



## TMG versus DMG

The following information is in part referenced from the book “Autism: Effective Biomedical Treatments” by Drs. Pangborn and Baker. This is not meant to be an in-depth discussion of methylation supplements of DMG, TMG, Methyl-B12, etc. The information listed below can be used as a quick reference guide – particularly if you have done amino acid or blood homocysteine and folate testing - for the decision between the use of TMG and DMG.

### DMG (Dimethylglycine)

#### Laboratory Assessment:

- Low cysteine, cystine – on amino acid analysis
- Homocysteine is not elevated on blood testing
- High histidine (via amino acid analysis) and high folate (serum/blood test)
- Adverse reactions or worsened behavior (irritability, aggression, hyper-stimulation, etc.) with Methyl-B12 or Folic Acid supplementation.

*NOTE: It is important to make sure folic acid levels are adequate. This can be achieved commonly by taking a multi-vitamin which generally has adequate levels of folic acid. With low levels of folic acid both TMG and DMG come apart normally, but cannot transfer its methyl-groups sufficiently. The result can be the production of formaldehyde (particularly with DMG).*

### TMG (Trimethylglycine)

#### Laboratory Assessment:

- High homocysteine or homocystine – via amino acid analysis
- Low methionine and/or s-adenosylcobolamin (SAME) – via amino acid analysis
- High folate (serum/blood testing)
- Adverse reactions or worsened behavior (irritability, aggression, hyper-stimulation, etc.) with Methyl-B12 or Folic Acid supplementation.

*NOTE: It is important to make sure folic acid levels are adequate. This can be achieved commonly by taking a multi-vitamin which generally has adequate levels of folic acid. With low levels of folic acid both TMG and DMG come apart normally, but cannot transfer its methyl-groups sufficiently. The result can be the production of formaldehyde (particularly with DMG).*



### **DMG/Folate and Methyl-B12 – May Be Beneficial**

#### Laboratory Assessment:

- Low cysteine, cystine and/or methionine – via amino acid analysis
- Normal homocysteine – via blood test
- Low Folate (serum/blood testing)
- High FIGlu or MMA – urine organic acid analysis
- Low Cobalt on hair analysis (this is a fairly common problem from hair analysis in my practice).
- Low Glutathione on blood testing

### **TMG/Folate and Methyl-B12 – May Be Beneficial**

- Elevated homocysteine – via blood test
- Low methionine – via amino acid analysis
- Low Folate (serum/blood testing)
- High FIGlu or MMA – urine organic acid analysis
- Low Cobalt on hair analysis (this is a fairly common problem from hair analysis in my practice).
- Low Glutathione on blood testing

Generally, poor speech development, lack of or poor eye contact, hyperactivity or over-stimulated behavior that leads to poor attention and focusing, and decreased awareness of surroundings can all be helped with DMG and TMG supplementation. In some respects, the addition of DMG with Folate and methyl-B12 or TMG with folate and methyl-B12 may be desirable.

If you are going off of lab work from blood folate and homocysteine testing, as well as amino acid analysis and you are also correlating these with development issues such as poor speech, poor eye contact, etc. than the use of DMG versus TMG should be a little more clear.



If you have no lab tests and are looking to implement therapy just based off behavior and development issues alone than I recommend starting with DMG, along with a multi-vitamin that has folic acid (preferably Folinic Acid or L-Methyl-Folate) in it. **New Beginnings Nutritionals – [www.nbnus.com](http://www.nbnus.com) carries a wide variety of supplements that support Methylation.**

DMG generally comes in 125mg doses. Starting low and slow and building up overtime is the best policy – with 2 to 6 doses commonly given during the day.

TMG generally comes in 500mg dosages. Using one to two dosages per day can be helpful. It is always a good idea to have some taurine – approximately 250 to 500mg – in place before starting TMG .Remember, it is always best to start low with TMG dosing and increase overtime (every 2 to 3 days).

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