Brain Science by Jade Teta and Keoni Teta (Onfitness March 10)

When most people think of fat loss, brain chemistry is far from their mind. However, the body only goes where the brain will let it. The brain holds the key to allow you control over willpower.

Neglect the brain, and willpower will instead control you. If you are a personal trainer or fitness enthusiast, becoming educated on how to balance brain chemistry can make the difference between long-term transformation or transient change.

Weight loss and fat loss are not the same. Weight loss methods focus exclusively on calories, neglecting the impact the brain has on body change. On the other hand, fat loss focuses on hormones, including the brain hormones called neurotransmitters. Brain hormones impact hunger, mood, cravings, energy, motivation and focus.

WEIGHT LOSS & FAT LOSS ARE NOT THE SAME.

THE FOUR MAJOR NEUROTRANSMITTERS There are four major neuro-hormones that fat loss seekers need to understand: dopamine (dope-ah-mean), acetylcholine (ah-settle-coe-lean), GABA (gah-bah), and serotonin (sara-tone-in).

Together these four brain chemicals interact to influence personality traits, energy and fat-burning. Dopamine and acetylcholine can be thought of as stimulating/energizing chemicals, while GABA and serotonin are more relaxing. Here is a brief primer on these key brain chemicals and how they may impact your fat burning efforts. DOPAMINE Dopamine energizes the brain and is key in allowing us to experience pleasure. Dopamine allows us to stay focused, energized and motivated. It keeps us from procrastinating and allows us to feel enjoyment from the world around us.

Too much or too little dopamine can cause problems. Those with too little dopamine have lower energy levels, poor focus and find it difficult to stick to a schedule. These individuals often use food and stimulants to self-medicate themselves.

Those with higher than normal dopamine signaling also suffer and may be overly focused to the point of compulsion. Unbalanced dopamine usually causes cravings for sugar and stimulants, especially coffee and chocolate. The goal for fat loss is to have a dopamine signaling structure that regulates and balances the system with sustained energy, focus and motivation. ACETYLCHOLINE Acetylcholine is mainly involved in the processing speed of the brain and manifests itself in the ability to recall events, numbers and names, quickly solve problems and resist brain fatigue.

Those with low acetylcholine function will frequently forget numbers, be unable to recall a name despite knowing a face, and may often forget where they left their keys or wallet. These individuals will often crave fat since fat is a rich source of choline, one of the building blocks of acetylcholine.

A craving for fried foods, hamburgers and pizza, as well as a love of creamy desserts like cheesecake and ice cream, may be a sign of low acetylcholine. SEROTONIN This neurotransmitter impacts how we feel about ourselves and the world. People who have high serotonin function wake up, look into the mirror and like whom they see. Serotonin gives us a sense of well-being and confidence in the world.

Low serotonin is associated with insomnia, depression and low self-esteem. Low serotonin often manifests as cravings for starches and salty foods like bread, pasta, chips and pretzels. These people often feel unsatisfied if starch is not part of the meal, and struggle more than others if they attempt a low carbohydrate diet. GABA GABA gives us the ability to quickly shut down and relax. Those with a strong GABA personality don't seem to stress much, tend to be more carefree, and often seem content and relaxed compared to others.

Those with low GABA function feel an inability to shut down and often suffer from anxiety. People with GABA

imbalance often eat way too much, way too fast. People low in GABA frequently seek out starch but are really content eating anything as long as there is a lot of it to fill them up. Low GABA people are emotional eaters in the truest sense of the word. BALANCING BRAIN CHEMISTRY For participants of the fat loss lifestyle it is hormones like these neurotransmitters that hold the key to true body change. We often think the way we are is set in stone and that people cannot change.

However, it is not uncommon for people to lament how they "used to be." We call this the "Used to be syndrome," and it is a sure sign your brain chemistry needs some help. If you "used to be" motivated, fit, focused, happy, relaxed, etc., then chances are the real issue is that you once had a more balanced brain chemistry that you currently don't today.

Refined sugar rich diets, excessive stimulant use, persistent stress and even too much exercise can cause brain chemistry issues.

If it gets bad enough your doctor may even prescribe a "mood drug" like Prozac or Lexapro, or drugs that "relax" you, like Xanax. Mood regulating drugs have actions that attempt to alter brain chemistry by blocking the natural recycling/reuptake of these chemicals by nerves.

Unfortunately, these drugs do not help your body make more of these valuable chemicals and instead provide a short-term Band-Aid to a potentially long-term issue. However, these brain chemicals can be reliably made in the body through amino acids naturally found in food or concentrated in nutritional supplements.

By first identifying which brain chemicals you have an imbalance of, you can tailor your intake of specific foods or supplement to help restore brain function, control cravings and improve motivation, focus and energy. SOME SCIENCE If you are skeptical of how much impact brain chemistry can have on food intake, exercise behavior and willpower, consider a brand new study published online in the journal Current Opinions in Gastroenterology.

In this study, researchers took on the controversial topic of food addiction. The conclusion of the research was that food addiction is real and is mediated in large part through neurotransmitter chemistry in the brain.

An October 2009 study published in the journal Behavioral Neuroscience showed how food intake is independently altered by changes in brain hormones like serotonin.

Several other studies published in the May 2009 Medical Hypothesis, as well as the March 2009 Journal of Nutrition, support the conclusion that brain chemistry is playing a large and unappreciated role in diet and lifestyle approaches to body change.

We all know that even the best diet and most scientifically based exercise program in the world only work if you can actually stick to it. Stress, intense exercise, emotional trauma, coffee, sugar, salt, toxins and genetic susceptibilities can all impact your neurotransmitter function.

The first step to balance brain chemistry is to get rid of the lifestyle factors that drain neurotransmitters, while at the same time using food to bolster the areas you are weak in. Those low in dopamine will benefit from decreasing sugar and stress and increasing the amino acid tyrosine in the diet.

Foods rich in tyrosine include all meats, avocado, banana, almonds and dairy products. Eating foods rich in tryptophan like turkey, fish, eggs, dairy and nuts can increase serotonin. GABA can be increased by eating seafood rich in the amino acid taurine and drinking herbal teas rich in lemonbalm, passionflower, valerian, chamomile and others.

Consuming foods rich in lecithin and foods including fish, egg yolks and peanuts can increase acetylcholine. Two foods that will help balance all these chemicals are cocoa and whey protein.

Cocoa powder consumed without sugar has many of these chemicals present in it including another powerful mood enhancing chemical called phenylethylamine (PEA). Whey protein contains many of the amino acids required to increase brain chemistry.

If you want to know what neurotransmitter you may be low in, take the brief 5-question quiz we included in this article. Choose the one letter in each question that best describes you. If none describe you then leave the question blank. If more than one describes you choose them all.

You have been sent the following article by Your Name from Digital Magazine.

1: I CRAVE:
a: Chocolate and/or coffee and/or sugar b: I love fatty things like cream cheese, guacamole and chocolate mousse.

c: I love bread, pasta and salty snacks.

d: I don't care what it is, I just want enough of it to make me feel full. 2: AT WORK OR SCHOOL:
a: I find it difficult to stay focused, have drops in energy and procrastinate.

b: I can never remember what I just did. I may have to redial the phone multiple times and can be slow to catch on.

c: People can easily annoy me. I usually trust my ideas over others and sometimes feel others are out to get me.

d: I get anxious and worry about every little thing so much that I sometimes have trouble getting things done. 3: EXERCISE MAKES ME FEEL:
a: More energized and powerful b: Smarter and more creative c: Happier and more attractive d: More calm with less worries 4: IF I FEEL DEPRESSED IT IS MOST LIKELY TO BE:
a: A feeling of frustration that I can't ever stick to a plan or schedule or fulfill promises to myself b: A feeling of mental slowness, mental frustration or feelings that I am just not as smart as others c: I am just sad without any good reason. I often wish I looked different or was someone sexier, smarter and more likable.

d: An anxious worrying-type depression. Anxiety rather than depression more defines me.

Now total up your answers. If any letter was chosen two or more times, then there is a good chance you have a deficiency in that neurotransmitter. Keep in mind you can often have more than one deficiency and also may have none. Here are how the letters break down.

a: Dopamine b: Acetylcholine c: Serotonin d: GABA