Autism:

Pathways to Recovery

A Guide to Using Nutrigenomics to Optimize Health

Workbook

Dr. Amy Yasko

NRI
Neurological Research Institute

NRI
Neurological Research Institute, LLC

Amy Yasko
Ph.D., CTN, NHD, AMD, HHP, FAAIM

Autism:

Pathways to Recovery

Workbook

Discussion Group

www.ch3nutrigenomics.com

Phone 207.824.8501

Fax 207.824.0975

279 Walkers Mills Road

Bethel, ME 04217

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INTRODUCTION

My approach to Autism, as well as other chronic neurological issues, is somewhat different than others in these fields. I do not believe in telling you what to do.

I believe that knowledge is power and that the more well informed you are about the process going on in the body, the better position you will be in to make informed choices as to supplementation and the path to health and wellness. For this reason I spend a lot of time talking about the "why" behind a choice or a suggestion, as well as looking at a great deal of biochemical test data to help you to learn how to monitor and follow your progress on this program.

We also rely heavily on molecular biology to help guide you with the choices you make. The tools that we use are not meant to replace the need to consult with your doctor. They are meant instead to serve as additional tools to help you while you work in conjunction with the doctor of your choice.

I believe that autism, as well as other chronic conditions are multi-factorial in nature, compromising an underlying genetic susceptibility with an infectious disease component as well as environmental toxins. I feel that it requires time and patience to slowly unravel the pieces of this complex puzzle for each individual.

This is a marathon; it is not a sprint. I cannot promise any magic bullets; however, I do promise to be here to help you to understand the pieces of this puzzle. I am committed to pursuing any missing pieces we need, even if it is only needed to help a single child or one individual adult.

This workbook is being provided as a beginner's guide to the protocol. It is a step-by-step approach to help you begin the journey to take those important first steps in the marathon. It includes daily/weekly ideas on how to get started, suggestions to increase your knowledge base and links to encouragement and support you will need along the way.

With love, hope, and a hug,

Dr. Amy

"Please take a deep breath and stop running as fast as you can. It is a marathon, not a sprint. It is okay to slow down and take your time. There is no prize for getting there first; we just have to get there!"

Contents

WEEK 1

DAY 1: Discussion Group

Welcome to Holistic Health International, LLC (HHI). We are glad you have chosen to explore this protocol to improve your health and well-being. Take a deep breath and remember that you are taking the first steps of a marathon. Relax and move at your own pace. Try not to stress yourself throughout this process.

Stress does bad things to the body, and there is no need to stress or rush. You will get there. Just take it one step at a time and know that you are not alone. There are many veteran members ready and willing to help you.

The place to start is by joining our Discussion Group at www.ch3nutrigenomics.com and reading Dr. Amy's welcome message. Please register as a new member, by creating a username and inserting the relevant information.

We have members from all over the world. Please add your location in the box provided. Be sure to click the "submit" button at the bottom of the page.

Please note that your registration is subject to approval and can take up to 48 hours (you may **or** may not receive confirmation of activation). If after 48 hours, you cannot log in or need help, contact the Moderator, Erin Griffin at erin@holistichealth.com.

Once registered, read, read, read.

It is suggested that you stick to the following forums until you are comfortable with the protocol:

Welcome

- **New Members**
- **The Basics**
- **Dr. Amy's Recent Posts and New Findings**

These forums are locked (locked icon on far left of each forum) which means that they are for information only and can only be edited by the moderator. Other forums have a page icon where one can post or respond to a question.

Look through the forums listed on the log in page to find the best fit for your question, click to open that specific forum (Genetics, Supplements, etc). To post on an existing thread, click on that thread to open it. If no existing thread fits your needs, you can start a new thread by clicking on the New Topic button above and to the left of the existing thread list.

This entire site may seem overwhelming. DO NOT PANIC. You can do this. It will take time to learn how to navigate through the forums, but over time, this Discussion Group will become your favorite resource in implementing the protocol and will keep you up-to-date with the most recent information.

DAY 2: Order Nutrigenomic Testing and Print Resources

Order the Comprehensive Methylation Panel with Methylation Pathway Analysis from **www.holisticheal.com**. Download The book *Autism: Pathways to Recovery* at www.dramyyasko.com.

It takes an estimated 10 weeks for results to come back from the lab. You will get your results mailed to you on a CD with suggested supplementation based on your genetics. Nutrigenomics integrates concepts in molecular biology and genomics to study how foods and nutritional supplements may assist in maintaining overall health and wellness.

This Nutrigenomic test, presently the most comprehensive available, contains more than two dozen SNPs (Single Nucleotide Polymorphisms) and covers the Methylation cycle in a way no other test does. A SNP (pronounced "snip") is a small genetic variation within a person's DNA sequence. Each of these variations can have an impact on an individual's nutritional status, and in combination, these SNPs may have a *significant* impact on an individual's health and well-being.

Your Nutrigenomic test kit will arrive in a few days and will include:

- Requisition Form
- FedEx shipping materials (not prepaid)
- Protein saver card
- Alcohol swabs
- 3 lancets
- CD Containing:

    Autism: Pathways to Recovery Workbook

    Autism: Pathways to Recovery Book

    Nutritional Supplement Addendum A

    Guide to Nutrigenomic Testing

    Genetic ByPass

    Blood Sample Instructions

    Frequently Asked Questions

The following is a sample of the Comprehensive Methylation Test results:

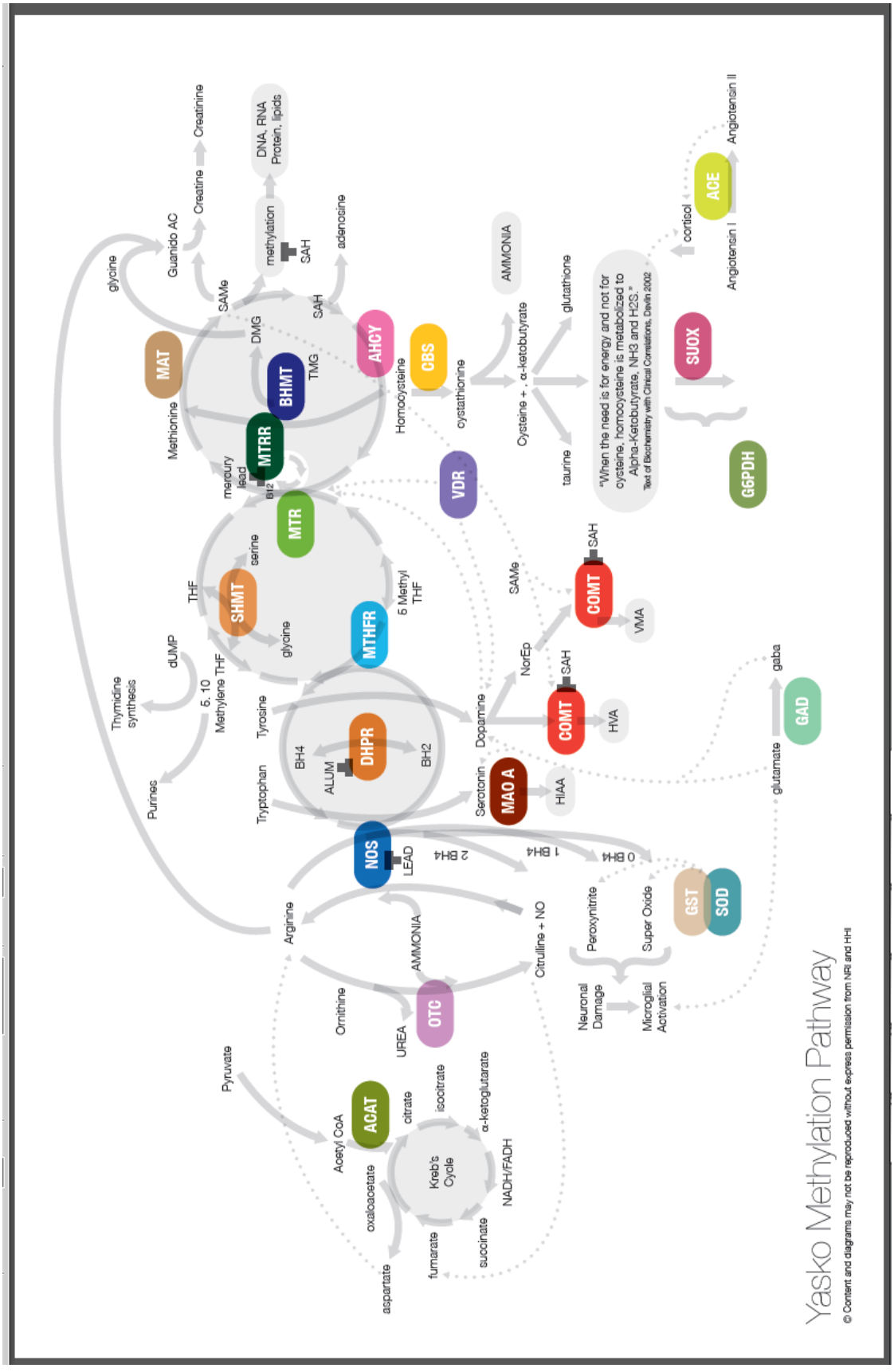
Gene Name	Variation	Result	Call
COMT	V158M	-/-	G
COMT	H62H	-/-	C
COMT	61	-/-	G
VDR	Taq	Tt	Hetero
VDR	Fok	FF	C
MAO A	R297R	-/-	G
ACAT	1-02	+/-	Hetero
MTHFR	C677T	-/-	C
MTHFR	3	+/-	Hetero
MTHFR	A1298C	+/+	C
MTR	A2756G	-/-	A
MTRR	A66G	+/+	G
MTRR	H595Y	-/-	C
MTRR	K350A	-/-	A
MTRR	R415T	-/-	C
MTRR	S257T	-/-	T
MTRR	11	+/-	Hetero
BHMT	1	-/-	A
BHMT	2	+/-	Hetero
BHMT	4	+/-	Hetero
BHMT	8	+/+	T
AHCY	1	-/-	A
AHCY	2	-/-	T
AHCY	19	-/-	A
CBS	C699T	+/-	Hetero
CBS	A360A	+/-	Hetero
CBS	N212N	-/-	C
SUOX	S370S	-/-	No Support Needed
SHMT	C1420T	+/+	A
NOS	D298E	-/-	G

DAY 3:

Pathways Diagram

As Dr. Amy mentioned in her introduction, she feels that Autism, as well as other chronic conditions are multi-factorial in nature, compromising an underlying genetic susceptibility with an infectious disease component, as well as environmental toxins. These factors would include Genetic Influences, Viral Influences, Organ Systems, Immune System, Neurotransmitters, Bacteria-Aluminum, Heavy Metals, and Mitochondrial Issues. It will take some time to understand how each of the genetic markers work together and how each can be influenced by the factors mentioned above. While one individual may have a greater influence of one factor or another, all are and should be addressed with this protocol.

See next page for diagram:


Yasko Methylation Pathway
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MAT
BHMT
TMG
AHCY
CBS
MTRR
MTR
SHMT
MTHFR
DHPR
NOS
MAO A
COMT
COMT
VDR
SUOX
AGE
G6PDH
GST
SOD
GAD
OTC
ACAT
Methionine
Homocysteine
cystathionine
Cysteine + α-ketobutyrate
AMMONIA
glutathione
taurine
"When the need is for energy and not for cysteine, homocysteine is metabolized to Alpha-Ketobutyrate, NH3 and H2S."
Text of Biochemistry with Clinical Correlations, Devlin 2002
cortisol
Angiotensin II
Angiotensin I
SAMe
DMG
methylation
SAH
adenosine
DNA, RNA Protein, lipids
Guanido AC
Creatine
Creatinine
glycine
mercury
lead
B12
THF
serine
glycine
6 Methyl THF
5, 10 Methylene THF
dUMP
Thymidine synthesis
Purines
Tyrosine
Tryptophan
BH4
ALUM
BH2
Dopamine
NorEp
SAMe
SAH
VMA
HVA
Serotonin
HIAA
2 BH4
1 BH4
0 BH4
LEAD
Arginine
Ornithine
AMMONIA
UREA
Citrulline + NO
Peroxynitrite
Super Oxide
Neuronal Damage
Microglial Activation
glutamate
gaba
Pyruvate
Acetyl CoA
citrate
isocitrate
α-ketoglutarate
NADH/FADH
Kreb's Cycle
oxaloacetate
fumarate
succinate
aspartate

DAY 4: What Brought You Here?

Are you brand new to the world of biomedical interventions?

Are you a parent of a child with Autism that has tried, what seems to be about everything, to help your child?

Are you an adult struggling to get through each day?

We all come from a variety of backgrounds. Some of us are caretakers, while others seeking treatment for ourselves. This is not a one-size-fits-all approach. Through Nutrigenomic testing, you will receive an individualized road map to help guide you and/or your loved one(s) to a better state of health.

This is a new day in terms of your health and the health of those you love. Please take some time to list some reasons that have brought you to Dr. Amy's protocol.

DAY 5: Evaluations

As you move through the program, it will be helpful to keep track of ongoing progress that you may have difficulty recognizing during stages of detox. The following links are suggested rating scales that may help you along the way.

Dr. Amy feels that the following tools may be helpful for evaluating progress. Please choose one of the following to get a baseline assessment.

- Autism Treatment Evaluation Checklist (ATEC): http://www.autism.com/ari/atec/atec-online.htm
- The PDD Assessment Scale/Screening Questionnaire: http://childbrain.com/pddassess.html
- Childhood Autism Rating Scale (CARS):

  http://portal.wpspublish.com/portal/page?_pageid=53,69417&_dad=portal&_schema=PORTAL

Date	Test Performed	Score / Rating	Change in Score

DAY 6: Organization

Having an organizational tool is vital. This marathon has a lot of information. To try to keep it all in your head would be overwhelming. Choose one of the following, use a combination of them, or create one of your own. The important thing is that you set up a system that works for you.

Approach #1

Get an "AT-A-GLANCE" month-by-month calendar book. Use this to plan the supplements for each week. Place a post-it on each month with what needs to be added/increased/reduced at some point in that month based on Dr. Amy's comments on tests, and what "protocol" needs to be addressed, and to mark what days to do B12 (mega drops, nasal, injection, patch), charcoal flushes and EDTA baths. Also, use the calendar to plan when to run your Biochemical testing (see page 30 for information about testing, and page 32 for information on scheduling).

Keep a separate running list of current supplements and doses organized by the time of day given (at breakfast, after school, at dinner and before bed). This can be a word document and updated each month.

Keep a separate binder organized in the following manner:

- ☐ Testing - Copies of test results and Toxic Metals Test graphing. (Download files from Discussion Group/the Basics Forum)
- ☐ MPA (Methylation Pathway Analysis) - Genetic results with the supplements listed.
- ☐ Discussion/Chat Groups - Relevant posts, diagrams, supplements, and protocols printed from Discussion Group.

Approach #2

Use a 3-ring binder with section separators and a 3-ring folder. The folder is for copies of test results.

The binder is separated into several sections:

- ☐ Important, frequently referred to posts in the Basics and Getting Started sections from the Discussion Forum
- ☐ Nutrigenomic Section—Results and relevant posts
- ☐ Supplements Section—Relevant posts
- ☐ Supplements Section—Current supplements given and "what comes next" lists. (This is great information to have in an emergency if Mom and Dad are not available….the caregiver could pick this section up and move forward without difficulty because it contains a complete history of supplementation and reactions.)
- ☐ A section for each issue being or to be addressed (Step 1 supports, strep, clostridia, etc)
- ☐ Testing Sections - Each test has its own section: MAP, UAA, UTM, UEE, FM, CSA, etc

DAY 7: Excitotoxins

A very important piece of the puzzle is limiting excitotoxin damage. Dr. Amy's paper, "The Role of Excitotoxins in Autistic Type Behavior" explains in detail the damage that excess excitotoxins can have on the body and how it relates to our behavior and health. Learning the importance of balancing GABA and glutamate and limiting calcium is essential to beginning the healing process.

As Dr. Amy stated "Excitotoxins will continue to damage more nerves and wreak more havoc in the body if they are not addressed. Therefore, the excitotoxin imbalance is the best place to start to put the pieces back together. Once excitotoxins are under control, it is easier to balance the rest of the body."

Key Definitions:

- Excitotoxins –A toxic molecule that stimulates nerve cells so much that they are damaged or killed**.**
- GABA –A calming neurotransmitter that is essential for speech.
- Glutamate –The main excitatory neurotransmitter in the body, that is essential for learning and for both short-term and long-term memory.

Printed resources relating to excitotoxins include:

- *Autism: Pathways to Recovery*, Chapter 4
- "Neurological Inflammation" and "Putting It All Together" DVDs (checkout webisodes on www.dramyyasko.com)
- Dr. Amy's paper, "The Role of Excitotoxins in Autistic Type Behavior"
    - To read this go to www.dramyyasko.com
    - Click on "Resources"
    - Click on "Books and Writings"
    - Scroll down to "The Role of Excitotoxins in Autistic Type Behavior"

WEEK 2

DAY 8: The Importance of the Diet

While you may already be on the GF/CF diet (which Dr. Amy recommends), there is an additional step to the diet that needs to be made in order for the inflammatory process to abate and the recovery process to begin.

This additional dietary step/intervention is to remove/reduce excitotoxins from the diet and from supplements as well.

Excitotoxins are: Glutamate, Glutamic Acid, MSG, Glutamine (which converts to Glutamate), Aspartate, Aspartame, NutraSweet, and Cysteine.

Foods that are especially high in Glutamate are: Soy, Peas, Mushrooms, Tomatoes, Parmesan Cheese, Yeast, Milk, and Wheat.

It is important to be conscious of the total load of Glutamate and to think of your ability to tolerate more Glutamate, as if your cup is already full to the brim and about ready to overflow.

For a full list of excitotoxins see "Frequently Asked Questions" at the back of this workbook.

Web Resources

- The Official GFCF Diet Support Group Website: www.gfcfdiet.com
- Autism Network for Dietary Intervention: www.autismndi.com
- Battling the MSG Myth Site: www.msgmyth.com
- PKU Diet: depts.washington.edu/pku/about/diet.html

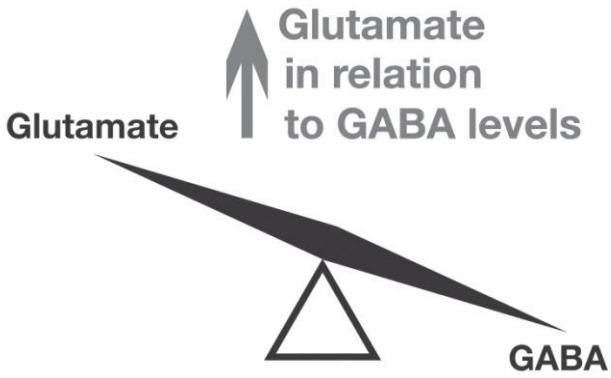
Print Resources

- *Autism: Pathways to Recovery* Chapter 4
- "Special Diets for Special Kids" by Lisa Lewis
- "Battling the MSG Myth Cookbook" by Debbie Anglesey

DAY 9: The Importance of Balancing GABA/Glutamate

Since we are viewing Autism/ASD/CFS as multifactorial conditions that have their roots in neurological inflammation, it is critical to understand the pivotal role that Glutamate excess along with a GABA deficiency play in setting the stage for the progression of symptoms.

As a starting point, let us think of this balance as if we are looking at a seesaw and when Glutamate is too high GABA is too low.



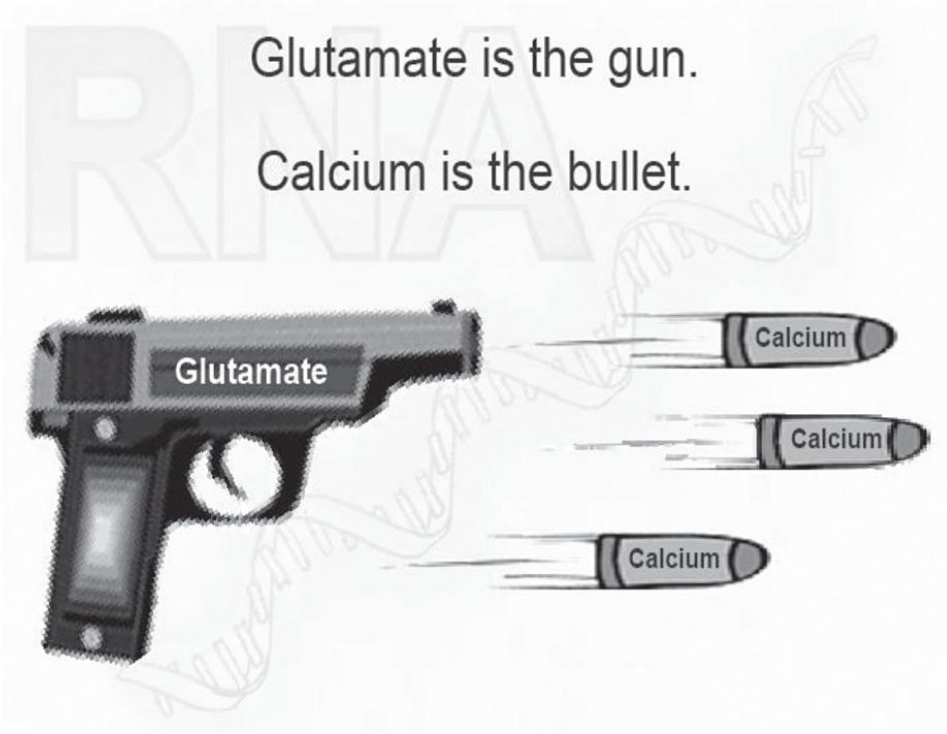
When **Glutamate is elevated** we can see the following types of symptoms, please check any that you or your child may be experiencing:

Increased	Decreased
☐ **Excitotoxin damage**	☐ **Glutathione**
☐ **Opioid effects**	☐ **Sleep**
☐ **TNF alpha (leading to leaky gut)**	☐ **Eye contact**
☐ **Acetylcholine**	☐ **Myelination**
☐ **Bladder contraction**	
☐ **Strabismus**	
☐ **Stims (self stimulatory behavior)**	
☐ **Seizures**	

When **GABA is low,** we may observe the following symptoms, please check any that you or your child may be experiencing:

Increased	Decreased
☐ **Anxiety**	☐ **Language/speech (particularly comprehension) remember that GABA puts the spaces between our words**
☐ **Aggressive behavior**	☐ **Social behavior**
	☐ **Eye contact**
	☐ **Bowel function (retention issues)**

Increased Glutamate leads to increased Calcium flow into neurons, which causes nerve damage. Nerve damage leads to increased inflammation. If Glutamate and Calcium remain too high and this process of nerve damage is left unchecked, then cytoskeletal and membrane damage can also occur.



Evaluating Calcium levels and utilizing Vitamins D&K are important to re-establishing this balance as well. Vitamins D&K are fat-soluble vitamins and without a diet high in dark leafy greens, one would need to supplement on a daily basis. A Urine Essential Elements test should be done to establish baseline mineral levels.

Controlling Calcium levels may be done by switching to Chamomile and/or Nettle supplementation rather than directly supplementing with Calcium. Increasing Magnesium relative to Calcium, using Zinc to limit Glutamate damage and watching Lithium, Iodine and Boron levels will all aid in reducing Glutamate levels and reversing the flow of Calcium into the neurons and back to the bones and teeth.

If you have not already done so, start limiting excitotoxins and switch Calcium to natural forms. Refer to Addendum A that came in your test kit or download it from the Discussion Group/The Basics Forum, and the *Autism: Pathways to Recovery* book for the suggested forms of natural Calcium.

The following supplements should be used on a daily basis to increase GABA and reduce Glutamate.

Support for Glutamate/GABA Balance

- ☐ Nerve Calm RNA
- ☐ Comfort RNA
- ☐ Be Calm Spray (Glutamate/GABA Spray)
- ☐ Melatonin Sleep Spray
- ☐ Progesterone Cream
- ☐ GABA
- ☐ Pycnogenol
- ☐ Grape Seed Extract
- ☐ Valerian Root
- ☐ Jujube
- ☐ Lithium Orotate
- ☐ L-Theanine
- ☐ Taurine (not for CBS + or SUOX +)

Protection from Excess Calcium

- ☐ MitoForce Compound Supplement
- ☐ CoEnzyme Q10 Spray
- ☐ GSH Caps
- ☐ Magnesium
- ☐ Chamomile
- ☐ Ayur Boswelia
- ☐ Vinpocetine
- ☐ Zinc
- ☐ Paradex
- ☐ Dong Quai
- ☐ Air Power
- ☐ Black Cohosh
- ☐ Prevagen 5 mg or less

Follow GABA/Glutamate levels with a Urine Amino Acid Test (UAA) every 3-6 months. Glutamate levels tend to increase with detox and increasing supplements may be necessary.

DAY 10: Visualize Recovery

Each individual has a different idea of what recovery means.

Please take some time and think about or make a list of what recovery means to you and those you love.

You may want to view www.dramyyasko.com, which is one of Dr. Amy's sites where some parents share their journeys of hope and inspiration.

Most people have no conscious control over their thoughts and tend to think negatively most of the time! Your most repeated thoughts dominate not only your mental world, but impact all aspects of your life. Thoughts, if powerful enough, are accepted by the subconscious mind changing your overall mindset, which in turn changes your habits and actions. The stronger the feelings and emotions associated with your thoughts and mental images, the stronger their impact on your life.

Certain traits of character and skills are necessary, too, such as faith in yourself and in your abilities, patience, perseverance, concentration, self-discipline and strong motivation. Creative visualization, which is the conscious desire and visualization of a goal, can change your life and improve your motivation to "do whatever it takes" to achieve that goal.

Our Goal is Recovery

Take a deep breath. Relax. Close your eyes. Visualize your recovery. What does your recovery look like? What behaviors are gone? What positive behaviors have taken over? What are things you can do when recovered? What does vibrant health look like? Envision the life changes recovery brings for your entire family.

Make your visualization as clear and detailed as possible. Sometimes writing down those wonderful thoughts as they come to you will help give you clarity….and increase your motivation to get to that place.

If this is a new concept to you, visualize steps toward that ultimate goal. What does the next step toward recovery look like? Know what you need to do next to make that next step a reality.

Whenever you have a negative thought (I cannot do this, or we seem to be stuck), drive those thoughts out of your mind with positive replacements. (I CAN do this) and take the necessary action to propel yourself forward. That may be posting a question on the Discussion Group. It may be re-reading a portion of the *Autism: Pathways to Recovery* book, or vewing a DVD/Webisodes to give you more clarity with your next move. Maybe it means adding that next supplement you have been hesitant to add for fear of detox. Identify that step and take it.

Visualize your success in moving forward with this marathon. Remember, it takes time to recover and we must continue to shake off negativity, whether it is from our own thoughts or negative input from unsupportive and unknowledgeable people around us.

Visualization, by itself, will not recover anyone. However, if you take the first 5 minutes you are up in the morning and the last 5 minutes before you drop off to sleep at night to visualize your recovery, you will be able to face each day and each challenge with renewed energy and commitment necessary to achieve that success.

DAY 11: Obtaining the Nutrigenomic Blood Sample

(Comprehensive Methylation Panel with Methylation Pathway Analysis)

When your test kit arrives, refer to the instructions that came in your kit for a step-by-step guide for obtaining the sample. The test is a simple finger prick that you can do at home.

If you are uncomfortable or have questions regarding how to get a good sample, refer to the post in the "New Members" section on the Discussion Group. Please note that the cost of returning the sample is not included in the cost of the test kit.

Here are a few helpful hints that others have shared on getting a blood sample:

- The finger prick can come from multiple sites
- Use the heel for infants
- Prick the side of the finger
- If for a child, try doing a finger prick while your child is sleeping
- Use a diabetes tester if the lancets do not work for you
- Your Doctor or local laboratory might be willing to help you

DAY 12: Resources

Dr. Amy strongly encourages everyone to read, learn and pay it forward. As she puts it:

> ***"I feel that if we all do our part, more and more people will be able to recover. My part is to share as much information as I can and to continue to uncover any missing pieces of the puzzle. Your part is to take advantage of the tools to understand the pieces that you need, and to find a doctor to work with you who is open to the process and will help to support you medically."***

The following is a list of resources available:

- ☐ *Autism: Pathways to Recovery* book located on the CD you received with your Comprehensive Methylation Panel kit.
- ☐ Webisodes Series on www.dramyyasko.com/resources/webisodes
  - An individualized Approach: Introduction to The Yasko Protocol
  - Stress and Aggression
  - Membrane Fluidity
  - Methylation: Why you should be concerned, Part 1
  - More Pieces to the Puzzle
  - Methylations & Mutations
  - And lots more!
- ☐ *Genetic ByPass* book located on the CD you received with your Comprehensive Methylation Panel kit.

All the DVD are to be upload to the www.dramyyasko.com site as webisodes. Getting the information to you is what it's all about. Also Dr. Amy has generously donated several copies of the DVD to the "Sharing Circle Lending Library" accessed through www.ch3nutrigenomics.com. Guidelines for utilizing the library can be found in the Sharing Circle Lending Library Forum.

You may wish to read or view the following today:

- ☐ *Autism: Pathways to Recovery* - Read chapters 1-3
- ☐ View the Webisodes on www.dramyyasko.com/resources/webisodes

DAY 13: Understanding Step 1 Support

Though our focus now is on Step 1 support, Dr. Amy's protocol is a three-step program. All of the groundwork you are doing now is in preparation for the steps that follow.

Step 1: Preparation, diet, and supplementation: Neurological Inflammation

Step 2: Detoxification: Toxin Elimination

Step 3: Nerve generation and repair: Remyelination

Support to help the body with chronic inflammation, balance Glutamate and GABA, support the organs, balance minerals, and address chronic bacterial issues in the system. This step **should** be implemented before receiving your nutrigenomic profile.

The usual starting point is to slowly introduce some of the top Step One supplements listed below. It is recommended that supplements be introduced with the "low and slow" method, starting with a sprinkle and working up over the course of several days to a week, depending on the response. How you proceed with supplementation and which of these are best for your program will depend on the individual, but the idea is to lay the nutritional groundwork, remove excitotoxin triggers, and add supports to help with inflammation **before** embarking on any form of detoxification. **It is recommended that you implement this program in conjunction with a healthcare practitioner.**

For more information on the above you may wish to read the *Autism: Pathways to Recovery* chapter 4.

TOP STEP ONE SUPPLEMENTS/Nutritional Groundwork

- ☐ 2-3 Neurological Health Formula (HHI General Vitamin)
- ☐ 1-2 MTHFR A1298C+/Liver Compound
- ☐ 1 VDR Fok/Pancreatic Compound
- ☐ 1-2 Ultimate B Complex
- ☐ 15-40 mg Zinc
- ☐ 1 OraKidney
- ☐ 1 Cod Liver Oil
- ☐ 3 Special Digestive Enzymes 1 w/each meal
- ☐ Resveratrol Spray
- ☐ Be Calm (Glutamate/GABA Spray)
- ☐ Vita D-Light Spray or Vitamin D (In NaturoMycin Spray)
- ☐ 1 Ora-Adren-80
- ☐ 1 Immuno Forte
- ☐ 1 or more GABA
- ☐ 1 Pycnogenol
- ☐ 1 Grape Seed Extract 500mg Vitamin C
- ☐ Probiotics–several types-rotate daily
- ☐ Cell Food
- ☐ 1 Vit. K-Super K (In VDR, ACAT, MitoForce)
- ☐ 1 Cholacol (In ACAT, MitoForce)
- ☐ Bionativus Trace Minerals
- ☐ Basic Mineral Support in place based on Urinary Essential Elements (UEE)
- ☐ General Pathway Support RNA
- ☐ Bowel Support Formula RNA
- ☐ Cytokine Balance IPS Support RNA
- ☐ Nerve Calm RNA
- ☐ Stress Foundation RNA
- ☐ Fatigue Support RNA (CFS Adults)

DAY 14:

Special Note

Step 1 supplementation is a foundation of supports that will serve to support the body. As such, it may trigger detox on its own and so careful attention should be paid to this possibility. Additionally, as Dr. Amy makes notes on biochemical tests she is doing so with the assumption that Step 1 supports are in place and that the necessary time period to watch and document detoxification from Step 1 supports has taken place. Please see page 72 of this workbook to learn how to recognize and control detox. If a supplement is not tolerated, 9 times out of 10 the new supplement is triggering detox. Ultimately, Step 1 supports will allow the body to withstand the rigors of enhancing the methylation pathway.

Supplement Brands

Please read labels on any supplements that you may have on hand or when purchasing supplements, beware of added fillers and sources of excitotoxins such as: Glutamate, Glutamine, Glutamic acid, Aspartate, Aspartame and Aspartic acid.

There can be an issue in terms of purity and storage for certain brands of supplements. Source and storage conditions are very important. Think of supplements as fresh produce.

Preferred Brands

For information on Dr. Amy's preferred brands of supplements visit: www.holisticheal.com

Community

Take some time today and read the "***New Members Forum"*** (5th link from the top). For questions please post on the Discussion Group, and other members will be happy to help you.

WEEK 3

DAY 15: Assessing Current Needs Based on Previous Testing

If you plan to order testing through HHI, please send in previous testing results to Dr. Amy's office for inclusion in your biochemical file.

Note that since testing has previously been reviewed by your practitioner, Dr. Amy will utilize this as a reference, but not supply comments directly.

At this time, it is suggested that you review past testing to assess current needs for organ support. If previous testing is not available, then you need to rely on symptoms and behavioral observations and new biochemical testing (see page 30).

Please utilize the following checklists to help determine your current level of support:

Lab Tests Indicating a Need for Liver Support

- ☐ Elevated AST (SGOT) or below normal AST
- ☐ Elevated ALT (SGPT) or below normal AST
- ☐ Elevated alkaline phosphatase (ALP)
- ☐ Elevated lactate dehydrogenase (LDH)
- ☐ Elevated bilirubin
- ☐ Elevated cholesterol
- ☐ Elevated triglycerides
- ☐ Long term chelation with sulfur based chelating agents
- ☐ High level excretion of toxic metals on fecal tests

Lab Tests Indicating a Need for Kidney Support

- ☐ Elevated BUN
- ☐ Urine excretion/detox of metals for prolonged periods
- ☐ High creatinine levels over a prolonged period of time

Lab Test Results and Other Indicators for Pancreatic Support

- ☐ Consistently elevated glucose
- ☐ Consistently low glucose
- ☐ Elevated triglycerides
- ☐ Mutations: VDR Fok + - or VDR Fok + +
- ☐ Imbalances in pancreatic elastase on a CSA/GI Profile
- ☐ Imbalances in chymotrypsin values on a CSA/GI Profile
- ☐ Imbalances in SCFA (Iso-butyrate, iso-valerate and n-valerate) on CSA/GI Profile
- ☐ Imbalances in LCFA on a CSA/GI Profile

Lab Tests/other Indicators for Need to Reduce Calcium

- ☐ Elevated Calcium relative to Magnesium on a UEE
- ☐ Elevated Calcium relative to Magnesium on a red blood cell element test
- ☐ Stims

Lab Tests Indicating a Need to Increase Calcium

- ☐ Calcium below the range of low-end normal on a UEE
- ☐ Calcium below the range of low-end normal on an RBC element test
- ☐ High level excretion of lead when checking urine Calcium levels

Lab Tests and other Indications of a Need for Glutamate/GABA Balance

- ☐ Elevated: Glutamate, Glutamine, Glutamic acid, Aspartate, Aspartic acid, and Low GABA (gamma aminobutyric acid) on a Urine Amino Acid test (UAA)
- ☐ Low GABA on a Neurotransmitter test
- ☐ Elevated quinolinic or kynurenate on OAT/Metabolic test
- ☐ Seizures, stims, poor eye contact, aggressive behavior

Lab Results and Other Indicators of High Ammonia

- ☐ Elevated Ammonia on a Urine Amino Acids test

Lab Results and Other Indicators of a Need to Address Lithium

- ☐ High Lithium or very low Lithium on UEE
- ☐ Low Lithium or dumping of Lithium on HMT
- ☐ Aggression
- ☐ Lack of Cobalt on UEE in spite of high level B12 support
- ☐ MTR/MTRR + Status

Please refer to **Nutritional Supplement Addendum A** that was included with your Nutrigenomic testing kit for specific organ supports indicated by previous testing. However, regardless of your level of need as determined in the checklist above, organ support is critical for anyone engaging in a detoxification protocol. It is important that all organs, even if there are no issues indicated, receive some level of support.

DAY 16: Biochemical Testing

The following biochemical tests are run throughout the protocol as needed to determine additional supports needed for each individual. When purchased thru www.holisticheal.com the total cost includes Dr. Amy's interpretation and shipping from you to that particular lab within the United States.

GI Function Test (DNA Stool test)

- Determines bacterial issues including anaerobes.
- Ordered within the CPR (see page 32).
- Turnaround time for processing is 7-10 days after file review date.

Neurotransmitter Test

- Determines levels of Serotonin and Tryptamine and other important Neurotransmitters.
- Ordered within the CPR (see page 32).
- Turnaround time for processing is 7-10 days after file review date.

Neopterin/Biopterin Profile

- Determines current level of Neopterin and Biopterin in urine.
- Ordered within the CPR (see page 32).
- Turnaround time for processing is 7-10 days after file review date.

Metabolic Analysis Profile (MAP)

- Determines current level of methylation support, and gives a sense about gut microbes and Dopamine balance in respect to Norepinephrine.
- Ordered within the CPR (see page 32).
- Turnaround time for processing is 7-10 days after file review date.

Urine Amino Acids Test (UAA)

- Determines Ammonia, Taurine, Glutamate and other important Amino Acid levels.
- Repeated every 3 to 4 months or within the CPR (see page 32).
- Turnaround time for processing can take approximately 3 weeks or 7-10 days after file review date when ordered within the CPR bundle.

Comprehensive Stool Analysis (CSA)

- Determines gut and bacterial issues.
- Ordered within the CPR (see page 32).
- Turnaround time for processing is 7-10 days after file review date.

Urine Toxic Metals Test (UTM) & Urine Essential Elements Test (UEE)

- Determines current level of detox and mineral levels.
- Repeated every 4-6 weeks (during times of heavy detox it is important to keep an eye on minerals as they can be depleted) or within the CPR (see page 32).
- Turnaround time for processing can take approximately 2 weeks or 7-10 days after file review date when ordered within the CPR bundle.

Fecal Toxic Metals Test (FM)

- Determines current level of detox through the stools.
- Repeated as necessary or within the CPR (see page 32).
- Turnaround time for processing can take approximately 2 weeks or 7-10 days after file review date when ordered within the CPR bundle.

Hair Elements Test (HE/HMT)

- Determines past/history of toxic metals excretions that you may have missed and Lithium levels.
- Repeated as necessary or within the CPR (see page 32).
- Turnaround time for processing can take approximately 2 weeks or 7-10 days after file review date when ordered within the CPR bundle.

Urine Toxic Metals Test (UTM)

- Determines current level of detox.
- Done weekly, biweekly, or monthly depending on finances.
- Turnaround time for processing can take approximately 2 weeks.

The **Preferred Supplement List** form can be downloaded from the Discussion Group at www.ch3nutrigenomics.com/phpBB2/viewtopic.php?t=14153. If tests are ordered through HHI, please send your updated list to Kelly@holistichealth.com or fax it to (207) 824-0975 when your samples are shipped.

When ordering the CPR please contact Kelly@holistichealth.com to schedule your file review date **before** obtaining any samples. Failure to do this may result in a delay of results, which will come by email 7-10 days after your file review date.

Day 17: Biochemical Testing Option 1 or Option 2

CPR: Comprehensive Program Review or UTM/UEE, UAA & HE/HMT

☐ **Option 1: Order your CPR from www.holisticheal.com**

The CPR is an individualized comprehensive program review based on the results of several biochemical tests, current supplement list and one page summary. Dr. Amy will go through each file in detail, cross check test values and make suggestions to guide you through the program.

Suggestions for consideration will be provided to you in a written format 7-10 days after your file review date, which is time reserved for and dedicated to Dr. Amy's review. Upon receiving your test kits, please contact Kelly@holistichealth.com to schedule your file review date **before obtaining any samples**. Failure to do so may result in a delay of results. Please note random samples for each test are recommended (ie. different stool samples for GI, CSA and FM) and the collecting process can take 1-2 weeks. Different urine samples are also suggested for the MAP,UAA, UTM.

The CPR is a tool that is strongly advised for any individual using Dr. Amy's protocol. Whether you are a beginner or veteran to the protocol, Dr. Amy's review of your file to establish a baseline or make historical comparisons once a year, better equips her to make suggestions, tweak supplements, and note new patterns that she is seeing. Her feedback is an invaluable resource to assist you in moving forward with this program. The following biochemical tests are included and are in a suggested order for collecting samples in regards to processing time needed:

1. **Gastrointestinal Function Profile (GI Profile):** Determines bacterial issues including anaerobes.
2. **Neurotransmitter Test:** Determines levels of Epinephrine, Norepinephrine, Tryptamine and other important Nurotransmitters.
3. **Neopterin/Biopterin Profile:** Determines levels of Neopterin and Biopterin in urine.
4. **Metabolic Analysis Profile (MAP):** Determines current levels of methylation support, and gives a sense of gut microbes and dopamine balance in respect to Norepinephrine.
5. **Urine Amino Acid (UAA):** Determines Ammonia, Taurine, GABA and other important Amino Acid levels.
6. **Comprehensive Stool Analysis (CSA):** Determines gut and bacterial issues.
7. **Urine Toxic Metals w/ Essential Elements (UTM/UEE):** Determines current level of detox and mineral levels.
8. **Fecal Metals (FM):** Determines current level of detox through the stools.
9. **Hair Elements (HE/HMT):** Determines past/history of toxic metal excretion which you may have missed.

Payment plans are available and kits are shipped once final payment has been received. Unless mentioned below, please follow the instructions that come with each kit. Dr. Amy prefers that you **stay on all supplements.** If you did not order the CPR, you should consider running option 2 at this time.

☐ **Option 2: Order your UEE/UTM, UAA and HE/HMT from www.holisticheal.com**

These three tests can be ordered individually upon starting the protocol and may also need to be rerun every few months to assess levels especially during Step 2.

1. **UTM/UEE:** Reports on the essential elements (minerals) AND will include excreted metals as reported in a UTM. Getting a baseline on minerals at this point is necessary to continue with your Step 1 work of balancing the body.
2. **UAA:** Reports on the Amino Acids levels, including Taurine, Ammonia, and Glutamate etc. This test may be run every few months as needed to assess Amino Acid levels.
3. **HE/HMT:** Reports on essential elements and excreted metals. It helps to determine a past/history of toxic metal excretions which you may have missed and Lithium levels.

Please note that the lab company analyzing your samples provides an auto-generated interpretation with the report. Dr. Amy's analysis is personalized and is completed in conjunction with your current supplement list and personal history. Written feedback is provided to be considered in conjunction with your physician and is aligned with the scientific principles on which this protocol is based.

DAY 18: *Autism: Pathways to Recovery*

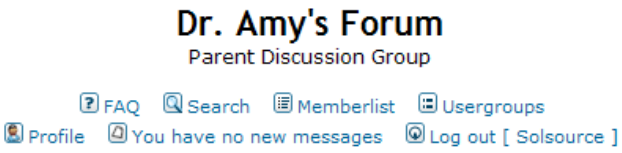
Continue reading the *Autism: Pathways to Recovery* book. This is also a good time to learn about the rationale behind this protocol prior to the arrival of your Nutrigenomics results. For many, this is also a time of anxiety because you may not feel like you are doing "enough." **Take a deep breath.** You are doing exactly what you are supposed to be doing. If something does not make sense the first time you read it or the second, log on to the Discussion Group and search for an answer to your question.

DAY 19: Discussion Group Search Example

The following is an example of a question that many have early on, "What do I do for sleep issues such as insomnia?"

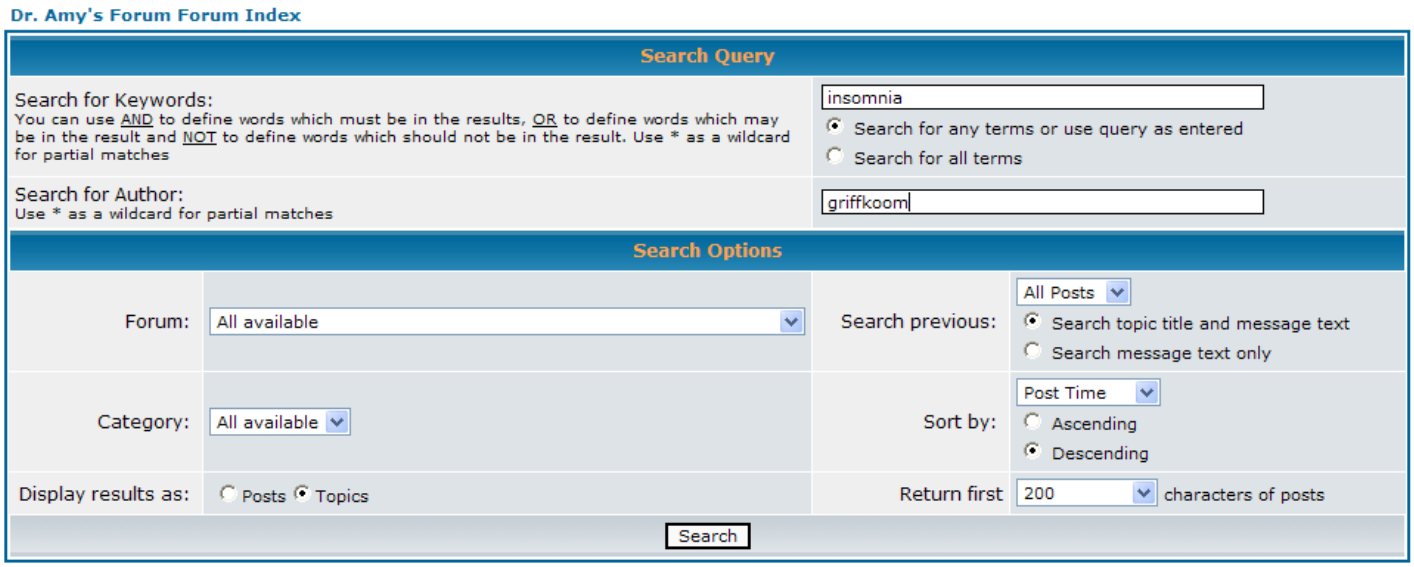
Let's go step by step and search for an answer:

1. Log In to www.ch3nutrigenomics.com
2. Click on the Search icon in the top menu:

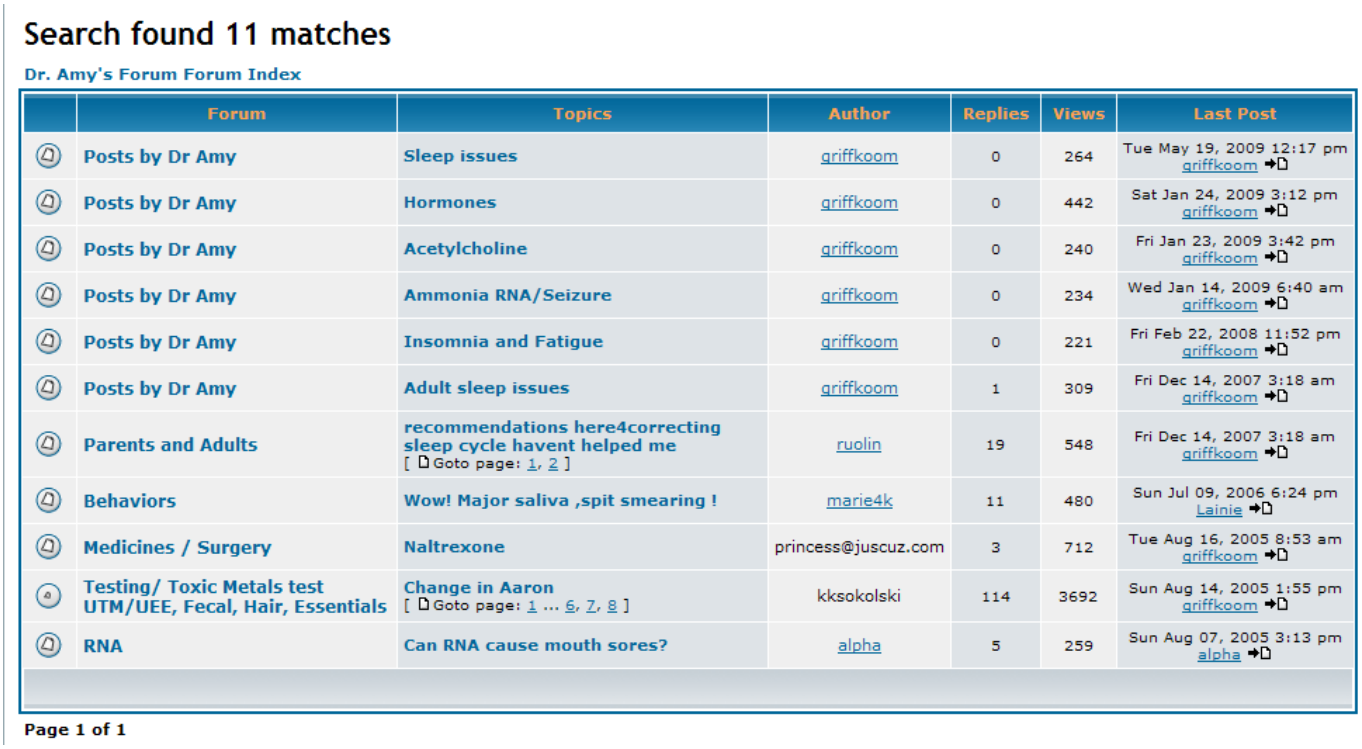


3. Enter key word(s) for your search. If you also enter "*griffkoom*" in the author box, you will only get responses to your topic that originated from Dr. Amy or the moderator, Erin Griffin.

*Note: Search for Keywords: You can use **AND** to define words which must be in the results, **OR** to define words which may be in the result and **NOT** to define words which should not be in the result. Use * as a wildcard for partial matches.



4. Once you hit the search button at the bottom, you will receive all the responses containing the keyword(s) you have entered. You can also limit by Forum and Category, but most do not do this unless they are searching for a very specific post.



Search found 11 matches

Dr. Amy's Forum Forum Index

	Forum	Topics	Author	Replies	Views	Last Post
	Posts by Dr Amy	Sleep issues	griffkoom	0	264	Tue May 19, 2009 12:17 pm griffkoom
	Posts by Dr Amy	Hormones	griffkoom	0	442	Sat Jan 24, 2009 3:12 pm griffkoom
	Posts by Dr Amy	Acetylcholine	griffkoom	0	240	Fri Jan 23, 2009 3:42 pm griffkoom
	Posts by Dr Amy	Ammonia RNA/Seizure	griffkoom	0	234	Wed Jan 14, 2009 6:40 am griffkoom
	Posts by Dr Amy	Insomnia and Fatigue	griffkoom	0	221	Fri Feb 22, 2008 11:52 pm griffkoom
	Posts by Dr Amy	Adult sleep issues	griffkoom	1	309	Fri Dec 14, 2007 3:18 am griffkoom
	Parents and Adults	recommendations here4correcting sleep cycle havent helped me [Goto page: 1, 2]	ruolin	19	548	Fri Dec 14, 2007 3:18 am griffkoom
	Behaviors	Wow! Major saliva ,spit smearing !	marie4k	11	480	Sun Jul 09, 2006 6:24 pm Lainie
	Medicines / Surgery	Naltrexone	princess@juscuz.com	3	712	Tue Aug 16, 2005 8:53 am griffkoom
	Testing/ Toxic Metals test UTM/UEE, Fecal, Hair, Essentials	Change in Aaron [Goto page: 1 ... 6, 7, 8]	kksokolski	114	3692	Sun Aug 14, 2005 1:55 pm griffkoom
	RNA	Can RNA cause mouth sores?	alpha	5	259	Sun Aug 07, 2005 3:13 pm alpha

Page 1 of 1

5. You can then select the posts that seem to relate closest in title to the issue you are experiencing. If more than 100 results return, you may wish to add an additional “and” or “not” to your search to further limit the results.

DAY 20: Positive Feedback

Take some time today and visit the Discussion Group, Positive Feedback Forum. You will find some wonderful stories that the members have shared along their journey thru the protocol.

There are many inspiring positives to read, some you may even want to print out and save for future reference or post on your refrigerator. As you move forward with the protocol, these may encourage you to keep moving forward, so feel free to visit the Positive Forum as often as you like.

You may wish to take a few moments to envision what your positive post might consist of in the future:

DAY 21: Implementing Step One Support

It is recommended to add Supplements/RNA's with the "low and slow" method; start with a sprinkle to 1⁄4 of a supplement, or 1 to 2 drops of an RNA, wait 3 to 4 days to see how you/your child tolerates. Dr. Amy feels that a sprinkle is a bonafide dose. How you proceed with supplementation and which is best will be individual; based on behaviors, symptoms, detox and ongoing biochemical testing. Reducing inflammation, supporting organs, balancing minerals and GABA/Glutamate support will help to prepare the body for Step 2.

As you add in the top supplements for Step 1, it may be very helpful to keep a diary of supplements. Date, dosage, reactions/behavior and any changes should be noted as you add them in. Below is a sample chart that some have used to track the addition of supplements.

Supplement Diary

Date	Supplement Given	Dosage	Reactions

WEEK 4

DAYS 22-28: Transitioning From Another Protocol

It may be difficult to blend Dr. Amy's protocol with others for a variety of reasons. Many supplements used on other approaches may contain excitotoxins; this may be counterproductive, please use your own judgment and consult your physician on what is best for you or your child. Make changes gradually. Just by stopping some supplements, you may see unwanted detox or behaviors. As we limit excitotoxins in the diet, we also want to limit excitotoxins in our supplementation as well.

For instance, many use glutamine for the gut. We are trying to avoid glutamine, especially early in the program. Chelated minerals may be chelated with problematic Amino Acids and should be avoided. Vitamin B6 is widely used in other protocols, but may be counterproductive. Methyl B12 shots may or may not be best for you/your child and will be dependent on your nutrigenomic results.

Even if you have been on many supplements before with other protocols, everyone needs to go through Step 1 to get the body balanced and prepared for detox. You may choose to slowly wean off the counterproductive supplements and slowly make the transition over to Dr. Amy's Step 1 supports. Please keep in mind that this change alone can, in some individuals, lead to some mild detox, as the change in supplements was sufficient to trigger the body's natural detoxification process. If you feel this is happening, please look to the Discussion Group for support and consider that this is an indication that some additional testing, especially a UTM, would be appropriate at this time.

Only by looking at the specific ingredients in the supplements will you be able to determine compatibility with this protocol. If you are having difficulty, post your current supplement list with a short description of you/your child's specific issues, and the veteran members will help suggest options for you to consider while making this transition. Of course, the ultimate decision is yours as to which supplements you use.

"Knowledge Empowers"

Transition Supplement List

Current Supplement	Current Dosage	Is the Supplement included in Dr. Amy's Protocol?	Does the Supplement contain offending ingredients, e.g. excitotoxins? (check label)	Questions, Concerns, & Feedback

Instructions for Collecting Biochemical Tests

Option 1: The suggested order of collecting samples for the CPR in regards to processing time is as follows:

Test Type	Date Sample Sent
1. GI Profile	
2. Neurotransmitter	
3. Neopterin/Biopterin Profile	
4. Metabolic Acid Profile (MAP)	
5. Urine Amino Acid (UAA)	
6. Comprehensive Stool Analysis (CSA)	
7. Urine Toxic Metals & Essentials Elements (UTM/UEE)	
8. Fecal Metals (FM)	
9. Hair Elements (HE/HMT)	

- Please contact Kelly@holistichealth.com schedule your file review date before obtaining any samples for the CPR. Failure to do this may delay your results.
- Dr. Amy prefers that you stay on ALL supplements for testing, unless specifically instructed on previous testing.
- Start collecting your samples in the order above at least 30 days before your file review date. Please note that random samples for each test are recommended (i.e. different stool samples for the FM, CSA and GI profile) and the collecting process can take 1-2 weeks. Different samples are also suggested for the MAP and UAA. In the past, Dr. Amy has preferred both being run on the same urine sample. This is no longer the case.
- Basic instructions for each of the above tests can be found on the next few pages. For more comprehensive suggestions, please refer to the Discussion Group/The Basics Forum post entitled, "Tips on Testing." If your child is not potty trained or you are having difficulty obtaining a sample, please refer to Discussion Group/Basics Forum, post entitled "Ideas for Collecting Urine."
- Please download the preferred supplement list format from the Discussion Group/Basics Forum, entitled "Methylation Pathway Analysis/Supp by Mutations list-Download."
- Once your first sample is obtained and shipped, it is important to send the one page summary of 'where you are' and 'what your biggest concerns are' to Kelly@holistichealth.com Previous tests ordered from outside Dr. Amy's office may be sent for inclusion in your file as a background reference, but they will not be commented upon.
- Please complete the supplement list reflecting supplementation at the time of testing. Note the date of testing and send it via fax (207) 824-0975 or email Kelly@holistichealth.com on the day of shipping your first sample. This will allow ample time for it to be placed in your chart for Dr. Amy's reference when commenting on testing.
- Results and suggestions for consideration should arrive by email from Kelly 7-10 days after your file review date.
- Please note that the lab company analyzing your samples provides an auto-generated interpretation with the report. Dr. Amy's analysis is personalized and is completed in conjunction with your current supplement list and personal history. Written feedback is provided, to be considered in conjunction with your physician, and is aligned with the scientific principles on which this protocol is based.

Option 2:

Test Type	Date Sample Sent
1. Urine Toxic Metals & Essentials Elements (UTM/UEE)	
2. Urine Amino Acid (UAA)	
3. Hair Elements (HE/HMT)	

- Dr. Amy prefers "spot/random urines" for the UTM/UEE test as opposed to the 24-hour collection. She prefers the later afternoon urines, but if it is easier to collect a morning or overnight urine, that is fine too. Try to follow the diet restrictions as best you can by eliminating fish and shellfish for one week prior to obtaining your sample.
- Dr. Amy prefers the first morning urine/void for the UAA as opposed to the 24-hour, unless otherwise instructed on previous testing. Your sample is required to be frozen for a minimum of 6 hours before shipping.
- Cut samples of hair as close to the scalp as possible from the back of the head and collect the suggested amount for the HE/HMT.
- Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, time of collection, height, and weight. You will also need to sign and date the release.
- If your child is not potty trained or you are having difficulty obtaining a sample, please refer to Discussion Group/Basics Forum, post entitled "Ideas for Collecting Urine."
- Please download the preferred supplement list format from the Discussion Group/Basics Forum, entitled "Methylation Pathway Analysis/Supp by Mutations list-Download"
- Complete the UAA list on page 4 reflecting supplementation at the time of testing. Note the date of testing and send it via fax at (207) 824-0975 or email Kelly@holistichealth.com on the day of shipping your samples. This will allow ample time for it to be placed in your chart for Dr. Amy's reference when commenting on testing.
- Test results and Dr. Amy's comments will come by email from Kelly@holistichealth.com. Please add this email address as a "safe sender" in your email filter so that you can receive email from Kelly without difficulty. The turnaround time is approximately 2-3 weeks depending on the lab processing time and Dr. Amy's schedule. If this is your first test and you have not received your test comments after 3 weeks please contact the office to make sure your email address is correct.
- Please note that the lab company analyzing your samples provides an auto-generated interpretation with the report. Dr. Amy's analysis is personalized and is completed in conjunction with your current supplement list and personal history. Written feedback is provided, to be considered in conjunction with your physician, and is aligned with the scientific principles on which this protocol is based.

Obtaining GI Profile Stool Sample

- ☐ Please contact Kelly@holistichealth.com before obtaining any CPR samples to schedule your file review date.
- ☐ Follow the instructions that come in your kit, but know that **Dr. Amy prefers that you stay on ALL supplements for testing** (including Enzymes, Baking soda and PeptiMycin), unless instructed on previous testing.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, date of birth, time of collection, height, and weight. You will also need to sign and date the release.
- ☐ Stool samples can be taken any time of the day. Make sure to collect from as many areas of the stool as possible, because bacteria live in colonies.

Some ideas on getting stool samples:

- Drain the water out of the toilet and insert the collection tray.
- Toilet plastic "Hats" that are used to collect urine/stool in hospitals fit nicely under the lid of the toilet and you can buy them at most pharmacies or hospital supply stores.

Date Sample Sent: _____

Gastrointestinal Function Profile (GI) example report

Metametrix
Clinical Laboratory
3425 Corporate Way
Duluth, GA 30096
770.446.5483 Fax:770.441.2237

Ordering Physician:
Metametrix

3425 Corporate Way
Duluth, GA 30096

Accession Number: **A1106290325**
Reference Number:
Patient: Sample Report
Age: 49 *Sex:* Female
Date of Birth: 02/05/1962
Date Collected: 6/27/11
Date Received: 6/29/11
Report Date: 6/29/11
Telephone: (770) 446-4583
Fax: (770) 441-2237
Reprinted: 7/19/11
Comment:

2100 Gastrointestinal Function Profile

Methodology: DNA Analysis, GC/MS, Microscopic, Colorimetric, Automated Chemistry, ELISA

Consistency = Formed/Normal

Percentile Ranking by Quintile

Results CFU/gram	1st	2nd	3rd	4th	5th	95% Reference Range
		20%	40%	60%	80%	

Predominant Bacteria (E+007)

	Results CFU/gram	1st	2nd	3rd	4th	5th	95% Reference Range
Obligate anaerobes							
Bacteroides sp.	2.2	1.6				6.7	>= 1.3
Clostridia sp.	2.2	1.5				6.2	>= 1.0
Prevotella sp.	2.1	1.6				6.2	>= 1.1
Fusobacteria sp.	2.6	1.6				7.4	>= 1.1
Streptomyces sp.	3.3	1.6				5.8	>= 1.0
Mycoplasma sp.	5.3	1.7				6.2	>= 1.2
Facultative anaerobes							
Lactobacillus sp.	2.6	1.8				7.8	>= 1.2
Bifidobacter sp.	2.5	2.3				7.6	>= 1.8
Obligate aerobes							
Escherichia coli	3.3	1.7				7.7	>= 1.1

Opportunistic Bacteria

No clinically significant amounts.

Units and Reference Ranges

Organisms are detected by DNA analysis. One colony forming unit (CFU) is equivalent to one bacterium. Each genome detected represents one cell, or one CFU. Results are expressed in scientific notation, so an organism reported as 2.5 E7 CFU/gram is read as 25 million colony forming units per gram of feces. The cutoff for significance of Opportunistic Bacteria has been set at 1.0E+ 005 (100,000). These are levels above which clinically significant growth may be present. Rather than reporting semi-quantitative +1 to +4 levels, the new methodology provides full quantitative analysis.

Predominant Bacteria play major roles in health. They provide colonization resistance against potentially pathogenic organisms, aid in digestion and absorption, produce vitamins and SCFA's, and stimulate the GI immune system. DNA probes allow detection of multiple species (sp.) within a genus, so the genera that are reported cover many species.

Opportunistic Bacteria may cause symptoms and be associated with disease. They can affect digestion and absorption, nutrient production, pH and immune state. Antibiotic sensitivity tests will be performed on all opportunistic bacteria found, although clinical history is usually considered to determine treatment since the organisms are not generally considered to be pathogens.

Georgia Lab Lic. Code #067-007
CLIA ID# 11D0255349

New York Clinical Lab PFI #4578
Florida Clinical Lab Lic. #800008124

Page 1

Laboratory Directors
J. Alexander Bralley, PhD
Robert M. David, PhD

Obtaining Neurotransmitter Urine Sample

- ☐ Follow the instructions exactly as provided in your kit. DO NOT COLLECT FIRST URINE OF THE MORNING! START COLLECTING SPECIMENS 2 TO 3 HOURS AFTER WAKING. DO NOT EAT, DRINK OR TAKE ANY SUPPLEMENTS OR MEDICATIONS BEFORE OBTAINING SAMPLE.

- ☐ Fill out all paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You will need to provide the following info: name, address, date of birth, date, wake up time, time of collection, height, and weight. You will also need to sign and date the release.

Date Samples Sent: _____

Neurotransmitter example report

Pharmasan Labs, Inc. - Lab Request

Page 1 of 1

Lab Request ID

PHARMASAN LABS, INC.
373 280th Street, Osceola, WI 54020
1-888-342-7272 - www.pharmasan.com

Reported on 8/31/2012 2:56 PM

Samples Received 8/22/2012

Health Care Professional

Holistic Health Consultants
Amy Yasko, PhD
279 Walkers Mills Rd
Bethel, ME 04217

Patient

Date of Birth (Age) | Gender: Male | Wake up: 06:15 AM

Additional Contact information

Order Details

Panel 9900* (Generic Neurotransmitter)

* indicates changes to the panel configuration

Results

For more information about reports visit http://neurorelief.com/reportguide

Neurotransmitters

	2.5% 20% 80% 97.5%	Result	Collected	Inter-Quintile Range	Reference Range	Units
Serotonin		263.7 (H)	03/18/2012 (8:15AM)	99 - 203	57 - 306	µg/gCr
Tryptamine		1,799.1 (H)	03/18/2012 (8:15AM)	419 - 840	219 - 1200	µg/gCr
Norepinephrine		110.5 (H)	03/18/2012 (8:15AM)	28 - 51	19 - 76	µg/gCr
Epinephrine		12.4	03/18/2012 (8:15AM)	7.1 - 13.6	4.7 - 20.8	µg/gCr

Red or light red bars indicate results out of Inter-Quintile Range.

Inter-Quintile Range is defined as the 60th percentile.
Reference Range as the 95th percentile.

Parameter	Result	Units	Collection	Reference Range
Creatinine Urine	58.8	mg/dL	8/18/2012 8:15 AM	28.0 - 259.0

A creatinine value less than 28.0 mg/dL may affect urinary neurotransmitter results.

Results are not intended to diagnose, treat, cure, or prevent any disease or replace medical advice/treatment from a qualified healthcare provider. Incorrect sample submission or shipment may affect results. Medication use may affect urinary neurotransmitter levels (www.pharmasan.com). Results cannot be used in Legal Proceedings. LDT - Laboratory Developed Test / Not FDA Approved. RUO - for Research Use Only. Laboratory tests performed by: * Pharmasan Labs, WI (CLIA# 52D0913593, NY Lab PFI # 7426) Laboratory Director: G. Kellermann, PhD - QC Cellular Immunology: E. Haus, MD

Page 1 of 1

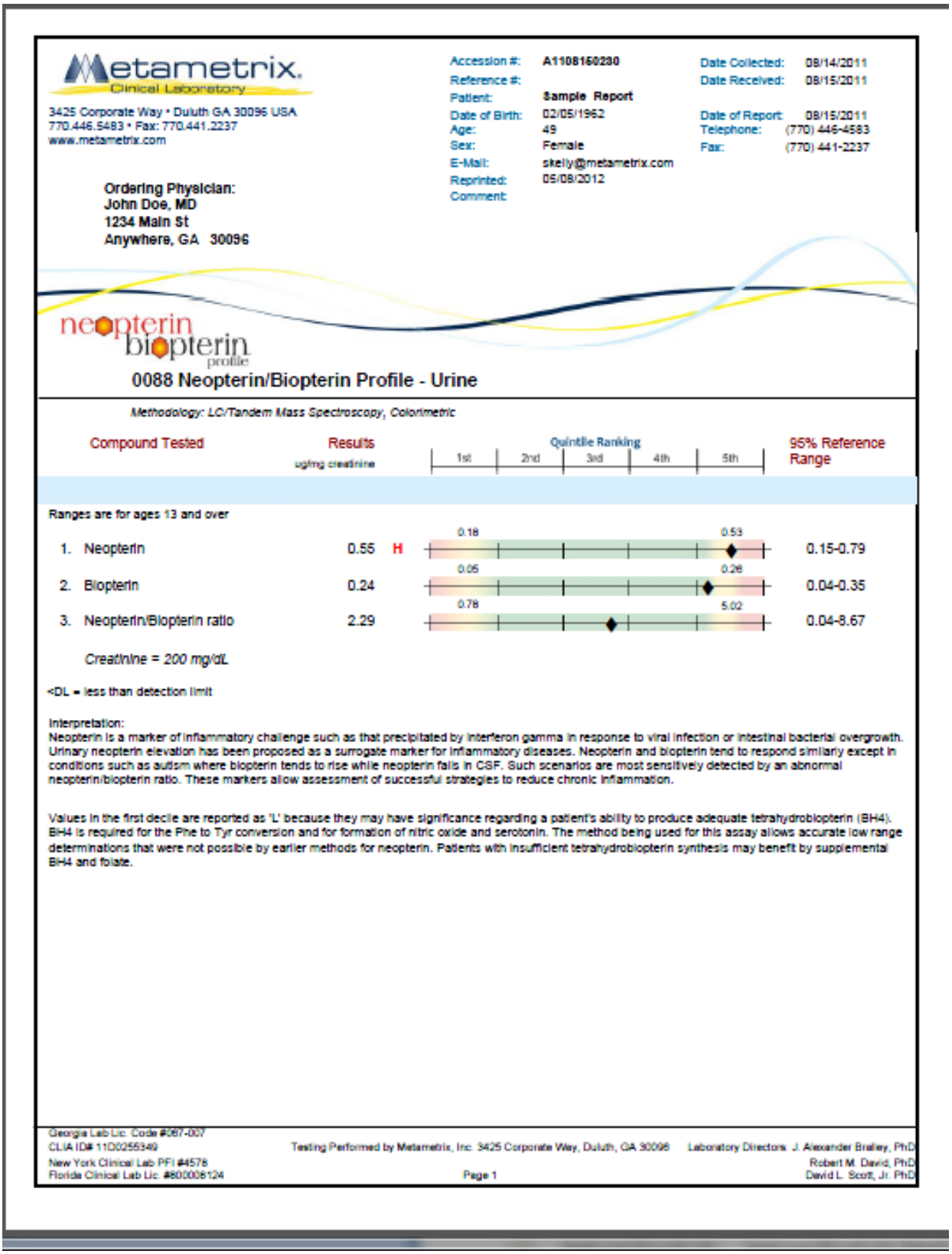
Obtaining Neopterin/Biopterin Urine Sample

- ☐ Follow the instructions that come in your kit. Dr Amy prefers that you stay on ALL supplements for testing unless instructed on previous testing.
- ☐ Follow preparation instructions (fluid restrictions for adults) as best as possible.
- ☐ Fill out the test requisition form. The patient's first and last name, date of birth, as well as date of collection, must also be recorded on the vial as well, using a permanent marker before first morning until sample is collected.

- ☐ Vial and ice pack must be frozen. Ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, time of collection, height, and weight. You will need to sign and date the release.

Date Samples Sent: _____

Neopterin/Biopterin Sample Report



Metametrix Clinical Laboratory

3425 Corporate Way • Duluth GA 30096 USA
770.446.5483 • Fax: 770.441.2237
www.metametrix.com

Accession #:	A1108160230	Date Collected:	08/14/2011
Reference #:		Date Received:	08/15/2011
Patient:	Sample Report		
Date of Birth:	02/05/1962	Date of Report:	08/15/2011
Age:	49	Telephone:	(770) 446-4583
Sex:	Female	Fax:	(770) 441-2237
E-Mail:	skelly@metametrix.com		
Reprinted:	05/08/2012		
Comment:			

Ordering Physician:
John Doe, MD
1234 Main St
Anywhere, GA 30096

neopterin biopterin profile

0088 Neopterin/Biopterin Profile - Urine

Methodology: LC/Tandem Mass Spectroscopy, Colorimetric

Compound Tested	Results ug/mg creatinine		Quintile Ranking 1st 2nd 3rd 4th 5th	95% Reference Range
Ranges are for ages 13 and over				
1. Neopterin	0.55	H	0.18 – 0.53	0.15-0.79
2. Biopterin	0.24		0.05 – 0.26	0.04-0.35
3. Neopterin/Biopterin ratio	2.29		0.78 – 5.02	0.04-8.67

Creatinine = 200 mg/dL

<DL = less than detection limit

Interpretation:
Neopterin is a marker of inflammatory challenge such as that precipitated by interferon gamma in response to viral infection or intestinal bacterial overgrowth. Urinary neopterin elevation has been proposed as a surrogate marker for inflammatory diseases. Neopterin and biopterin tend to respond similarly except in conditions such as autism where biopterin tends to rise while neopterin falls in CSF. Such scenarios are most sensitively detected by an abnormal neopterin/biopterin ratio. These markers allow assessment of successful strategies to reduce chronic inflammation.

Values in the first decile are reported as 'L' because they may have significance regarding a patient's ability to produce adequate tetrahydrobiopterin (BH4). BH4 is required for the Phe to Tyr conversion and for formation of nitric oxide and serotonin. The method being used for this assay allows accurate low range determinations that were not possible by earlier methods for neopterin. Patients with insufficient tetrahydrobiopterin synthesis may benefit by supplemental BH4 and folate.

Georgia Lab Lic. Code #087-007
CLIA ID# 11D0255349
New York Clinical Lab PFI #4578
Florida Clinical Lab Lic. #800008124

Testing Performed by Metametrix, Inc. 3425 Corporate Way, Duluth, GA 30096

Page 1

Laboratory Directors: J. Alexander Bralley, PhD
Robert M. David, PhD
David L. Scott, Jr. PhD

Obtaining MAP Sample

- ☐ Follow the instructions that come in your kit, but know that **Dr. Amy prefers that you stay on ALL supplements for testing** (including malic acid, citrates, orotates and malates) unless instructed on previous testing.
- ☐ First morning void is preferred and the sample needs to be frozen for a minimum of 2 hours prior to shipment.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, date of birth, time of collection, height, and weight. You will also need to sign and date the release.
- ☐ Urine samples must be sent in as fresh as possible as metabolites disintegrate easily. Therefore, they should not be frozen/stored for more than a day or two at the most before shipping. It is highly recommended that you take your urine sample over the weekend, say Sunday or early in the week so that you can ship it Monday through Wednesday. However, know that it is best to send the urine sample for a MAP on the same day that you collect it. DO NOT SEND SAMPLES AT THE END OF THE WEEK. If you send it at the end of the week, it may get stuck in transit over the weekend and arrive at the lab in a less then fresh condition. Samples must be received by the laboratory within 4 days of collection.
- ☐ Try to follow the diet restrictions as best you can, avoiding MSG, Aspartame for a full 24hrs prior to obtaining your sample.

Date Sample Sent: _____

Metabolic Analysis Profile (MAP) example report

Metabolic Analysis Profile

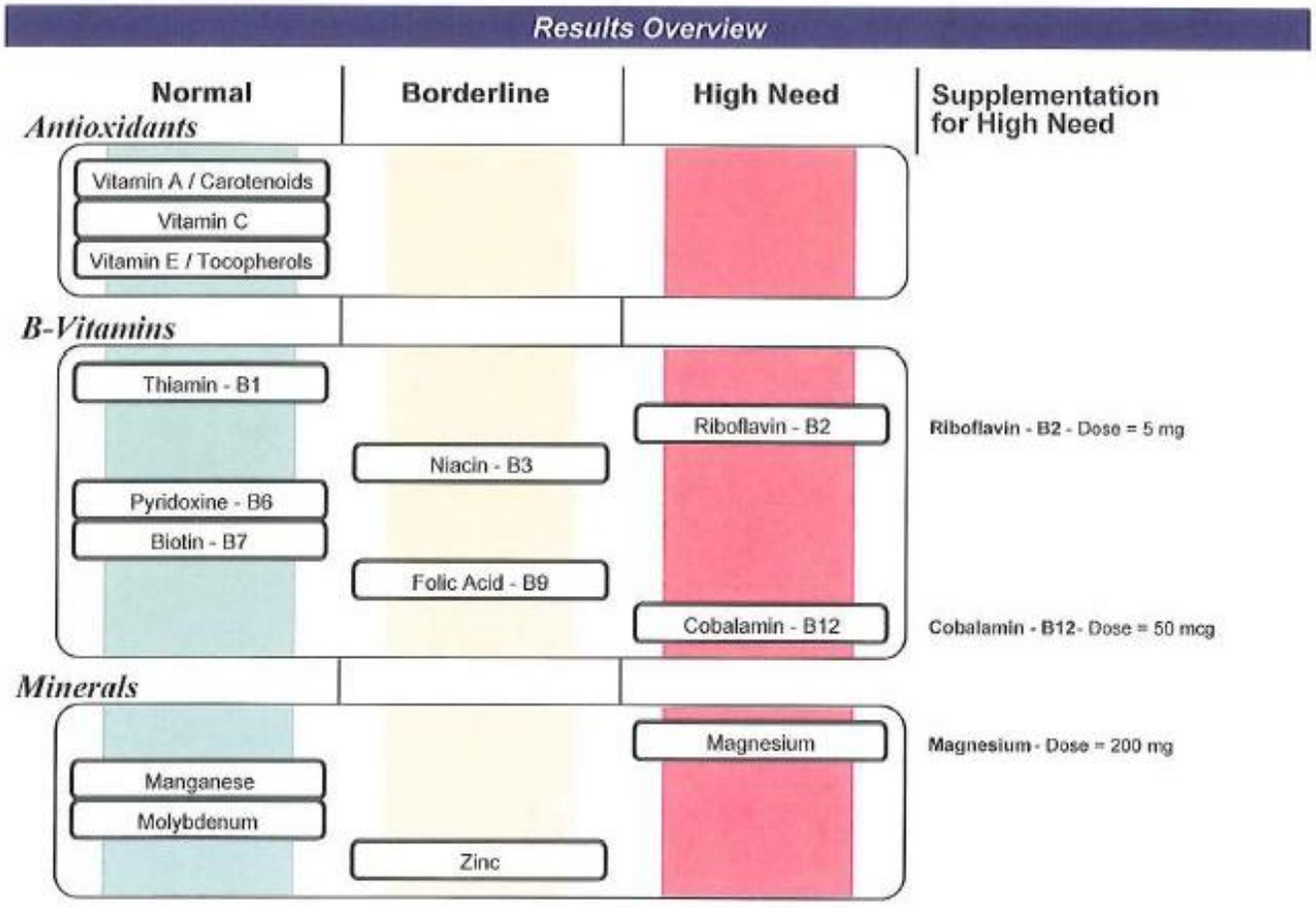
Physician Copy

Genova Diagnostics
Innovative Testing for Optimal Health

63 Zillicoa Street
Asheville, NC 28801

Patient: JOHN
DOE
DOB: October 31, 2008
Sex: M
MRN:

Order Number: D5240150
Completed: March 25, 2011
Received: March 24, 2011
Collected: March 24, 2011



Obtaining UAA Urine Sample

- ☐ Follow the instructions that come in your kit, but know that **Dr. Amy prefers that you stay on ALL supplements for testing** unless instructed on previous testing.
- ☐ First morning void is preferred, and the sample needs to be frozen for a minimum of 6 hours prior to shipment.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, date of birth, time of collection, height, and weight. You will also need to sign and date the release.
- ☐ Samples should not be frozen/stored for more than two days at the most before shipping. It is highly recommended that you take your urine sample over the weekend, say Sunday or early in the week, so that you can ship it Monday through Wednesday. However, know that it is best to send the urine sample for a UAA on the same or next day that you collect it. DO NOT SEND SAMPLES AT THE END OF THE WEEK. If you send it at the end of the week, it may get stuck in transit over the weekend and arrive at the lab in a less then fresh condition
- ☐ If running individually, please follow the general test suggestions on page 41.

Date Sample Sent: _____

Urine Amino Acids (UAA) example report

24-HOUR URINE AMINO ACIDS

DOCTOR'S DATA INC

LAB#: U000000-0000-0
PATIENT: Sample Patient
SEX: Male
AGE: 14

CLIENT#: 12345
DOCTOR:
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

SPECIMEN VALIDITY

SPECIMEN MARKERS	RESULT PER 24 HOURS	REFERENCE RANGE
Creatinine	1240	600- 1900mg
24 Hour Volume	1450	450- 1500mL
Glutamine/Glutamate	20	5- 160
Ammonia Level	19800	11000- 60000µM
SPECIMEN VALIDITY INDEX		

ESSENTIAL / CONDITIONALLY INDISPENSABLE AMINO ACIDS

ESSENTIAL AMINO ACIDS	RESULT µMOLE/24 HRS	REFERENCE RANGE
Methionine	17	10- 60
Lysine	35	32- 300
Threonine	130	75- 310
Leucine	37	28- 120
Isoleucine	12	12- 60
Valine	44	17- 85
Phenylalanine	52	25- 115
Tryptophan	46	20- 140
Taurine	1740	320- 1600
Cysteine	46	22- 79
Arginine	18	6- 40
Histidine	760	350- 2300

NONESSENTIAL AMINO ACIDS

NONESSENTIAL AMINO ACIDS	RESULT µMOLE/24 HRS	REFERENCE RANGE
Alanine	370	130- 650
Aspartate	23	26- 115
Asparagine	79	50- 230
Glutamine	530	220- 900
Glutamate	27	5- 47
Cystine	41	20- 90
Glycine	2010	480- 4100
Tyrosine	140	39- 290
Serine	530	190- 675
Proline	18	1- 65

Obtaining CSA Stool Sample

- ☐ Follow the instructions that come in your kit, but know that **Dr. Amy prefers that you stay on ALL supplements for testing** (including enzymes, baking soda and PeptiMycin), unless instructed on previous testing.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, date of birth, time of collection, height, and weight. You will also need to sign and date the release.
- ☐ Stool samples can be taken any time of the day. Make sure to collect from as many areas of the stool as possible because bacteria live in colonies.

Some ideas on getting stool samples:

- Drain the water out of the toilet and insert the collection tray.
- Toilet plastic “Hats” that are used to collect urine/stool in hospitals fit nicely under the lid of the toilet and can be found at most pharmacies or hospital supply stores.

Date Sample Sent: _____

Comprehensive Stool Analysis (CSA) example report

DOCTOR'S DATA INC.

LAB #: F000000-0000-0
PATIENT: Sample Patient
ID: P12345
SEX: Female
AGE: 50

CLIENT #: 12345
DOCTOR:
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

Comprehensive Stool Analysis

BACTERIOLOGY CULTURE

Expected/Beneficial flora	Commensal (Imbalanced) flora	Dysbiotic flora
3+ Bacteroides fragilis group		4+ Klebsiella oxytoca
NG Bifidobacterium spp.		
NG Escherichia coli		
NG Lactobacillus spp.		
4+ Enterococcus spp.		
1+ Clostridium spp.		

NG = No Growth

BACTERIA INFORMATION

Expected /Beneficial bacteria make up a significant portion of the total microflora in a healthy & balanced GI tract. These beneficial bacteria have many health-protecting effects in the GI tract including manufacturing vitamins, fermenting fibers, digesting proteins and carbohydrates, and propagating anti-tumor and anti-inflammatory factors.
Clostridia are prevalent flora in a healthy intestine. Clostridium spp. should be considered in the context of balance with other expected/beneficial flora. Absence of clostridia or over abundance relative to other expected/beneficial flora indicates bacterial imbalance. If *C. difficile* associated disease is suspected, a Comprehensive Clostridium culture or toxigenic *C. difficile* DNA test is recommended.
Commensal (Imbalanced) bacteria are usually neither pathogenic nor beneficial to the host GI tract. Imbalances can occur when there are insufficient levels of beneficial bacteria and increased levels of commensal bacteria. Certain commensal bacteria are reported as dysbiotic at higher levels.
Dysbiotic bacteria consist of known pathogenic bacteria and those that have the potential to cause disease in the GI tract. They can be present due to a number of factors including: consumption of contaminated water or food, exposure to chemicals that are toxic to beneficial bacteria; the use of antibiotics, oral contraceptives or other medications; poor fiber intake and high stress levels.

YEAST CULTURE

Normal flora	Dysbiotic flora
No yeast isolated	

MICROSCOPIC YEAST

Result:	Expected:
Many	None - Rare

The microscopic finding of yeast in the stool is helpful in identifying whether there is proliferation of yeast. Rare yeast may be normal; however, yeast observed in higher amounts (few, moderate, or many) is abnormal.

YEAST INFORMATION

Yeast normally can be found in small quantities in the skin, mouth, intestine and mucocutaneous junctions. Overgrowth of yeast can infect virtually every organ system, leading to an extensive array of clinical manifestations. Fungal diarrhea is associated with broad-spectrum antibiotics or alterations of the patient's immune status. Symptoms may include abdominal pain, cramping and irritation. When investigating the presence of yeast, disparity may exist between culturing and microscopic examination. Yeast are not uniformly dispersed throughout the stool, this may lead to undetectable or low levels of yeast identified by microscopy, despite a cultured amount of yeast. Conversely, microscopic examination may reveal a significant amount of yeast present, but no yeast cultured. Yeast does not always survive transit through the intestines rendering it unvialble.

Comments:
Date Collected: 4/13/2011
Date Received: 4/15/2011
Date Completed: 4/22/2011

***Aeromonas, Campylobacter, Plesiomonas, Salmonella, Shigella, Vibrio, Yersinia, & Edwardsiella tarda* have been specifically tested for and found absent unless reported.**

v5.09

0001420

Obtaining UTM/UEE Urine Sample

- ☐ Follow the instructions that come in your kit, but know that **Dr. Amy prefers that you stay on ALL supplements for testing** unless instructed on previous testing.
- ☐ Dr. Amy prefers "spot/random urines" for the UTM/UEE test as opposed to the 24-hour collection. She also prefers the later afternoon urines, but if it is easier to collect a morning or overnight urine, that is fine too.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, time of collection, height, and weight. You will also need to sign and date the release.
- ☐ Try to follow the diet restrictions as best you can, by eliminating fish and shellfish for one week prior to obtaining your sample.
- ☐ If running individually, please follow the general test suggestions on page 41.

Date Sample Sent: _____

Urine Toxic Metals (UTM) example report

DOCTOR'S DATA INC

LAB #: U000000-0000-0
PATIENT: Sample Patient
ID: PATIENT-S-00001
SEX: Female
AGE: 35

CLIENT #: 12345
DOCTOR:
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

Toxic Metals; Urine

TOXIC METALS		RESULT µg/g creat	REFERENCE INTERVAL	WITHIN REFERENCE / OUTSIDE REFERENCE
Aluminum	(Al)	54	< 35	
Antimony	(Sb)	< dl	< 0.4	
Arsenic	(As)	< dl	< 117	
Barium	(Ba)	2.9	< 7	
Beryllium	(Be)	< dl	< 1	
Bismuth	(Bi)	< dl	< 15	
Cadmium	(Cd)	1.3	< 1	
Cesium	(Cs)	2.9	< 10	
Gadolinium	(Gd)	0.2	< 0.4	
Lead	(Pb)	7.1	< 2	
Mercury	(Hg)	1.3	< 4	
Nickel	(Ni)	14	< 12	
Palladium	(Pd)	< dl	< 0.3	
Platinum	(Pt)	< dl	< 1	
Tellurium	(Te)	< dl	< 0.8	
Thallium	(Tl)	0.2	< 0.5	
Thorium	(Th)	< dl	< 0.03	
Tin	(Sn)	2.3	< 10	
Tungsten	(W)	< dl	< 0.4	
Uranium	(U)	0.1	< 0.04	

URINE CREATININE	RESULT mg/dL	REFERENCE INTERVAL	-2SD -1SD MEAN +1SD +2SD
Creatinine	27.3	35 - 225	

SPECIMEN DATA		
Comments:		
Date Collected: 8/11/2011	pH upon receipt: Acceptable	Collection Period:
Date Received: 8/16/2011	<dl: less than detection limit	Volume:
Date Completed: 8/17/2011	Provoking Agent:	Provocation:
Method: ICP-MS	Creatinine by Jaffe Method	

Results are creatinine corrected to account for urine dilution variations. **Reference intervals and corresponding graphs are representative of a healthy population under non-provoked conditions.** Chelation (provocation) agents can increase urinary excretion of metals/elements. V13

Urine Essential Elements (UEE) example report

DOCTOR'S DATA INC

LAB #: U000000-0000-0
PATIENT: Sample Patient
ID: PATIENT-S-00001
SEX: Female
AGE: 35

CLIENT #: 12345
DOCTOR:
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

Essential Elements; Urine

ESSENTIAL AND OTHER ELEMENTS		RESULT/UNIT per creatinine		REFERENCE INTERVAL	PERCENTILE 2.5th 16th 50th 84th 97.5th
Sodium	(Na)	81	mEq/g	43.5 - 226	
Potassium	(K)	43	mEq/g	22 - 82	
Phosphorus	(P)	27	µg/mg	250 - 1300	
Calcium	(Ca)	610	µg/mg	35 - 350	
Magnesium	(Mg)	120	µg/mg	25 - 230	
Zinc	(Zn)	25	µg/mg	0.1 - 2	
Copper	(Cu)	0.018	µg/mg	0.01 - 0.09	
Sulfur	(S)	470	µg/mg	308 - 1650	
Manganese	(Mn)	0.088	µg/mg	0.0005 - 0.01	
Molybdenum	(Mo)	0.062	µg/mg	0.016 - 0.18	
Boron	(B)	1.7	µg/mg	0.8 - 6.8	
Chromium	(Cr)	0.001	µg/mg	0.0005 - 0.01	
Lithium	(Li)	0.059	µg/mg	0.01 - 0.2	
Selenium	(Se)	0.041	µg/mg	0.034 - 0.28	
Strontium	(Sr)	0.23	µg/mg	0.06 - 0.54	
Vanadium	(V)	0.001	µg/mg	0.0002 - 0.004	
					68th 95th
Cobalt	(Co)	0.066	µg/mg	< 0.008	
Iron	(Fe)	1.5	µg/mg	< 2	

URINE CREATININE	RESULT mg/dL	REFERENCE INTERVAL	-2SD -1SD MEAN +1SD +2SD
Creatinine	27.3	35 - 225	

SPECIMEN DATA

Comments:

Date Collected: 8/11/2011
Date Received: 8/16/2011
Date Completed: 8/17/2011
pH Upon Receipt: Acceptable
<dl: less than detection limit
Provoking Agent:
Collection Period:
Volume:
Provocation:

Method: ISE:Na, K Spectrophotometry: P ICP-MS: B, Ca, Cr, Co, Cu, Fe, Mg, Mn, Mo, Se, Sr, S, V, Zn Creatinine by Jaffe method

Results are creatinine corrected to account for urine dilution variations. **Reference intervals and corresponding graphs are representative of a healthy population under non-provoked conditions.** Chelation (provocation) agents can increase urinary excretion of metals/elements. V13

Obtaining Fecal Toxic Stool Sample

- ☐ Follow the instructions that come in your kit, but know that **Dr. Amy prefers that you stay on ALL supplements for testing** (including enzymes, baking soda and PeptiMycin), unless instructed on previous testing. Try to follow the diet restrictions as best you can.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, date, date of birth, time of collection, height, and weight. You will also need to sign and date the release.
- ☐ Stool samples can be taken any time of the day.

Some ideas on getting stool samples:

- Drain the water out of the toilet and insert the collection tray.
- Toilet plastic “Hats” that are used to collect urine/stool in hospitals fit nicely under the lid of the toilet and can be found at most pharmacies or hospital supply stores.

Date Sample Sent: _____

Fecal Metals (FM) example report

FECAL METALS

DOCTOR'S DATA INC

LAB#: F000000-0000-0
PATIENT: Sample Patient
SEX: Male
AGE: 4

CLIENT#: 12345
DOCTOR:
Doctor's Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

POTENTIALLY TOXIC METALS

METALS	RESULT mg/kg	REFERENCE RANGE	PERCENTILE (68th / 95th)
Mercury	0.037	<.05 w/o amalgams*	
Mercury	0.037	< .5 with amalgams*	
Antimony	0.105	< 0.080	
Arsenic	0.14	< 0.30	
Beryllium	0.007	< 0.009	
Bismuth	0.047	< 0.050	
Cadmium	0.24	< 0.50	
Copper	41	< 60	
Lead	2.57	< 0.50	
Nickel	5.3	< 8.0	
Platinum	< dl	< 0.003	
Thallium	0.008	< 0.020	
Tungsten	0.599	< 0.090	
Uranium	0.083	< 0.120	

% WATER CONTENT

	RESULT % H_2O	EXPECTED RANGE	2SD LOW	1SD LOW	MEAN 72.5%	1SD HIGH	2SD HIGH
% WATER CONTENT	77.3	60-85%					

DISCUSSION

Analysis of elements in feces provides a comprehensive evaluation of environmental exposure, accumulation and endogenous detoxification of potentially toxic metals. For several toxic elements such as mercury, cadmium, lead, antimony and uranium, biliary excretion of metals into feces is the primary natural route of elimination from the body. Studies performed at DDI demonstrate that the fecal mercury content and number of amalgam surfaces are highly correlated, as is the case for post-DMPS urine mercury levels and amalgam surface area.

Results are reported as mg/kg dry weight of feces to eliminate the influence of variability in water content of fecal specimens. The reference values that appear in this report have been derived from both published data and in-house studies at DDI. *Due to exposure to mercury in the oral cavity, people with dental amalgams typically have a considerably higher level of mercury in the feces than individuals without dental amalgams; therefore, two reference ranges have been established for mercury.

To provide guidance in interpretation of results, patient values are plotted graphically with respect to percentile distribution of the population base. Since this test reflects both biliary excretion and exposure (metals to which the patient is exposed may not be absorbed), it may not correlate with overt clinical effects. Further testing can assist in determining whether the metals are from endogenous (biliary excretion) or exogenous (oral exposure) sources.

1. Bjorkman, L, Sandborgh-Englund, G, and Ekstand, J,. Mercury in Saliva and Feces after Removal of Amalgam Fillings. Toxicology & Applied Pharmacology 144: 156-162 (1997)
2. Zalups, R, Progressive Losses of Renal Mass and the Renal and Hepatic Disposition of Administered Inorganic Mercury. Toxicology & Applied Pharmacology 130: 121-131 (1995)
3. Adamsson, E., Piscator, M., and Nogawa, K., Pulmonary and Gastrointestinal Exposure to Cadmium Oxide Dust in a Battery Factory. Environmental Health Perspectives, 28: 219-222 (1979)
4. Smith,J., et al., The Kinetics of Intravenously Administered Methyl Mercury in Man. Toxicology & Applied Pharmacology 128:251-256 (1994)
5. Bass, D., et al., "Measurement of Mercury in Feces", Poster presentation 1999 AACC

SPECIMEN DATA

Comments:
Date Collected: 12/22/2008
Date Received: 12/23/2008
Date Completed: 12/24/2008

Provocation:
Detoxification Agent:
Dosage:

Dental Amalgams: None
Quantity:
Methodology: ICP-MS v02.00

Obtaining Hair Elements Test Sample

- ☐ Follow the instructions that come in your kit, cutting samples of hair as close to the scalp as possible from the back of the head and collecting the suggested amount.
- ☐ Fill out the paperwork and ship according to the package instructions. The invoice is only partially filled out and the test is already paid for. You still need to provide the following info: name, address, date of birth, date of collection etc. You will also need to sign and date the release.
- ☐ If running individually, please follow the general test suggestions on page 41.

Date Sample Sent: _____

Hair Elements (HE/HMT) example report

HAIR ELEMENTS

DOCTOR'S DATA Inc.

LAB#: H000000-0000-0
PATIENT: Sample Patient
ID: PATIENT-S-00003
SEX: Female
AGE: 86

CLIENT#: 12345
DOCTOR:
Doctors Data, Inc.
3755 Illinois Ave.
St. Charles, IL 60174

POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT µg/g	REFERENCE RANGE
Aluminum	3.0	< 7.0
Antimony	0.019	< 0.050
Arsenic	0.019	< 0.060
Barium	15	< 2.0
Beryllium	< 0.01	< 0.020
Bismuth	0.99	< 2.0
Cadmium	0.046	< 0.050
Lead	0.20	< 0.60
Mercury	0.34	< 0.80
Platinum	0.003	< 0.005
Thallium	< 0.001	< 0.002
Thorium	< 0.001	< 0.002
Uranium	0.002	< 0.060
Nickel	0.83	< 0.30
Silver	0.07	< 0.15
Tin	2.0	< 0.30
Titanium	0.36	< 0.70
Total Toxic Representation		

PERCENTILE: 68th, 95th

ESSENTIAL AND OTHER ELEMENTS

ELEMENTS	RESULT µg/g	REFERENCE RANGE
Calcium	3050	300 - 1200
Magnesium	310	35 - 120
Sodium	700	20 - 250
Potassium	55	8 - 75
Copper	27	11 - 37
Zinc	190	140 - 220
Manganese	0.13	0.08 - 0.60
Chromium	0.44	0.40 - 0.65
Vanadium	0.023	0.018 - 0.065
Molybdenum	0.010	0.020 - 0.050
Boron	1.3	0.25 - 1.5
Iodine	0.43	0.25 - 1.8
Lithium	0.17	0.007 - 0.020
Phosphorus	143	150 - 220
Selenium	0.80	0.55 - 1.1
Strontium	50	0.50 - 7.6
Sulfur	44300	44000 - 50000
Cobalt	0.015	0.005 - 0.040
Iron	3.5	7.0 - 16
Germanium	0.038	0.030 - 0.040
Rubidium	0.050	0.007 - 0.096
Zirconium	0.058	0.020 - 0.42

PERCENTILE: 2.5th, 16th, 50th, 84th, 97.5th

SPECIMEN DATA

COMMENTS:

Date Collected: 1/31/2009
Date Received: 2/2/2009
Date Completed: 2/4/2009
Client Reference:
Methodology: ICP-MS

Sample Size: 0.195 g
Sample Type: Head
Hair Color: Gray
Treatment:
Shampoo: Pantene

V010.08

RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	9.84	4 - 30
Ca/P	21.3	1 - 12
Na/K	12.7	0.5 - 10
Zn/Cu	7.04	4 - 20
Zn/Cd	> 999	> 800

WEEK 5

DAYS 29-35: Gut Protocol

Slowly make changes to you/your child's supplement program and watch for changes.

Gut Protocol

With respect to the gut, as with all aspects of this protocol, there is no "one size fits all" approach. Sometimes it is difficult to know where to start with support, and there is no easy answer that fits all cases. On the Discussion Group/The Basics Forum you will find the COMPREHENSIVE GUT PROTOCOL. It is a compilation of suggestions for overall gut health, taking biochemical testing and Nutrigenomics into account. As always, work closely with your physician.

Below is a brief summary of Dr. Amy's Comprehensive Gut Protocol:

While it is lengthy and extensive, you will find that everyone needs some of the basic tools, while others need more extensive supports. There are many tools suggested, some you may not have even heard of, but periodic biochemical testing (CSA and GI Profile as needed) will help narrow down the necessary supports. The idea is to stay in control of the non-ideal organisms. During times of heavy detox you may need to rely on more tools and supports.

The three arms of the gut protocol:

1. Bacterial/Aluminum detox and pH balance
2. Probiotics and overall gastrointestinal environment
3. Specifically targeted bacteria (Strep, Clostridia, Staph, H.pylori, Ecoli etc.)

Gut Health Assessment

Look over old testing and records to see what history you/your child may have with gut issues. Please use the following checklists to indicate affected areas:

Lab Tests indicating a need to address bacterial imbalances:

- ☐ History of chronic ear infections
- ☐ Maternal history of Streptococcal infection
- ☐ History of bacterial Pneumonia
- ☐ Streptococcus, E.coli on CSA/GI Profile
- ☐ Other bacterial pathogens on CSA/GI Profile
- ☐ Elevated kynurenic on OAT/Metabolic Test, CONFIRM with CSA/GI Profile
- ☐ Elevated quinolinic on OAT/Metabolic Test, CONFIRM with CSA/GI Profile
- ☐ Low gut pH

- [ ] High DHPPA on a MAP or OAT
- [ ] High Suberic on a MAP or OAT

Lab Tests indicating a need to address yeast imbalances:

- [ ] Elevated arabinose on OAT/Metabolic test, CONFIRM with CSA /GI Profile
- [ ] Presence of yeast on CSA/GI Profile
- [ ] Low gut pH, CONFIRM with CSA/GI Profile

Lab Tests indicating a need to address parasites:

- [ ] Parasites on a CSA/GI Profile

Lab Tests indicating a need to address Helicobacter:

- [ ] Helicobacter test
- [ ] Presence of blood on a CSA
- [ ] Low Manganese on UEE or HE/HMT test in spite of supplementation
- [ ] Very High Suberic on MAP
- [ ] Extreme swings in CSA/GI profile Stool PH
- [ ] High Asparate Or high Tryptamine on Neurotransmitter
- [ ] Excretion of Bismuth on a FM in the absence of supplementation
- [ ] Consistent Cadmium excretion on a UTM and FM
- [ ] Signs of ketosis on a MAP
- [ ] Normal to high excretion of Arginine on UAA, when all other Amino Acids (except Taurine) are low
- [ ] Low PS on a UAA regardless of having all suggested supports in place
- [ ] High 5HIAA or Indole acetic acid on a MAP
- [ ] High Taurine on UAA in the absence of a CBS +, OR in spite of sufficient CBS RNA/Ammonia RNA

Friendly Reminders

It is important that you do the following as you continue on your path to wellness:

- ☐ Continue layering Step 1 supports and documenting in your supplement diary.
- ☐ Visit the Discussion Group and read Dr. Amy's Recent Posts and New Findings Forum for updates in this continuously evolving protocol.
- ☐ While you wait for your test results, also continue to implement Step one support. Please refer to the Discussion Group, the *Autism: Pathways to Recovery* book pages 75-84 and Addendum A on the CD in your Nutrigenomics test kit.
- ☐ Continue collecting test samples if applicable.

Please utilize this space to indicate any other gut health symptoms or issues:

WEEK 6

DAYS 36-42: Understanding Your Biochemical Test Results

If you ordered your UTM/UEE, UAA, and HE/HMT thru HHI on Day 17 (see page 41), you should be receiving Dr. Amy's comments and suggestions for consideration by email shortly. If you ordered the CPR, her comments and suggestions will come 7-10 days after your file review date. Continue to add in Step 1 supports along with these new suggestions. Please refer to Addendum A, *Autism: Pathways to Recovery* book Chapter 4, and pages 131-139, and the Discussion Group for more information.

The lab company analyzing your samples provides an auto-generated interpretation with the report. Dr. Amy's analysis is personalized and is completed in conjunction with your current supplement list and personal history. Written feedback is provided, to be considered in conjunction with your physician, and is aligned with the scientific principles on which this protocol is based.

Because Dr. Amy Is looking at various markers when making suggestions for consideration, she will often suggest supports based on patterns that she feels are emerging overtime after reviewing numerous biochemical tests. Therefore, it is imperative to stay current on the Discussion Group for the most recent information.

Examples of this are:

- High Taurine and/or high Aspartate may possibly be an indicator of Helicobacter in the following conditions:
    - In the absence of a CBS mutation
    - With a sufficiently supported CBS mutation
- Threonine levels may be an indicator of Clostridia and/or other bacterial issues.
- Cadmium levels may be an indicator of Helicobacter.
- If Lithium is being supplemented, it may be in high range, but that is to be expected. However, if Lithium is **NOT** being supplemented and is in high range, it may mean there is 'Lithium dumping'. Running the HE/HMT is also useful.

The following are *"general"* preferred ranges. Suggestions are individually tailored based on genetics, previous testing in the file, current supplementation, and fluctuations in urine Creatinine.

UTM/UEE

The first page of your results will contain the toxic heavy metal levels being excreted from the body. While many other professionals look solely at Mercury or Lead, Dr. Amy looks at all the metals and their relationship to each other and the Essential Elements/Minerals.

- At this time any metals showing would be considered a positive
- In the presence of high Lead, she may suggest Calcium supports
- In the presence of high Cadmium, she may suggest Helicobacter supports

The second page of your UTM/UEE results will contain the Essential Elements/Mineral levels.

- Midrange for Sodium, Phosphorous, Potassium, Chromium, and Boron
- Midrange Lithium
- Low to Normal range for Calcium, but lesser than Magnesium
- High to Normal range for Magnesium, but greater than Calcium
- Normal range for Zinc, but lesser than Magnesium and greater than Copper
- Low to Normal range for Copper, but lesser than Zinc
- Normal to High range for Manganese, Molybdenum, Selenium, Sulfur and Strontium
- Low to Normal range for Vanadium
- High range for Cobalt (indicator of B12 levels)
- No detectable levels for Iron

UAA

The 3 page Urine Amino Acids test report contains levels of GABA, Glutamate, Ammonia, Taurine, and other important Amino Acids. Dr. Amy makes suggestions for consideration based on the levels of Amino Acids and their relationship to each other.

- Midrange to High GABA (gamma aminobutyric acid), greater than Glutamate
- Low to Mid range Glutamate, Glutamine, Glutamic acid, lesser than GABA
- Low to Mid range Ammonia
- Low to Mid range Taurine
- Mid range Methionine, Lysine, Threonine, Isoleucine, Leucine, Valine, Phenylalanine, Tryptophan, and Arginine
- Low range of normal for Cysteine
- Midrange Citrulline and Phosphoethanolamine
- Low to Mid range Aspartate, Aspartic Acid, Glycine, Beta-alanine, Homocysteine, Ornithine, Methionine Sulfoxide, Anserine, Carnosine, Methylhistidine and Histidine

HE/HMT

The results will contain the toxic heavy metal levels being excreted from the body. While many other professionals look solely at Mercury or Lead, Dr. Amy looks at all the metals and their relationship to each other and the Essential Elements/Minerals.

- At this time any metals showing would be considered a positive
- In the presence of high Lead, she may suggest Calcium supports
- In the presence of high Cadmium, she may suggest Helicobacter supports
- Mid to High range of Lithium
- Low to Mid range Iron and Potassium
- Mid range Rubidium

WEEK 7

DAYS 43-49: Reflect, Regroup, and Review

- ☐ Spend some time today watching the "Nutrigenomics" DVD set that came with your test kit.
- ☐ Take a deep breath and regroup. Revisit DAY 10, "Visualize Recovery."
- ☐ Go to the "Positive Feedback" Forum and read.

Visualize Recovery

Please take some time and think about or make a list of what recovery means to you and those you love.

Take a deep breath. Relax. Close your eyes. Visualize yourself/your recovered child.

What does your recovery look like?

What behaviors/symptoms are gone?

What positive behaviors have taken over?

What academic gains have you achieved?

What are things you can do with recovery that you cannot do now?

What does vibrant health look like?

Envision the life changes for you and your entire family.

- ☐ Continue adding in Step 1 supports and any additions/changes recommended on testing so far.
- ☐ If you are seeing signs of detox, don't forget to take a toxic metals test.

DVD Resources

- ☐ Take time to watch some more of the DVDs or view Webisodes at www.dramyyasko.com/resources/webisodes/.

The suggested order is as follows:

- An individualized Approach: Introduction to The Yasko Protocol
- Stress and Aggression
- Membrane Fluidity
- Methylation: Why you should be concerned, Part 1
- More Pieces to the Puzzle
- Methylations & Mutations

WEEK 8

DAYS 50-56: Genetics

The following is a summary of the genes that are included in your Comprehensive Methylation Panel with Methylation Pathway Analysis. For those who would like more detailed information, consider reading the *Genetic Bypass* book (found on the CD in your test kit) and reading the *Genetics 101* post in the Basics Forum. The + or - designation is obtained by comparing the sample to a standard database norm. The database used is a proprietary national database chosen by the laboratory.

+ / + means homozygous and you have 2 copies of the mutation, one from each parent

+ / - Heterozygous and you have one copy of the mutation

- / - No Mutation

Mutations or Single Nucleotide Polymorphism (SNP): A gene mutation is a permanent change in the DNA sequence that makes up a gene. Mutations range in size from one DNA base to a large segment of a chromosome. A Single Nucleotide Polymorphism or SNP (pronounced “snip”) is a small genetic change, or variation, that can occur within a person’s DNA sequence. The genetic code is specified by the four nucleotide “letters” A (adenine), C (cytosine), T (thymine), and G (guanine). SNP variation occurs when a single nucleotide, such as an A, replaces one of the other three nucleotide letters: C, G, or T.

Think of mutations in enzymes as breaks that affect the ability of the enzyme to do its job. Homozygous (++) mutations are ones where both copies of the gene are affected and heterozygous (+-) mutations are the ones where only one copy of the gene is affected. Each of us has two copies of each gene that we inherit from each parent. Some mutations speed up the activity of the enzyme (e.g. CBS upregulation) whereas others slow them down considerably (e.g. MTHFr C677T and A1298C, COMT mutations).

COMT V158M, H62H, 61 (catechol-O-methyltransferase):
A primary function of this gene is to help to break down dopamine. Dopamine is a neurotransmitter that is recognized for its role in attention, as well as reward seeking behavior. Dopamine helps to cause pleasurable feelings that aid in reinforcing positive behaviors and motivating individuals to function in certain reward gaining activities. COMT is also involved in the breakdown of another neurotransmitter, norepinephrine. The balance between norepinephrine levels and dopamine levels has been implicated in ADD/ADHD; in addition, dopamine levels are important in conditions such as Parkinson’s disease. COMT is also involved in the proper processing of estrogen in the body. Sensitivity to pain has recently been found to be correlated with COMT activity, such that COMT + + individuals may be more sensitive to pain.

VDR/Taq and VDR/Fok (vitamin D receptor):
The panel looks at more than one portion of the vitamin D receptor, the Taq as well as the Fok sites. While the Fok change has been related to blood sugar regulation, changes at Taq can affect dopamine levels. For this reason it is important to look at the composite of the COMT and VDR/Taq status and make supplement suggestions based on the combined results at these two sites. The focus on changes in the Fok portion of the VDR is in regard to supplements that support the pancreas and aid in keeping blood sugar in the normal healthy range.

MAO A R297R (monamine oxidase A):
Mao A is involved in the breakdown of serotonin in the body. Like dopamine, serotonin is another neurotransmitter in the body. It is involved with mood, and imbalances in serotonin levels have been associated with depression, aggression, anxiety, and OCD behavior. Since Mao A is inherited with the X chromosome and is considered a dependent trait it may not show standard inheritance characteristics in males. Since the X chromosome in males can only come from the mother, this means that the father's Mao A mutations (or lack thereof) does not play a role in his son's Mao A status. For females, since one X chromosome is inherited from each parent, the genetics tend to reflect the Mao A status of both parents.

ACAT 102 (acetyl coenzyme A acetyltransferase):
ACAT plays a role in cholesterol and other lipid balance in the body, helping to prevent the accumulation of excess cholesterol in certain parts of the cells in the body. ACAT is also involved in energy generation in the body. It is involved in helping to allow protein, fats and carbohydrates from food to be converted into an energy form that can be used by your body. In addition, lack of ACAT may also cause a depletion of B12, which is needed for the long route around the methylation cycle.

ACE (angiotensin converting enzyme): Considered for all – No longer testing
The support for ACE should be considered for all as most individuals have the ACE deletion and many of the supports are suggested for basic nutritional support. Changes can occur that affect the activity of the ACE gene that can lead to elevated blood pressure. In animal studies imbalances in this pathway were also correlated with increased anxiety and decreases in learning and memory. Increased ACE activity can also throw off the essential mineral balance in the system due to decreased excretion of sodium in the urine and increased excretion of potassium in the urine. This reaction is also tied to the stress response such that situations of chronic stress can result in additional sodium retention and increased potassium excretion. This excess potassium is excreted provided that the kidneys are functioning properly. In the event that kidney function is compromised, it can lead to the retention of potassium in the body. ACE is a deletion, it is not a SNP. As a consequence it does not associate in the same manner that the other single nucleotide polymorphisms (SNP) on this panel do, so the inheritance pattern of the ACE deletion may not distribute in the same manner as single base changes.

MTHFR A1298C, C677T, 3 (methylenetetrahydrofolate reductase):
The MTHFR gene product is at a critical point in the methylation cycle. It helps to pull homocysteine into the cycle, serving to aid in keeping the levels in a normal healthy range. Several mutations in the MTHFR gene have been well characterized as increasing the risk of heart disease, as well as cancer, and may play a role in the level of the neurotransmitters serotonin and dopamine.

MTR A2756G/MTRR A66G, H595Y, K350A, R415T, S257T, 11 (methionine synthase/ methionine synthase reductase):
These two gene products work together to regenerate and utilize B12 for the critical long way around the methylation pathway, helping to convert homocysteine to methionine. High levels of homocysteine have been implicated as risk factors in a number of health conditions including heart disease as well as Alzheimer's disease. As is the case for COMT and VDR /Taq, the MTR and MTRR composite status is also important. Mutations in MTR can increase the activity of this gene product so that it leads to a greater need for B12 as the enzyme is using up B12 at a faster rate. Conversely, recent publications suggest that the A66G mutation in MTRR decreases the activity of the enzyme. Regardless of which theory is correct, over activity depleting the cycle of B12 or lack of activity impairing the function of the methylation cycle at that point, the net result is the same in terms of suggestions for supplementation.

BHMT 1,2,4,8 (betaine homocysteine methyltransferase):
The product of this gene is central to the 'short cut' through the methylation cycle, again helping to convert homocysteine to methionine. The activity of this gene product can be affected by stress, by cortisol levels and may play a role in ADD/ADHD by affecting norepinephrine levels.

AHCY 1,2,19 (S adenosylhomocysteine hydrolase):
The various mutations in AHCY may affect levels of homocysteine as well as ammonia in the body.

CBS C699T, A360A, N212N (cystathionine-beta-synthase):
The CBS enzyme basically acts as a gate between homocysteine and the downstream portion of the pathway that generates ammonia in the body. The types of CBS mutations that are identified on this SNP panel cause this "CBS gate" to be left open, this 'open gate' is not a neutral situation. The 'open gate' can allow support that is added for the rest of the methylation pathway to be depleted, including any B12 that is used to address MTR and MTRR mutations. While there are some positive end products that are generated via the downstream portion of the pathway such as glutathione and taurine, there are also negative byproducts such as excess ammonia and sulfites. By virtue of increased CBS activity, these sulfur groups that were complexed as part of the methylation cycle can now be released into the system as sulfites which are toxic to the body and put an additional burden on the SUOX gene product.

SHMT C1420T (serine hydroxymethyltransferase):
This gene product helps to shift the emphasis of the methylation cycle toward the building blocks needed for new DNA synthesis and away from the processing of homocysteine to methionine. While DNA building blocks are important, mutations which affect the ability to regulate this gene product and interfere with the delicate balance of the methylation cycle may cause accumulations in homocysteine as well as imbalances in other intermediates in the body.

NOS D298E (nitric oxide synthase):
The NOS enzyme plays a role in ammonia detoxification as part of the urea cycle. Individuals who are NOS + + have reduced activity of this enzyme. NOS mutations can have additive effects with CBS up regulations due to the increased ammonia that is generated by the CBS up regulations.

SUOX S370S (sulfite oxidase):
This gene product helps to detoxify sulfites in the body. Sulfites are generated as a natural byproduct of the methylation cycle as well as ingested from foods we eat. Sulfites are sulfur based preservatives that are used to prevent or reduce discoloration of light-colored fruits and vegetables, prevent black spots on shrimp and lobster, inhibit the growth of microorganisms in fermented foods (e.g. wine), condition dough, and maintain the stability and potency of certain medications. Sulfites can also be used to bleach food starches, to prevent rust and scale in boiler water that is used to steam food, and even in the production of cellophane for food packaging. The FDA estimates that one out of a hundred people is sulfite-sensitive, and five percent of those also suffer from asthma. A person can develop sulfite sensitivity at any point in life. Because many reactions have been reported, the FDA requires the presence of sulfites in processed foods to be declared on the label. Scientists have not pinpointed the smallest concentration of sulfites needed to trigger a reaction in a sulfite-sensitive person. Difficulty in breathing is the most common symptom reported by sulfite-sensitive people. Sulfites give off the gas sulfur dioxide, which can cause irritation in the lungs, and cause a severe asthma attack for those who suffer from asthma. Responses in the sulfite-sensitive person can vary. Sulfites can cause chest tightness, nausea, hives and in rare cases more severe allergic reactions. Mutations in SUOX may be a risk factor for certain types of cancer, including leukemia.

WEEK 9

DAYS 57-62: Assessing Detox and Current Needs Based on Follow up Testing

As you continue to add in Step 1 supports, including minerals, you may start to see changes. If so, it is recommended to do a UTM, HE/HMT, or FM. This will give you an idea if you are detoxing. Along the way, keep checking the Cobalt levels on UEEs. In addition, watch for the rise and fall of creatinine as well. For some it may take a year just to get the basic supports on board and tolerated, and for others it may be a quick process. Remember that there is no right or wrong way just what works for you, your family and your physician. It is not a quick process but, chances are you will enjoy every positive step forward--both large and small!

Many need to keep an extra Toxic Metals kit on hand in the likelihood of detox, but even if you do not have a kit on hand, you can still collect and store some samples. Please see the “Tips on Testing” post in the Basics Forum of the Discussion Group for more information on storage options.

Recognizing Detox

Detox has many faces. It may be an increase in hyperactivity, increased stimming, recurrence of old obsessions, increases in OCD behaviors, less language or effective use of language, rashes, fever, cold like symptoms, increased difficulty with going to sleep etc. Some may even become lethargic, or they just do not feel well. Any behavior or feeling that is considered "out of the ordinary" for you or your child or even an increase in certain behaviors/symptoms may be considered as possible detox. One way to confirm your suspicions is to send a toxic metals test (UTM, HE/HMT, or FMT).

“When in doubt, run a UTM, HE/HMT or FM.”

Controlling Detox

To help with the symptoms of detox, you can either increase the calming supplements and RNA’s or pull out/reduce the detoxing supplement(s) until symptoms subside to a tolerable level or until you are back to a calm place.

The calming supplements include Chamomile, Relaxation, General Inflammatory Pathways support RNA, Stress RNA, Nerve Calm RNA, Cytokine Support RNA, etc. You may also need to increase your glutamate and GABA supports to help offset the changes in behavior/symptoms. Increases in supports that help to reduce inflammation can also be helpful.

There is no right or wrong way, do what is best for you, your child and your family!

“This is a marathon, not a sprint.”

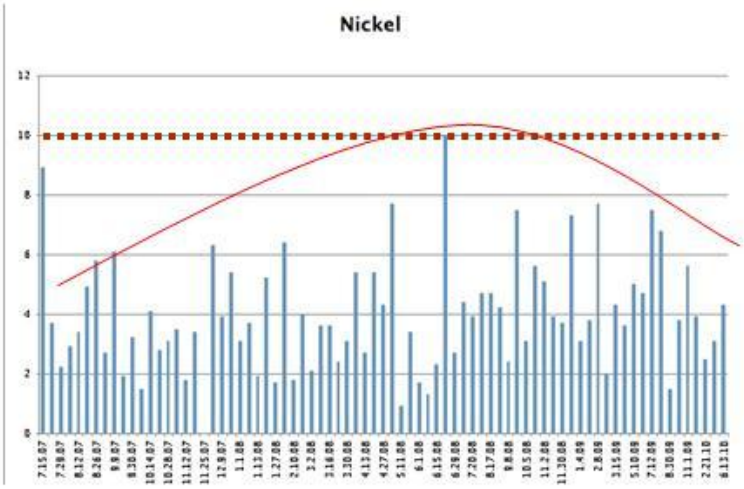
Urine Color

During this time, it can be very helpful to monitor creatinine on a daily basis and note the color, smell and appearance. In this way, you can "see" what has been changing inside you or your child's body and that these changes are producing the less than desirable behaviors or performance. There are creatinine test strips you can buy and use at home. One less expensive way is to collect urine in Dixie cups or small vials. Note the date and time on each strip and use them as you would picking out paint colors. Some have even referred to the changes to the color of beer (Stout vs Pale Ale). Also, if you have some urine left over from your UTM samples, freeze it and write the actual creatinine on them when it comes back from the lab.

Graphing

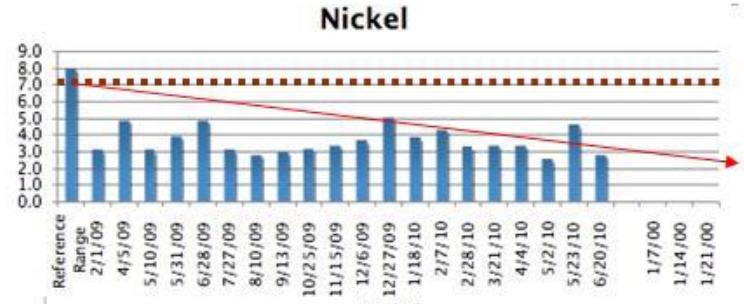
Graphing the hair, urine and fecal toxic tests is an additional way to monitor your progress. Templates for these can be found in the Basics Forum on the Discussion Group.

The following are graphing examples where one can see the rise and fall of a particular metal and ultimately see the bell shaped curve.

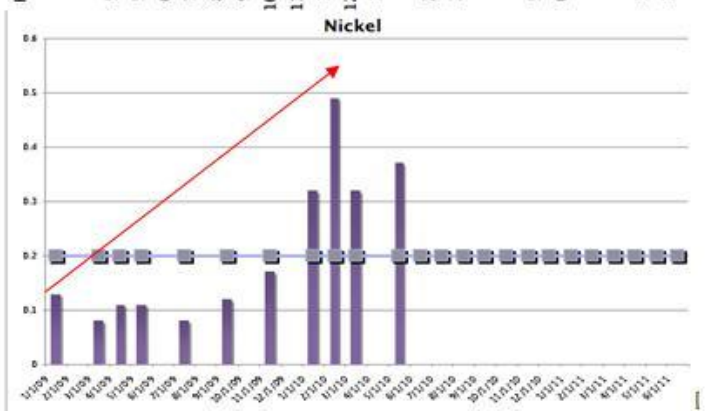


Nickel

Urine: Bell shaped curve



Fecal: Decrease



Hair: Increase

At this point in the protocol there may be some big changes. Maybe you are seeing improvements, or even experiencing symptoms of detox. Take some time to reflect on where you are right now.

Use the chart below to document changes and behaviors you think might be attributable to detox.

Detox Diary

Date	Detox Symptoms	Toxic Metals Test Sent	**Suspected Trigger** (Dietary Infraction, Supplement Addition, etc.)	Adjustments Made

Resources

Take some time today to view more of Dr. Amy's resources and Webisode Series at www.dramyyasko.com. The following is a suggested order:

- An individualized Approach: Introduction to The Yasko Protocol
- Stress and Aggression
- Membrane Fluidity
- Methylation: Why you should be concerned, Part 1
- More Pieces to the Puzzle
- Methylations & Mutations
- Continue Reading *Autism: Pathways to Recovery*

Spend some time on the Discussion Group reading new posts, also the "Positive Feedback" Forum.

WEEK 10

DAYS 63–70: Prioritizing and Supporting Mutations

The following is a suggested order to support Nutrigenomic mutations in conjunction with your physician.

First Priority Mutations

In general, we can think about addressing the SHMT and ACAT first, then the CBS, and then the rest of methylation cycle support.

SHMT/ACAT

The reason you want to look at SHMT and ACAT support as starting points, if they are issues, is that we tend to see more dysbiotic and imbalanced flora associated with these mutations. Until we get the flora in better balance, we risk the problem of retention of toxic metals by the microbes. If we have an MTHFR A1298C mutation, BH4 and aluminum issue, we may have trouble moving ahead with this mutation and gaining on the aluminum excretion and mitochondrial issues, if we have not addressed the general gut environment by looking at SHMT and ACAT support. It is fine to layer in some B12 support early on and then later look at really supporting B12 in a big way after you have addressed some of these other mutations. You can look at B12 Mega Drops, B12 gum, B12 patch or the Get B12 spray at any point, and then layer in the much larger amounts of B12 (multiple routes/multiple sources) once you have dealt with some of the other mutations such as the SHMT, ACAT and CBS. Remember that the level of B12 in the system can also affect the gut environment. So if there are a number of MTR/MTRR mutations, higher doses of B12 are needed. B12 gradually layered in over time is important for the gut environment as well as support for the methylation cycle.

Consider addressing these first if you/your child has these mutations or any of the following test results:

- ☐ Elevated Iron on a UEE
- ☐ SCFA Imbalances on a CSA/GI Profile
- ☐ Suberic, beta hydroxyl methylglutaric acid, or other ketone and fatty acid metabolites
- ☐ Imbalances on a MAP
- ☐ Severe gut issues
- ☐ Muscle weakness (which can be related to aluminum retention)

CBS

- ☐ Start the ammonia program for CBS based on UAA results.

The full ammonia protocol is listed in the Basics Forum, post entitled *Ammonia Protocol CBS.*

The Ammonia/CBS Protocol is a set of supplement suggestions designed to address biochemical issues associated with CBS + individuals. The level of support is determined by your individual mutations as detailed in the Methylation Pathway Analysis and Urine Amino Acid biochemical test results.

There is potential for each supplement to add in a layer of detox. It is suggested that you start LOW and SLOW with all recommendations, including the reduction of protein in the diet. If you see regressions in behavior, speech, etc., be sure to take a UTM.

Please note that Ammonia supports may also be needed for NOS and SUOX mutations.

Second Priority Mutations

The following is the list to address the second priority mutations. These mutations are by no means "secondary" in terms of their function, but are supported most effectively once primary mutation support is in place.

- MTHFR
- MTR/MTRR
- AHCY
- COMT
- BHMT
- MAO A
- SUOX
- NOS
- VDR

For More information on each mutation and priority, please read the *Autism: Pathway to Recovery* book Chapter 6, *The Genetic Bypass* book on the CD you received that came in your test kit, and refer to the Genetics Forum on the Discussion Group.

Transitioning from Step 1 to Step 2

Step 1 is often part of the honeymoon period…you are making changes to your supplement program to take into account excitotoxins, GABA and other basic supports. As noted earlier, you may also see some detox in Step 1 as the body becomes more balanced, but know that some can see improvements too.

It is important to continue Step 1 supplements as you move into Step 2. As you begin to address the mutations identified in your Nutrigenomic Test, you are giving the body what it needs to begin the natural detox process. You may find that you need to increase your calming supports and at this time you may begin to experience greater detox and the accompanying behaviors and/or regressions.

The more mutations, the more time, the greater the exposure to toxins, the more there is to excrete. How long this process takes will depend on several factors.

This is also the step where frequent Toxic metal tests make a tremendous difference. As mentioned in Week 9 as detox progresses, graph your results to look for the bell-shaped curve which indicates you have detoxed the majority of that metal.

Part of this transition involves adding in the basic methylation supports which would include:

- MethylMate A Compound Supplement
- MethylMate B Drops
- 2-3 Neurological Health Formula (HHI General Vitamin)
- Hydroxy B12 Mega Drops
- Hydroxy B12 Spray (Get B12)
- Methylation RNA 1X/day
- Kidney RNA at least 1X/week
- Liver RNA at least 1X/week

Closing Remarks

I like the idea of looking for the next mile marker along the way rather than simply concentrating on the finish line. I think that sometimes it is easy to feel discouraged that you have not reached the finish line yet, but if we can all concentrate on how far we have come, rather than how far left to go, I believe that it makes the journey more enjoyable and easier to travel. It is another way of living in the moment, rather than always living for the future and the “what ifs”. When I used to do a lot more counseling in my private practice I would tell people that I wanted them to get rid of the “would haves”, “could haves” and “what ifs”. What is done is done, where we are is where we are. Live in the moment, concentrate on the moment, be the best you can be each and every day and you will not have regrets. We do need to learn from the past and look toward the future, but that is different than living with regrets or living for the future. I like the idea of focusing on the mile markers as we pass them, and trying to appreciate and enjoy the run along the way!

I hope that this workbook will be helpful in getting you started.

With Love, Hope, and a Hug,

Dr.Amy

Glossary

A more comprehensive glossary can be found in *Autism: Pathways to Recovery* and on the Discussion Forum.

Chelation: to remove a heavy metal (i.e. Lead or Mercury) from the body by means of an agent such as EDTA.

Creatinine: Generally, the darker the urine sample, the higher the creatinine. This is when we believe the body is detoxing viruses. When creatinine drops, the urine becomes lighter and that is when the body is eliminating metals. Aluminum excretion can be happening despite the creatinine level. Some also detox heavy metals at high creatinine. The higher the creatinine, the more stress is placed on the kidneys.

Comprehensive Program Review (CPR): An individualized, comprehensive file review based on the results of a collection of biochemical test kits all completed consecutively.

Detox: The process of ridding the body of viruses, bacteria and metals. Detox behaviors range from lethargy to hyperactivity and inability to sleep. Also cold symptoms and fevers are common.

CSA: Comprehensive Stool Analysis. Identifies bacteria and good flora in the gut. Also measures pH levels and sIgA, an inflammatory bowel marker.

Enzyme: Any of numerous proteins or conjugated proteins produced by living organisms and functioning as specialized catalysts for biochemical reactions. Enzymes help reactions happen faster than they would if the enzyme were not present.

Escorts: MetalAway, BactiSolve, Naturomycin, EDTA, Malic Acid, and Horsetail Grass are frequently referred to as “escorts” because they escort the metals out of the body.

Excitotoxin: A toxic molecule that stimulates nerve cells so much that they are damaged or killed.

FM: Fecal Metals Test. Shows what metals are being excreted via stool (processed by liver).

GI Profile (DNA Stool): Identifies bacteria and flora in the gut, and also measures anaerobes.

Hair Metals Test HE/HMT: Determines past/history of toxic metal excretions via hair which you may have missed and Lithium levels.

MAP: Metabolic Analysis Profile- Determines current level of methylation supports and gives a sense of gut microbes and dopamine balance in respect to norepinephrine.

Methyl group: A methyl group is simply a single carbon atom bonded to 3 hydrogen atoms (CH3).

Methylation: Transfer of methyl groups from one chemical to another is called methylation. Essentially any chemical compound that has a methyl group as part of its chemical structure is capable of donating it to another chemical that needs it. The chemical that receives the methyl group is “methylated”. This process of moving methyl groups around is necessary for the functioning of several biochemical reactions such as DNA and RNA synthesis, creatinine generation, immune responses involved in silencing viruses etc. Filling in the methylation cycle is critical for improved health and ability to excrete toxins.

MPA: Methylation Pathway Analysis. Test to determine genetic mutations to be addressed and includes lists of supplementation suggested for each mutation.

Myelination: The wrapping around nerves. The change or maturation of certain nerve cells whereby a layer of myelin forms around the axons which allows the nerve impulses to travel faster.

Neurotransmitter Test: Determines levels of Serotonin and Tryptamine and other important Neurotransmitters. Ordered within the CPR.

OCD: Obsessive Compulsive Disorder

Organ Supports: for liver, kidneys, pancreas and adrenals. Supplement lists found on Discussion Forum, Basics Section and Addendum A.

PM: Private message on the Discussion Group. At the bottom left of each post is a button marked "PM" which allows you to send a private message to the author of that post. To view PMs sent to you, go to the top of the page, look below Dr. Amy's Discussion Group and you'll find "You have X new messages." Click there and your private mailbox will open.

SNP: (Pronounced snip) is a small genetic variation within a person's DNA sequence.

UAA: Urine Amino Acids test. Shows levels of amino acids, especially important for identifying Ammonia, Taurine and GABA/Glutamate.

UTM: Urine Toxic Metals test to see which metals are being detoxed and in what quantity. Also reports Creatinine (processed through the kidneys).

UTM & UEE: Urine Toxic Metals test AND Urine Essential Elements, measuring mineral levels.

Frequently Asked Questions

Q: Do I have to use all the supplements in all the lists?

A: No. Lists are provided to give you options. It is important to cross-reference the lists so you can see which supplements work in multiple areas. If you are uncomfortable with a particular supplement, don't use it, choose another from the list.

Q: Why do all the HHI RNAs list the same ingredients?

A: The specifics of each isolated RNA product are so complex and lengthy that they cannot be listed on the small bottles. Therefore each RNA product is labeled with the proprietary blend statement.

Q: How do I know if it's detox?

A: When in doubt its best to run a UTM, FM, or HE/HMT. Detox has many faces. It may be an increase in hyperactivity, increased stimming, recurrence of old obsessions, increases in OCD behaviors, rashes, fever, cold like symptoms, increased difficulty with going to sleep and many other issues. Some may even become lethargic because they just don't feel well.

Q: What do I do if detox gets to be more than I can handle?

A: Increase the calming supplements and RNAs, pull out or reduce the detoxing supplement(s) until detox subsides to a tolerable level or until you are back to a calm place.

Q: Do I still give supplements when I or my child is sick? Which ones?

A: This is a personal choice. Increasing the calming supplements and RNAs may be helpful. You may choose to continue the detox provokers at the same or lower dose, or stop them completely. There is no magic answer for this one. You are the expert on yourself or your child and are in the best position to determine which approach is most tolerable for your situation.

Q: Will Dr. Amy answer my question on the Discussion Forum?

A: Most questions will be answered by "Veteran" members. A few posts are selected each week, at the discretion of the moderator, and sent to Dr. Amy.

Q: How and when do I contact the office?

A: For office related questions please contact the office. You will find addresses on the contact page at the beginning of this workbook. For questions regarding the protocol itself and all other questions please use the Discussion Group.

Q: What are the sources of excitoxins?

List of Excitotoxins

- monosodium glutamate
- seasoning(s)
- NutraSweet/Aspartame
- caseinate
- malted barley flour
- soy protein
- glutamate
- seasoned salt
- hydrolyzed protein
- disodium guanylate
- malt extract
- soy protein concentrate
- natural flavor(s)
- dough conditioners
- hydrolyzed vegetable protein
- disodium inosinate
- malt flavoring(s)
- soy protein isolate
- natural flavoring(s)
- yeast extract
- hydrolyzed plant protein
- disodium caseinate
- malted barley/barley malt
- soy extract
- maltodextrin
- soy sauce
- hydrolyzed oat flour
- autolyzed yeast
- malted anything
- autolyzed yeast extract
- carrageenan
- autolyzed anything
- hydrolyze anything
- bouillon
- texture protein
- broth
- gelatin
- stock
- sodium caseinate
- soup base
- guar gum
- vegetable gum
- spice(s)
- komb extract
- smoke flavoring(s)
- ajinomoto
- calcium caseinate
- whey protein concentrate
- plant protein extract l-cysteine
- chicken/pork/beef “flavoring”
- whey protein
- chicken/pork/beef “base”
- whey protein isolate

Sources of MSG

- Hydrolyzed Protein or Hydrolyzed Oat Flour
- Sodium Caseinate or Calcium Caseinate
- Autolyzed Yeast or Yeast Extract
- Gelatin
- Glutamic Acid
- Monosodium Glutamate

Possible Sources of MSG

- Textured Protein
- Carrageenan or Vegetable Gum
- Seasonings or Spices
- Flavorings or Natural Flavorings
- Chicken, Beef, Pork, Smoke Flavorings
- Bouillon, Broth, or Stock
- Barley Malt, Malt Extract, Malt Flavoring
- Whey Protein, Whey Protein Isolate or Concentrate
- Soy Protein, Soy Protein Isolate or Concentrate
- Soy Sauce or Extract

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