TRAIN YOUR BRAIN #4

FILLING YOUR BODY'S CUPBOARD

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ARTICLE

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Introduction

This class is about you taking charge of the biochemistry – in your own body – that is the physical basis of your well-being and your capacity for contemplative practice.

In contrast to most of the classes in this course, which are about using your mind to change your brain to benefit your whole being – using *mind* to change *matter* to benefit mind – this class is about using matter (i.e., molecules) to change matter to benefit mind.

So, after we present an experiential exercise, the bulk of this article will be pretty data intensive. Take care of yourself both with the exercise and with all the information – don't worry, no text next week! – and if you just want to cut to the chase and learn the specific things you can do for yourself, just zip to the end and read the two boxes: Your Biochemical Foundation, and Targeted Nutritional Interventions.

What Happens When You Regard Your Body as Your Beloved?

Introduction

Building on the previous class (#3) on your precious life, we suggested an exercise that course participants might do as we approached this class (#4) on optimizing your biochemistry. Here it is:

Any time you like, imagine that your own body is a beloved pet, or a precious loved one, or a sacred temple. After taking a moment to settle into that attitude toward it, then ask yourself, "How do I feel moved, now, to treat my body?" Let answers come to mind – and to heart.

If the answers to this question are different from how you normally treat your body, perhaps follow the guidance in those answers for a single day – or even a single meal – and see how that feels.

Exercise

So, whether you did the exercise or not, let's go through an expanded version of it right here. Just read the instructions to yourself, or tape them and listen to them, or listen to the talk for this class on www.WiseBrain.org, or have someone read them to you.

As with all the exercises we do in this course, you can keep your eyes open or closes, write in your notebook or not, and go as deeply as you want. You can follow our suggestions or you can do whatever you like.

Get comfortable. Find a posture that is both comfortable and alert.

Relaxing. Settling into your breath. Aware of your body as a whole . . . the body breathing . . . breathing the body.

Take a minute to imagine the history of your body. Starting when it was first conceived, just an ovum and sperm fused together, and then pregnancy, birth, infancy, being a young child, adolescence, adulthood . . . all the way to the present time.

Take a minute to consider some of the many parts of your body . . . outer skin and inner organs . . . bones and muscles . . . nervous system and brain . . . hormones, nutrients, immune system components . . . saliva, hair, sweat, urine . . . toenails and everything else. Your body includes your brain and thus the physical machinery of your thoughts and feelings and wants and sense of being yourself . . . .

Take a minute to be aware of your body's growth over the years . . . of so many things it learned to do . . . be aware of some of the many ways it has carried you along, and taken care of you . . . be aware of what it has gotten good at, from latching onto a nipple to driving a car or navigating a job interview . . . be aware of challenges it may have faced . . . and what it has overcome . . .

See if you can step back from your body and regard it as a dear friend . . . or precious child . . . or even a sweet pet . . . or a revered teacher . . . or a sacred temple.

Now, appreciating all that your body has done for you over the years, can you wish it well? Can you extend to it a feeling of lovingkindness? Perhaps lovingkindness expressed through words such as: "May you, dear body, be safe from internal and external harm . . . May you, dear body, be happy . . . . May you, dear body, be healthy, strong, and vital . . . May you, dear body, live with ease."

Take a couple minutes to explore what it might be like to appreciate your body . . . to wish it well . . . to cherish it as a dear and valued organism . . .

OK, now if you like, gently float this question in your awareness, and see what answers come, though they may often not be in words, but in feelings or images: "How would my body like to be treated?"

PAUSE

For example, "How does my body like to move? . . . . How does my body like to be fed? . . . . How does my body like to be touched? . . . . How does my body like to be active? . . . . What does my body want for its health? . . . . For its longevity?"

OK. If you like, tell your body that you got it. You got its communications. Tell it you appreciate it letting you know what it needs . . . See what this feels like, truly respecting and listening to your body . . .

Start coming back into the room. Get a sense of it, and perhaps rub your hands on your thighs and your feet on the floor.

Perhaps take a couple minutes in silence to reflect upon that exercise. You might like to consider any ways that your body would like to be treated differently from now on. See if you feel moved to treat your body any differently in the future.

See if it feels true to you to commit to treating your body any differently in the future.

Discussion of the Exercise
You might like to consider these questions, in reference to whatever you experienced or realized during the exercise:

- What was all that like for you?

- What sorts of things did your body ask for? How did it ask to be treated?

- Did you experience any feeling of being let down by your body? Any sense of being embarrassed by it? Any sense of being critical of it? Any anger at it?

- Did you experience any resistance to appreciating your body? To being nice to it? To cherishing it?

- Did you have a sense of your body being one of the most intimate and all-pervading relationships of your life? (Though perhaps in second place to your mind . . . !)

- Did you have a sense of your power over your body, your influence over it? Through what it gets fed, how it's exercised, the toxins you expose it to, and so on . . . ?

- If moral responsibility is based on power – with the more power someone has over someone else, the greater the duty of care to that person – then what is your moral responsibility to your own body?

- Imagine treating your body the way it wants to be treated for the rest of its – the rest of your – life. What sort of life would that be?

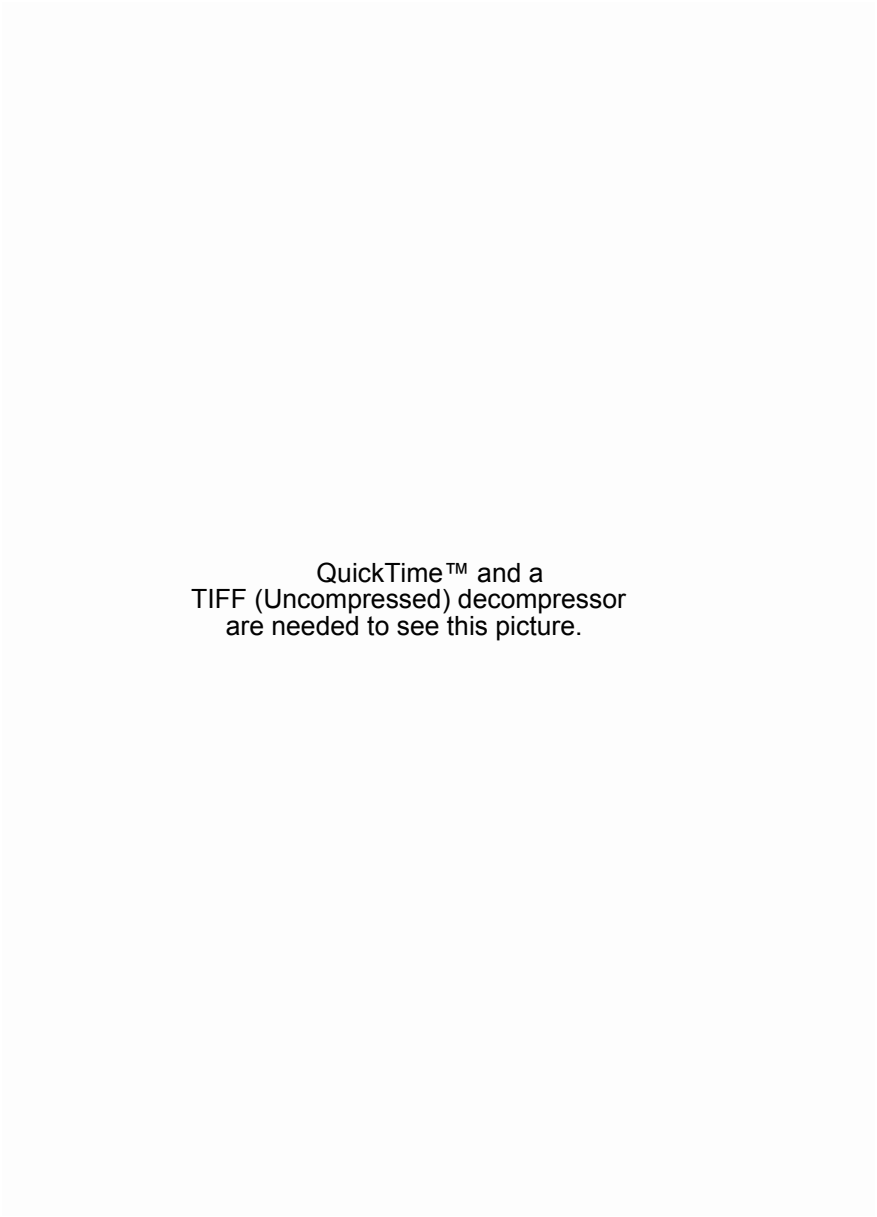
Right Molecular Effort

Introduction

To have the best possible foundation for psychological well-being and spiritual growth, we all need to nurture the physical substrate of our body. And that means good nutrition, since that is how you get the building blocks of that substrate into your body. There is simply no other way.

Nutrition Is Molecules

At the physical level, when we talk about nutrition, we are talking about *molecules*. For example, take a look at the serotonin molecule just below (at the top of the picture). We picked serotonin since it's in the Molecule Hall of Fame for its central role in your well-being and contemplative depth. But in order to have lots of these marvelous molecules rolling around in your brain – and in your digestive tract and other important sites in your body – you need to ingest lots of the amino acid, tryptophan, plus iron and vitamin B6 and other co-factors that help convert tryptophan to serotonin.



In other words, we need to **eat** the right molecules to <u>have</u> the right molecules.

We also need to avoid foods that supply molecules that interfere with the body's effectiveness.

By the way, it's interesting that this is the biochemical equivalent of Right Effort in Buddhism – which of course shows up in other wisdom traditions: increase the causes of the wholesome and decrease the causes of the unwholesome.

So, to tend to those good causes for our own body, we need to think about the interactions among important molecules in our body. Making the right thing happen in the body requires many, many things to be available and go right.

The Big Picture
So, what's the overall strategy for improving your biochemical balance sheet? So you have more assets in your body and fewer liabilities?

It's actually very straightforward and simple:

- Eat good food

- Take foundational nutritional supplements.

- Take targeted nutritional supplements.

- Develop a healthy gastrointestinal system.

- Come to terms with your nature as an "orchid" or as "crabgrass." Orchids: You must take good care of yourself – even if you don't want to – or you won't feel good. Crabgrass: You can get away with a lot and still feel good, but beware of the big problem (heart attack, stroke, diabetes, cancer) that strikes after a lifetime of ignoring your health; and don't look down your nose at those more sensitive orchids: it's not in their heads, it's biochemical and real.

Okay – with that in mind, let's review food, foundational supplements, targeted supplements, and healthy GI, for a calm, happy, focused mind.

You will have heard much of this before. But you've also heard how your body wants to be treated – even before you did the exercise above – and had you acted on what you heard?

The lesson here is that the key is **action**. So please regard the information to come here as a kind of pre-flight checklist – actually a kind of pre-life checklist for what stretches out ahead of you for hopefully many, many years to come. Just check off what you are already doing, and give yourself a pat on the back for that.

Then, when you come to something that you are not already doing, and which makes sense to you, then how about putting that on your action list from here on out?

Your Biochemical Foundation

Food Basics

Overall perspective: Protein is needed for amino acids, which are vital. In general, you get minerals from plants and animals, and vitamins from plants. (As an important side note: Vitamin D is built in response to sunlight, and ingested from fish; Vitamin A also comes from fish).

Here are the details:

1. Eat protein with every meal, especially breakfast. Protein contains the amino acids that are the building blocks of the neurotransmitters and a lot else. Protein also helps regulate blood sugar levels, which helps prevent Type II diabetes and makes it easier to shed excess pounds. Animal protein is best – buy clean meat, organic if you can afford it.

2. Eat more vegetables. Everyone agrees that this is important.

3. Eat carbohydrates that are <u>not</u> made of sugar and flour (bread, cereal, pasta, etc.). Carbs should mainly come from vegetables, fruits, and whole grains (ideally not turned into flour).

Carbs that have a lot of sugar or flour raise your blood sugar rapidly, and their chronic consumption frequently leads to insulin problems and sometimes Type II diabetes. They are also addictive. (Note that many of the diseases of the 20th and 21st centuries are diseases of excess insulin.

4. Stay away from food allergens. The foods that a person is most likely to have difficulty with are, in descending order of risk: dairy products, gluten grains (wheat, oats, rye, barley, spelt, kamut), soy, eggs, corn, citrus, and nightshade vegetables (potatoes, tomatoes, peppers, eggplant).

Supplement Basics (every day)

1. Take a basic multi-vitamin/multi-mineral supplement. For women who are having a cycle, these should probably include iron. A good vitamin will have levels of most B-vitamins that are many times the government "Recommended Daily Value" (DV), and minerals at the level of the DV.

2. Supplement omega-3 essential fatty acids in fish oil that has been "molecularly distilled" for purity (Nordic Naturals is excellent); take enough capsules to get about 500 mg <u>each</u> of two key ingredients, DHA and EPA, which will be listed on the label.

3. Take a B-vitamin complex, a B-50 or B-100.

4. Take at least one to two grams of vitamin C.

5. Take 1000 – 1500 mg of calcium and 400 – 600 mg of magnesium. (Some of this could be in your multi-vitamin.)

Some people prefer flax oil to fish oil due to being a vegetarian; if so, take a tablespoon a day. But please be aware that only a minority of people naturally make in their bodies the enzymes or co-factors needed to convert flax oil into the long-chain fatty acids their bodies need, which already exist in fish oil. If you do choose to use flax oil, make sure you're taking a good multi-vitamin/multi-mineral supplement as well, for the co-factors it contains. Nonetheless, this is still a less effective way of supplementing EFAs than taking fish oil.

3. Take a B-vitamin complex, a B-50 or B-100.

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A Healthy Digestive Tract
Avoid food allergens, and supplement with beneficial bacteria: acidophilus and bifidus.

Targeted Nutritional Interventions

Introduction
The research-based methods just below use natural molecules that the body is used to metabolizing.

That said:
- You'll get the most out of these methods if you have already established the foundation of good health practices we have just discussed.

- If you experience any uncomfortable side effects, stop immediately.

- If you try these methods and they don't show much effect, consult with a licensed, holistically-inclined health professional.

• If you are already taking any psychotropic medications (e.g., antidepressants, psychostimulants, tranquilizers, sleeping pills), check with your physician before trying any of the methods below.

For a Blue Mood
The first line of defense against a slump in mood is increasing serotonin (which can also help with anxiety).

Your body manufactures serotonin in two steps, which require a good supply of iron and of vitamin B-6:

Tryptophan -> 5-hydroxy-tryptophan (5-HTP) -> serotonin
^ ^
IRON vitamin B-6
as pyridoxal-5-phosphate (P5P)

Consider these steps:
• Take pyridoxal-5-phosphate (P-5-P), 50 mg/day on an empty stomach, and make sure iron intake is adequate.

• Increase serotonin levels by taking either tryptophan (500 – 1500 mg/day, often best before sleeping) or 5-HTP (50 – 200 mg/day; both best on an empty stomach.

For Anxiety
• At the molecular level, it helps to shift production from glutamic acid to GABA.

Glutamic Acid -> GABA
^
vitamin B6 as P-5-P

Vitamin B-6 as Pyridoxal-5-Phosphate (P5P) is the key nutritional co-factor that shifts the balance in the direction of GABA.

You can increase levels of GABA through these methods:
• Take P-5-P, 50 mg/day on an empty stomach.

• Take theonine, 100 – 200 mg/day. This amino acid is found in green tea and put into chewing gum and sodas in Japan (unlike the caffeine which is added in American products). It is antagonistic to glutamic acid, although the specific route still seems unknown.

- Take taurine, 1000 mg/day. This amino acid binds to the GABA receptor, therefore stimulating the receptor and increasing GABA-like activity. Taurine is generally safe and benign. By the way, it is depleted during breast-feeding – perhaps contributing to mothers feeling frazzled – and women who are nursing should routinely supplement taurine. Also, since taurine is excreted in quantity when there are digestive imbalances, if you know or suspect that your GI tract is troubled, then that's another reason to supplement taurine.

- Consider progesterone (women only), since this hormone stimulates the GABA receptor. As many (most?) women approach menopause, progesterone decreases before estrogen does, so supplementing progesterone may be helpful. Try Pro-Gest cream, used only during the second half of your cycle. Some women don't like the way it feels; others love it, so just use it if it works for you.

For Focus and Concentration
In general, make sure you have adequate thyroid hormone. If you often feel tired and are prone to a blue mood, have your thyroid checked (other warning signs include feeling cold). If you are symptomatic, be suspicious of thyroid levels below the 50th percentile of people like you (e.g., gender, age). And make sure your serotonin levels are adequate (see discussion above).

Then, more specifically, increasing norepinephrine and dopamine can improve your focus and concentration.

Norepinephrine is secreted throughout the brain to bring alertness and readiness for responses. It is involved in the subjective experience known to meditators as "brightening the mind."

Dopamine is the neurotransmitter most involved with the pleasure/reward systems in your brain – which is why people with addictive personalities tend to have relatively fewer dopamine receptors, so they turn to drugs like cocaine to flood the receptors they do have with intense stimulation.

To stay on task – such as keeping attention on a boring lecture, or on the breath – your dopamine circuits need to keep rewarding you for success (at least in the initial stages of meditation, until you are naturally and nearly effortlessly absorbed in the breath).

Actions:

- Take either L-tyrosine or L-phenylalanine, 500 – 1000 mg./day, on an empty stomach in the morning. These are the amino acids from which norepinephrine and dopamine are built.

For Memory
Consume plenty of these foundational nutrients:
- Folic acid, 800 – 1000 mcg./day

- Fish oil: about 500 mg. of EPA and DHA

- Methylcobalamine (B-12), 1000 – 5000 mcg./day, sublingual

And consider these targeted interventions:
- Take N-Acetyl-Carnitine, 500 – 1000 mg. in the morning, on an empty stomach.

- Take Phosphatidyl Serine, 100 – 200 mg./day.

- For women entering menopause, consider taking estrogen.

Conclusion

It's a lot to absorb. Perhaps the key thing to take away from all this is not so much the specific methods, but the more general sense that you can really do things to make yourself feel better and be more able to grow psychologically and spiritually.