Food for Thought
by Morry Zelcovitch

Food, without it there is no life!

It affects the chemicals in your brain; these chemicals are called neurotransmitters. Neurotransmitters control many of the bodies’ functions including mood, appetite, thoughts, feelings and indeed our behaviors.

As you probably know (especially if you've spoken to me:) brainwave entrainment helps to create some very important neurotransmitters that we all need for proper everyday functioning.

What you may not know however is that many of the foods we eat also directly influence the production or non-production of important neurotransmitters that we need to be happy and healthy in our lives.

For example, one neurotransmitter that affects mood is called serotonin. Serotonin can be produced by foods such as dairy, beef, poultry, nuts, beans, pasta and even some types of bread.

In fact, most of the brains’ neurotransmitters are actually made from something called amino acids, which are obtained from the proteins in various foods.

Neurotransmitters are used by our brains to motivate, sedate, focus or frustrate us. Their complex interactions are responsible for how your brain functions, including every time your mood shifts or you change your mind.

You may have heard or read from other sources that it's good to load up on carbs if you need a burst of energy. In actuality, you need to choose more protein when you're tired.

Foods that are high in protein include fish, poultry, meat and eggs. Other foods which can be good sources of protein are legumes, cheese and milk.

These foods are broken down during digestion and become amino acid building blocks including Tyrosine, which help to increase the production of neurotransmitters such as dopamine, which in turn can bring increased energy and mental alertness.
On the other hand you need to be sure to avoid simple carbohydrates, such as foods made with white flour, for example; breads, pasta and rice as well as carbs high in sugar which can tend to lead to fatigue.

In order to get the most beneficial effects from either carbohydrates or proteins, it's always best to eat them separately.

The energy boosting effect that you can get from proteins will often be offset if you start out a lunch of fish for example (protein) with a bread roll (mostly carbohydrates). Make the protein the first food that you eat and then go lightly on the carbohydrates (if it's mental alertness that you're after:).

**Helpful hint number one...** berries are loaded with antioxidants called anthocyanins which combat inflammation, and free radicals. Free radicals are molecules that can harm brain cells and impair brain function. Some research suggests that blueberries may also enable brain cells to send and receive messages more easily.

Eating carbohydrates can help to trigger the release of insulin into the bloodstream.

Insulin actually helps to clear all of the amino acids out of the blood with the exception of Tryptophan.

Tryptophan is an amino acid that normally gets crowded out by other amino acids in its attempts to cross what is called the blood-brain barrier, but when its competitors are out of the way it can enter the brain.

What is interesting about this is that the Tryptophan is actually converted to serotonin, and serotonin is a neurotransmitter that tends to have the effect of reducing pain, decreasing appetite and producing a sense of calm.

Of course, if there's too much of it in your brain, it can even induce sleep, which will explain why many people after a large Thanksgiving turkey dinner get very tired. Tryptophan is a very large component of turkey.

**Helpful hint number two...** Research is showing that dieters tend to become depressed about two weeks into a diet, about the time that their serotonin levels have dropped due to decreased carbohydrate intake.

Protein sources such as fish, chicken and red meat can help increase alertness. During the digestion process, protein rich foods are broken down into amino acids as well and some of those amino acids help to increase the production of neurotransmitters that are known to increase energy levels and alertness.

For example, a deficiency of folic acid has been linked to depression in clinical studies.

This deficiency tends to cause serotonin levels in the brain to decrease, in fact it's been found that psychiatric patients with depression tend to have much higher rates of folic
acid deficiency than is found in the general public. It has also been found that this kind of depression can often be relieved by as little as 200 mcg of cooked spinach or even a simple glass of orange juice.

Researcher Judith Wurtman suggested recently that serotonin deficiency could actually cause depression and thus could be helped by eating high carbohydrate foods thus increasing Tryptophan intake.

According to Wurtman, food-induced changes in energy and mood can be explained by the effect of foods on neurotransmitter levels. She suggests choosing foods on the basis of their content of principal amino acids and carbohydrate/protein ratios. For example; Tryptophan uptake in the brain is actually enhanced if it is ingested along with sugar and not with other competing amino acids.

Research that has been conducted by the Brain and Behavior Institute at the University of Maastricht in the Netherlands has shown that foods depleted in the amino acid Tryptophan can commonly cause depression.

It appears that Tryptophan is a metabolic precursor to the chemical messenger serotonin (this simply means that you need one to get the other), and is found in foods such as milk, bread, cheese and bananas as well as meats such as Turkey.

What they actually found was that the depletion of serotonin levels in the brain can actually result in depression and other mental problems, all of which can be helped greatly by one's diet and nutritional intake.

**Helpful hint number three... The early warning signs of serotonin deficiency may be a noticeable loss of enthusiasm for your favorite activity or a lack of joy when eating your favorite foods, also physical symptoms like weight gain or skin breakouts may signal to you that you have a biochemical imbalance.**

Endorphins are another type of chemical that also has a great deal of an effect on our moods and energy levels. A food substance that is related to Endorphins is phenyl ethylamine, and is found in chocolate.

There is actually some evidence that chocolate can be responsible for improving mood temporarily due to its high levels of sugar, fat, phenyl ethylamine and caffeine.

The sugar in chocolate is associated with the release of serotonin and phenyl ethylamine is associated with the release of endorphins. This can cause an effect that has been popularly called “optimal brain happiness”.

Of course, the caffeine in chocolate also adds a temporary stimulant effect to help round out the complete chocolate experience.

You may find it interesting that when estrogen drops during menopause and before a woman's period each month, her serotonin levels also fall. This may explain why many women reach for chocolate at these times.
It has been noted that a lack of selenium can also have a role in causing bad moods. It seems that individuals who suffer from too little selenium have been shown to be more anxious, irritable, hostile and depressed than people who are in possession of normal levels.

It is not quite known how selenium does what it does, but making sure to get enough in your diet is always a good idea. One way to do this is to eat foods like brazil nuts, tuna sandwiches, sunflower seeds and whole grain cereals.

**Helpful hint number four... recently it has been found that many alternative methods aimed at raising neurotransmitter levels have been widely used with reportedly good success, especially in places such as Asia and Europe. Some of these methods include properly engineered brainwave entrainment, acupuncture, hypnosis, massage, reflexology, meditation, yoga as well as some herbal remedies.**

Actual neurotransmitter measurements of Tibetan monks during meditation showed increased levels of serotonin, known in those circles as the “serenity” messenger. With scientific data like this that now supports the benefits of these ancient treatments, more western medical disciplines are becoming convinced and are integrating them into their practices.

At this point in this article I think that it's important to mention that, in general, the food-mood response can be short-term in nature. For instance, eating tuna at lunch may increase alertness and concentration for two to three hours after eating, just as having pasta with tomato sauce can produce a calming response for two to three hours.

Many people who are evening people, otherwise known as night owls, must understand that it is not only important to have breakfast, but to make sure that their breakfast has a protein-rich aspect.

This is because protein provides the brain with Tyrosine which is an amino acid that acts as a precursor of neurochemicals that help to promote alertness. A midmorning snack is another good time to include protein rich foods such as cheese or yogurt.

*Warning:* People who skip breakfast are more likely to show erratic eating patterns throughout the day, such as eating less citrus fruits and giving into junk food cravings. They may even crave a midmorning sugar fix because they can't make it all the way to lunch time on an empty fuel tank.

As I mentioned earlier, the brain actually synthesizes the neurotransmitters from certain amino acids that are known as neurotransmitter precursors, and are gained in many cases from the foods that we eat.

The most important of these neurotransmitter precursors are: phenylalanine, glutamine, tyrosine and tryptophan.
One reason why this is important is that a major facet of drug addiction is the depletion of these precursor molecules to the point where neurotransmitter production is impaired.

When neurotransmitters such as dopamine and serotonin drop to below normal levels, unpleasant feelings can arise; agitation in patients can become the norm and all of this can start a craving for substances or activities that will help to stimulate the production of these missing or low level neurotransmitters.

Often times this can and does result in the use and the abuse of illicit drugs and or alcohol abuse in an effort to restore the feelings that result from normal levels of these neurotransmitters.

**Helpful hint number five... it's important for you to be aware of the fact that stimulant type foods such as coffee, tea and chocolate only temporarily boost some neurotransmitter levels.**

Low-level carbohydrates such as refined white sugar, potato chips, white bread or anything for that matter made with refined flour will tend to boost your serotonin levels only temporarily and you can count on these foods to drop you back down even faster than they seemed to lift you up.

Low levels of serotonin can create anxiety, feelings of insecurity, anger, fear, depression, and even induce suicidal thoughts. Higher levels of serotonin can influence your concentration, as it is relaxing and calming.

Carbohydrates help to raise the levels of serotonin in the body. Stress busting foods which are high in carbohydrates include whole grains, fruit, high-fiber cereals, rice and potatoes.

How many commercials have you seen were someone who stressed-out suddenly becomes calm after one piece of chocolate?

When you're stressed, you've probably been told that carbohydrates help.

However be sure that it's not a bad carbohydrate, you see that favorite candy bar that's calling your name is not a good one... Good carbs such as whole grain breads, grains, pasta, as well as rice, cereal and fruit trigger the release of insulin and as I mentioned earlier, insulin clears amino acids out of the brain with the exception of tryptophan, which is converted to serotonin when it enters the brain.

Known for reducing pain as well as lessening anxiety, serotonin also decreases appetite (unlike bad carbohydrates which can increase appetite). Of course too much serotonin can also contribute to becoming sleepy.

In some cases producing too much serotonin can also make you extremely nervous and paranoid. Excessive levels of serotonin can lead to feelings of inadequacy and inferiority as well as contribute to sadness, depression, anger and desperation.
Another factor that influences alertness and performance can be the size of a meal.

For example, large lunches containing 1000 calories have been associated with decreased performance in the afternoon.

Such high calorie lunches tend to be high in fat. A lunch consisting of a double hamburger, french fries and a milkshake would fit into this category.

You see, the size of the meal makes a difference as fat slows down absorption and because blood flow to the stomach is increased for a longer period of time. This results in less blood flow to the brain often resulting in a sleepy and sluggish feeling.

Most people will tend to eat a combination of carbohydrates, protein, and fat during the course of a meal. Since the neurotransmitter for protein (norepinephrine) tends to dominate after eating a meal containing carbohydrates, fats and protein, you might feel more alert but your craving will probably not be satisfied.

Thus, you might tend to eat more, or crave foods high in carbohydrates and fat. This will tend to increase serotonin levels in the brain and satisfy your craving. Remember however, that fat should not exceed 30% of your total daily calories.

You're probably noticing at this point that you can actually plan your meals according to how you plan on using your brain during the day.

For instance, a low calorie, high-protein meal that also contains complex carbohydrates makes you more alert and would be perfect for breakfast and lunch. A higher calorie, higher carbohydrate and lower protein meal could help you to relax and fall asleep in the evening.

**Helpful hint number six... Eat foods that reduce bad cravings and increase good ones.**

Chocolate bars are loaded with salt, sugar, caffeine and fat. Many are up to 300 calories per bar. Like a body demanding heroine for its balance, the body will crave sugar, salt and fat.

If you take candy from a sugar junkie look out. Remove sugar, processed fat or salt from your diet and you will crave them. You will be likely to face withdrawal symptoms similar to what you may face by withdrawing from drugs.

**Strawberries and bananas don't cause cravings.** You never feel guilty about eating too many cantaloupes;). You never hear little voices in the back of your head saying “eat eat eat cantaloupe”, because natural foods balance the body and physical cravings are caused by biochemical imbalances.

**Street drugs, alcohol, caffeine, nicotine, salt, saturated fat, refined starch and refined sugars cause cravings because they imbalance the body's chemistry.**
Addictive substances cause the body to become dependent on unnatural substances for homeostatic balance. When they are removed suddenly they may cause symptoms often associated with withdrawal.

During withdrawal, the addict suffers through painful readjustment as the body cries out for the missing substance.

In this section I’d like to go over some of the facts that you may or may not know about your brain function and nutrition...

Morning people need protein-rich foods during the afternoon and evening, particularly if they need to be focused later in the day for a meeting or some other work that requires their attention to be focused on detail.

Instead of a lunch of pasta with marinara sauce for example, morning people would be more alert in the afternoon if they added some grilled chicken, seafood or other protein source to their pasta --, this would help to increase their levels of dopamine and norepinephrine.

Eating too little fat can make you feel grouchy.

Foods that are high in fat increase endorphin levels and tend to make you happy. Endorphins are opiate like chemicals that are often called the feel-good neurotransmitters. In order to help keep your moods on an even keel, choose healthy fats such as monounsaturated fats like the ones found in olive oil, almonds and avocados.

The most rapid brain growth occurs during the first year of life with the infant’s brain tripling in size by the first birthday. During this stage of rapid central nervous system growth, the brain uses 60% of the total energy consumed by the infant.

Fats are major components of the brain cell membrane and the myelin sheath around each. So it would make sense that getting enough fat, and especially the right kinds of fat can greatly affect one's brain development and performance especially in the formative first year of life.

In fact during the first year, around 50% of infants daily calories comes from fat. And for your information, around 50% of the calories in mother's milk is fat.

There are actually two windows of time in which the brain is especially sensitive to nutrition. The first two years of life for a growing baby, and the last couple of decades of life for a senior citizen. Thus both growing and aging brains need nutritious fats to function and develop properly.

DHA (docosahexaenoic acid), is one of the omega-3 fatty acids and is the primary structural fatty acid in the gray matter of the brain which promotes communication between brain cells by allowing synapses to remain soft and functional. DHA helps in
the transmission of messages from one cell to the other. It actually helps the brain monitor mood and memory as well. It is commonly found in breast milk and has been found to promote higher intelligence in children.

The most abundant fat in the brain is DHA. Good dietary sources of DHA come from high-fat cold water fish like salmon, sardines, mackerel and trout. DHA made from microalgae can also be a good source.

Linoleic acid belongs to the Omega six fatty acid family and is found in the oils of seeds and nuts. Main food sources of Omega six can include cold-pressed sunflower, safflower, corn and sesame oils.

Eggs and liver contain Choline. Choline is a B complex vitamin that is also a precursor to the neurotransmitter acetylcholine. This neurotransmitter can improve your memory and a deficiency in acetylcholine has actually been linked with Alzheimer's disease.

Niacin, or vitamin B3, helps to increase circulation of oxygen and improves memory. Because Niacin also prevents blood clotting, it may protect the brain against damage from strokes.

Vitamin B6 has been linked with learning ability, it also produces neurotransmitters norepinephrine, serotonin and dopamine which have been found to help in the reduction of stress. Vitamin B12 creates and maintains the protective sheath around the nerve fibers, this vitamin also produces the neurotransmitter acetylcholine which is implicated in memory and learning. It's also been shown to enhance the action of folic acid which protects against neural tube defects in newborns.

Helpful hint number seven... most people need a true balance of omega-3 and omega six polyunsaturated fatty acids to feel normal. Keep in mind that most of the Western world tends to ingest an overabundance of Omega six and not enough omega-3. It is this imbalance that can directly affect the structure and substance of all the membranes in the brain.

Recent animal research from the University of Massachusetts Lowell indicates that consuming apple juice may actually increase the production in the brain of acetylcholine thus resulting in improved memory.

Vitamins and minerals such as folic acid and selenium are involved in mood related disorders. As I mentioned earlier, a lack of folic acid in the diet may be linked to depression. Oranges, Turkey, asparagus, beets, soybeans and green leafed vegetables like spinach are all good sources of folic acid. Also, too little selenium in the diet can make you grouchy, anxious and depressed. Some good sources of selenium include whole grains, lean meat, fish, poultry, dairy products, legumes, nuts and seeds.

When it comes to caffeine it's best to have it in moderation. A small amount may keep you alert and lift your mood but it can be quite a downer during the withdrawal. Too much may also make you anxious and give you insomnia as well as headaches.
Now that you may have a much better idea of what you should eat, I think it would be sound to help you understand how to eat in order to get the best results for your body and mind.

To that end I would like to present you with 10 good habits that will help to promote optimum digestion, ensure that you get the most out of what you eat and may even help you with losing those extra pounds:)

1) When you're eating, don't read, watch TV or do anything else. Pay full attention to your food and only your food.

2) Keep your meal simple. Do not eat too many different types of foods at one meal.

3) Try not to eat if you're feeling stressed or distracted.

4) Try to chew each mouthful of food between 25 to 40 times before swallowing.

5) Eat small and regular meals and always try to leave the table a little bit hungry.

6) When eating fresh fruit, make sure that it's only on an empty stomach.

7) When eating dinner (or supper as some may call it) in the evening, keep the meal light.

8) If you absolutely have to eat after your last meal of the day, try to make sure that it's at least three to four hours before you go to sleep.

9) When possible you should try to avoid very cold or very hot foods.

10) Finally, keep any drinks with the meal to a maximum of half a glass of water, and it's not a bad idea to wait an hour before and after eating before consuming any other fluids.

**Here's a partial list of some foods that are good for your brain...**

Avocados, bananas, lean beef, brewers yeast, broccoli, brown rice, brussel sprouts, cantaloupe, cheese, chicken, collard greens, eggs, flax seed oil, legumes, milk, oatmeal, oranges, peanut butter, peas, potatoes, romaine lettuce, salmon, soybeans, spinach, tuna, turkey, wheat germ, and yogurt.

**Here's a partial list of some foods that are bad for your brain...**

Alcohol, artificial food colorings, artificial sweeteners, colas and other soda pops, corn syrup, frostings, any drinks that are high in sugar content, hydrogenated fats, junk sugars such as those found in candy bars and other fast food treats, nicotine, white bread, and any form of over eating.
Please understand that these are simply partial lists and there are many other foods that are both good and bad for your brain out there. It is incumbent upon yourself to do the research and take the responsibility for your own nutrition and health.

**WARNING:** always consult with a healthcare professional before starting a diet or nutritional supplement program, such as taking high doses of vitamins or minerals.

Small changes in diet can have a large effect on your health.

By now you should have a much better idea of how to nurture your brain for optimum performance.

Combining this information with the Mind Movies Matrix system can help you optimize the overall performance of your brain and mind and allow you to truly be all you can be.

I hope this has helped.

I'm here for you.

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