

What's Eating Your Game? by Kay Umeakunne, MS, RD, LD

Chess is a game that requires a high level of cognition. Whether you're playing 5 rounds of G/30 or G/120, at some point in time fatigue can set in and affect performance on the chess board. Factors contributing to fatigue onset include inadequate rest the night before the tournament, not getting breaks between rounds and lengthy rounds that may drain the brain and body. All can result in decreased mental alertness. Another key factor that can affect mental performance is diet. Those who understand the best type and timing of meals may have yet another strategy to bring to the table.

Food for thought – literally.

Much of the research aimed toward diet and cognitive function has come from military interest in sustaining alertness and performance in soldiers. Research shows that a glucose(sugar)-caffeine combination can amend deficits in cognitive performance and subjective fatigue during extended periods of cognitive demand. Peak blood plasma levels occur between 30 and 75 minutes following oral ingestion.

Coffee drinking does have its limitations however. While it helps you think faster and more efficiently, tannins from excess coffee will drain your iron stores needed for concentration. After you get the jitters, it ceases to be of any benefit at all. So limit coffee to no more than 3 cups per day and drink it between meals to maximize its effectiveness.

At last, CARBs are good!

The delivery rate of dietary carbohydrates affects cognitive performance in humans. Though the brain comprises only 2 percent of body weight, it uses up to 30% of the day's calories. It also demands all energy

come from high-quality carbohydrates. Good brain carbohydrates include whole grain breads and pasta, brown rice, dried beans and peas, green leafy vegetables, wheat germ, dried apricots, bananas, strawberries, cantaloupe, oranges, grapes, apples, and nonfat yogurt. These carbohydrate foods have what is termed a low glycemic index (GI) which means they are absorbed slower into the bloodstream. They provide time-released evenly flowing energy throughout the day. On a scale of 0 – 100, foods with a GI <56 are best. For great GI food lists, visit www.lowglycemicdiet.com

What about fat and sugar?

Brain cells are nerve cells in the brain (neurons). While sugar is carbohydrate, it is also refined and rapidly absorbed. Westernized diets, rich in saturated fat and refined sugar can contribute to cognitive decline by decreasing neuron flexibility by means of a factor that mediates nerve cell vitality and function. A high fat and refined sugar diet also results in insulin resistance, a condition which prevents glucose from getting from the bloodstream into the cells. Memory impairment has been shown to occur in adults with type 2 diabetes following ingestion of 50 grams of rapidly absorbed carbohydrate. Dietary regulation of blood sugar through eating foods with a low glycemic index ensures a low insulin level and improves the quality and duration of intellectual performance.

Protein selection matters.

Certain amino acids found in dietary protein act to elaborate neurotransmitters (chemical messengers that allow brain cells to talk to each other). The amino acid tyrosine appears to prevent the substantial decline in cognitive performance and mood associated with

many kinds of acute stress. Tyrosine affects the alertness neurotransmitters dopamine and norepinephrine. Diets high in the amino acid tryptophan, on the other hand, will cause you to feel fatigued and sluggish. Tryptophan encourages production of serotonin, a neurotransmitter that relaxes the brain causing a sedative effect. A high carbohydrate diet also favors serotonin production. Ever pass out after eating a big pancake breakfast or a lunch with a six inch sub sandwich, soda & chips?

How about dietary supplements?

I once took my son to an out-of-state scholastic tournament where I witnessed a parent sponsor handing out capsules of an undisclosed substance to all the children. When approached as to whether I wanted my child to have one, I immediately declined and asked what the substance was. To my horror the parent replied, “it’s bee pollen”. Needless to say, their team won the championship and I couldn’t help but wonder if the nutritional supplement played a role. But studies have shown such purported ergogenics (performance enhancers) to be ineffective. Many nutrients and some functional foods play a role in brain function.

- **Iron**
Plays a role in oxygenation and synthesis of neurotransmitters. Be careful. Too much iron can cause oxidative stress in the brain.
- **Vitamins B1, B6, B9 (folate) & B12**
Help prevent cognitive decline
- **Vitamins C & E**
Antioxidants that attack free radicals associated with oxidative stress and loss of memory & thinking
- **Omega-3 fatty acids**
Helps prevent depression.
- **Soy isoflavones**
Improves cognitive function

A good multivitamin which includes the above nutrients would suffice. For those players who are overweight or obese, however, loss of excess body fat may be an effective ergogenic. Keeping physical health optimal can be a plus for chess players. Our neural function is in many ways determined by the lifestyle we choose. Some stretching and yoga exercises before and in between rounds can help prepare the body and mind.

Putting it all together.

- ✓ The ideal tournament meals should be high in tyrosine (tuna, soy, eggs, turkey, non-fat yogurt) and moderate in carbohydrates (whole grains, legumes, leafy vegetables, wheat germ, fruits).
- ✓ Don’t eat large meals between rounds. Snack throughout the day by eating 6 mini-meals.
- ✓ Don’t drink alcohol or high sugar beverages, smoke, or eat baked goods with hydrogenated fats.
- ✓ Save chocolate, pastries and desserts for after the tournament.
- ✓ Avoid fast food.
- ✓ Keep hydrated. Drink water. Dehydration causes mental and physical fatigue.
- ✓ Walk around and if possible, do some stretching exercises.

A Note for Women

Don’t go on a low carb diet during a tournament. They deprive the brain of needed carbohydrates and have been shown to cause slower reaction time, and problems with memory and information processing which suggest decreased problem solving ability.

Guidelines for Scholastic Players

Chess Moms and Dads

- ✓ Make sure your children get a good night's sleep before the tournament.
- ✓ Start the morning with a wholesome low glycemic index breakfast
- ✓ Eat at least 30 minutes to 1 hour before a round begins. If your child doesn't have time before the next round, give them a small snack like a cheese stick, whole wheat crackers and some grapes.
- ✓ Keep your child hydrated by giving them water to drink. Dehydration causes fatigue and mental sluggishness. The brain is 75% water. Avoid high sugar drinks (soda, punch, koolaid).
- ✓ Fruits to pack: apples, oranges, grapes, cherries and grapefruits.
- ✓ For lunch: Don't eat large meals between rounds. Snack throughout the day by eating 6 mini-meals. Try a pasta or rice dish. Stay away from French Fries and Fast Food. Vanilla yogurt would be better than yogurt with fruit. Add a salad.
- ✓ Save desserts for after the tournament. Same goes for candy.
- ✓ Between rounds try some stretching or yoga exercises to help keep your child mentally and physically prepared for the next challenger. Even a walk or a little playtime can help when the opportunity is available.

Meal Ideas

Here's some suggestion for both meat eaters, vegetarians and vegans. Pick and choose what fits your lifestyle. Whole wheat bread should be stone ground.

Breakfast	Fresh Peanut Butter Whole Wheat Bread Banana Oatmeal Low fat Vanilla Yogurt Scrambled Eggs Whole Wheat Toast
Lunch	Tuna or Turkey Whole Wheat bread Cantaloupe Spaghetti Marinara Sauce Spinach Salad with egg Tofu and Brown Rice Three Bean Salad
Dinner	Chili with Kidney Beans Brown Rice Garden salad (Choose salad dressings made with canola oil.) Brown rice and Lentils Fresh Salmon
Snacks	Cheese sticks Banana Low-Fat Yogurt Orange Dried Apricots Broccoli sprigs Hard cooked egg wedges Hummus & pita bread Walnuts

