Healthy Nutrition – Healthy Brain: How Eating Shapes Your Brain
by Guido K.W. Frank, MD

How much we eat is driven, to a large degree, by the taste of food. Taste stimulates brain reward circuits, brain mechanisms that tell us whether a food is considered “good” for the organism and whether this type of food should be eaten again or not. Taste inputs from the tongue project, via the brain stem and thalamus, to the two substructures of primary brain taste cortex: the insula and the frontal operculum. The insula is a major gateway for taste processing; it is here that we recognize whether a food is sweet, sour, salty, or of umami flavor, and from here the information is transmitted to the ventral striatum and amygdala, and subsequently to the hypothalamus, midbrain, and frontal cortex. Ventral striatum and midbrain contain dopamine and opioid receptors that are important to drive the motivation to approach food and to process the experience of pleasure from eating food, respectively. The hypothalamus contains centers for hunger and satiety, and the prefrontal cortex contributes to decision-making regarding whether to eat more or less of a food, which may be influenced by fear or values such as fasting for spiritual reasons. In addition, these brain circuits receive input from the body to the left insula regarding information about the sensation of “fullness” of the stomach, and from fat cells via the leptin hormone as well as from other neuropeptides regarding the body’s general status of nutrition to modulate food intake. Thus, food intake regulation involves a complex brain–body interaction.

Effects of Eating on Brain Reward Function
Food restriction and weight loss have been found to increase brain dopamine reward response in animal studies. In contrast, overconsumption of food leads to a down-regulation of dopamine D2 receptors. In a study by Johnson and Kenny, rodents were fed normal chow or cafeteria food. Not surprisingly, the more cafeteria food the animals ate, the more weight they gained. More importantly, however, the more they gained, the fewer dopamine D2 receptors they had. This down-regulation of dopamine function has also been associated with processes as they occur in addiction disorders, although evidence of potential food addictions has not been clearly established. Those animal studies suggest that food restriction may sensitize brain reward pathways, whereas excessive food intake desensitizes these pathways. Earlier brain imaging studies in humans examining obesity support altered reward mechanisms. These studies indicated that obese individuals had reduced brain response in response to food receipt and reduced brain dopamine receptor availability. However, studies comparing underweight, normal weight, and overweight humans are scarce. In animal studies, brain reward circuits are also affected by malnutrition via other neurotransmitters and hormones, including leptin, ghrelin, glutamate, and opioids, but the dopamine system is particularly well-characterized.

continued on page 3
From the Chair

Diane Spear, MS, RDN, LD, FAND

What a fabulous Food and Nutrition Conference and Expo™ (FNCE®) in Boston, where BHN members were shining stars! Our Eating Disorders session spotlighting Orthorexia was a home run with the largest number of attendees in BHN history. Held in the grand ballroom of the opening session for FNCE®, it was both amazing and humbling to experience the energy and thirst for knowledge our speakers motivated. Marci Anderson Evans, MS, CEDRD, LDN, BHN’s Eating Disorders Resource Professional opened the session for Dr. Stephen Bratman, MD, MPH who coined the term for this emerging disorder and shared the spotlight with Jessica Setnick, MS, RD, CEDRD as expert presenters in the field. The event was truly amazing!

Make BHN Your Cup of Tea was the theme for our Member Breakfast as well as the BHN Showcase. Distinguished Member and Excellence in Practice awards were presented to very deserving members. Read more about each one further in the issue. Two case studies were presented and very well received by the breakfast attendees:

- Case Study #1: Janice Scott, MS, RDN, DSC, LD
  Families of patients with complex feeding problems need the on-going support of the RDN for education, goal-setting, monitoring progress, and adjusting intakes of energy, nutrients and fluids.

- Case Study #2: Janelle Smith, MS, RDN
  The interaction between bariatric surgery, alcohol abuse, and an eating disorder diagnosis calls for an interdisciplinary approach and a multi-faceted treatment plan, which included behavioral, food, and nutrient supplement interventions.

Read these and more Case Studies at www.bhndpg.org.

Our BHN Booth at the DPG Showcase highlighted our increasing number of member benefits and we gained many new members! BHN Member Talking Points included the following:

- Member Website Forums – provide the opportunity to post questions and build a community amongst likeminded RDNs.
- Case Studies – members may access a variety of case studies with free CPEs on the BHN Web site, beginning with the FNCE® 2016 presentations.
- Speaker’s Bureau – a list of BHN members for the public to contact for speaking on topics related to BHN available via our website.
- Mentor Program – BHN is adapting the Academy’s mentor program to build our own.
- Member Market Place – an on-line store provides a place for the promotion and sales of products and services of our members as well as BHN.
- Brain Game – a downloadable set of Q & A cards with challenging and fun brain and nutrition facts will soon be available in our Member Market Place.
- SOP/SOPP in Mental Health – a workgroup is currently developing standards of practice and standards of professional performance for RDNs working in the focus area of mental health.
- Research Project – a first for BHN with member participation! Information is forthcoming.
- Fact Sheets – continue to be published and available on BHN Website.
- Webinars *** Newsletters *** Social Media *** Student Blog!!!

I was absolutely thrilled to meet so many of you in person and would love to hear what you gained from BHN’s events. Planning for FNCE® 2017 is already underway. If you would like to get involved with BHN, now is a great time to shine!

Your Chair,
Diane Spear
Healthy Nutrition –
Healthy Brain: How Eating
Shapes Your Brain
continued from page 1

Dopamine Circuits
as a Target for Human
Brain Imaging Research

Dopamine-related brain circuits are critically associated with providing signals regarding the presence and amplitude of rewards. Such signals facilitate reinforcement learning and code the value of stimuli, perhaps even the metabolic values of food. Furthermore, computational models exist that allow us to test brain dopamine-related brain activation based on type and frequency of food stimulus exposure. Such a model is the prediction error model. This is a computational theoretical framework for reward learning that is based on brain dopamine activation in response to receiving expected or unexpected reward stimuli. In short, when we subject an individual to conditions of receipt or omission of expected or unexpected food stimuli, we can study brain dopamine-associated reward pathways using brain imaging. This particular response is called “prediction error response” as it is related to a computation in the brain that compares expected and received reward value. This model has been studied in dopamine neurons in basic research and adapted to human brain imaging.13 If we then were to apply this model to individuals with disordered eating and abnormal body weight and were to find differences in brain response compared with healthy individuals, this could provide us with information about possible dopamine-related brain function and may help to identify pharmacologic interventions.

That is exactly what our investigative team did.14 We recruited underweight women with anorexia nervosa (AN), healthy controls, and obese women who all underwent functional magnetic resonance brain imaging (fMRI). During fMRI the study participants learned to associate visual cues (colored shapes) with taste stimuli delivered to the mouth via tubes (sugar solution, water, or no stimulus); at times when the shape predicted the sugar solution, no stimulus was delivered, and at times when no taste was expected, sugar solution was given. Results showed that women with AN had higher brain response to unexpected taste stimuli, whereas obese women had lower brain response to such stimuli. These finding suggest that hypersensitive dopamine-related brain function is present in underweight individuals with AN, whereas the opposite occurs in obese women, consistent with the aforementioned animal research.

Another disorder characterized by pathologic eating is bulimia nervosa (BN). Bulimia nervosa has been associated with addiction disorders15 due to the episodic and often compulsive bingeing on palatable foods. However, individuals with BN also typically restrict food or over-exercise between binge-eating episodes. There are only so many brain circuits that process drive and motivation, and the same neural pathways that reinforce motivation to approach food are also activated in response to addictive drugs. This has led to the hypothesis that addiction-prone individuals could become “addicted” to food, which could include exhibiting increased tolerance as well as reduction of dysphoria, and such behaviors could be related to altered reward processing. We applied the same study protocol to our BN investigation16 as we did with AN and obese individuals and found that the BN group also showed reduced brain response in insula, anteroventral striatum, and frontal cortex, but not quite as much as in the obese group. Importantly, higher binge/purge frequency predicted lower brain response, supporting the notion that eating behavior in BN has a direct effect on brain function.

Together, these studies suggest that dopamine-related brain function lies on a trajectory form consisting of heightened response in the underweight state, moderately lower response in BN, and very low response in obesity and presumably chronic overeating. This body of research further suggests that this type of altered brain function could be acquired and remits with recovery. New results from our group suggest that after long-term recovery from AN there is a hyper-responsiveness in the insula but not anymore in the ventral striatum. An ongoing question, however, relates to what could be predisposing traits that might make an individual vulnerable to develop an eating disorder (ED).

Brain Structure
in Eating Disorders

Another type of brain research involves brain structure and volume. The results of such research over the years have been especially inconsistent, probably because food restriction or binge eating have significant acute and quickly changing effects on brain volume, and those effects may obscure brain alterations that cause disordered eating behavior. To mitigate such effects, we have studied individuals with AN and BN under nutritionally controlled conditions, and we also controlled for effects from medication and comorbid diagnoses.17 In that study, we showed that in ill and recovered AN individuals as well as ill BN individuals, their orbitofrontal cortex gyrus rectus volume was higher compared with controls, suggesting that this could be a trait alteration across all forms of EDs. This study further found that ill and recovered individuals with AN had higher right insula volume, whereas individuals with BN had higher left insula volume. The right insula is not only important in taste perception but it also contributes to self-recognition—the “abstract representation of oneself” and interoceptive awareness. The fixed perception of being fat while severely underweight in AN could thus be due to a right dysfunctional insula. The left insula activation responds to gastric distention and self-reported fullness. Thus, altered anterior insula volume could interfere with normal interoception in BN and an abnormal sense of “fullness” or satiation, and then trigger the urge to purge after excessive food intake and guilt experienced over binge eating. Importantly, those results of higher insula volume17 are discrepant from most other studies on brain structure in AN that had found lower brain volumes compared with controls.19 We believe this is due to the fact that subjects in our studies were assessed after 1 or 2 weeks of controlled food intake, which

continued on page 4
Healthy Nutrition – Healthy Brain: How Eating Shapes Your Brain

continued from page 3

should have resolved effects from acute starvation and ideally identify regions that contribute to ED psychopathology. A caveat is that the findings of all these studies need to be replicated in larger samples; whether the left and right distinctions will hold remains to be seen. We are currently conducting a large study funded by the National Institutes of Mental Health that tests whether we can replicate the above findings on brain structure and function.

Concluding Remarks

We are living in exciting times where tools of neuroscience are providing us increasingly with models of brain function. At the same time, we have access to more and more advanced brain imaging techniques that allow us to study the living human brain. This will help us to bridge real-life behavior and brain function to determine how we can modulate brain function by eating behavior and perhaps support recovery from EDs with specific meal plans that target individual psychopathology.

About the Author

Guido K.W. Frank is an associate professor of psychiatry and neuroscience at the University of Colorado Anschutz Medical Campus. He is associate director of the Eating Disorders Program at Children’s Hospital Colorado, and heads the Developmental Brain Research Program. He has received funding from the National Institute of Mental Health (NIMH) for the past 7 years, with currently two NIMH Research Project Grant (RO1) awards for the study the biologic domains of youth and adults that potentially underlie ED behavior.

References


Slate of Candidates for the 2017-18 Officer Positions

The Behavioral Health Nutrition DPG Nominating Committee is pleased to announce the slate of candidates for the 2017-18 officer positions:

Chair Elect:
Megan Kniskern MS, RD, LD/N, CEDRD
Cynthia Rutkowski, MA, RDN, FAND

Treasurer:
Jenni Costello, RD, LD, LCSW

Nominating Committee:
Christina Drobisch, RDN
Sally Kilpatrick, RDN, LD, CDE, CCP

Thank you,
BHN DPG Nominating Committee
CPE Questions for Healthy Nutrition – Healthy Brain: How Eating Shapes Your Brain

1. Signals of whether or not a food should be eaten are triggered by taste inputs on the tongue that stimulate reward circuits in which brain substructures?
   A. Hypothalamus and cerebellum
   B. Amygdala and hippocampus
   C. Insula and frontal operculum
   D. Parietal lobe and subiculum

2. Which portion of the brain is the gateway for taste processing and recognizing whether a food is salty, sweet, sour, or umami flavor?
   A. Insula
   B. Pre-frontal cortex
   C. Hypothalamus

3. Dopamine receptors in the ventral striatum and midbrain are important to which of the following?
   A. Identifying the flavors of food
   B. Driving motivation to approach food
   C. Regulating the production of leptin

4. Opioid receptors in the brain are important to which of the following?
   A. Signaling fullness of the stomach when eating food
   B. Deciding whether to eat more or less of food
   C. Processing the experience of pleasure from eating food

5. The results of a study by Johnson and Kenny showed that feeding rodents cafeteria food versus chow led to?
   A. Greater weight gain and fewer dopamine D2 receptors
   B. Less weight gain and fewer dopamine D2 receptors
   C. Greater weight gain and more dopamine D2 receptors

6. Down-regulation of dopamine D2 receptors has been associated with?
   A. Impaired sensory processing
   B. Attention deficit disorder and self regulation
   C. Processes as they occur in addiction disorders

7. Animal studies on the effect of eating on brain reward function suggest that brain reward pathways may be?
   A. Desensitized by food restriction
   B. Sensitized by food restriction
   C. Sensitized by excessive food intake

8. A study by Frank et al compared the response to unexpected taste stimuli in women with anorexia nervosa (AN), obesity, and normal weight controls, using functional magnetic resonance (fMRI). Their findings on dopamine-related brain function suggest?
   A. Hypersensitive function in underweight with AN; hypersensitive in obese
   B. Hypersensitive function in underweight with AN; hyposensitive in obese
   C. Hypersensitive function in underweight with AN; no change in obese

9. The same neural pathways that reinforce motivation to approach food are also activated in response to?
   A. Sleep deprivation
   B. Addictive drugs
   C. Excessive exercise

10. Frank et al applied the same protocol with bulimia nervosa (BN) as in the AN study and observed which of the following results supporting the notion that eating behavior in BN has a direct effect on brain function?
    A. Higher binge/purge frequency predicted lower brain response
    B. Lower binge/purge frequency predicted lower brain response
    C. Higher binge/purge frequency predicted higher brain response
    D. Lower binge/purge frequency predicted higher brain response

11. Together, the dopamine-related brain function studies show that brain function response is?
    A. Heightened in BN; moderately lower in obesity; very low in underweight
    B. Heightened in obesity; moderately lower in BN; very low in underweight
    C. Heightened in underweight, moderately lower in BN, very low in obesity

12. In a tightly controlled study by Frank et al that investigated the effect of changes in brain structure and volume, results suggest that the perception of being fat while severely underweight in AN and abnormal sense of fullness in BN could be due to which of the following?
    A. AN had higher right insula volume; BN had higher left insula volume
    B. Lower brain volumes in somatosensory cortex of those with AN or BN
    C. Lower parietal lobe volume in AN; higher parietal lobe volume in BN
Motivating your Clients: A Quick Overview of Motivational Interviewing

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Do you ever find yourself wrestling with your patients rather than dancing? As healthcare professionals, we are trained to give our clients important knowledge to benefit their health. If that information is not followed, there can be negative consequences, especially if it relates to serious health concerns.

Have you ever thought your clients may not be ready to receive what you need to share with them? Perhaps they are preoccupied with other priorities. Life pulls us in different directions. There’s always more to do, or life stressors that need attention. When it comes to decisions and important choices with respect to our health, it’s not surprising that many of us are overwhelmed or resistant to one more thing to add to the list of “to do’s.”

James Prochaska, PhD, professor of psychology at University of Rhode Island, identified six stages in which people change: precontemplation (not ready), contemplation (getting ready), preparation (ready), action (overt modifications in behavior change), maintenance (sustained action) and termination (zero temptation to return to old habits). According to Dr. Prochaska, people move through these stages of change as they are ready. As an example, they cannot be forced into action if they are in precontemplation or contemplation. Relapse is the norm and not the exception when changing behavior, and many times clients can spiral through the stages multiple times before behavior change is maintained.

The good news is there is a language to use with clients to assess what stage they are in, and how to navigate movement through these stages. Motivational Interviewing (MI) can be helpful in assessing a client’s stage of readiness and how to proceed with the assessment and treatment.

MI: A Powerful Tool

MI is a client-centered, guiding method of communication and counseling designed to elicit and strengthen motivation for change by exploring and resolving ambivalence.

The power and essence of MI lies in our basic assumption that people are naturally inclined to strive toward being the best person they can. As healthcare professionals, we can help our clients find the motivation that is already within them, build discrepancy and at the same time affirm and value them as people.

So, what is the best way to motivate our clients? We motivate by our presence, undivided attention, and curiosity to their particular situation. Common human reactions to being listened to are: feeling understood, wanting to talk more and open up, as well as feeling safe, empowered and hopeful.

The Oars Technique

As Theodore Roosevelt once said, “No one cares how much you know, until they know how much you care.”

Although our education, advice and information have a role, the most powerful tool we have for helping people is not what we tell them. What supports change is the manner, attitude and spirit with which we empower them.

One acronym we use in MI is OARS – open-ended questions, affirmations, reflections, and summaries. It sounds simple, but common knowledge is not always common practice!

For example, a client with diabetes can be overwhelmed with their diagnosis, and reflecting their feelings can get to the heart of their fears. When they feel heard and understood, they may be more open to hearing what we have to say.

Affirming what they are already doing is part of MI. For example, stating, “It must have taken a lot of courage for you to come to this appointment today given your fears,” is affirming something they already did with respect to their health.

Asking open-ended questions (versus closed ended, or yes and no questions) allows elaborating on their situation, giving you more information and a direction to go in. Using “forward-moving” open-ended questions have more potential with movement towards a desired change. Examples of forward moving questions might be: “what helps you follow through with daily exercise,” or “when you’ve been successful with diet changes in the past what was most helpful?”

Summarizing statements after each pause can help clients feel heard and want to talk more. Reflections are short summaries after a series of statements on the part of the client. Longer summaries are often useful for them to feel heard and continue the conversation.

Putting MI into Practice

People are more likely to make changes if they perceive they have control and choice. Our conversations with them can convey this choice and help them in their process.

Using OARS can be instrumental in assisting our clients to hear their own thoughts and address their fears with a focus on behavior change. We try to navigate the conversation towards “the dream” of what a client wants versus “the problem.” Rather than saying “tell me about problem X” ask “what would be most beneficial to your health today?”

What is one easy way to start using MI? It’s called engagement, which according to Steven Rollnick, PhD, co-author of Motivational Interviewing: Helping People Change, is 20% of the conversation. How do you engage your clients from the start? Research shows continued on page 7
that clients make up their mind if you are able to help them within the first two minutes of an interview.

Eye contact and body language convey presence and assist with engaging patients. If engagement does not happen, movement toward behavioral change will likely not occur. Completely focusing on your client is essential. You may need to reconsider writing information down or using a computer to record data, especially at the beginning of a conversation, which can cause a disconnect with presence.

Many healthcare practitioners immediately go to planning (educating, information giving, etc.) but engagement must happen first, followed by a focus on what the client is interested in hearing about. Why they came in for an appointment may be different than you originally thought. Knowing what is important to them, and navigating the conversation towards that will keep them engaged with you.

Give your clients information in eyedropper-size units, and let them choose the information that is most relevant to their situation and interest. It will help with long-term change and take the pressure off you as a professional.

Listen for Change Talk

In MI we say there are 3 types of “talk” we hear from a client: discord, sustain talk and change talk. Discord is heard when there is dissonance in your working relationship with the client. You may hear “you don’t understand me” or “you’re overwhelming me.” Sustain talk is speech that favors the status quo rather than movement towards change. Common responses include: “I don’t need to” or “I’m not sure I can do that.” Change talk is speech that favors movement towards change. “I’m ready to do that” or “I need to change that.”

Our goal in MI is to recognize change talk, reflect it and reinforce it.

“You really want to keep your blood sugars in normal range and avoid the long term effects of diabetes” in response to a client wanting to avoid the ramifications of diabetes. Many times a client has “change talk” and we miss it completely or move on to another question, thereby missing an opportunity to increase movement towards change.

Research shows that when a client talks about change out loud it reinforces to their brain they can change. If you reflect their statements, it is a double reflection to the brain. The more change talk there is the more likely change will occur.

Just as you have to prep your house before you paint, MI is the prep before giving information. Motivational Interviewing is like learning a language and takes patience to grasp. Going to a one- or two-day workshop can help with the beginning stages of learning MI. If it is something you want to build upon, there are MI trainers and coaches throughout the U.S. and Europe. You can find their information at motivationalinterviewing.org.

If you choose to learn MI, you will have a lot more dancing than wrestling in your office, and go home feeling more satisfied and energetic knowing you made more of a difference in the world and your clients’ lives.

References:


About The Author

Susan B. Dupert, MS, RD, CDE is in private practice in Los Angeles, California and a member of the International Motivational Interviewing Network of Trainers, which practices a collaborative, person-centered form of behavioral change. She is the author of A Recipe for Life by the Doctor’s Dietitian, Healthy You, Healthy Baby: A Mother’s Guide to Gestational Diabetes and A Healthy Baker’s Dozen. You can find her online at susandopart.com, motivationalinterviewingtrainer.com, on Twitter @smnutritionist, @change_talk, Instagram at Instagram.com/susandopart and Facebook at https://www.facebook.com/A-Recipe-for-Life-175127155535/?ref=mf.
Parents of children who have autism frequently rank meal time as the most difficult thing they do with their children. Many skills must come together to have a successful meal experience for both the child and parent. Just to sit at a table during mealtime individuals need to possess feeding skills to move food from the plate to their mouth, chew and swallow food safely, and attend to the task and those around them in a socially appropriate manner. While none of these skills address the possibility of sensory challenges with food, it is a behavior often observed by families with an autistic child at the table. These concerns should generate a referral to the Registered Dietitian Nutritionist and other members of a feeding team.

The image below illustrates feeding/eating difficulties seen in autism that are just the tip of the iceberg. There are many factors that come into play below the surface as well, both positive and negative, that the average person might never guess exist. On the surface, the untrained eye may only see what appears to be non-compliant behavior that seems to be a deliberate attempt to avoid healthy foods. Picky eating, limited food choices, and food refusals may be a direct result of sensory issues. Wandering might be related to issues with seat stability or a lack of training in sitting in a chair. When working with individuals who have autism, Registered Dietitian Nutritionists should only consider one change at a time to assist with tackling feeding difficulties, particularly sensory disorders. The entire iceberg cannot be melted all at once. It will need to be chipped away one small piece at a time.

Sensory issues may be officially diagnosed as Sensory Processing Disorder (SPD) or there may be no official diagnosis provided. In a statement by the American Academy of Pediatrics (AAP) released May 28, 2012, pediatricians were discouraged from using Sensory Processing Disorder as a stand-alone diagnosis. The statement encouraged physicians to look at the possibility other developmental disabilities might be present. As the statement from the AAP suggests, autism is not the only diagnosis that includes a sensory component. A number of diagnoses can involve sensory challenges. Premature or drug-exposed babies, children with Attention Deficit Disorder, Down Syndrome, or any diagnosis that involves a neurological component could exhibit similar sensory symptoms. Sensory Processing Disorder is more than simply picky eating. A picky eater may not prefer sticky foods, but be able to consume enough nutritional variety

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*Sensory Processing Disorder, Autism and Food Challenges*

Sharon Lemons, MS, RDN, CSP, LD

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*continued on page 9*
Sensory Processing Disorder, Autism and Food Challenges
continued from page 8

to compensate for the lack of a disliked food. Sensory issues are a problem when they negatively affect an individual’s ability to eat a balanced diet.

Sensory issues may manifest as a total refusal of food or as a reaction to the environment. Individuals with SPD may have hyper, hypo, or mixed sensitivity to any or all senses. The preference for one extreme or another may even differ within the same day. Imagine being so afraid of falling out of a chair, due to concern of instability, that contemplating food presented during a meal is unimaginable. Even a change in a utensil makes food look different. To a child who has managed to learn to eat chicken nuggets and goldfish from a round blue plate, the food has completely changed if it is now offered on a square red plate. Additionally, the same chicken nuggets may only be accepted from a specific restaurant due to a preference for the desired level of crunchiness or the spices used. Learning to eat a previously undesirable food may take a child months or years. The strategies involved in working through sensory issues must address all the senses. A preference for crunchy food may indicate a desire to hear the crunch of chewing when eating. Additionally, highly flavored, spicy food may indicate a need for the sensory impact of the spices.

Behavior is communication. The trick to working with autism or any behavioral challenge is determining the issues the individual is trying to communicate with their behavior. “I know you think you understand what you thought I said but I’m not sure you realize that what you heard is not what I meant” is the perfect quote for working with feeding concerns and autism. Practitioners should ask themselves if they are interpreting the behavior correctly. Are the strategies being implemented making a difference in the first three days? If not, then one should re-evaluate the interpretation to see if they have understood the communication correctly. Caregivers and providers should give themselves permission to reassess their interpretation of the behavior observed. At any given time, another clue may present itself, giving much greater clarity to what the individual is communicating.

Recent research has shown that individuals who have autism are unable to predict the stimuli from their environment. In his TED presentation, “How the Brain Learns to See”, Pawan Sinha, PhD demonstrates the differences in eye tracking strategies of typically developing children and those who have autism while playing the game Pong. Children, who have autism and typically developing children played Pong while the researchers tracked their eye gaze. The experiment showed that typically developing children were predicting where the ball was going to go with their eyes, but the children, who had autism were looking where the ball had already been.

Just imagine never knowing what was coming because you were always looking behind you at where you had been. You would be surprised by everything in your environment. Looking at it from this viewpoint explains some of the resistance children with autism have when offered new foods. If a person could not predict any of the sensory stimulation they were about to get from a new food, new foods would indeed be a scary experience. To a person with autism, a change in any part of the meal takes away their ability to predict the sensory experience of eating even normally familiar foods.

Repeated experiences help us make predictions. In turn, the way to help individuals with autism or a person with sensory feeding issues become more willing to try new foods is to help them predict what the food will be like when they put it in their mouth. Using a team approach that utilizes professionals trained in sensory integration strategies, food and the sensory experiences associated with each new food can be introduced without the added stress of actually putting the food in their mouth and eating it. While most of us never think about how food is perceived by all of our senses, this may be all the individual with SPD can think about. For example, an experience of being overwhelmed by the strong taste of green beans may cause a child to be afraid of all green foods thereafter. Through food play children can be taught how a food is going to smell, feel, look, and sound when they bite into it. Dietitians can and should be a vital part of the feeding therapy team, as there is nobody more qualified and better trained to describe the sensory experience of food as well as provide ideas on how to incorporate different nutritional components within a limited repertoire of accepted sensory experiences.

Individuals with autism react to food as soon as they see it or sometimes even before they see it, but can smell it. The author of “Food Chaining” uses the predictability of linking new foods with foods the child already accepts to expand the food repertoire. Unfortunately, many therapists using this method are only increasing the number of foods accepted. Since individuals with autism are more prone to dental issues, obesity and obesity-related diseases, it is important to also expand the nutritional density of accepted foods. An individual, who only accepts crunchy foods such as Chips Ahoy cookies, Goldfish crackers, or Teddy Grahams, could eventually accept crunchy vegetables, but this is a process that takes work and time. Through touching foods during fun activities, a lot can be learned. Utilizing activities with new foods allows the individual to learn how it feels and how it smells just by handling it doing activities they already do. This may be no more than building a structure with carrot sticks or lining up pieces of broccoli. Therapy should always start at the developmental stage appropriate for each individual and use activities they already enjoy.

All work with food should feel safe for the participant. No one likes every food. It is important everyone have the ability to decline a food. The goal is to teach persons with SPD to mindfully eat the same way we are encouraging mindful eating in all those we counsel. If we teach individuals with autism to mindlessly eat every food every person offers them in whatever quantity is available, this is counterproductive to their future health. Additionally, it’s important to teach them to eat balanced meals. For this task the United States Department of Agriculture (USDA) My Plate is a fan-
Sensory Processing Disorder, Autism and Food Challenges
continued from page 9

tastic tool. A common strategy to help those with autism bring predictability to their day is the use of picture schedules. Similarly, using My Plate with pictures of foods (or food items written or typed in each category) can demonstrate a balanced mealtime menu. My Plate can also give the person more autonomy over the foods they eat, while maintaining balance by listing all the food choices for the day in each category then giving the option to choose one from each category.

Autism affects 1 in 68 of our children and 1 in 42 boys. Finding effective ways to nourish them is vital to their health. The healthcare crisis will not improve if a segment of the population this large is totally ignored. Teaching individuals with Sensory Processing Disorder how to predict the sensory experiences associated with food, will not only improve their nutritional health, but their mental health. Every strategy learned is a strategy that will help them develop autonomy in all areas of their life.

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BHN would like to congratulate our. They are remarkable leaders in our profession. Our thanks to each of them for their hard work and dedication.

**Distinguished Member: April Winslow, MS, RDN, CEDRD**

April (@AprilWinslow) is a Psychiatric Registered Dietitian Nutritionist and the founder of Choose to Change Nutrition Services. An amateur chef, critical thinker, and advocate for the healing power of food, April focuses on living out the reality she believes all may possess.

Her extensive training in Psychiatric Medical Nutrition Therapy was developed while creating nutritional restoration protocols for the Adolescent Eating Disorder program at Alta Bates Summit Medical Center – Herrick Campus in Berkeley, CA. Additional training in gastroenterology, pediatrics, professional management, food chemistry, psychology, and neuroscience from New York University, University of Virginia, University of California, San Francisco, UC Berkeley, La Ventana Eating Disorder Programs, Monarch Cove/Castlewood Eating Disorder Treatment Center, and University of Illinois at Urbana-Champaign served as steps in her professional expertise.

April is currently completing analysis on her dissertation research investigating dietary patterns of humans who manifest clinical symptoms of anxiety disorders. The aim is to develop food-based protocols for the modulation and stabilization of mental health conditions. Her work is currently being investigated through the University of Illinois at Urbana-Champaign in the Department of Food Sciences and Human Nutrition in collaboration with the Beckman Institute for Advanced Science and Technology. She speaks internationally on the topic of the topic of malnutrition in Psychiatric diseases. You can watch her TEDx talk entitled, “Turn in at the fork” or find numerous pictures of her culinary creations on Instagram (healingkitchen). April lives with her husband, Roger, and 4-legged canine daughter, Sadie, in San Jose, CA.

**Excellence in Practice AD: Yulia Brockdorf, RD, LD, CDE, CPT, CS, NCC, LPC-i**

Yulia has been the Clinical Director of Nutrition for Success, LLC in Hillsboro, Oregon for over fifteen years. Yulia specializes in behavioral and mental health dietics, addictions, diabetes education, integrative and functional medicine, dietics, psychodynamic and person-centered psychotherapy, and sex therapy. Additionally, she manages all clinical and administrative operations of Nutrition for Success, LLC. Yulia practiced as a diabetes educator for five years at Providence Health System in Portland, OR. She founded and managed for ten years Supplies For Life, a 501(c) 3 charitable corporation with operations in the USA and Europe. Yulia has served as a public policy board member, consumer protection coordinator, and reimbursement chair for the Oregon Academy of Nutrition and Dietetics. Additionally, Yulia serves on the Editorial Board for Multinational Association of Supportive Care in Cancer Journal, - Supportive Care in Cancer and the Research Advisory Board with the Community Academic Consortium for Research on Alternative Sexualities.

She holds memberships with the Behavioral Health Nutrition Practice Group, Dietitians in Integrative and Functional Medicine Practice Group, the Vegetarian Nutrition Dietetics Practice Group, the American Academy of Nutrition and Dietetics, the North American Society for the Study of Celiac Disease, the Society for the Scientific Study of Sexuality, the American Association of Sexuality Educators, Counselors, and Therapists, the Psychodynamic Psychoanalytic Research Society, the Division of Psychoanalysis of American Psychological Association, the Oregon Psychoanalytic Center, the San Francisco Psychotherapy Research Group, the Community Academic Consortium for Research on Alternative Sexualities, and the American Mental Health Counselors Association.

Yulia’s professional experience is vast; her commitment to continuing education within her fields propels her to rigorously learn new information in order to provide the best possible care to those she serves. Outside of her practice, Yulia focuses her time and energy on family, humanitarian work, continued on page 12
Excellence in Practice ED:
Tammy Beasley, RDN, CEDRD, CSSD

Tammy Beasley, RDN, CEDRD, CSSD has been practicing as a registered, licensed dietitian/nutritionist with the Academy of Nutrition and Dietetics for over thirty years, of which the last 25 have been specialized in the field of eating disorders. Tammy was the first RD to become a certified eating disorder registered dietitian (CEDRD) with the International Association of Eating Disorder Professionals in 1993, and has served on the Certification Committee since 2008, stepping into the role of Director in 2013. During her tenure, the Commission on Dietetic Registration approved the Certified Eating Disorder Registered Dietitian (CEDRD) certification for RDS in the field of eating disorders as of June, 2015. During her Miami years, Tammy developed and managed the Eating Disorder Outpatient Nutrition Services for Baptist Hospital of Miami, created the first intensive outpatient program for eating disorders in collaboration with Miami Counseling Services, and was co-owner and Vice President of Wellstyles LLC, a nutrition and wellness boutique specializing in eating disorder nutrition, recreational and professional sports nutrition, and corporate wellness. She has served in multiple leadership roles for both the Miami Dietetic Association, North Alabama Dietetic Association and Alabama Dietetic Association, for which she currently serves as President. Her vision to bring education specific to eating disorder nutrition therapy and share practical experience with dietetic students opened the door for her to assume Chair of the newly created Nutrition and Dietetics Advisory Board for Auburn University in 2012. In November 2015, she joined Castlewood Treatment Centers as National Coordinator for Nutrition Education, working with both clients in treatment and clinicians dedicated to their clients’ recovery. Tammy is passionate about translating evidence-based science into practical and insightful messages for clients to begin healing their relationship with food and body and for clinicians to incorporate into their own practices.

Excellence in Practice IDD:
Patricia Novak, MPH, RDN

Patricia Novak, MPH, RD, CLE has over 30 years’ experience working with children with autism, developmental disabilities and chronic illness. The common thread throughout her work has been working with children, from infancy through adolescence, to resolve eating and feeding concerns. Her clinical experience includes interdisciplinary feeding programs at Professional Child Development Associates (PCDA) and University Center for Excellence in Developmental Disabilities (UCEDD) at Children’s Hospital Los Angeles (CHLA); outpatient hospital clinics including the Adolescent Eating Disorders Clinic at UCLA Neuropsychiatric Institute and EMPOWER weight management program at CHLA; school based California Children’s Services (CCS) clinics, home based Early intervention and inpatient Mother-baby/NICU lactation services. In addition to clinical services, Patricia has also developed school nutrition curricula and a weight control program for children with autism spectrum disorders. She has published in leading journals, written book chapters and is a frequent presenter at regional, national and international conferences.

Excellence in Practice MH: Terry Anderson-Girard, MS, RD, LDN

Terry Anderson-Girard, MS, RD, LDN earned a BS in Human Nutrition from the University of Massachusetts in Amherst. She worked initially in Food Service Management while pursuing a MS in General Management from Lesley University in Cambridge, MA. In 1991 she completed a Community Nutrition Internship through Simmons College in Boston. After earning her RD, she started her own practice as a Consultant Dietitian in the Greater Boston area.

Terry is interested in nutritional needs of people who are challenged by mental and neurological issues. Most of her work has been with adults and adolescents throughout the community, specializing in this area of practice for more than 10 years. She has served with the Behavioral Health Nutrition DPG since 2006 and is currently serving as the Chairperson for Standards of Practice for Registered Dietitian Nutritionists in Mental Health.
In the BHN Pipeline!

**Member Forum Online**
Our new way for BHN members to communicate and ask questions and get responses is now operational and on the BHN website. Check it out, read the instructions to post and get started!

**Mentoring Program in the Works**
Bridget Arrazilla, Student Member, worked with the Academy in evaluating their e-mentoring system to determine if it would work for our members. The EC has determined that we would develop our own mentoring program based on successful programs implemented by other DPGs. If you have any comments on this program or wish to participate in any way, please share with the Membership Chair Les Rosensweig at membershipchair@bhndpg.org.

**Member Marketplace Online**
Members can now post links for purchasing books and guides that they developed or other services such as training and web-based services.

**Case Studies**
Promotions and incentives to get members to submit case studies worked! Case studies from Janice Scott, MS, RD, DSC, LD (our chair-elect) and Janelle Smith, MS, RDN were selected from several great entrees and they presented their cases at the BHN Breakfast at FNCE®. You are encouraged to submit case studies to share your experiences and contribute to our base of working knowledge. Instructions and forms are available online in the members only section.

**BHN Speaker’s Bureau in the Works**
Go to the BHN website “Store” and the Speakers Bureau drop down to complete a survey if you are interested in participating. This is being coordinated by Jackie Larson, MS, RDN our website coordinator at websitemaster@bhndpg.org.

**Fact Sheets now Available:**
- Spina bifida
- Stress Management
- ADHD (Attention Deficit Hyperactivity Disorder)
- Autism
- Depression
- Eating Assistance in Adults with Developmental Disabilities
- Feeding Children with Developmental Disabilities
- Prader Willi Syndrome
- Rett Syndrome

**Calendar of Events**
An e-blast went out requesting information from members as we develop a web-based calendar of activities related to our areas of practice. This would include local, state, national and international events sponsored by service and professional organizations, colleges and institutions, government and our members. If you have events to add please contact Les Rosenzweig at membership@bhndpg.org.

The House of Delegates met on October 14 & 15, 2016 in Boston, MA. On October 14th Academy leaders attended an Appreciative Inquiry training session on October 14, 2016 led by Gervase R. Bushe, Ph.D. Dr. Bushe is Professor of Leadership and Organization Development in the Beedie School of Business at Simon Fraser University. Attendees included House of Delegates, the Board of Directors, the Nominating Committee and Academy Committee Chairs. Appreciative Inquiry (AI) is another tool leaders can use to engage members in generating new ideas and moving the profession forward.

On October 15, 2016 the HOD met to discuss the mega issue of Wellness and Prevention. Over 160 attendees, including delegates, Board of Directors members, auditors and student scribes participated in the dialogue session. The mega issue of Wellness and Prevention is:

“How can we as Academy members capitalize on our strengths to create a future where credentialed food and nutrition practitioners play an integral role in wellness and prevention?”

To learn more about this timely subject of Wellness and Prevention access the link below: [http://www.eatrightpro.org/~media/eatrightpro%20files/leadership/hod/about%20hod%20meetings/fall2016/hodbackgrounder-wellnessandprevention.ashx](http://www.eatrightpro.org/~media/eatrightpro%20files/leadership/hod/about%20hod%20meetings/fall2016/hodbackgrounder-wellnessandprevention.ashx)

“Appreciative Inquiry” was used to elicit positive responses to encompassing questions such as the topic of “Wellness and Prevention used in dietetics practice”. We will be using this technique to further expand our knowledge and response to this mega issue after the first of the year. Stay tuned!

Our profession is at a crossroads and is moving forward into our future and the next 100 years. All RD/RDN/NDTRs are encouraged to embrace the future and consider attending our 100-year celebration at FNCE® in Chicago, October 21 – 24, 2017!

Please contact me with any and all issues. Thank-you for taking the time to read this report.
Hands-on Nutrition Education: Teaching Healthy Eating Skills Through Experiential Learning

This guide illustrates how to turn theory into practice when counseling clients on healthy eating. Hands-on nutrition, or HONE, actively engages the participant through observation and actual hands-on completion of tasks. Learn practical guidelines for different types of HONE activities including food demonstrations, grocery store tours, cooking classes, and the development and management of institutional HONE programs.

Member Price: $36 | Nonmember Price: $49

Available at www.eatrightSTORE.org

Pocket Guide to Eating Disorders, Second Edition

This newly revised guide includes everything the RDN needs for nutrition assessment and intervention with an individual experiencing dysfunctional eating behaviors. Organized according to the Nutrition Care Process, Eating Disorders includes sample PES statements, DSM-5 diagnostic criteria, guidelines for providing nutrition education, communicating in difficult situations, and much more. Most RDNs will encounter eating disorders at some point in their careers—this guide will ensure they’re prepared.

Member Price: $25.50 | Nonmember Price: $33.00

Available in print or eBook formats, at www.eatrightSTORE.org
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Contribute an article or topic for future BHNewsletter issues!

Contact
newsleterseditor2@bhndpg.org
or one of the BHN leaders listed in this newsletter.

A complete list of BHN Executive Committee members and volunteers is available at www.bhndpg.org.

Mission:
Empowering BHN members to excel in the areas of Addictions, Eating Disorders, Intellectual and Developmental Disabilities and Mental Health by providing resources and support.

Vision:
Optimizing the physical and cognitive health of those we serve through nutrition education and behavioral health counseling.

Academy of Nutrition and Dietetics website: www.eatright.org
BHN website: bhndpg.org • BHN practice standards: www.bhndpg.org/members/practice-standards/