A New Tool for Diabetes Education

Using Mindful Eating to Promote Glycemic Control
Learning Objectives

At the conclusion of this webinar, the learner will be able to:

- Define mindful eating
- List 4 qualities of mindfulness
- State 2 findings from new research on mindful eating
- Define internal and external information
- Define the following terms:
  - dynamic
  - complex
  - unique
What is Mindful Eating?

- Eating with awareness
- Being present for each sensation of the experience of eating.
- Awareness of the chewing, tasting and swallowing of food, moment by moment.
Why Mindful Eating?

Mindful Eating is power:

- Power to make you a more effective counselor
- Power for your client to unlock his or her potential for change
Mindful Eating Is About the Present

- The purpose of Mindful Eating is to keep the client in the present.
- The intent is to help integrate learning by bringing the client’s experience back to the present moment where change can happen.
- Helping the client appreciate the difference between the present and the future is key to facilitating change.
Part 1

Diabetes and Mindful Eating: The Research

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A Brief History -- Meditation

- MBSR
- MB-EAT
- MEAL
- Empower
## Overview

<table>
<thead>
<tr>
<th>Researched Programs</th>
<th>MB-EAT (BED)</th>
<th>MB-EAT (Weight Loss)</th>
<th>Empower</th>
<th>MEAL</th>
<th>Eat Smart Move More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Name</td>
<td>Mindfulness Based Eating Awareness Training (for Binge Eating Disorder)</td>
<td>Mindfulness Based Eating Awareness Training (for Weight loss)</td>
<td>Enhancing Mindfulness for the Prevention of Weight Regain</td>
<td>Mindful Eating and Living</td>
<td>Eat Smart Move More</td>
</tr>
<tr>
<td>Sample Size</td>
<td>140</td>
<td>117</td>
<td>95</td>
<td>10</td>
<td>1162</td>
</tr>
<tr>
<td>Audience</td>
<td>Binge Eating</td>
<td>Overweight</td>
<td>Overweight</td>
<td>Overweight &amp; Diabetes</td>
<td>Overweight</td>
</tr>
<tr>
<td>Measured Outcomes</td>
<td># of Binges from 4-1.5 per week. Magnitude (70% to 10%)</td>
<td>Weight Loss 7 lbs.</td>
<td>17% weight loss sustained 15 months</td>
<td>All lost weight. Mean 4 kgWeight loss. Blood sugar Control</td>
<td>86% lost weight. 8.4 pounds</td>
</tr>
<tr>
<td>Time</td>
<td>4-month</td>
<td>6-month</td>
<td>12 month</td>
<td>15-19 weeks</td>
<td></td>
</tr>
</tbody>
</table>

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Not all MBSR Based

- Intuitive Eating
- Eat Smart, Move More
- Am I Hungry?
- Appetite Awareness Training
- Other Unnamed Programs
Mindful Eating Questionnaire

5 Domains, 28-Item Survey:

- Disinhibition (eating when full)
- Awareness (of sensory experience)
- External Cues
- Emotional Response
- Distraction

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Distraction


N=44. Distraction during one meal has the capacity to influence subsequent eating. They may also help to explain the well-documented association between sedentary screen-time activities and overweight
Specific to Diabetes

- Specific to hunger and blood glucose.

- 3 Studies:
  - Initial Hunger Training
  - Weight Loss with IHMP
  - Estimating Blood Glucose with IHMP

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Abstract

**Background:** Dietary restraint is largely unsuccessful for controlling obesity. As an alternative, subjects can easily be trained to reliably recognize sensations of initial hunger (IH) a set of physiological sensations which emerge spontaneously, not necessarily at planned mealtimes, and may be the afferent arm of a homeostatic system of food intake regulation. Previously we have reported that IH is associated with blood glucose concentration (BG) below 81.8 mg/dL (4.55 mmol/l), (low blood glucose, LBG), and that a pattern of meals in which IH is present pre-meal (IHMP) improved insulin sensitivity, HbA1c and other cardiovascular risk factors. Here we report the effect upon weight in overweight and normal weight subjects.

**Objective:** To investigate whether the IHMP is associated with sustained loss of weight in overweight subjects over a 5 month period.

**Methods:** Seventy four overweight subjects (OW: BMI > 25) and 107 normal weight (NW) subjects were randomly allocated to either trained (OW: N = 51; NW N = 79) or control (OW: N = 23; NW: N = 28) groups. All subjects were allocated post-randomization into either low or high mean pre-meal BG groups (LBG and HBG groups) using a demarcation point of 81.8 mg/dL.

**Results:** A significant longitudinal decrease was found in body weight (trained NW: -2.5 ± 4.6 kg; OW -6.7 ± 4.5 kg; controls: NW +3.5 ± 4.0 kg and OW -3.4 ± 4.0 kg; P = 0.006 and 0.029) and in energy intake, mean BG, standard deviation of diary BG (BG as recorded by subjects’ 7-day diary), BMI, and arm and leg skin-fold thickness in (OW and NW) HBG subjects. OW LBG subjects significantly decreased body weight (trained: -4.0 ± 2.4 kg; controls: -0.4 ± 3.7 kg; P = 0.037). 26 NW LBG subjects showed no longitudinal difference after training as did 9 control subjects.

**Conclusion:** Over a 5 month period the IHMP resulted in significant loss of weight in OW subjects compared to controls practicing dietary restraint. NW subjects maintained weight overall, however NW HBG subjects also lost weight compared to controls.
Conclusion
A three-times-daily meal pattern (IHMP) was associated with LBG and sustained regression of overweight. The method was more effective than restraint-type dieting in a 5 month trial. IH, validated by BG, may represent the recovery of a vital afferent arm of the body's homeostatic energy regulation system allowing sustained self-regulation of energy intake. Post hoc division of NW and OW subjects into subgroups with mean pre-meal BG either lower or higher than 81.8 mg/dL suggests body weight maintenance in NW subgroup with low mean BG and decrease in those who were either OW or HBG NW.

The findings of this study and those of the accompanying study [16] suggest that the current epidemic of insulin resistance and overweight may have its origin in the non-cognizance of hunger - the physiological signals of energy insufficiency to body cells. This may owe to forestalling such signals in early life and subsequent reinforcement of this behaviour pattern. By restoring and validating hunger awareness, the IHMP could help in the prevention and treatment of diabetes and obesity and a range of associated disorders and thus lessen the high economic burden of health services in industrialized societies.
Abstract

Background: The will to eat is a decision associated with conditioned responses and with unconditioned body sensations that reflect changes in metabolic biomarkers. Here, we investigate whether this decision can be delayed until blood glucose is allowed to fall to low levels, when presumably feeding behavior is mostly unconditioned. Following such an eating pattern might avoid some of the metabolic risk factors that are associated with high glycemia.

Results: In this 7-week study, patients were trained to estimate their blood glucose at meal times by associating feelings of hunger with glycemic levels determined by standard blood glucose monitors and to eat only when glycemia was < 85 mg/dL. At the end of the 7-week training period, estimated and measured glycemic values were found to be linearly correlated in the trained group (r = 0.82; p = 0.0001) but not in the control (untrained) group (r = 0.10; p = 0.40). Fewer subjects in the trained group were hungry than those in the control group (p = 0.001). The 18 hungry subjects of the trained group had significantly lower glucose levels (80.1 ± 6.3 mg/dL) than the 42 hungry control subjects (89.2 ± 10.2 mg/dL; p = 0.01). Moreover, the trained hungry subjects estimated their glycemia (78.1 ± 6.7 mg/dL; estimation error: 3.2 ± 2.4% of the measured glycemia) more accurately than the control hungry subjects (75.9 ± 9.8 mg/dL; estimation error: 16.7 ± 11.0%; p = 0.0001). Also the estimation error of the entire trained group (4.7 ± 3.6%) was significantly lower than that of the control group (17.1 ± 11.5%; p = 0.0001). A value of glycemia at initial feelings of hunger was provisionally identified as 87 mg/dL. Below this level, estimation showed lower error in both trained (p = 0.04) and control subjects (p = 0.001).

Conclusion: Subjects could be trained to accurately estimate their blood glucose and to recognize their sensations of initial hunger at low glucose concentrations. These results suggest that it is possible to make a behavioral distinction between unconditioned and conditioned hunger, and to achieve a cognitive will to eat by training.
Overlap Between Hunger, Hypoglycemia, and Hyperglycemia

**Hunger**
- Pangs
- Growling
- Grumbling
- Emptiness
- Gnawing
- Queasy feeling

**Hypoglycemia**
- Blood sugar <70 mg/dl or 80 mg/dl with symptoms
- Anxiety
- Emotional
- Headache
- Trembling
- Sweating
- Dizziness
- Blurred vision
- Loss of consciousness

**Hyperglycemia**
- Blood sugar >140 mg/dl
- Thirst
- Frequent urination

**Tired**
- Low energy
- Weak
- Irritability
- Mild headache
- Difficulty concentrating
- Difficulty thinking
- Difficulty making decisions

**Note:** You may not have any symptoms at all
ME Research is Showing Great Promise

- Exclusively Mindful Eating programs are showing positive outcomes:
  - Binge eating
  - Weight loss
  - Weight maintenance
- Health programs using Mindful Eating are showing weight loss
- Research looking at specific aspects of Mindful Eating (distraction and hunger awareness) are showing health improvements
- There is now a validated questionnaire to rate a person’s Mindful Eating skill level.
Part 2

Integrating ME into your DSMT Program
Eating is an experience

- It has many points
- At each point—with awareness—choice and change is possible.
Create Eating Experiences

- In your DSMT program is there an opportunity to eat with your clients?
- If YES, create mindful eating experiences.
Mindful Eating Activities For Your Diabetes Clients

- 6 activities from *Discover Mindful Eating*—a collection of 51 mindful eating handouts and activities (35 CPEs)
- Can you guess the stage of the meal each is designed for?

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Setting the Stage

How can you set the context of your eating so that you're centered, calm and mindful?

Read the items below, either to yourself or out loud. Pause between each one and think about its meaning.

<table>
<thead>
<tr>
<th>Relax</th>
<th>Arrive</th>
<th>Be attentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoy</td>
<td>Taste</td>
<td>Feel</td>
</tr>
<tr>
<td></td>
<td>Smell</td>
<td>See</td>
</tr>
<tr>
<td>Open up</td>
<td>Savor</td>
<td>Slow down</td>
</tr>
<tr>
<td></td>
<td>Take your time</td>
<td></td>
</tr>
<tr>
<td>Be deliberate</td>
<td>Appreciate</td>
<td>Have fun</td>
</tr>
<tr>
<td>Give thanks</td>
<td>Don't rush</td>
<td>Experience every bite</td>
</tr>
<tr>
<td>Take only what you need</td>
<td>Be in harmony</td>
<td></td>
</tr>
<tr>
<td>Be gracious</td>
<td>Live in dignity</td>
<td></td>
</tr>
<tr>
<td>Treat yourself well</td>
<td>Enjoy those with you</td>
<td></td>
</tr>
</tbody>
</table>

Cut out the box above on the dotted line and put the paper next to your plate for lunch or dinner. Take a mindful moment and read the card before you begin eating.

Set the stage for eating in a purposeful, wakeful way.

More

What words might be missing from this box that would help you even more to be grounded as an eater? Make your own card! Borrow items from the one above or start from scratch.

Perhaps all you need is just one word or phrase from the card. If so, use a marker and write that word or phrase on a 3x5 card. Use the card each time you eat.
Tuning In Before Eating

Mindful eating can begin long before you ever get to the dinner table or have any encounter with food.

Any moment of the day is an opportunity to inspect your own body and mental systems and see how you feel about food.

A few hours before a meal you may feel hunger. But what exactly is hunger?

- How do you know when you're hungry?
- What exactly are the indications or messages you get that your body is in need of food?
- Where are all the places in your body where you feel hunger?
- Are you really hungry or are you just bored or lonely or sad?
- How about your energy levels—do they change as you experience being hungry?

What events, sights, sounds or smells trigger your hunger?
Becoming aware of your hunger is a big first step in recognizing when you're full during a meal.

Observations and Questions

Just observe it objectively, like a scientist. Then take a moment and describe it. Some people might notice that they get 'light headed' or 'feel anxious' when they are hungry. Other people might describe it as 'a slight discomfort' in their stomach. There is no one way to describe hunger. It will be different from day to day, moment to moment. The idea is that the more accurately you can describe your hunger, the more you can deal with your hunger as a natural, controllable part of your life.

Experiment with your hunger before eating. If you're very hungry and you wait an extra half-hour before you eat, what happens to your feelings of hunger? Do they continue to increase? Or do they settle down?

If you ignore your hunger too long do other problems arise? For example did you have a medication reaction? Or did you overeat at your next meal?

If you feel very hungry and you take several deep breaths while you examine your hunger—relax with it, be calm with it—can you provide any details about your hunger? Try it and jot down some of your observations.
Experiencing Hunger, Part 1

Looking at the logic of hunger and eating

Hunger is the signal your body uses to tell you that it is looking for energy. This signal is part of a larger system the body has developed to link eating to both your physical and psychological needs. If you ignore your hunger, you feel poorly. You may get tired, or grumpy. When you respond to hunger and eat, it feels good. It is this positive feeling that has helped humans survive and evolve.

When you are rushed or preoccupied with thoughts, it may be difficult to hear exactly what you are feeling. Am I tired because I am hungry or was I up late and working really hard? Am I grumpy because I am hungry or is it something else?

If you are tired because you worked hard and you eat, you will not feel rested. Unfortunately, you will likely feel tired and full! If you are angry and you eat, you will not suddenly be happy. You will be full and angry. If we are excited and we eat, it doesn’t make that wonderful feeling better.

Eating fixes only those problems caused by hunger.

It is not hard to see where we might have learned “If eating feels good and I feel bad, I should eat and I will feel better.” Unfortunately, the above logic is incorrect. The positive feedback works only when hunger IS present. If you eat when you are not hungry, you can feel full, heavy or uncomfortable. These physical feelings can also trigger a host of emotional responses too; guilt, fear, anger and depression.

Taking time to be mindful of your body

The next time you are thinking of eating something...pause and check in and ask yourself:

- Will eating help my body? If yes...then eat. If no, what would help your body?
- Will eating help my mood? If yes...then eat. If no, what would help your mood?
- Will eating help my health? If yes...then eat. If no, what would help your health?
The Basic Mindfulness Bite

The simplest technique of mindful eating is the Basic Mindfulness Bite. You can use this technique with any solid food.

1. As you bring food to your mouth, slow down and become aware of your movements.
2. Once the food is in your mouth, clear your hands. Put silverware or remaining food down.
3. Chew this bite with your mind in laser-sharp focus on the process. Concentrate on the taste of the food and the act of eating. Don’t do anything else while you’re chewing. Simply chew and pay attention.
4. Keep chewing until the food is uniformly smooth. Use this consistency of the food as a signal to swallow.
5. After you swallow, but before you bring more food to your mouth, rest for a few seconds, thereby inserting a pause into your eating.

No matter what other technique or strategy you may use with mindful eating, this Basic Mindfulness Bite can serve you as the best starting point.

Questions

Try a small, snack-sized bag of potato chips with this technique. What do you notice about your experience with potato chips as you mindfully eat through all of them in the bag?

Who around you might make this technique difficult? Is there anything you might do to enlist their help rather than see them as making it difficult?

What do you notice about the pace of your eating when you eat this way?

What do you notice about your enjoyment of food when you eat this way?
Leaving Food on the Plate!

For some, it’s **unthinkable** to leave food on the plate. Of all the ideas of mindful eating, this is the one with which people have the most problem. Many people learned when they were very young to “clean the plate,” and the parent voice still can be heard in their heads.

Some people hate the idea of throwing away food in the trash can, and would rather overeat and harm their bodies. If it helps, remind yourself that a trash can—and not your body—is where you put things you don’t need any more.

Mindful eating teaches that food is a gift and to honor it. To eat more than is needed is to dishonor the gift.

So, sometimes you have to leave food on your plate.

- This is the food you don’t really need.
- This is difficult, because it seems so wasteful.
- And indeed it may be a little wasteful. But which is better: to waste some of the food or to eat food you don’t need?

When you eat more than you actually need, you can lose something very important: your sense of appreciation and gratitude for food.

**Try**

At your next meal, practice leaving some food on your plate, as a symbolic act of appreciation and gratitude for the food you do have.

**Questions**

Instead of throwing away the food you don’t really need, could you:

- Save some for a lunch or dinner serving?
- Create a ‘mini-meal’ for a snack?
- Take the extra and create a new meal: for example, extra hamburger can be made into meatballs or meat sauce?
- Compost the food?
- Create a meal for a friend or co-worker?
- Freeze extra vegetables for soup?

What else could you do with it? What are the reasons you do not use these alternatives?
Forgiving the Past

Eating mindfully begins when you arrive at the meal with an open mind. This can be a challenge if your thoughts are fixated on the past. Sometimes it seems that no matter how hard you try to appreciate the meal before you, to notice hunger, and to respect your body, your mind wanders from the present into a moment that has gone.

Health problems that are in some part caused by what was eaten can carry with them a lot of guilt and shame. It is not uncommon to criticize and feel badly about yourself. These thoughts may trigger feelings of anger and disappointed for what has happened to bring you to where you are now.

Dwelling in the past is a very strong desire for the mind. By being in the past you no longer have to take action—you can't take action because the opportunity you keep thinking about never comes over.

It is wonderful to remember the past, but living in the past is like trying to drive a car by looking in the rear view mirror. It is hard to see what is coming at you.

Mindful eating is not about judging the past. It is about arriving in the present. It is the careful attention to the events and opportunities before you. If you find you are struggling to become present, try acknowledging your frustrations or weakness. Try saying, “I know I messed up at my last meal, but I have this meal before me and I can pay attention to what I am eating now.” Forgiveness can be a powerful tool to arrive in the present.

Questions

- Do you find it difficult to eat mindfully because of something that happened?
- Do you think acknowledging your emotions might help you move past it?

Keep in mind forgiveness is not about denying your actions. It is about creating a level of honesty that allows our mind to become present.
Case Study #1

- JM is a 56 year old women. She has had diabetes for 6 years and is dealing with the grief of losing her daughter.
- She is using food to cope with this loss and is sad to limit her food choices.
- How could mindful eating help her?
Case Study #2

- PM is a 63 year old man
- He has lost 30 pounds since being diagnosed in August
- He ‘hasn’t touched a cookie’ since the doctor told him he has diabetes
- How could mindful eating help him?
Case Study #3

- AD is a young mother who takes 3 oral agents and insulin
- She has low blood sugar often due to erratic eating
- How could mindful eating help her?
For Your Continued Learning

- Consider practicing these activities on yourself!
- CPE programs from Skelly Publishing:
  - *Discover Mindful Eating* book (35 CPEs):
  - Basics of Mindful Eating webinar series (8 CPEs):
    [http://www.skellypublishing.com/Mindful_Eating_Webinar_Series_p/web-me.htm](http://www.skellypublishing.com/Mindful_Eating_Webinar_Series_p/web-me.htm)
- Free counseling tips at [www.resourcesformindfuleating.com](http://www.resourcesformindfuleating.com)
- Blog posts available at [www.diabetesandmindfuleating.com](http://www.diabetesandmindfuleating.com)
- TCME.org website—Principles of mindful eating:

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Questions

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