g., chips, ice cream).

2 **Moderate food anxiety.** Often feels anxious when required to plan meals and/or eat food. Often rigid or structured about quantity and/or type of food eaten. For example, needs a meal plan to feel secure, has trouble changing the meal plan, and/or is fearful of some foods.

3 **Severe food anxiety.** Consistently anxious when required to plan meals and/or eat food. Always rigid or structured about quantity and/or type of food eaten. For example, a meal plan is essential even though it does not feel reassuring or helpful. Youth may cry before/during/after meals, may worry about upcoming meals, and/or display angry, oppositional behaviours around food and meals.

11. Eating Rituals

This item is about eating rituals. Eating rituals are compulsive behaviours or rigid habits specifically related to food and eating. The youth typically needs to perform them and finds them extremely difficult to resist. There are a variety of eating rituals such as: having to eat at a specific time or at a specific rate (only taking a bite of food every 5 minutes), chewing mouthfuls of food a specific number of times before swallowing, chewing food and spitting it out (instead of swallowing it), crumbling food or cutting it into tiny pieces, not tolerating different kinds of food touching each other on a plate, hoarding food or collecting recipes, preparing or baking food for others but not eating it him/herself, eating food extremely rapidly.

0 **No eating rituals.** Has no eating rituals. Demonstrates flexibility in preparing and eating food.

1 **Mild eating rituals.** Sometimes takes part in eating rituals (i.e., less than weekly). Actively works on stopping them. Always able to interrupt eating rituals when they are pointed out to him/her.

2 **Moderate eating rituals.** Often takes part in eating rituals (i.e., weekly). Sometimes works on stopping them. The desire to work on stopping eating rituals comes and goes.

3 **Severe eating rituals.** Consistently takes part in eating rituals (i.e., daily). Generally unable to stop them. Youth may not want to work on stopping eating rituals.

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12. Social Anxiety Related to Eating & Body Image

This item examines social anxiety as it relates to eating and body image. Youths with eating disorders are often fearful of contact with other people. They may have difficulty being themselves and feeling comfortable in the presence of others, even their loved ones (e.g., parents) when their bodies can be seen and/or food is involved. They are convinced that others are judging them as “fat”, “ugly”, etc.. Sometimes, they avoid places and/or situations in which they feel especially judged about their eating and/or body (e.g., eating in public, eating in a restaurant, going to a party, attending a family get-together).

0 **No social anxiety.** Does not feel socially anxious. Feels comfortable and relaxed around others, and can be him/herself. Can share thoughts, feelings and opinions without worrying what others are thinking. Feels at ease in most places and/or situations.

1 **Mild social anxiety.** Sometimes feels socially anxious about eating and body image. May have difficulty feeling comfortable and relaxed around others, and being him/herself. Sometimes has trouble sharing thoughts, feelings and opinions without worrying what others are thinking about their eating and/or body. Despite feeling afraid, usually tries to face even those situations in which s/he feels especially judged (e.g., eating in public, eating in a restaurant, going to a party, attending a family get-together).

2 **Moderate social anxiety.** Often feels socially anxious about eating and body image. More often than not, feels uncomfortable and cannot relax around others due to body image and food thoughts. Often worries about what others are thinking about his/her body and/or eating. May avoid certain situations in which s/he feels especially judged (e.g., eating in public, eating in a restaurant, going to a party, attending a family get-together).

3 **Severe social anxiety.** Consistently feels socially anxious about eating and body image. Unable to feel comfortable or relaxed around others due to body image and food thoughts. Worries all the time about what others are thinking about his/her body and/or eating. Avoids a number of places and/or situations in which s/he feels especially judged (e.g., eating in public, eating at a restaurant, going to a party, attending a family get-together).

SUBSCALE 4: TREATMENT PROGRESS

13. Motivation for Treatment

This item explores the extent to which the youth wants to get better. It also looks at feelings of guilt, which are commonly associated with recovery from an eating disorder.

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If the patient has not yet begun treatment please respond to the following question by considering their potential motivation for treatment.

0 **Consistent motivation.** Consistently motivated for change. Wants to get better and fully recover from the eating disorder. Feels happy and free to move towards health and away from the eating disorder (i.e., no guilt whatsoever associated with recovery).

1 **Frequent motivation.** Often motivated for change. More often than not, wants to get better. Sometimes feels guilty about moving towards health and away from the eating disorder.

2 **Occasional motivation.** Sometimes motivated for change. Sometimes wants to get better. Feels a lot of guilt about moving towards health and away from the eating disorder.

3 **No motivation.** No motivation for change. Does not want to get better. Feels comfortable with the eating disorder and does not want to move away from the eating disorder.

14. Cooperation During Treatment

This item investigates how cooperative the youth is during treatment. If the patient has not yet begun treatment please respond to the following question by considering their cooperation during the assessment.

0 **Consistent cooperation.** Consistently cooperates. Accepts and participates in treatment. Always engages in therapy. Actively works with team and family members in strategizing against the eating disorder. Accepts recommended support and supervision. Asks for support and supervision when needed.

1 **Frequent cooperation.** Often cooperates. More often than not, accepts and participates in treatment. Usually engages in therapy. When prompted, helps team and family members strategize against the eating disorder. Accepts recommended support and supervision. Sometimes able to ask for support and supervision.

2 **Occasional cooperation.** Sometimes cooperates. Sometimes accepts and participates in treatment. Engages in therapy now and then. Desire to help team and family members strategize against the eating disorder comes and goes (i.e., sometimes treatment needs to be imposed). Sometimes accepts recommended support and supervision. Rarely able to ask for support and supervision.

3 **No cooperation.** Never cooperates. Does not accept or participate in treatment willingly. Does not engage in therapy. Does not strategize with team and family members against the eating disorder. Rather, treatment is imposed. Does not accept recommended support and supervision. Does not ask for support and supervision.

15. Distorted Beliefs About Treatment

Youths with eating disorders can often have distorted (inaccurate or faulty) beliefs about treatment. They may see things only in extremes (called all-or-nothing thinking). For example, a small setback like a binge eating or vomiting episode becomes an indication that the treatment plan has completely failed. When given information, they may focus exclusively on “negative” details and be unable to hear anything else, no matter how important. For example, they may only hear that they need to gain weight and block out the fact that their illness will lead to heart problems and eventually, death. At their worst, distorted beliefs about treatment can lead to a complete denial of the eating disorder. If the patient has not yet begun treatment please respond to the following question by considering their distorted beliefs during the assessment.

0 **No distorted beliefs about treatment.** Consistently listens and accepts information about treatment without distorting it. Does not think in all-or-nothing terms or focus exclusively on the “negative” aspects of treatment. For example, understands the medical consequences of low body weight and the need to work towards a normal weight range. There is no denial of the eating disorder illness.

1 **Mild distorted beliefs about treatment.** Often listens and accepts information about treatment without distorting it. May sometimes think in all-or-nothing terms and/or focus exclusively on the “negative” aspects of treatment. For example, understands the medical consequences of low body weight but may sometimes question the need to work toward a normal weight range. Can usually identify distorted beliefs when they happen and replace them with more accurate beliefs. Rarely denies the eating disorder illness.

2 **Moderate distorted beliefs about treatment.** Sometimes listens and accepts information about treatment without distorting it. More often than not, thinks in all-or-nothing terms and/or focuses exclusively on the “negative” aspects of treatment. For example, understands the medical consequences of low body weight but often questions the need to work toward a normal weight range. Ability to identify distorted beliefs and replace them with more accurate beliefs comes and goes. May sometimes deny the eating disorder illness.

3 **Severe distorted beliefs about treatment.** Does not listen or accept information about treatment without distorting it. Consistently thinks in all-or-nothing terms and/or focuses exclusively on the “negative” aspects of treatment. For example, has little to no understanding of the medical consequences of low body weight and refuses to work toward a normal weight range. Cannot recognize distorted beliefs. There is complete denial of the eating disorder illness. There is also complete distrust of the treatment team and family members; the youth feels s/he is being purposely lied to and tricked.

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16. Perceived Ability/Hope For Recovery

This item is about how strong the youth feels in his/her fight against the eating disorder and how hopeful the youth is about the possibility of recovery. It is not uncommon when fighting an eating disorder to feel powerless and ineffective. If the patient has not yet begun treatment please respond to the following question by considering the ability and hope they demonstrated during the assessment.

0 **Consistent ability and hope.** Feels consistently powerful against the eating disorder, and effective at overcoming eating disorder symptoms. Consistently hopeful about the possibility of recovery. Feels there is a way out of the illness. Knows that things will get better. Can always imagine a future that does not include the eating disorder.

1 **Frequent ability and hope.** Often feels powerful against the eating disorder. Often feels effective at overcoming eating disorder symptoms. Often hopeful about recovery. More often than not, feels there is a way out of the illness, and knows that things will get better. Can usually imagine a future that does not include the eating disorder.

2 **Occasional ability and hope.** Goes between feeling powerful and feeling helpless against the eating disorder. Feelings of effectiveness at overcoming eating disorder symptoms come and go. Sometimes hopeful about recovery. Belief that there is a way out of the illness and that things will get better comes and goes. Often finds it difficult to imagine a future that does not include the eating disorder.

3 **No ability or hope.** Feels completely helpless against the eating disorder. Feels unable to overcome eating disorder symptoms. Not hopeful about recovery. Feels there is no way out of the illness, and that things cannot possibly ever get better. Unable to imagine a future that does not include the eating disorder.

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TRAINING

It is required for the purposes of respecting the copyright that training be provided for the EDS^3 so that it may be administered accurately and consistently across health professionals and settings. Training for this measure is based on the format used by Lyons (1998) for the *Childhood Severity and Acuity of Psychiatric Illness Scales*. As such, it last approximately 2 to 3 hours. Training begins with a general overview of the purpose of the measure and how it can facilitate total outcomes management. This is followed by a description of the actual measure and presentation of its items. The final part of the training consists of small-group and individual ratings of training vignettes. Health care professionals will be deemed reliable when they have an interclass correlation of 0.70 with the standard scoring for a vignette. The CHEO team will provide certificates for health care professionals to demonstrate that they are certified to use the EDS^3.

Recertification is required 1 year after the initial certification on the EDS^3. Recertification does not require attendance at a training day, it simply requires that the health care professional complete a training vignette and pass with a reliability score of greater than 0.70. Thereafter, health care professionals are required to recertify every 2 years.

Certified trainers will be required to have a reliability score of greater than 0.75. Certified trainers will receive a set of training vignettes to be used for training purposes and reliability assessment. The use of current cases and/or chart review also represent viable strategies for training on the EDS^3 measure (see Lyons, 1998).

ADMINISTRATION AND SCORING

<u>Administration</u>

Begin by entering the demographic data (e.g., patient name, age, gender, date of completion) for the youth in question on the Rating Sheet.

In the Item Booklet, read each item and its rating levels carefully and choose the one that best describes the youth's state during the evaluation period. Circle the correct severity level on the Rating Sheet. Base the rating on contact with the patient, interviews with parents, feedback from other staff members, and/or a review of case files.

<u>Scoring</u>

Much like the Lyons Scales (1998, 1999), the EDS^3 aims to provide an overall description of eating disorder symptoms and their severity levels. There are a number of ways that the measure can be used. One option is to look at the measure as a profile of item scores rather than calculate a total score. For example, any item with a severity level of *3* (severe) should necessarily be the focus of immediate clinical attention, followed by items with a severity level of *2*, and a level of 1. Items with a severity of 0 provide no evidence of need for attention or treatment.

A helpful way to think of the ratings is as follows (Lyons, 1999):

0 = no need for action
1 = a need for watchful waiting (a need to review it later or prevention work)
2 = a need for action
3 = the need for either immediate or intensive action

Another option is to use the scale as a composite index of how the severity of a youth's eating disorder is changing. This can allow a clinician or team to help determine a plan of care and also to evaluate the effectiveness of their programming.

It is hoped that with future research, we will know which scores on the EDS3 will indicate the best level-of-care for a youth.

Subscale raw scores are calculated by adding up the subscale's item numbers. The first subscale, the Eating Disordered Behaviours Subscale, is divided into two parts. Part A (AN-Behaviours Total Raw Score) is calculated by summing items 1 and 4, and Part B (BN-Behaviours Total Raw Score) is calculated by summing items 2 and 3. The total raw scores from Parts A and B are then added together to obtain the Total Raw Score for the Eating Disordered Behaviours Subscale. The Total Raw Score for the second subscale, the Eating Disordered Cognitions subscale, is calculated by summing items 5 though 9. The Total Raw Score for the Eating Disorder Anxiety Subscale is obtained by adding items 10 through 12, and the Total Raw Score for the Treatment Progress Subscale is obtained by adding items 13 through 16.

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A Total Symptom Severity Score can be calculated if desired. It is the sum of the four subscale total scores. It is hoped that future research on the measure will provide a normative sample and make T Score conversions possible.

A monitoring table is provided at the end of the Rating Sheet so that one may enter scores from several consecutive assessments and monitor symptom improvement over time.

SCALE DEVELOPMENT AND STATISTICAL PROPERTIES

Scale Development

The progression of the EDS^3 from an exciting idea to a reality was initially made possible through the award of a Children's Hospital of Eastern Ontario (CHEO) Research Institute Studentship (a graduate student, Julie Perkins, performed as research assistant, under the supervision of the Dr. Katherine Henderson, principal investigator). It was further supported through funding from the Weston Foundation (Principal Investigator, Dr. Wendy Spettigue) and an expertise mobilization award for Dr. Katherine Henderson, Ph.D., C.Psych. from the Provincial Centre of Excellence for Child and Youth Mental Health at CHEO.

A specific methodology was elaborated for the development of the EDS^3. This methodology comprised four stages.

First, a thorough review of the literature on available measures for assessing eating disorder symptoms was conducted so that potential items for the measure could be identified. Second, a series of three focus groups were held with health care practitioners working in the field of eating disorders in order to generate feedback and further refine item development. These two steps produced the EDS^3 which, at that point, was an 18-item measure with 4 subscales (eating disorder behaviours subscale, eating disorder cognitions subscale, eating disorder anxiety subscale, and treatment progress subscale), and a total symptom severity score. Third, the measure was circulated to eating disorder experts across North America and Dr. John Lyons for their consultation. Adjustments to the measure were then made according to the feedback received from the experts consulted. The circulation of the measure to experts who are familiar with eating disorder measurement and involved in daily patient care was an important step in determining the EDS^3's content validity.

The fourth stage involved piloting the measure and establishing its psychometric properties. Training sessions were organized for CHEO staff. Training vignettes were used to provide this training. Data generated from these training sessions were part of the data that determined the measure's interrater reliability and test-retest reliability. The EDS^3 was then piloted as part of the regular assessment and monitoring battery for inpatients, day patients and outpatients in the CHEO Regional Eating Disorder Program. This permitted an examination of the factor structure and the calculation of internal consistency and concurrent validity. Also, examination of item and total scale correlations from these data showed the degree to which items measure unitary scale constructs, and therefore further established the EDS^3's content validity. These statistical analyses resulted in the final version of the EDS^3 as a 16 item measure with 5

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subscales [(1) Eating Disordered Behaviours – AN behaviours; (2) Eating Disordered Behaviours – BN behaviours; (3) Eating Disordered Cognitions (4) Eating Disorder Anxiety; (5) Treatment Progress]. The first two subscales can be collapsed to be the Total Eating Disordered Behaviours subscale. The whole scale can also be totalled for a Total EDS^3 score.

Reliability

This section will provide a brief overview of the scales reliabilities. For more detailed analysis and description the reader is directed to Henderson et al. (in press).

Interrater reliability was established using training vignettes. Raters were trained to a reliability of greater than 0.70 using spearman correlation to the scoring key on the training vignettes (mean 0.865, n=16) (Henderson et al., in press).

The factor structure of the EDS^3 was examined using a Principal Component Analysis (PCA) with Varimax rotation. Following the initial analysis two items were removed because they did not load well on their hypothesized subscales. The second PCA supported the five hypothesized subscales.

For a sample of 105 EDS^3 completed on female patients, item total correlations were strong (0.69 to 0.93). Cronbach's alpha for the total scale was (0.93). Cronbach's alphas for the subscales were a follows, .69 AN-behaviors; .77, BN-behaviors; .91, Cognitions; .80 Anxiety; .92, Treatment Progress (Henderson et al., in press).

Dissemination to the Eating Disorder Community

A main objective in the development of the EDS^3 was a wide dissemination to the eating disorder community. To date the EDS^3 has been disseminated through the preparation of journal articles (in preparation) and the submission of abstracts to provincial and international conferences (such as, Henderson et. al., 2006: Buchholz et al., 2008).

The CHEO team (Henderson, Buchholz and colleagues) has also worked to integrate the EDS^3 into other research and clinical settings to continue to monitor its effectiveness. To this end, the EDS^3 is already part of a randomized, placebo-controlled study evaluating the effectiveness of an antipsychotic medication (Olanzapine) for the treatment of youth suffering from Anorexia Nervosa and related severe eating disorders (Spettigue et al., 2008). The EDS^3 was also introduced as part of the regular assessment and monitoring battery for inpatients, daypatients and outpatients in the CHEO Eating Disorder Program in 2008. Collaborations with provincial partners within the provincial network for eating disorders and the Ontario Community Outreach Program for Eating Disorders have been established. Three partner sites within the provincial network have agreed to integrate the EDS^3 into the standard clinical assessment battery and outcomes measurement strategy. It is hoped that the successful use of the EDS^3 in these important research studies, clinical settings, and in conjunction with projects with partners in the provincial collaborative network will produce valuable data, the dissemination of which will further demonstrate the usefulness of the EDS^3 to clinical and research activities.

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Ultimately, it is hoped that the EDS^3 will enhance the regular clinical decision making regarding eating disorders for health care professionals and enhance the ability of many treatment programs to monitor the treatment progress of their patients with limited financial or time commitments and to enhance level of care decisions. This measure will facilitate the collection of information on treatment effectiveness and address the ongoing dearth of information in eating disorder research (especially anorexia nervosa). It is essential that the international eating disorder community develop a better understanding of treatment effectiveness to improve patient care, treatment outcome, and secure funding for programs internationally. The EDS^3 may provide one small step toward this important goal.

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