

Setting the Standard for Nutrition in Behavioral Healthcare

Intuitive Eating in the Treatment of Eating Disorders: The Journey of Attunement

By Evelyn Tribole, MS RD



Evelyn Tribole, MS RD

Patients with eating disorders are virtually the polar opposite of Intuitive Eaters (1,2,3). Intuitive Eaters possess three core characteristics—they are able to (4):

- Eat for Physical Rather than Emotional Reasons

- Rely on Internal Hunger and Satiety Cues
- Give Self Unconditional Permission to Eat (with attunement)

A growing number of studies show that Intuitive Eaters are diverse in their food choices, more optimistic, have better self-esteem, and healthier body weights, without internalizing the thin ideal (5).

How does an eating disorder practitioner facilitate the attunement required to become an Intuitive Eater? This article describes when and how to implement the process of Intuitive Eating for patients with eating disorders. Timing and readiness is key.

Nutrition Rehabilitation Phase I: Intuitive Eating is Contra-Indicated

Broken Satiety Meter. When in the throes of an eating disorder, the individual is not capable of accurately hearing biological cues of hunger and fullness. In this situation, I tell my patients, that their “satiety meter” is broken, a consequence of complex interactions of mind-body biology and malnutrition. Chronic malnutrition, whether from anorexia or bulimia, results in a compensatory slowing of the digestive process, in which the patient experiences early and prolonged fullness.

Additionally, it is hard for binge-eaters to recognize “gentle fullness,” when painful binge cycles prevail. For the bulimic patient,

the sensation of fullness is amplified and often distorted when purging behaviors stop (such as vomiting or taking laxatives), which can cause temporary bloating. Amplifying the problem is the biological impact of stress and anxiety about eating, which triggers a neuro-chemical cascade in the body, which in turn, can blunt hunger and result in nausea.

Nutrition Rehabilitation. Consequently, in the beginning of treatment, nutrition rehabilitation will usually require some sort of eating plan (under the direction of a nutrition therapist), to help heal the body and restore balance. This is similar to when a cast is needed to support the healing of a broken arm. The cast provides structure and support, but it is not lifelong, nor the destination in recovery. The cast is used until the bone is strong enough on its own. Similarly, a meal plan serves as structure and support, until there is biological restoration. For a low-weight patient, this includes weight restoration.

Nourishment as Self-Care. The body has been through nutritional trauma and needs consistent, predictable, nourishment with adequate calories and nutrients. In this phase, it is helpful to view nutrition rehabilitation, as a form of self-care. While this prescriptive eating phase may seem mechanical, the patient needs to recognize that the body must be adequately nourished, regardless of the absence of hunger cues or the presence of early fullness. In this early stage of recovery, a patient’s willingness, alone, is usually not enough to assure adequate intake.

Boundaries: The Role of the Schedule of Eating. Creating a schedule of eating with the patient helps contain the anxiety of eating, by establishing a predictable expectation of when to eat. Eating regularly helps foster body rhythms, which include hormonal patterns that help gear up for digestion. In

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From the Chair

Charlotte Caperton-Kilburn, MS, RD, CSSD, LDN



"Let's Get It Started" is exactly what BHN members accomplished at FNCE 2011 in San Diego! I was thrilled to meet so many of you in person, and if you weren't there, take it from me, BHN definitely made a presence. Our BHN booth at the DPG Showcase was exceptional. Not only did we meet many current members, but many new members have joined us as a result. We have much to celebrate and celebrate we did!

The highlight event was our BHN member reception and awards ceremony, both touching and inspirational with awardees and their family members as well as founding members and 50 year plus ADA members in attendance. For the first time ever, the BHN awards reception offered attendees a speaker event, featuring Ruth Leye-Wallace, PhD, RD presenting *Screening and Assessment for Nutrients that Influence Mental Status*. We had the privilege of honoring five of our members for their magnificent contributions to BHN's practice areas. The BHN Distinguished Member award for 2011 is Ruth Ann Foiles-Brunet, MPA. The Excellence in Practice awards were given to Karen Wetherall, MS, RD, LDN in Eating Disorders, Joan Guthrie Medlen, MEd, RD in Intellectual and Developmental Disabilities, Marilyn Ricci, MS, RD in Mental Illness, and Lisa Beckley-Barrett, RD in Addictions. With the many attendee complimentary "gifts", door prizes, wine and fajita bar, members were treated to a fun and inspiring event. Recognition and great appreciation is given to our sponsor, Abbott Nutrition for their contribution to making our member reception a success.

As amazing as it seems, my term as chair is one-third over, but what we have accomplished will set the stage for many future successes. BHN's first Standards of Practice (SOP) & Standards of Professional Performance (SOPP) was published in August for the Eating Disorders practice area along with the Position Paper on Nutrition Intervention in the Treatment of Eating Disorders. The SOP/SOPP for Intellectual and Developmental Disabilities practice area is well on the way to completion. Member volunteers have increased along with the expansion of volunteer positions in BHN's many committees. Planning for FNCE 2012 in Philadelphia is already underway, along with numerous educational webinars, publications and social media opportunities. If you would like to get involved with BHN, now is a great time to start. We look forward to hearing from you! Contact nflperformance@yahoo.com.

This newsletter marks the first newsletter that BHN has published with CPEUs available. Many thanks for those who have worked to make this happen especially to our newsletter editor, Diane Spear, MS, RD, LD, and ADA member Kathy Mount, MS, RD, LDN. As this year has moved along, BHN has really "Got it Started."

Charlotte Caperton-Kilburn, MS, RD, CSSD, LDN
BHN Chair 2011-2012

Do you want to do more? Do you have great ideas and no place to put them? Do you want to support and enhance the role of the dietitian in behavioral health?

If you answered yes, or even maybe, to any of those questions, then it is time to consider being an officer for the BHN dietetic practice group.

Not only will you be sharing your expertise to support your practice group but you also will advance your skills in communication, organization and advocacy.

Nominations needed for the 2012 Executive Committee are:

**Chair-Elect
Secretary
Nominating Committee
HOD Delegate**

If you would like to volunteer or recommend another BHN Member, please contact Patricia Novak, MPH, RD, Nominating Committee Chair at patricianovakrd@gmail.com. To receive a copy of job description for the above position(s) please contact Patricia Novak.

Deadline for officer nominations is November 1, 2011.

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an outpatient setting, I like to establish the times with built-in flexibility of 30 minutes, for each agreed upon eating period. For example, if the patient agrees to eat lunch at 12:00, then eating between 11:30-12:30 is acceptable. But if that 30 minutes of flex-time is up, the patient needs to stop-and-drop (the other tasks at hand) and feed the body. This is an important concept, because it helps the patient establish self-care (nourishment) as a priority.

The schedule of eating is therapeutic for practicing boundaries, which is essential for recovery and for healthy relationships. For example, the patient might need to tell a friend of the need to eat first, before shopping, rather than the other way around. This might also mean needing to learn and practice assertiveness skills.

Hunger Cues. During nutrition rehabilitation, the meal plan is gradually increased, incrementally, week-by-week, in order to meet energy needs. This is a collaborative process. When hunger cues begin to arise, I invite the patient to use this as an opportunity to let the body “tell us” when to add the next incremental food increase. It is the beginning of attunement and empowers the patient.

Keep in mind that the occurrence of regular hunger cues varies and is determined by many factors including:

- Duration of eating disorder
- Severity of malnutrition
- Intensity of anxiety and fear about eating
- Motivation for recovery
- Medications, which can distort hunger and satiety cues.

Phase 2: Identifying, Normalizing and Responding to Satiety Cues

It is vital that satiety cues are normalized before further exploring Intuitive Eating. The challenge lies beyond “hearing” the range of physical sensations of hunger and fullness, patients need to learn how to respond appropriately to their biological cues.

However, as a person’s hunger and fullness cues begin to resurface, it’s not

unusual for fears and distorted beliefs to arise, in-tandem. For example, some patients distort and mis-label the physical sensation of fullness, as “proof” of over-eating. Consequently, the patient fears any fullness experience, and labels it as “bad” or “wrong.” Or some patients might believe that achieving fullness means eating just until the hunger goes away, but not a single bite more.

In this stage it is helpful to explore the patient’s understanding and beliefs around hunger and fullness. What is the expectation around satiety cues? What might “normal” cues feel like? What did these cues feel like before the eating disorder developed? What fears arise for the patient about the idea of responding appropriately to hunger and fullness cues?

It’s important for the patient to understand that there is no single “correct” way to experience these biological cues. Our bodies are designed to operate with flexibility.

Dealing with “False-Labeling” of Body Cue Experiences. In general, there is a three-step process to normalizing satiety cues:

- Develop ability to identify physical cue.
- Normalize physical cue--confront distortion (or fear) about the physical cue.
- Respond appropriately to cue.

It is helpful to remind the patient that every eating experience is an opportunity to learn. For example, if for some reason not enough was eaten at a meal—did the patient get hungry sooner? (Usually, yes). Did the patient think about food more often? (Usually, yes).

Or if eating beyond comfortable fullness, did the patient feel satisfied and sustained for a longer period of time? (Usually, yes). Were there fewer thoughts about food? (Usually, yes).

Phase 3: Indicators of Readiness for Intuitive Eating

While many patients would like to dive straight into Intuitive Eating, it’s helpful to first look for these indicators of readiness before proceeding further. Does the patient have the ability to:

- Recognize that the eating disorder is not about weight or food, but rather something deeper.

- Tolerate risk. When beginning to heal both physically and psychologically, the person is better able to take and tolerate risks with eating. For someone with anorexia, a risk may be simply adding bread to a meal. Or for someone with bulimia it might be allowing and savoring ice cream.
- Tolerate being uncomfortable. Trying new experiences can be temporarily uncomfortable.
- Recognize and manage needs and feelings. If an individual is not able to identify needs or cope with feelings, he/she might cope with an eating disorder behavior such as restricting food, over-exercise, or binge-eating.
- Value Self-Care. Is the patient willing to eat in the absence of hunger, which may arise from ordinary life stressors?
- Recognize vulnerability—too hungry, too tired, too stressed and so forth.

Intuitive Eating Trial. If the patient seems ready to explore Intuitive Eating, explore a one or two-day trial. The purpose of this trial is to determine if the patient is truly ready to eat according to biological satiety cues. It is helpful to explore these issues:

- Were you able to honor hunger/fullness cues in a timely manner?
- How did you respond to hunger cues?
- How did you respond to fullness cues?
- Was there a part of you that was thinking it was an opportunity for you to eat less? And (more importantly) did you act on that thought?

During this trial period, a patient might discover that he/she doesn’t feel ready, and opts to continue on a meal plan. It’s important to emphasize that this does not reflect failure. Rather, the preference to remain on a meal plan often reflects a patient’s desire to protect recovery, and it’s important to respect it and view it as a self-care action.

Moreover, it is still possible to work with other Intuitive Eating principles within this framework—such as working on permission to eat any food (patients often express feeling safer experimenting with new foods, within

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the framework of a meal plan). There is no right or wrong way to proceed.

The challenge is to facilitate more eating experiences that build self-trust in the eating process. What does the patient need to feel safe? What types of foods and meals feel satisfying and sustaining? What types of foods would provide more social connectivity? (For example, would the ability to eat pizza without anxiety, allow more social interaction among friends?)

Exploring Unconditional Permission to Eat. The ability to eat any food is an important component of recovery and Intuitive Eating. Eating becomes emotionally neutral—without moral dilemma or shame; where one food, one meal, or one day of eating does not make or break health or weight. When guilt is removed from eating, it's easier to be more attuned to the needs and experiences of the body.

Furthermore, habituation studies show that the more a person is exposed to a food, the less of a big deal it becomes with time and repetition (6).

What About Food Addiction? There are three studies to date, in which binge eaters, ate their "forbidden foods" as part of the treatment process, resulting in a significant decrease binge eating.

A study from the University of Notre Dame applied the Intuitive Eating principles to 30 women with diagnosed binge eating disorder (7). After eight, 90-minute, weekly sessions, binge episodes decreased significantly--80% of the women no longer met the diagnostic criteria for the disorder.

Two larger, randomized control studies on binge-eaters, used Mindfulness Based-Eating Awareness Training (MB-EAT), which resulted in decreased binge episodes (8). MB-EAT share many features with Intuitive Eating, including eating "forbidden" food.

If food addiction was an issue, you would not expect these types of results. Food addiction theory would predict increased binge eating, triggered by eating "addicting food". Yet, the opposite happened.

The brain region involved with substance abuse has been implicated in overeating. But the majority of studies

Chart 1. How Intuitive Eating Principles Apply to Eating Disorders*

Core Principle	Anorexia Nervosa	Bulimia Nervosa/Binge Eating Disorder
Reject the Diet Mentality	Restricting is a core issue and can be deadly.	Restricting does not work and triggers primal hunger, which can lead to binge eating.
Honor Your Hunger	Weight Restoration is essential. The mind can not function and think properly. You are likely caught in an obsessional cycle of thinking and worrying about food, and have difficulty making a decision. Your body and brain need calories to function. Your nutrition therapist will work with you to create a way of eating that feels safe to you.	Eat regularly—this means 3 meals and 2 to 3 snacks. Eating regularly will help you get in touch with gentle hunger, rather than the extremes that often occur with chaotic eating. Ultimately, you will trust your own hunger signals even if they deviate slightly from this plan.
Make Peace with Food	Taking risks, add new foods, when ready. Do this gradually, take baby steps.	Take risks, try "fear" foods, when ready and not vulnerable. (Vulnerable includes, over hungry, overstressed, or experiencing some other feeling state.)
Challenge the Food Police	Challenge the thoughts and beliefs about food. Take the morality and judgment out of eating.	Challenge the thoughts and beliefs about food. Take the morality and judgment out of eating.
Feel Your Fullness	You can't rely on your fullness signals during the beginning phases of recovery as your body likely feels prematurely full, due to slower digestion.	A transition away from experiencing the extreme fullness that is experienced with binge eating. Once regular eating is established, gentle fullness will begin to resonate. Note, if you are withdrawing purging, especially from laxatives, you may temporarily feel bloated which will distort the feeling of fullness.
Discover the Satisfaction Factor	Frequently, there are fears or resistance to experiencing the pleasure from eating (as well as other pleasures of life).	If satisfying foods and eating experiences are included regularly, there will be less impetus to binge.
Cope with Emotions Without Using Food	Often emotionally shut down. Food restriction, food rituals and obsessional thinking are the coping tools of life. With re-nourishment, you will be more prepared to deal with feelings that emerge.	Binge eating, purging, excessive exercise is used as coping mechanisms. Can begin to take a time out from these behaviors to start experiencing and dealing with feelings.
Respect Your Exercise	Heal the body image distortion.	Respect the here and now body.
Honor Your Health	You will likely need to stop exercising.	Over-exercising can be a purging behavior. Moderate exercise can help manage stress and anxiety.
	Learn to remove the rigidity of nutrition—where there is a strict adherence to "nutritional principles", regardless of their source. Recognize that the body needs: Essential fat Carbohydrates Energy Variety of Foods	Learn to remove the rigidity of nutrition. There is a strict belief as to what constitutes healthy eating, and if this belief is violated, purging consequences can ensue (if bulimic). Recognize that the body needs: Essential fat Carbohydrates Energy Variety of Foods

*Tribole E and Resch E, Intuitive Eating, 2nd ed. St. Martin's Press: NY, NY, 2003

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on food addiction have been on animals. The limited research on humans has focused mainly on brain-imaging studies, but with a very small amount of people and not much exclusion criteria. In a review of the scientific literature, Benson concluded that there is too little research on food addiction to be drawing any conclusions (9).

There are many reasons, other than addiction, that can explain the reward aspect of eating:

- Hunger by itself, enhances the reward value of food, which triggers dopamine activity.
- Dieting (which can be a form of chronic hunger) also has this effect.
- Pavlovian conditioning - which is a form of automatic learning, made famous by Russian scientist, Ivan Pavlov. Pavlov rang a bell, before giving dogs a treat. Consequently, the mere ringing of the bell resulted in anticipatory salivation. This is not addiction.
- Dopamine and Unbalanced Living - many pleasurable activities trigger dopamine, including socializing, hiking, and playing games. Many binge-eaters lead very unbalanced lives. These unbalanced lives "deprive" them of the dopamine benefits. When needs are not being met, food becomes more enticing, even more rewarding.

Model: Integrating Intuitive Eating for Eating Disorder Recovery. Cook-Cottone developed the Attunement Representation Model to conceptualize the integration needed for an individual's recovery from an eating disorder (10,11,12), which also aligns with Intuitive Eating.

This model represents the dynamic integration of a person's inner and external worlds, the process of which is called attunement. A person with an eating disorder is skewed or mis-attuned toward the expectations of others and the external world (such as cultural expectations of thinness). See Figure 1. Representational Self: Attunement and Expression.

Internal System. Ultimately, Intuitive Eating is an individual's attunement

with food, mind and body. The Intuitive Eating principles fall primarily within the internal system of the attunement model, which consists of a person's thoughts, feelings, and physiology (biological sensations of the body), as shown below.

1. Thoughts

Principle 1. Reject the Dieting Mentality

Principle 3. Make Peace with Food

Principle 4. Challenge the Food Police

Principle 8. Respect Your Body

2. Feelings

Principle 7. Honor Your Feelings without Food

3. Physiology (Body)

Principle 2. Honor Your Hunger

Principle 5. Respect Your Fullness

Principle 6. Discover Satisfaction

Principle 9. Exercise—Feel the Difference

Principle 10. Honor Your Health with Gentle Nutrition

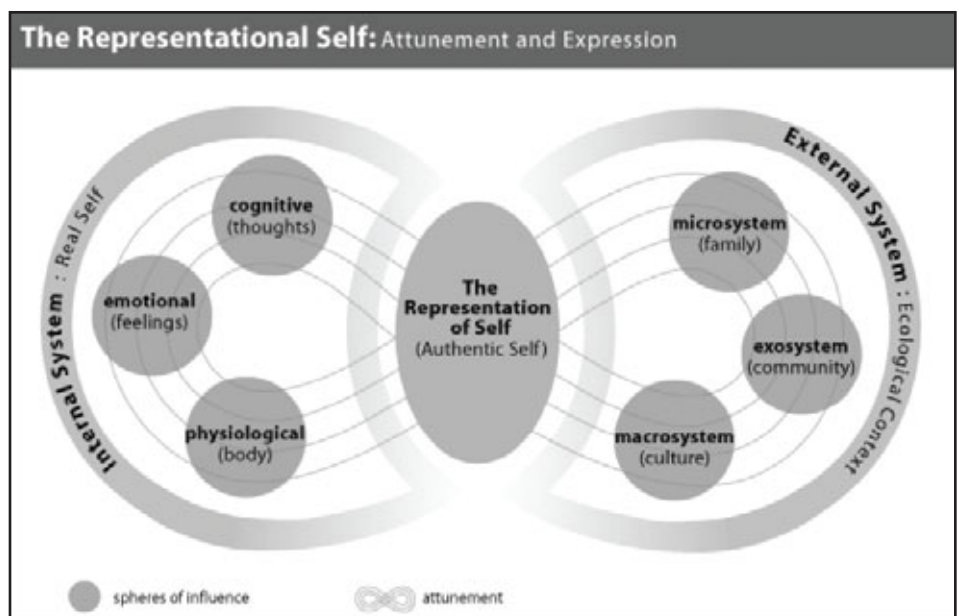
The External System consists of friends and family, communities, and culture. These external influences include food traditions, food mores, cultural beauty standards and public health guidelines.

The last two principles of Intuitive Eating (pertaining to exercise and nutrition) are components of both the inner and the external systems, the latter being in the form of health recommendations and policy. Exercise and nutrition are excellent examples of the dynamic integration (attunement) needed of an individual's inner and outer systems, to achieve authentic health.

For example, a person can integrate exercise recommendations for health while being attuned to the experience of her body. This type of physical activity has also been termed "mindful exercise" by Calogero and Pedrotty (13), defined by the following four components where exercise:

- Is used to rejuvenate the body, not exhaust or deplete it.
- Enhances the mind-body connection and coordination, not confuse or dis-regulate it.
- Alleviates mental and physical stress, not contribute to and exacerbate stress.
- Provides genuine enjoyment and pleasure, not to provide pain and be punitive.
- The pursuit of exercise is about feeling good, not about calories-burned or used as a penance for eating.

Figure 1.



"Permission granted by Catherine Cook-Cottone, PhD, Associate Professor, SUNY, Buffalo. Available at <http://satsanga.buffalo.edu/healthyself.asp> Accessed August 1, 2011.

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Phase 4: Final Phase

The final phase of nutrition rehabilitation focuses on if and what, of the external world, a patient would like to integrate, ultimately to achieve “authentic health.” It’s important that the “inner” attunement is truly dialed-in before embarking on this final phase. It is also critical that a person does not define self-worth by the foods eaten—food is morally neutral; and the patient recognizes that one food, one meal, or one day of eating does not make or break a person’s health.

For example, perhaps a family value’s eating sustainable foods with a low carbon footprint. If a person is truly inner-attuned, he/she can integrate this value without resorting to an eating disorder behavior or mind-set.

Health can be honored with gentle nutrition. For example, a large body of research indicates that the Mediterranean pattern of eating confers health benefits from cardiovascular to improved mood. A person recovered from an eating disorder can eat within this dietary framework, while paying

attention to hunger, fullness, satisfaction and so forth. If however, a person enters this realm too soon, it could become embraced as another rigid rule, fueling old eating disorder thinking and behavior, and ultimately backfire. Timing and readiness is key.

Ultimately, when a person recovers from an eating disorder, he/she can trust the inner body wisdom. The person is at peace with mind and body, and finally, enjoys the pleasures of eating without guilt or moral decree.

Evelyn Tribole, MS, RD trains health professionals how to help their clients create a healthy relationship with food, mind, and body through the process of Intuitive Eating, via teleseminars and individual training. She is founder of Intuitive Eating Professionals on LinkedIn, and author of seven books, including co-author of Intuitive Eating. For more information see www.EvelynTribole.com

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Public Policy Update

Submitted by, **Cinde Rutkowski, MA, RD, FADA**
BHN Public Policy Liaison

Though the 2012 election is not for another year, many candidates have announced their intent, organized their campaign team and begun the search for supporters, financial and otherwise. Now is the time for you and me as a Food & Nutrition Expert to get involved with the candidates who will represent us both locally and nationally.

Begin by researching the candidate and their previous Food and Nutrition support history. If the candidate is in office or has previously held an elected office, the easiest way to access this information is on line via a variety of websites including the candidate’s own. If it is someone new to the political process, contact the candidate’s campaign office and request the candidate’s Food and Nutrition awareness/ position. Be prepared to answer questions that may be asked by the staffer. When you receive the information, carefully review it to determine what the candidate’s position is/may be on the issues that are important to you as a Food and Nutrition Expert and those affecting your patients/clients/ customers. Decide what you want to accomplish in a meeting with the candidate and contact the candidate’s campaign office to schedule an appointment. If you need assistance in preparing for this meeting, contact ADA’s Policy Initiatives & Advocacy

Office in Washington, D.C. at 800/877-0877 or 202/775-8277.

At the meeting, present yourself as a credentialed Food and Nutrition expert available to the candidate and their staff as questions regarding Food and Nutrition arise during the campaign and after the election. Communicate your Food and Nutrition passions in a professional manner, even if the conversation strays. Following the meeting, continue communicating with the candidate and their staff as opportunities arise to further advance your issues. You have done the groundwork and will reap the rewards when your candidate is elected and supports the Food and Nutrition issues that you schooled them on!

If your candidate for federal office voluntarily offers support for Food and Nutrition issues, consider requesting ADAPAC (American Dietetic Association Political Action Committee) funds to support their campaign. ADAPAC’s contact information is: ADA Policy, Initiatives and Advocacy Office 1120 Connecticut Avenue NW Suite 480 Washington DC 20036 Phone: 202/775-8277 Fax: 202/775-8284 E-mail: adapac@eatright.org

Enjoy! Remember “If dietetics is your profession, politics is your business!”



Ruth Leyse-Wallace,
PhD, RD

I. What is Anxiety?

The term anxiety and “being anxious” are used to describe many people in many circumstances. The

one-year prevalence rate in U.S. adults for anxiety is 3% (1). Patients of RDs may be anxious. At times the term is used in the clinical psychiatric sense, sometimes it may be used in less than the strictly clinical sense. Anxiety is often found in lists of symptoms of physical or mental health conditions.

What is anxiety in the clinical, diagnostic, use of the word? The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) describes anxiety as

- 1) subjective distress which is out of proportion to the actual likelihood or impact of the feared event,
- 2) worrisome thoughts interfere with attention to tasks at hand, and
- 3) difficulty stopping the worry.

The worry may involve routine life circumstances. It may cause impairment in social, occupational or other important areas of functioning.

Anxiety may be a component of numerous other psychiatric diagnoses: Panic Attack/Disorder, Agoraphobia, Social Phobia, Obsessive-Compulsive Disorder, Separation Anxiety Disorder, Anorexia Nervosa, Somatization Disorder, Posttraumatic Stress Disorder, or Hypochondriasis, or may be related to a medical condition.

Anxiety may also be accompanied by symptoms such as muscle tension, trembling, twitching, feeling shaky, muscle aches or soreness, somatic symptoms such as cold clammy hands, dry mouth, sweating, nausea, diarrhea, urinary frequency, trouble swallowing (lump in the throat), or an exaggerated startle response. A diagnosis of anxiety would need to rule out physiological effects caused by substance-drug abuse, medication, or toxin exposure (2). In patient care an RD may need to be aware that anxiety, as well as low blood glucose, can cause a patient to feel shaky, may be one cause of com-

Anxiety in Dietetic Practice

by Ruth Leyse-Wallace, PhD, RD

plaints of difficulty in swallowing, or be one factor in nausea or diarrhea.

II. Anxiety Affects Patients Seen in Dietetic Practice

The following examples demonstrate the type of research concerning anxiety and the reported findings. Selections were based on populations or issues that are thought to be of interest to RDs.

Dietary Counseling

Research reports indicate: After a novel 3-year intervention in the Diet and Omega-3 Intervention Trial (DOIT), there was no difference between the dietary counseling and control group with regard to anxiety, depression, or life satisfaction, but scores on the HADS-anxiety (Hospital Anxiety and Depression Scale) increased significantly (4.0 vs. 3.3, $P < .001$) in both groups. Compared to the general population, subjects who had screened positive did not have increased mental distress 25 years after screening, and beneficial health behavior persisted. Dietary counseling did not affect psychosocial outcomes (3).

Usual Diet

A large study in Australia studied the extent to which depression and anxiety are related to habitual diet over an extended period. The “traditional” diet pattern (vegetables, fruit, meat, fish and whole grains) was associated with lower odds for anxiety disorders, major depression, and dysthymia. The “western” diet (processed or fried foods - such as meat pies, pizza, chips, and hamburgers, flavored milk drinks, refined grains, sugary products and beer) was associated with lower GHQ (General Health Questionnaire) scores.

The “modern” diet (fruits, salads, fish, tofu, beans, nuts, yogurt and red wine) was unexpectedly associated with a higher, rather than lower, likelihood of depression. Authors also noted that the absolute amount of unhealthy food consumed appeared more relevant to mental health than the quantity as a proportion of overall diet (4).

In Psychiatric Populations

Symptoms and co-occurring symptoms in patients with depression reported by Su et. al. includes: Anxiety, 57% of

this group of patients; fatigue, 73%; anorexia, 40%; gastro-intestinal symptoms, 34.47%; abdominal pain, 21% (5).

A meta-analysis studying unipolar depression and/or bipolar disorder, schizophrenia, and anxiety, examined the association of these disorders with polymorphism in 5,10 methylenetetrahydrofolate (MTHFR), an enzyme important in folate metabolism. Presence of this polymorphism reduces the bioavailability of folate and folate metabolites. The analysis demonstrated a correlation of the polymorphism with depression (odds ratio of 1.36), bipolar disorder (odds ratio of 1.82), and schizophrenia (odds ratio of 1.44). The odds ratio for anxiety was 0.98, indicating no association (6).

Larine Abbey, Nurse Practitioner, reported on agoraphobia and nutritional data found in a set of her patients. She reported on results from biochemical laboratory tests on 12 clients who had previously failed to improve with (a) standard treatment provided by psychiatrists, (b) dietary improvement or (c) the intake of a moderate-level multivitamin/mineral supplement. In another group of 136 highly symptomatic patients for whom functional vitamin testing was performed only 5 failed to show abnormalities in any of those nutrients assayed (7).

Eating Disorders

Pre-meal anxiety was significantly correlated with meal intake, but not snacks, among weight-restored patients with Anorexia Nervosa, but not healthy controls. Authors suggest addressing anxiety as a potential target for relapse prevention (8).

Cynthia M. Bulik and colleagues reported that alcohol-use disorders rise significantly in patients with a history of bulimia and/or patients with both bulimia and anorexia nervosa. Alcohol-use disorders were associated with more depression and anxiety disorders as well as being psychologically more complex. The full syndrome of alcohol use disorder may also occur with sub-threshold eating disorders and anxiety disorders (9).

Fearful or anxious behavior as a child was associated with the attainment of low BMI in Anorexia Nervosa

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and childhood anxiety was associated with caloric restriction. Measures of anxiety and factors associated with anxiety-proneness in childhood may index children at risk for restrictive behaviors and extremely low BMIs in Anorexia Nervosa (10).

Bariatric Surgery

Evaluation by structured interview of 174 candidates for bariatric surgery found 13.8% had a diagnosis of an eating disorder. Twenty-two percent had a history of affective disorder, 15.5% had a history of anxiety disorder (11).

In a national study of 1027 individuals who were seeking surgical help for weight loss, Salvatore R. Maddi and colleagues gathered data including pre-surgery MMPI assessment as well as at 6-months and 1-year, personal interviews, family history and a medical examination. They found an unusually high level of psychopathology compared to the normal population, consisting of depressive disorder, anxiety, and somatization features. The authors commented that symptoms, coping skills, and long-standing habits cannot be assumed to disappear with surgery or weight loss. Psychological support counseling was advised following bariatric surgery (12).

Maaikruseman and colleagues conducted a study of a cohort of 80 patients who were assessed and observed for eight years following bariatric surgery. Screening for depression and anxiety was conducted at baseline and the last visit. The Hospital Anxiety and Depression Scale, consisting of seven questions related to anxiety and seven related to depression, was used. Results showed unchanged depression and anxiety scores between baseline and last visit. Depression had a prevalence rate of 27%; the prevalence rate for anxiety was 46% (13).

Diabetes

In a study of diabetic adolescents, blood glucose control, and hospitalizations, Bryden et al wrote there was a trend for emotional problems, such as anxiety and depression, associated with lower glycemic levels, which suggested that anxious children may be more diligent in monitoring and may take more effective action in response to signs of poor blood glucose control (14).

Table 1.

Abnormal Nutritional Status in Abbey's Agoraphobic Patients (N = 12)

Vitamin	Biochemical Test	Enzyme Activity Tested	No. of Clients with Abnormal Tests
Thiamin	TPP% uptake	Erythrocyte transketolase activity	7
Riboflavin	Red cell	Glutamic reductase	1
Pyridoxine	Red cell	Glutamic pyruvic transaminase	6
Niacin		N1 methyl	Nicotinamide
Folacin	Serum	FIGLU (formiminoglutamic acid test)	2
Vitamin B12	Serum	MMA (methylmalonic acid)	3

NOTE: Number of clients with more than one enzymopathy: 10;
Number of clients with more than two enzymopathies: 2;
Number of clients with more than three enzymopathies: 1.

Craving

K. A. Gendall and colleagues studied the characterization of craving. Features of intensity or "core features" were those that related to

- 1) strength of craving,
- 2) difficulty resisting eating,
- 3) feeling anxious when the craved food was unavailable, and
- 4) a change in speed of consumption (15).

Food deprivation does not appear to be a necessary condition for food cravings to occur. Rather, food cravings are closely associated with mood. In particular, mood may be an antecedent and also a consequence of craving. Food cravers had higher ratings of boredom and anxiety during the day; dysphoric mood was prominent prior to the craving themselves (16).

Celiac Disease

Females with celiac disease (CD) have been associated with a probable anxiety disorder. Living alone was associated with a reduced risk of an anxiety disorder. The levels of anxiety in patients with CD along with Inflammatory Bowel Disease (IBD) were higher than those of persons in the general population. The prevalence of a probable anxiety disorder in persons with CD (16.8%) and IBD (14.0%) was higher than that of the general population. (5.7%) (17).

On a gluten-free diet, self-perceived health improved significantly among patients with classic symptoms of celiac disease and those detected by screening. Symptomatic and asymptomatic

individuals were equally concerned about their health before the diagnosis, but anxiety was alleviated by the gluten-free diet in symptomatic patients. Among the 23 asymptomatic patients, perception of health worsened and concern about health increased while they were on the study celiac diet (18).

Vitamin C Deficiency

A case was reported by Peter Roy-Byrne MD of a forty-year-old male who, in response to a depressed mood, decided to starve himself to death. For the previous year the patient had a diet deficient in vitamin C, eating on one dollar per day, consuming a diet of canned pork and beans, peanut butter, bread, fruit, cereals, and milk. Within a month of his decision to starve himself, he had symptoms of scurvy: bruising, muscle soreness, and bleeding skin. He remained in bed for one to two months and was then brought to the hospital.

A dexamethasone suppression test was normal. Trials of halperidol, lithium, and desipramine were ineffective in bringing him out of asocial and amotivational states.

He was diagnosed with low protein, low iron, and folate deficiency, and he had an undetectable blood ascorbate (vitamin C) level. He was anxious, fearful, alert and oriented, and unresponsive to most questions, and he laid face-down in fetal position. Over four weeks, he was given vitamin and mineral supplements. Suicidal preoccupation and anxiety diminished, and his sleep and

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appetite returned to normal. Vit C is a required cofactor in conversion of dopamine to norepinephrine, a deficiency which could result in norepinephrine depletion, thus providing a neurochemical rationale for the severe depression often seen in scurvy (19).

Academic Behavior

Administration of a polyunsaturated fatty acid mixture of omega-3 and omega-6 can improve the behavioral variables associated with test anxiety, an incapacitating academic syndrome. Appetite, mood, mental concentration, fatigue, academic organization, poor sleep, as well as cortisol level, improved accompanied by a corresponding reduction of anxiety (20).

Risk of Myocardial Infarct

In a study with a mean follow-up of 12.4 years anxiety traits independently predicted MI risk after controlling for age, education, marital status, fasting glucose, body mass index, HDL cholesterol, systolic blood pressure, drinking alcohol, smoking, caloric intake, medications for hypertension, high cholesterol, and diabetes during follow-up and the psychologic variables depression, type A behavior, hostility, anger, and negative emotion (21).

Food insecurity

A survey of 2870 mothers regarding food security and children's behavior problems in eighteen large cities in the U.S. found twelve percent were food insecure; seventeen percent were marginally food secure. After adjusting for socio-demographic factors it was determined that either a major depressive episode or generalized anxiety disorder increased with food insecurity. With food insecurity 30.3% had one of these disorders; with marginal food security 16.9% were affected, and if fully food secure 16.9 % were affected. Behavior problems with the children of these women also increased with food insecurity. With food insecurity 36.7 % of children were reported to have behavior problems (using the Child Behavior Checklist), with marginal food security 31.1%, and with food security 22.7% were reported to have behavior problems (22).

III. Treatments for Anxiety Anxiolytic Drugs

Both antidepressants and anti-anxiety medications are used to treat anxiety disorders. Anti-anxiety medications include the benzodiazepines, which after weeks or months may result in tolerance and dependence. Commonly used benzodiazepines include clonazepam (Klonopin), alprazolam (Xanax), diazepam (Valium), and lorazepam (Ativan). Patients should avoid grapefruit, alcohol, sedative herbs (chamomile, kava), and consume < 400-500 mg caffeine /day.

A withdrawal reaction may occur if the treatment is stopped abruptly. Symptoms of withdrawal may include anxiety, shakiness, headache, dizziness, sleeplessness, loss of appetite, or in extreme cases, seizures. A withdrawal reaction may be mistaken for a return of the anxiety.

The only medication specifically for anxiety disorders other than the benzodiazepines is buspirone (BuSpar). Unlike the benzodiazepines, buspirone must be taken consistently for at least 2 weeks to achieve an anti-anxiety effect and therefore cannot be used on an "as-needed" basis. Patients should avoid grapefruit, alcohol, and St. John's Wort (23). Beta blockers, medications often used to treat heart conditions and high blood pressure, are sometimes used to control "performance anxiety" such as when facing a specific stressful situation – a speech, a presentation in class, or an important meeting. Propranolol (Inderal, Inderide) is a commonly used beta blocker. Beta-blockers generally are not recommended for people with asthma or diabetes because they may worsen symptoms (24,25).

Vitamin-Mineral Supplements

Douglas Carroll and colleagues reported on a double-blind, placebo-controlled, randomized study of a multi-vitamin and mineral supplement given to eighty healthy male volunteers for 28 days. Reliable and internally consistent psychological tests of anxiety and measures of perceived stress were utilized. The diet questionnaire revealed that 51% of the treatment group and 29% of the placebo group ate fresh fruit or vegetables less than daily and approximately half of both groups ate only white bread. Relative to the placebo group, the treatment group had consistent and

statistically significant reductions in anxiety and perceived stress. The treatment group rated themselves as less tired, better able to concentrate, and registered significantly fewer somatic symptoms on day twenty-eight (26).

Mindfulness

Meditation refers to a variety of practices that intentionally focus attention to help the practitioner disengage from unconscious absorption in thoughts and feelings. Unlike concentrative meditation—in which practitioners focus attention on a single object such as a word (mantra), body part, or external object—in mindfulness meditation participants bring their attention to a wide range of objects (such as breath, body, emotions, or thoughts) as they appear in moment-by-moment awareness. Mindfulness is a nonjudgmental, present centered awareness in which each thought, feeling, or sensation that arises in the intentional field is acknowledged and accepted as it is. Regular mindfulness meditation has been shown to result in structural brain changes that may help explain how the practice effectively addresses psychiatric symptoms (27).

Assessment and Interventions by RD

If a patient exhibits signs or complains of anxiety and it has not been formally diagnosed, a description of the observed behavior or comments by the RD may alert other care-givers to the fact the patient may be especially worried about issues of diet or nutrition. If the formal diagnosis includes anxiety the RD may want to devote time to reassuring or problem-solving with the patient if the area of anxiety pertains to dietary issues. An additional step may be to encourage the patient to discuss sources of anxiety with other care-givers.

Co-morbid medical issues such as celiac disease, diabetes, eating disorders, a history of bariatric surgery, history of myocardial infarct, and hypertension should serve as an alert for possible anxiety. Assessing food insecurity may also be helpful.

Assessment should include inquiry regarding medications and use of grapefruit juice, St. John's Wort, alcohol, sedative herbs such as chamomile and kava, and whether the patient consumes > 400-500 mg caffeine /day. Any suspected exposure to toxins such as

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lead or other heavy metals should be reported (28,29).

Symptoms such as nausea, diarrhea, dry mouth, or trouble swallowing (lump in the throat), poor appetite, etc. can be addressed with recommendations for dietary measures that address these symptoms.

Since diet quality may affect, and is affected by anxiety, a diet assessment and recommendations regarding a nutritionally adequate diet (especially folic acid, fiber and fluid) is important. Calm discussion and explanations may reduce anxiety by instilling trust and confidence in potential results.

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Marley Peale Braun, MS

College life is full of exciting and challenging times that most likely involve moving away from home, making new friends, and managing a class schedule along with homework. All these new responsibilities and changes can leave students feeling stressed out and overwhelmed. According to the American Freshman National Norms Fall 2010, college students of 2010 rated their emotional health the lowest since the Higher Education Research Institute at UCLA started administering the annual survey to first-year students in 1985 (1). In 2008, students surveyed for the American College Health Association's National College Health Assessment (NCHA) ranked stress and anxiety as their top two interferences in their academic achievements - even more so than relationship difficulties or computer games and internet usage (2). These alarming statistics show that finding solutions to improve the mental health and well-being of today's college students is increasingly important; proper nutrition and good dietary habits can offer support.

Overall diet quality has been found to be associated with psychological symptoms, including anxiety (3). This survey research showed that people who had diets of vegetables, fruit, meat, fish, and whole grains had less anxiety and depression than those with diets comprised of refined grains, beer, processed, fried, and sugary foods.

Healthy fats are often associated with good mental health because they help the brain to achieve proper structure and function. Omega-3 fatty acids, including DHA, EPA, and ALA, are thought to be most important to the brain and the nervous system (4). Omega-3 fatty acids are found in cold water fish, such as salmon, sardines, and mackerel.

Specific vitamins and minerals have been identified as having a role in the reaction to psychological stress (5,6).

Student Corner . . .

College Nutrition: Reducing the Stress and Anxiety

By Marley Peale Braun, MS

Research indicated that vitamin C actually reduced stress hormone production (5). Another study found that B vitamins combined with vitamin C and magnesium reduced stress-related symptoms (6). Meats, including pork, chicken, turkey, and tuna, along with whole grains, bananas, lentils, green vegetables, eggs, nutritional yeast, and dairy products are good sources of B vitamins. Papaya, broccoli, bell pepper, strawberries, kale, and citrus fruits are good sources of vitamin C. Magnesium is found in pumpkin seeds, spinach, Swiss chard, salmon, and black beans.

Good nutritional status in college is especially important for managing stress and anxiety. It may also help to establish behavioral patterns that will impact health and well-being for years to come. So what can you, the stressed out student, do to make sure you are getting the most from your diet? Here are some tips to help promote mental health and well-being while on campus.

In the dining hall or cafeteria:

- Frequent the areas where healthier items are offered, such as the salad bar. Eating a rainbow of colors will provide a variety of vitamins and minerals.
- Divide up your plate into sections: $\frac{1}{2}$ vegetables, $\frac{1}{4}$ complex carbohydrates (such as brown rice or quinoa), and $\frac{1}{4}$ lean protein (like chicken). Top it off with a healthy fat, such as avocado.
- Choose cold water fish (such as salmon or sardines) at least twice a week to get those omega 3 fatty acids. If the cafeteria doesn't serve these items, then order them when dining out.

In the dorm room:

- Skip the vending machine. Instead stock protein-rich snacks in your dorm fridge and pantry. Nut butters with whole wheat bread or brown rice cakes and hummus with pre-cut vegetables are great choices that are easy to store. Keep a variety of fruits

on hand. Bananas, oranges, and grapefruits don't need to be washed and can easily be taken to class if you are pressed for time.

Keep in mind every day:

- Don't rely on energy drinks or other sources of caffeine and sugar for a boost. These may be too stimulating, which could increase anxiety, and they may produce an energy crash later.
- Make sure your meals and snacks contain fiber and protein. This will keep blood sugar levels constant and prevent surges of insulin followed by energy crashes.
- Eat regular small meals throughout the day at relatively the same time each day. Bodies love routine and function better when they know what to expect.
- Even though it feels like you have no time, slow down when eating meals and don't multi-task (so no watching television or reading). Practicing mindfulness and paying attention to what you are eating will allow you to savor your food, enhance satiety so you don't feel hungry after you just ate, and it also forces you to take a little break from the stress of school work.
- Get plenty of rest and take advantage of your school's exercise facilities. Yoga, meditation, and aerobic exercise can produce feel-good brain chemicals called endorphins, making you feel happy and stress-free.

Marley Peale Braun received her MS in nutrition from Bastyr University in 2011 and her BA in psychology from the University of Virginia in 2001. Marley is currently a dietetic intern with Sea Mar Community Health Center in Seattle, WA.

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When Exercise Becomes Addictive

By Mary E Kuester, MA, RD, LD

The benefits of exercising are wide and far reaching and include the prevention of certain diseases such as cardiovascular disease, type II diabetes, cancer and osteoporosis. In addition, exercise helps improve sleep patterns, improve mood, alleviate depression, decrease anxiety and reduce stress (1). However, there are times when exercise becomes a problem, even an addiction. Sometimes people engage in unhealthy levels of physical activity with a specific purpose of burning calories, gaining permission to eat, or to numb themselves from emotions. This type of exercise can become all consuming in a person's life and in that respect can become "addictive". This person might find themselves engaging in excessive or obligatory exercise to the detriment of their personal lives, in addition to their physical, emotional and spiritual well being (1).

Defining Mindless Exercise

Peach Friedman the author of *Diary of an Exercise Addict* says that the message in our culture is clear: Exercise more and eat less (2). This is part of the reason that assessing excessive/ compulsive exercise is difficult. Many people engage in excessive exercise without realizing it because they tend to blend in with other exercisers or not recognize that they have a problem because all exercise is seen as good and beneficial. To make assessment even more difficult, everyone's fitness level is different so there is not a "one size fits all" approach to assessing activity levels. For example, two people are training for a half marathon and are following the same training plan. One person is eating well and is training to reach a personal goal. The second person is not eating sufficient calories and therefore is engaged in unhealthy exercise.

Healthcare practitioners also have difficulty assessing excessive exercise. Adkins and Keel (2005) reviewed the literature and found that disordered exercise falls into two categories or dimensions: a quantitative and a qualitative dimension (3). Quantitative exercise involves the duration, frequency, and intensity while qualitative exercise

involves more obligatory or compulsive exercise. One focuses more on time, the other on motives. Calogero and Pedrotty (2007) further assign the term "mindless" to exercise that is done for the sole purpose of weight loss, reshaping the body, self-punishment, affect regulation, acquiring "permission" to eat, identity maintenance (i.e. I am a "runner"), in obsessive rigid patterns, in hiding, while malnourished or undernourished, to escape difficult emotions or avoiding exercise all together (1). Hereafter, this article will refer to excessive/ obligatory exercise as "mindless" exercise.

Mindless Exercise with and without Eating Disorders

Mindless exercise is often coupled with disordered eating. The Diagnostic and Statistical Manual (DSM-IV-TR) (2000) lists excessive exercise as a compensatory behavior for bulimia nervosa (4). However, mindless exercise is often seen with anorexia nervosa. Grave et al (2008) evaluated exercise patterns among 165 patients with eating disorders (5). They found that almost 46% engaged in compulsive exercise with a higher prevalence for those with restrictive anorexia over binge purge anorexia, bulimia nervosa or eating disorder not otherwise specified. These patients also had lower body mass index (BMI), were younger, showed higher levels of perfectionism, more obsessive compulsive tendencies, were less likely to seek novel experiences, and had higher obsessive-compulsive disorder symptoms. Disordered eating, especially anorexia coupled with mindless exercise increases length of treatment and decreases time before relapse (1,3,5).

However, mindless exercise can also occur independently of an eating disorder or disordered eating. This may have to do with the amount of exercise, but also the social and cultural contexts around exercise. In today's culture, there is pressure on both men and women to obtain certain body types. For women, it is the tall, lean, but athletic looking female. For men, it is the super sculpted, hyper masculine male (6,7). These images may lead people to begin to see exercise as a way of obtaining these

unrealistic body ideals and this may spiral out of control. As seen with addictions to drugs or alcohol, the mindless exerciser may become preoccupied with exercise and begin to limit social interactions so they can exercise. In addition, they may need more exercise to get the same effect and may feel restless or irritable when they are unable to exercise. They may also exercise despite being injured, undernourished or dehydrated. Gradually, the desire or need to exercise begins to take over their lives.

Assessing Mindless Exercise

As noted earlier it is difficult to assess mindless exercise because each individual has their own threshold for when exercise becomes a problem. It is important for the healthcare provider to look not only at frequency and duration, but motives for exercise as well as nutritional adequacy and hydration (1,5,7). Many people don't even recognize that they have a problem with mindless exercise and therefore it might be helpful to have the client complete an exercise log. It is important that the log include not only time and duration, but also motivation for exercise as well as physical signs and symptoms during and after exercise. It will help the healthcare provider obtain some baseline data as well as help the client get a better understanding of why exercise might be a problem. Calogero and Pedrotty (2007) suggest obtaining a history of the clients past and present experiences with exercise. This will help the healthcare practitioner understand their current relationship with exercise. Some questions that may be asked include: What are your earliest memories of exercise? Do you feel present and connected to how your body feels when you exercise? Are you looking forward to exercising again? Obtaining an in depth history of the client's relationship and experience with exercise will help form the best treatment plan possible.

Mindless Exercise Treatment

Treatment for those people who are undernourished may include the discontinuation of exercise until they are able to restore weight or obtain adequate

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When Exercise Becomes Addictive

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nutrition and hydration. Unless the client is in a structured and controlled environment this may be difficult. Many clients have been using mindless exercise as a coping mechanism for a long time and they may find it difficult to stop all together. Grave et al (2008) recommend an enhanced cognitive-behavioral approach (CBT-E) (5). CBT-E involves a more collaborative approach where the practitioner works with the client to help them see mindless exercise is a problem in their life. This likely involves education on the effects of excessive exercise on the body including injury, isolation, and decreased participation in other areas of life. Once this is done the client develops a "pros and cons to change" table. This table is thoroughly discussed with the practitioner. The practitioner helps the client draw the conclusion that changing their exercise habits will improve their life and therefore they are no longer obligated to exercise as much. This type of treatment also involves keeping a "real time" exercise journal to help the client become more tuned in to how they are feeling before, during and after exercise. In addition, the practitioner can encourage the client to add in more social forms of exercise into their routine such as a group fitness class or joining friends for a hike.

Calogero and Pedrotty (2007) have a somewhat different approach for the treatment of mindless exercise. They encourage their clients to work on having a more balanced approach to exercise that includes variety, fun, and flexibility. The first step is to determine the client's motivation for exercise. Their motivation determines how they exercise. For example, a person who is motivated to exercise because they want to change their physical appearance will engage in a different type of exercise than someone who exercises because it feels good. The person who wants to change their shape may engage in weight training to build more muscle whereas the person who exercises because it feels good might take a yoga class because they feel better after participating in it. Further, Calogero and

Pedrotty (2007) believe that how a person exercises determines how they feel during exercise. Physical activity should connect us to our bodies, not disconnect us. In addition, exercise should be fun and enjoyable rather than a chore. For example a person might run as their form of exercise because it helps burn fat verses doing it because it feels good and they enjoy it. Many times, mindless exercisers are disconnected from their bodies and will continue to exercise in a particular way even though they don't really like it. They encourage the use of an "Exercise Checklist" that the individual completes and keeps with them when they exercise. This checklist contains personal questions that help the person become more aware of their motivation for exercise as well as help them transition to more mindful exercise practices. Sample questions include: Have I eaten enough to support my level of physical activity? Why am I so reluctant to exercise today? In addition, they suggest various changes a person can make to help them challenge their mindless exercise practices including exercising with others, slowing the pace of activity or changing exercise routines (i.e. yoga verses running). In the end, helping the person change their motivation for exercise will in turn change how they exercise.

Another approach is utilizing the Transtheoretical Model of Change and motivational interviewing. The Transtheoretical Model of Change proposes that people go through a series of stages when changing. These stages range from precontemplation where the client does not even recognize the need to change, to action and maintenance (8). Motivational interviewing is a technique that is used to help a person move from one stage of change to the next (9). This is done by asking the client questions that rate the importance of a potential change and their confidence that they will be able to change. These questions are asked using a Likert rating of 0 to 10. For example, the practitioner may ask: "How important would it be for you to decrease the amount of exercise you are doing on a scale of 0 to 10?" If the client answers a 1 or a 2 then the healthcare practitioner can follow-up by asking questions that help raise the client's awareness of why exercise may

be a problem. The healthcare practitioner can also ask what would need to change to raise their motivation to a 7 or 8. The second aspect of motivational interviewing is assessing the client's confidence level. Perhaps the practitioner is working with a client whose motivation is high, but their confidence is level is low. The practitioner can then ask what has happened to create a low confidence level. This type of questioning helps both the client and practitioner evaluate a client's level of motivation as well as their confidence to change.

Regardless of which technique is used, Registered Dietitians are uniquely positioned to help people with their eating habits as well as their exercise habits. We understand the relationship between adequate nutrition and healthy levels of physical activity and can help clients make changes that will improve their lives and overall sense of well being.

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News Flash: ADA Publishes Eating Disorder Position Paper and Standards of Practice and Performance (SOP/SOPP) in August Journal and Practice Paper Online

by Karen Wetherall, MS, RD, LDN

The August issue of the Journal of the American Dietetic Association contains several important documents for RDs working with eating disorders (EDs). The ADA position paper on Nutrition Intervention in the Treatment of EDs was updated (1). It outlines the roles and responsibilities of RDs in the treatment of EDs stating that RDs are “an essential component of the team treatment” (1). The paper reviews evidence for types of therapy including cognitive behavioral therapy (CBT), dialectical behavior therapy (DBT), and alternative therapies. Evidence is strong that CBT is effective at reducing the occurrence of binge eating behaviors and at enhancing normal cognitions in patients/clients with bulimia nervosa (BN). Changes in neurotransmitter secretion and function in the patient/client with anorexia nervosa (AN) limits the response to CBT in this population. It is stated that alternative therapies such as yoga, stress management skills and spirituality may lead to the reduction of food preoccupation and meal-time anxiety (1). Issues are addressed in special populations including: athletes, adolescents and patients/clients seeking bariatric surgery. The paper concludes that “risks for eating pathology increase with dietary changes and weight management efforts” (1). It is suggested that RDs promote “health-centered behaviors rather than weight-centered dieting” (1).

A second paper published in the August issue is the Standards of Practice and Standards of Professional Performance (SOP/SOPP) for RDs in Disordered Eating and Eating Disorders (DE and ED). The SOP/SOPP specifically defines standards of practice for RDs at various levels (competent, proficient and expert) (2). The “measurable action statements that illustrate how each standard can be applied in practice” are available online at www.adajournal.org, see Figures 1, 2, and 3 (2). For easy access to all three documents, go to the BHN website at: www.bhndpg.org.

The ADA practice paper also titled: Nutrition Intervention in the Treatment of EDs unfortunately was not published in the journal, but is available online. It provides a comprehensive review of literature summarizing research advances in EDs, providing clinical guidelines, and

advocating for advanced training for RDs who treat EDs (3). The ten page paper is a valuable resource and a must read for any RD working with EDs. It begins by reviewing etiology of EDs stating that they are the “result of a complex interaction between genetics, neurobiology, personality characteristics, and environment” (3).

Treatment theories are addressed including positive evidence supporting the Maudsley or family-based therapy (FBT) for patients/clients under 18. Patients/clients with EDs can challenge clinicians due to frequent lack of insight, tendency toward deception and resistance to treatment. RDs who are ED specialists are “psychologically literate”, pursue advanced training and obtain supervision from clinical psychologists (3). As time passes EDs typically become more entrenched and challenging to treat. An excellent resource which identifies suggested levels of care based on assessment data is the 2011 American Psychiatric Guidelines (4).

The practice paper provides a comprehensive review of the latest research reporting on: signs and symptoms of EDs, assessment and treatment. In Figure 2 an extensive list of abnormal laboratory values related to EDs are reviewed, and Table 1 provides guidelines for patients/clients at risk for refeeding syndrome (3). Assessment tools are referenced and sample nutrition diagnostic statements are listed.

The intention of this brief review is to provide a small sampling of the latest trends and evidence-based treatment summarized in the three important documents on EDs. RDs need to be aware of the controversies in EDs etiology and treatment and understand their role on multidisciplinary teams, offering the best possible evidence-based treatment to patients/clients diagnosed with EDs.

Patients/clients and family members in addition to health providers are often appreciative of the RDs contributions to the individual’s recovery, however evidence supporting the RD’s value on the team is lacking. There is a great need for RDs and the dietetics community to participate in research which demonstrates the effectiveness of RDs in the treatment of EDs. I invite you to thoroughly review the latest evidence in these documents and consider collecting outcomes on your patient/client population to begin documenting the value of RDs on the ED team.

Karen Wetherall, MS, RD, LDN, is the dietetic internship director at the University of Tennessee, Knoxville. She has a private practice working with clients with eating disorders and consults for Focus/Moonpointe an Intensive Out-patient Program for Eating Disorders. Ms. Wetherall was a co-author of the SOP/SOPP for RDs in DE and ED. She is Publications Chair and Resource Professional for EDs for BHN.

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NEW! CPE Credit Available Through BHN!

CPE credits (3 CPEs) are available from BHN for the full text version of the article, **American Dietetic Association: Standards of Practice and Standards of Professional Performance (SOP/SOPP) for Registered Dietitians (Competent, Proficient, and Expert) in Disordered Eating and Eating Disorders (DE and ED)** *Journal of the American Dietetic Association*. August 2011; 111: 1242-1249 and the supporting Figures 1, 2, and 3. Available through October 31, 2012. Access the article and CPEU quiz at www.bhndpg.org/moa/cpes.asp.

In Search of Evidence . . .

Nutritional and Metabolic Status of Children with Autism vs. Neurotypical Children, and the Association with Autism Severity

James B Adams¹, Tapan Audhya², Sharon McDonough-Means³, Robert A Rubin⁴, David Quig⁵, Elizabeth Geis¹, Eva Gehn¹, Melissa Loresto¹, Jessica Mitchell⁶, Sharon Atwood¹, Suzanne Barnhouse¹ and Wondra Lee¹

Nutrition & Metabolism 2011, 8:34; Journal of BioMed Central, an open access publisher Published: 8 June 2011, Full text PDF (467KB). Accessed September 09, 2011.

ABSTRACT

Background

The relationship between relative metabolic disturbances and developmental disorders is an emerging research focus. This study compares the nutritional and metabolic status of children with autism with that of neurotypical children and investigates the possible association of autism severity with biomarkers.

Method

Participants were children ages 5-16 years in Arizona with Autistic Spectrum Disorder (n = 55) compared with non-sibling, neurotypical controls (n = 44) of similar age, gender and geographical distribution. Neither group had taken any vitamin/mineral supplements in the two months prior to sample collection. Autism severity was assessed using the Pervasive Development Disorder Behavior Inventory (PDD-BI), Autism Treatment Evaluation Checklist (ATEC), and Severity of Autism Scale (SAS). Study

measurements included: vitamins, biomarkers of vitamin status, minerals, plasma amino acids, plasma glutathione, and biomarkers of oxidative stress, methylation, sulfation and energy production.

Results

Biomarkers of children with autism compared to those of controls using a t-test or Wilcoxon test found the following statistically significant differences ($p < 0.001$): Low levels of biotin, plasma glutathione, RBC SAM, plasma uridine, plasma ATP, RBC NADH, RBC NADPH, plasma sulfate (free and total), and plasma tryptophan; also high levels of oxidative stress markers and plasma glutamate. Levels of biomarkers for the neurotypical controls were in good agreement with accessed published reference ranges. In the Autism group, mean levels of vitamins, minerals, and most amino acids commonly measured in clinical care were within published reference ranges.

A stepwise, multiple linear regression analysis demonstrated significant associations between several groups of biomarkers with all three autism severity scales, including vitamins (adjusted R² of 0.25-0.57), minerals (adj. R² of 0.22-0.38), and plasma amino acids (adj. R² of 0.22-0.39).

Conclusion

The autism group had many statistically significant differences in their nutritional and metabolic status, including biomarkers indicative of vitamin insufficiency, increased oxidative stress, reduced capacity for energy transport, sulfation and detoxification. Several of the biomarker groups were significantly associated with variations in the severity of autism. These nutritional and metabolic differences are generally in agreement with other published results and are likely amenable to nutritional supplementation. Research investigating treatment and its relationship to the co-morbidities and etiology of autism is warranted.

Links of potential interest:

1. <http://www.medscape.org/viewarticle/745365>
Therapeutic Use of Omega-3 Fatty Acids in Bipolar Disorder
Vicent Balanzá-Martínez, MD, PhD; Gabriel R. Fries; Gabriela D. Colpo; Patricia P. Silveira; André K. Portella; Rafael Tabarés-Seisdedos, MD; Flávio Kapczinski, MD, PhD; Medscape Education 2011. (Examination of available evidence of the possible therapeutic use of O-3 fatty acids in BD)
2. <http://www.ncbi.nlm.nih.gov/pubmed?term=Tindle%20suicide%20bariatric%20surgery>
Risk of suicide after long-term follow-up from bariatric surgery. Tindle HA, Omalu B, Courcoulas A, Marcus M, Hammers J, Kuller LH, Am J Med 2010. (Epidemiological evidence: Examination of post bariatric surgery suicides by time since operation, sex, age, and suicide death rates as compared with US suicide rates)
3. <http://www.ncbi.nlm.nih.gov/pubmed/19270446>
Nutritional Status in relation to balance and falls in the elderly: a preliminary look at serum folate. Shahar D, Levi M, Kurtz I, Shany S, Zvili I, Mualleme E, Shahar A, Sarid O, Melzer I.; Ann Nutr Metab 2009. (Correlational evidence between falls, blood work and psychological interviews)
4. <http://www.ncbi.nlm.nih.gov/pubmed/20595420>
Relationship between vitamin D levels and depressive symptoms in older residents from a national survey population. Stewart R, Hirani V; Psychomat Med 2010. (Epidemiological evidence: data analysis from National Health Study in England)
5. http://www.medscape.com/viewarticle/738758?src=nl_crb
Can Zinc Treat ADHD? Zinc for attention-deficit/hyperactivity disorder: placebo-controlled double-blind pilot trial. Arnold LE, DiSilvestro RA, Bozzolo D, et al. Medscape Psychiatry 2011. (Medscape expert interview (Robert Findling, MD) regarding new treatment study conducted in children who have ADHD)

Compiled by Ruth Leyse-Wallace, PhD, RD San Diego, California, email: rthlys@cox.net

In the BHN Pipeline!

Jessica Fishman Levinson, MS, RD, CDN, founder of Nutritioulicious®, developed 55 kid-friendly and nutritionally sound recipes for her newly-released first cookbook, *We Can Cook: Introduce Your Child to the Joy of Cooking with 75 Simple Recipes and Activities* (Barron's, August 2011). Designed to make cooking and eating fun for children and parents, every recipe has step-by-step instructions with tasks for children age's three to six.

Jessica was inspired to write *We Can Cook* because she loves seeing the interest and excitement children have when it comes to food. As a dietitian, she believes that teaching children about nutrition and food at a young age is a very important part of child development. She also advocates for children to eat the same food that adults eat, and one way to encourage children to advance their palates is by bringing them into the kitchen during the cooking process. Involving kids in the kitchen at an early age is a great way to introduce them to new foods and help them gain a positive understanding of food and cooking.

We Can Cook is divided into six chapters based on food groups, including fruit, vegetables, bread, pasta, and grains, meat, fish, and poultry, dairy and eggs, and healthy treats (while not a real food group, no cookbook would be complete without this section!) While there are some kid-favorites like mac 'n' cheese and chicken fingers, there are many recipes that are not staples of children's diets, such as steak fajitas and grilled plums with yogurt sauce. No parent should be a short-order cook, so having recipes the whole family can enjoy will help parents stick to cooking one meal at a time.

To find out more about *We Can Cook* or to order a copy, contact Jessica at Jessica@Nutritioulicious.com or check out <http://amzn.to/mUw9vn>.

BHN would like to feature you in BHNNewsletter!

Whether it's your unique product or service, or a recent recognition, please send highlights to Milton Stokes at miltonbhn@yahoo.com. News will be considered for follow up interviews and possible inclusion in the column *In the BHN Pipeline*.

Joan Guthrie Medlen, MEd, RD, founder of Phronese Publishing, ICC, focuses her work on supporting people with intellectual and developmental disabilities (IDD), their families, and those who support them to lead quality, healthful lives as independently as possible. As mother of a young adult who experiences Down Syndrome, Autism, Celiac Disease, and does not speak, Joan has long realized the need for a practical tool which effectively promotes independence in the kitchen as well as good nutrition.

Her recently published, *Cooking by Color: Recipes for Independence* is designed for youth and adults who experience or plan to experience IDD living in their own home. This tool for support uses color coding, visual tools and plain language to create recipes for just one or two people.

Blending her experiences with hundreds of families and youth with Down Syndrome along with best practices in education and literacy, Medlen creates a system and a set of basic recipes that create an environment of success. The book is perfect for school transition programs, independent learning centers, and anyone who is interested in building successful experiences in the kitchen.

Joan's first book, *The Down Syndrome Nutrition Handbook: A Guide to Promoting Healthy Lifestyles*, was the inspiration for the development of this cooking tool, along with many other practical tools available on her website at www.DownSyndromeNutrition.com.

Cooking by Color: Recipes for Independence is published by Phroneses Publishing and available from www.DownSyndromeNutrition.com, Amazon.com, or can be ordered from your local bookstore.

American Association on Health and Disability: Resource for IDD Nutrition and Behavioral Health

The American Association on Health and Disability (AAHD) offers many publications and programs on health and wellness initiatives for people with disabilities.

The mission of AAHD is not only to advance such initiatives, but to also identify effective intervention strategies to reduce the incidence of secondary conditions and health disparities between people with disabilities and the general population. AAHD accomplishes its mission through research, education and advocacy. The AAHD Health Promotion Resource Center (HPRC) is a free clearinghouse offering contemporary scientific, policy and educational information on disability and health. In April 2011 new fact sheets, research abstracts and best practices were added to the HPRC. The fact sheets are on topics such as Obesity and Disability, Health Screening and People with Disabilities, Health Disparities and People with Disabilities, and Health Promotion and Wellness for People with Disabilities. Access these and other AAHD resources at

http://www.aahd.us/page.php?pname=publications/fact_sheets

College Nutrition...

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Double Your Referrals... Without Spending One Marketing Dollar

By Jessica Setnick, MS, RD, CSSD and Michelle Johnson

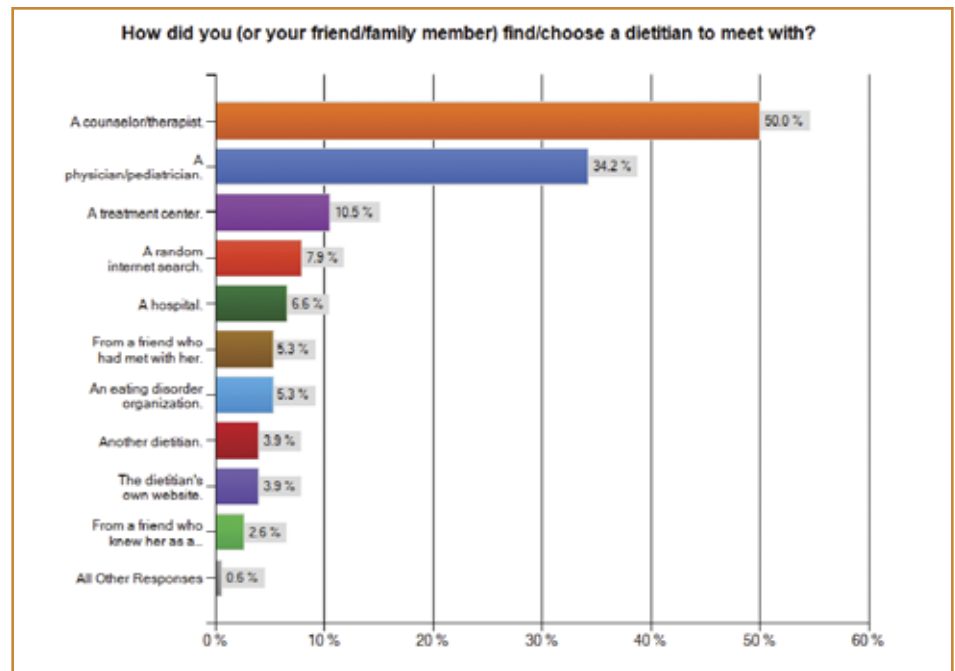
The best session I ever attended at an ADA Food & Nutrition Conference & Expo (Expo) impacting my private practice was led by a business and marketing expert. I took away a crucial piece of information that has guided my professional practice ever since... if you want to see more of a certain type of patients, find out how your favorite patients find you, and increase your marketing to that source. Because my specialty area is eating disorders, and the majority of my patients with eating disorders were referred by another of their treatment providers, from that day forward, every marketing moment and dollar that I have spent has been promoting my services to other professionals, rather than directly to the public. This has been a very effective strategy for building my local reputation and patient case load, and one that I recommend to colleagues.

Earlier this year a survey was conducted of individuals who had met with a dietitian as part of their eating disorder treatment. A total of ten dietitians referred patients to the study, and I was curious if their patients had found them the same way(s) my patients find me. Item 4 of the survey investigated the question "How did you (or your friend/family member) find/choose a dietitian to meet with?" Nineteen possible response choices were provided, including different types of

- facilities (hospital, treatment center, college, eating disorder organization),
- health providers (physician, counselor/therapist, other dietitian),
- internet websites (EDReferral.com, EatRight.org, HealthProfs.com, Bulimia.com, random internet search, the dietitian's own website), and
- other contacts (a friend, a support group, a presentation, etc.).

Participants were able to choose more than one response, in case they had seen more than one dietitian or had received guidance toward a dietitian from more than one source.

My research assistant, Michelle Johnson, summarized the responses to Item 4. She provided the following chart and explanation.



The top 10 most frequently chosen referral sources, as shown above, included 96% of the total responses. Six choices received 0 responses: 1) EDReferral.com, 2) EatRight.org, 3) HealthProfs.com, 4) Bulimia.com, 5) She spoke to my support group, and 6) I heard her give a presentation.

The most frequently selected response, counselor/therapist, was selected by a full 50% of patient respondents. The second most frequent selection, Physician/Pediatrician, was chosen by just over one-third of respondents. Ten and one-half percent (10.5%) of respondents indicated receiving assistance finding a dietitian by a treatment center, and nearly 8% of patient respondents indicated they successfully used a random internet search.

Combining responses into groups, the Health Providers group (physician, counselor/therapist, other dietitian) stands out as the most influential in connecting patients in search of eating disorder treatment with dietitians providing such treatment. No other group or individual referral source came close to this level. In fact physician/pediatrician and counselor/therapist together received more responses than all of the other possible options combined.

Clearly dietitians wishing to include more eating disorder patients in their

practices should look at networking with counselors and doctors in their vicinity as an essential marketing strategy. That doesn't mean that other leads shouldn't be followed, but they should be prioritized after connecting with other professionals. It is not clear if the other methods that dietitians use to generate referrals (paid website listings, personal website, networking with treatment centers) are not as effective in general, or if they simply weren't used by this particular patient population. In areas where there are fewer professionals per capita, methods that reach a wider audience, such as the internet, may be more effective. It is not possible to globalize these results to all patient types, as individuals with medical illnesses may utilize other resources to find a dietitian. However, this study provides support for that strategy I learned long ago at ADA FNCE and can be a template for further research and strategy.

Jessica Setnick is a past chair of BHN and the author of *The ADA Pocket Guide to Eating Disorders*, available at www.eatright.org.

Michelle Johnson is a dietetic intern at the University of Texas Southwestern Medical Center.

BHN member Ruth Lyse-Wallace, PhD, RD, is also a co-author of the study.

BHN: Setting the Standard for Nutrition in Behavioral Healthcare

Vision: Impact the nutrition of the behavioral health populations we serve.

Mission: Empower Behavioral Health Nutrition (BHN) members to be the food and nutrition experts in the areas of:

- Intellectual and Developmental Disabilities
- Eating Disorders
- Mental Illness
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ADA website: <http://www.eatright.org>

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