



Combating Back to School Stress by Meredith MacKay, RHN

Back to school time is upon us again – it sneaks up quickly, providing us with lots of anticipation, excitement, and for many: stress. Back to school time can create physical, emotional and mental stress for children and parents alike; luckily many of the same stress management remedies apply to both parents and children. In this article we will focus on what parents can do to help children manage the stress they confront in the preparation for and during the school day.

From a nutritional standpoint, the absolute best thing to do to manage stress and optimize cognitive function is to balance blood sugar – this requires eating regularly and eating a balanced assortment of macro- and micronutrients, meaning eating protein, whole grain and especially veggies or fruits every 2 to 3 hours throughout the day. The physiological stress response is heightened when the

body is forced to raise blood sugar levels hormonally during a period of fasting. Hormones such as cortisol, known as the stress hormone, are required to increase blood sugar during a fasted state. Stress hormones negatively affect not only metabolism but also cognition. (1) Cognitive testing (math, reading, verbal and non-verbal ability) on children at ages 7, 11 and 16 years old have been shown to be inversely associated with cortisol levels.(2) Studies have also shown that school children with high perceived stress levels exhibit significantly poorer scores on speed of memory and continuity of attention relative to school children with a lower perceived stress, suggesting that the stress response in children may diminish cognitive performance via the effects of stress on hypothalamic-pituitary-adrenal axis (HPA) activity.(1)

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Remove, Restore, and Return by Ingrid Davis, RHN

A recent CAHN-PRO newsletter article (*Depletion of Good Bacteria-the Smoking Gun?* December 2010) addressed the subject of using probiotics as the first tool in healing our intestinal ecology and restoring good bacteria. The writer cited no less than 20 supporting references and it is clear that the medical community is becoming increasingly aware of the health benefits of probiotics to prevent and combat disease. While medical doctors, ND's and nutritionists have used elimination diets to control food sensitivities and to prevent further allergenic load on the intestine, the results have not been satisfactory in terms of long-term prevention.(1) Elimination diets alone will not heal the gut; removing the offending food will only give the immune system a temporary reprieve from responding to allergens. Research tells us that intestinal im-

mune system regulation depends on the establishment of healthy gut microflora.(2) Reducing the risk of food allergy and sensitivity has progressed from simply avoiding the offending food to regulating immune function with the goal of re-introducing the offending food.(3) We have identified three steps:

- **remove** the allergenic food (elimination diet);
- stimulate the immune system (**restore** it by introducing probiotics); and then
- **return** the food when it can be tolerated by the body.

The goal of managing food allergies and sensitivities is to heal the intestinal system to the point that it will eventually be able to tolerate the previously allergenic food.

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When kids are stressed, so are the parents. Herbs that are adrenal adaptagens can help balance stress hormones and energy levels.

Enjoy your love of food ...with food that loves you back



Combating Back to School Stress by Meredith MacKay, RHN

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This is a fundamental reason to eat breakfast. The breakfast meal and the regularity with which it is eaten may influence appetite control, dietary intake, dietary composition and chronic disease risk, meaning that skipping breakfast may not only lead to increased appetite and increased caloric intake, but to weight gain, diabetes, and cardiovascular disease risk factors as well as poorer overall diet quality.(3) Alternatively, regular breakfast consumption has been linked to lowered risk of chronic diseases and is associated with improved learning abilities and better school performance in children.(3) The association between school performance – specifically enrollment, attendance, achievement, behavior and dropout rates – and nutritional status has been well researched.(4) Many studies have shown an association between hunger, poor dietary intakes, stunting, underweight and poor school performance. Short-term studies that looked at the effects of skip-

ping breakfast have consistently found detrimental effects on children's cognition, whereas studies providing breakfast has shown benefits associated with attendance and arithmetic performance.(4)

Breakfast frequency and the quality of the breakfast meal may be causally related to appetite and blood sugar control, supporting the hypothesis that breakfast and the quality of breakfast play an important role in disease risk.(5) The proportion of breakfast-skippers in pediatric and adolescent age range from 10 to 30 percent throughout the world.(6) According to neurobehavioral data, a good example set by parents and access to a variety of palatable and nutritious foods should drive children to become able to self-select breakfast meals with balanced composition. (6) Balanced composition specifically refers to the Glycemic Index (GI) value of the meal – or how quickly the body turns that meal into circulating blood glucose.

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What Exactly Are Our Children Drinking? by Meredith MacKay, RHN

Not sure? Turns out, neither are the "experts". 30-50% of adolescents and young adults are consuming energy drinks with unregulated levels of caffeine and other stimulating ingredients in them.(1) What are energy drinks? They are beverages containing caffeine, taurine, vitamins, herbs, sugar and/or other sweeteners that are marketed as "nutritional supplements" in order to circumvent FDA regulations on caffeine in food and beverages. Includes drinks like colas with claims to improve energy, lose weight, increase stamina, enhance athletic performance and improve concentration.(1-3) Energy drinks are actually the fastest growing US beverage market, with 2011 sales expected to hit \$9 billion.(4-9)

50% of the energy drink market is children (<12), adolescents (12-18) and young adults (18-25).(6-9) So how are all these stimulants, caffeine and other ingredients affecting our children? The caffeine listed in energy drinks is often 3-5 times that of the same volume of cola.(5,7) Additionally, ingredients such as guarana, kola nut, yerba mate and coca are also used to provide "natural" sources of caffeine which manufacturers are not required to include in the levels of caffeine listed on the food label.(6) Each gram of guarana contains 40-80mg of caffeine (8-oz of cola contain 23-27mg of caffeine), with a potentially longer half-life than caffeine, meaning it remains active in your body for longer than caffeine, as it interacts with other compounds

in the body.(6) Since these additional sources of caffeine are not required to be listed on the label, the single serving of an energy drink may far exceed the caffeine content listed on the side of the can.

28% of 12-14 year olds, 31% of 12-17 year olds and 34% of 18-24 year olds report regularly consuming energy drinks.(4) 51% of college students regularly consumed energy drinks (8). Germany has been tracking energy-drink related incidents since 2002 (10); reported side effects include: liver damage, kidney failure, respiratory disorders, agitation, seizures, psychotic conditions, rhabdomyolysis, tachycardia, cardiac dysrhythmias, hypertension, heart failure and death.(10)

Caffeine is the most commonly used psychoactive drug in the world and is the only psychoactive drug legally available to children and sold among food and beverage products.(11) Caffeine is an adenosine benzodiazepine receptor antagonist, phosphodiesterase inhibitor, and central nervous system stimulant.(12,13) Caffeine causes coronary and cerebral vasoconstriction, relaxes smooth muscle, stimulates skeletal muscle, has cardiac chronotropic and inotropic effects, reduces insulin sensitivity (which can lead to diabetes), and modulates gene expression in premature neonates.(8,12) Caffeine also increases urine flow and sweat excretion, thus altering blood electrolyte levels.(14)

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Green Eggs No Ham By Leanne Vogel, RHN

Serves 4

Pumpkin pesto

- 1/2 cup raw pumpkin seeds [pepitas]
- 1/2 cup fresh basil leaves
- 1/2 cup fresh parsley leaves
- 1/4 cup extra virgin olive oil
- 2 tbsp nutritional yeast
- 2 tbsp fresh lemon juice, about 1/2 a lemon
- 1 tbsp rice miso
- 1 clove garlic
- 1/2 tsp herbamare

Eggs

6 eggs

- 1 tbsp extra virgin coconut oil or other cooking oil
- 1 head kale, chopped
- 1 cup spinach, chopped
- 3-4 leaves fresh basil, chopped
- handful raw pine nuts

To make pesto: process all ingredients in a food processor until smooth. To make the eggs: heat coconut oil in a large frying pan on medium heat. Once melted, add eggs and mix with a fork. Allow to cook for 5-6 minutes, turning with a fork every minute or so. Add kale, spinach, and 3-4 spoonfuls of pesto to the mix and continue to cook until desired consistency is met, about 9-11 minutes. Add extra basil and pine nuts, mix to combine and serve.



Remove, Restore, and Return by Ingrid Davis, RHN

CONTINUED FROM PG 1 ...

Remove: While it is essential to remove any suspected allergen from the diet, removal of the food or other substance alone will not heal the intestinal mucosa. In one study, twenty seven patients, ranging in age from 9 months to 5 ½ years, were subjected to a cow's milk challenge.(4) The number of specific cells secreting antibodies against the most abundant components of cow's milk, beta lactoglobulin and casein, increased from 4.8 to 16.9 against beta lactoglobulin, and from 2.2 to 7.5 against casein. This was in patients with a challenge in the IgM class, which indicates *defective immune elimination of milk antigens*. Even more interesting is that yet another antibody increase was observed against gliadin, an unrelated dietary antigen that is not even present in cow's milk. That increase was from 8.2 to 31.0. The study concludes that such immune system reactions

may be the result of lesions in the mucosal lining of the intestine (leaky gut). Intestinal permeability can be normalized by probiotic therapy, as well as the intestine's immunologic barrier.(5)

Those with food allergies, whether it is to corn, gluten, dairy, or another substance, must be aware that cross-contamination can occur. A 2010 pilot study in the U.S tested 22 inherently gluten-free grains, seeds and flours. All samples were homogenized and tested in duplicate. The results indicated that 7 of the 22 samples contained mean gluten levels over 20 ppm and were not considered gluten-free. (6) This is a concern for someone with a gluten intolerance who has removed the gluten but has not taken steps to heal the gut. If the gut was healed, then the body may not respond to trace amounts of gluten.

CONTINUED ON PG 4 ...

Non-GMO Shopping Guide by Eleanor Healy, RHN

What is a Genetically Modified Organism (GMO)?

According to the definition on the Institute of Responsible Technology (IRT) website, GMOs (genetically modified organisms) involve taking genes from one species and forcing them into the DNA of another species to introduce a new trait.(1) Animal studies show that health risks associated with consuming GMO foods may include allergies, infertility, immune problems, accelerated aging, faulty insulin regulation, and changes in major

organs and the gastrointestinal system.(2)

What can you do as a consumer to avoid GMOs?



The IRT offers the following advice:

Buy organic: certified organic products can not intentionally include any GM ingredients. You must still read the labels to look for 100% organic ingredients or as close as possible to that.

Look for Non-GMO Project Seals: The Non-GMO project features brands that will not use or support any GM products or ingredients.

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Combating Back to School Stress

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Considering mood, glucose and cortisol levels at baseline, low-Glycemic Index (GI) meals showed better declarative-verbal memory. Observed GI effects were valid across Glycemic Load (GL) groups.(7)

In theory, there are two physiological changes resulting from an overnight fast:

- 1) maintaining the availability of fuel and other nutrients to the central nervous system;
- 2) long-term beneficial changes that breakfast could have on nutrient intake and nutritional status, which in turn affects cognitive ability.(8)

Skipping breakfast has shown diminished short-term memory, decreased speed and accuracy on tests of visual and auditory short term memory, delayed recall, impaired recognition memory and spatial memory in children and

young adults.(9-11) Skipping breakfast also affects cognitive functions unrelated to memory tasks such as verbal fluency tests (12), math, continuous visual stimulus (13) and stimulus discrimination (9) – poor nutritional status and poor mental development is a well documented link in children.(14) It is suspected that the brain is vulnerable to metabolic stresses of fasting for both children and adults – children, whose cognitive processes are still maturing and older adults whose cognitive processes are on the decline are most at risk to the stresses of skipping breakfast. The composition, size and timing of breakfast are all important variables for physiological changes in blood glucose, insulin, and neurotransmitter concentrations, thus the characteristics of a meal itself can influence cognitive function. (8)



10 Minute Chia Pudding

by Jackie Rafter, RHN

Serves 2

- 1/4 cup chia seeds
- 1/4 cup shredded coconut
- 1/4 cup pecans
- 1/4 cup raw agave syrup or maple syrup for sweetener
- 1-1/4 cup water
- 1 tsp cinnamon
- 1/4 tsp nutmeg
- 1 tsp organic vanilla extract
- Pinch of sea salt (optional)

Stir chia seeds and coconut in a medium bowl. Blend the remaining ingredients in a blender. Add liquid to chia mixture and stir well and let set for 5 minutes. Stir again every 5 minutes for 15 minutes until you get a nice creamy texture. You may have to add additional water or chia seeds, which will not affect the flavour. Chia seed is a nutritious thickener so add more if your pudding gets too runny (or add more water if it gets too thick). This delicious treat lasts 3-4 days in the refrigerator. Chia is one of nature's best kept secrets as it is an excellent source of protein and Omega-3 fatty acids. This amazing seed looks and tastes a bit like tapioca pudding and provides an excellent means to thicken and provide texture to foods and provide plenty of fiber to help stabilize blood sugar. Serve with fresh fruit and yogurt for a great start to the day.



Remove, Restore, and Return by Ingrid Davis RHN

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Restore: Establishing normal microbiota in the intestine is essential to keeping it free of disease while it performs its job as the immunological barrier for pathogens entering our body.(7) Probiotics, along with its many other benefits, also help the gut-associated lymphoid tissue (GALT) – the digestive tract's immune system - to mature, as well as to balance pro-and anti-inflammatory cytokines (proteins secreted by cells of the immune system that regulate various inflammatory responses). They have been shown to heal leaky gut in children with food allergies, and to enhance specific IgA responses lacking in those children. Healing intestinal function with probiotics normalizes the gut ecology and reduces the risk of food allergy.(8) Once probiotics have been introduced to restore the health of the gut, a minimum of three months of probiotic therapy is recommended. This time frame was established in accordance with a study which concluded that probiotics shortened common cold episodes by almost 2 days and reduced the severity of symptoms. (9)

What Exactly Are Our Children Drinking? by Meredith MacKay, RHN

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Caffeine levels >300mg are associated with miscarriage and low birth weight.(15,16) Caffeine is also associated with anxiety, jitteriness, headache, fatigue, withdrawal symptoms, nervousness, irritability, insomnia, tremor, heart palpitations, vomiting and abdominal pain, hypokalemia, hallucinations, increased intracranial pressure, cerebral edema, stroke, paralysis, altered consciousness, rigidity, seizures and death.(5-8,17)

The FDA sets requirements and safety regula-

Return: Once the gut has been healed you can slowly begin to re-introduce an allergenic food. How do you know when you're ready to bring an allergenic food back into the diet? At this point it really is simply a matter of trial and error. Lisa Bloomer, ND, suggests that, "It can take up to 18 months to heal a gut, but in many cases people can reintroduce foods prior to 18 months with success. One needs to eliminate a food for at least 2 weeks to make sure it is out of their system, and then avoid it for 6-8 weeks before slowly attempting to re-introduce." She goes on to say that each case is different and that it all depends on the "quantity and severity of the food sensitivities."

Research continues to focus on identifying specific strains of probiotics which mediate the immune system, and on how food and diet interact with those strains.(2) As more studies are conducted on this topic, nutritionists must continue to rely on probiotics as our first and most powerful tool when restoring digestive and intestinal function in our clients with food intolerances.

tions for sodas and other foods and drinks, however, since energy drinks are considered a "natural dietary supplement", safety determinations of energy drinks are made at the discretion of its manufacturer, with no requirements for testing, warning labels or restriction against sales or consumption by minors.(2,3) These drinks may put children at risk for adverse health reactions (18): the ingredients vary by manufacturer, are under-researched, not regulated and worst of all are directly marketed to our youth.

Non-GMO Shopping Guide by Eleanor Healy, RHN

CONTINUED FROM PG 1 ...

This non-profit organization is committed to providing consumers with clearly labelled and independently verified non-GMO choices including testing suspected ingredients. Check their [website](#) for more information

Avoid Risky Ingredients: If you don't buy organic or non-GM marked products, avoid products that may be derived from GMOs. This is necessary as there is no law in Canada requiring food producers or manufacturers to label their products as containing GMOs.

The eight GM food crops are corn, soybeans,

canola, cottonseed, sugar beets, Hawaiian papaya, and small amount of zucchini and yellow squash. GM alfalfa is fed to livestock in the USA. It is not yet legal to sell GM alfalfa seeds in Canada although the Canadian Government approved Monsanto's GM alfalfa for human consumption in 2005.

The Canadian Perspective:

The Canadian Biotechnology Action Network (CBAN) advocates for non-GMO products in Canada. Read more about GMOs in Canada at: <http://www.cban.ca/>

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