

## Vitamins in High Dose

*By: Merlin G. Butler, MD, PhD, FFACMG*

*Professor of Psychiatry, Behavioral Sciences and Pediatrics  
ABMG Certified Clinical Geneticist and Clinical Cytogeneticist*

It is not a good idea to have excess quantity of any specific agent particularly a vitamin. Although the B vitamins are not fat soluble (such as A, D, E, K) and should be excreted if in excess if the metabolic and physiology of an individual is not altered, and we cannot say this with certainty in PWS.

Therefore, I would not recommend it particularly in developing infants (PWS or not PWS). B12 treatment can mask specific types of anemias so one would need to follow blood counts as well. As recent data on nutrition (particularly vitamins such as folic acid, another B vitamin) and its effect on gene expression and activity (which we know is already altered in PWS) could further complicate the gene alterations in PWS.

For example, adding folic acid may decrease gene expression in living cells further complicating the altered genetic network and gene-gene interaction in PWS based on the one carbon metabolism pool in living cells.

Therefore, I would not recommend megadoses of B12 in PWS subjects, particularly infants; it is an area of concern for me regarding long term effects for the PWS individual. We should be cautious.