

Disorder of metabolism of vitamin B and microelements

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- **Vitamins** (from lat. *vita* -«life») — low molecular organic compounds of various chemical nature, necessary for normal and life and which have a high biological activity.



- The most vitamins aren't synthesized in human body. That's why they should be regularly consumed in sufficient amount with food or in the form of drugs. Exclusions are vitamin K, sufficient amount of which is synthesized in the large intestine by bacteria, and vitamin B3, which is synthesized by intestinal bacteria from amino acid tryptophan.

B vitamins take part in the processes of methylation, disorder of which more frequently is diagnosed in children with autism and autistic spectrum of behavioral disorder.

Methylation is a simple process in which the methyl group — one atom of carbon and three atoms of hydrogen. Abnormal methylation leads to disorders throughout life, from impregnation to death. This simple biochemical reaction has a great significance for DNA synthesis, «switching on» and «switching off» genes in a cell, detoxification and metabolism.

Methylation helps the body to remove toxins of heavy metals, including mercurous, lead, stibous, arsenic. If methylation in a child is abnormal, these toxic metals accumulate, that negatively influence on many functions of the body. If chemical analysis of hair for mineral content reveals a high level of toxic heavy metals in the body, it shows methylation disorder.

Methylation process

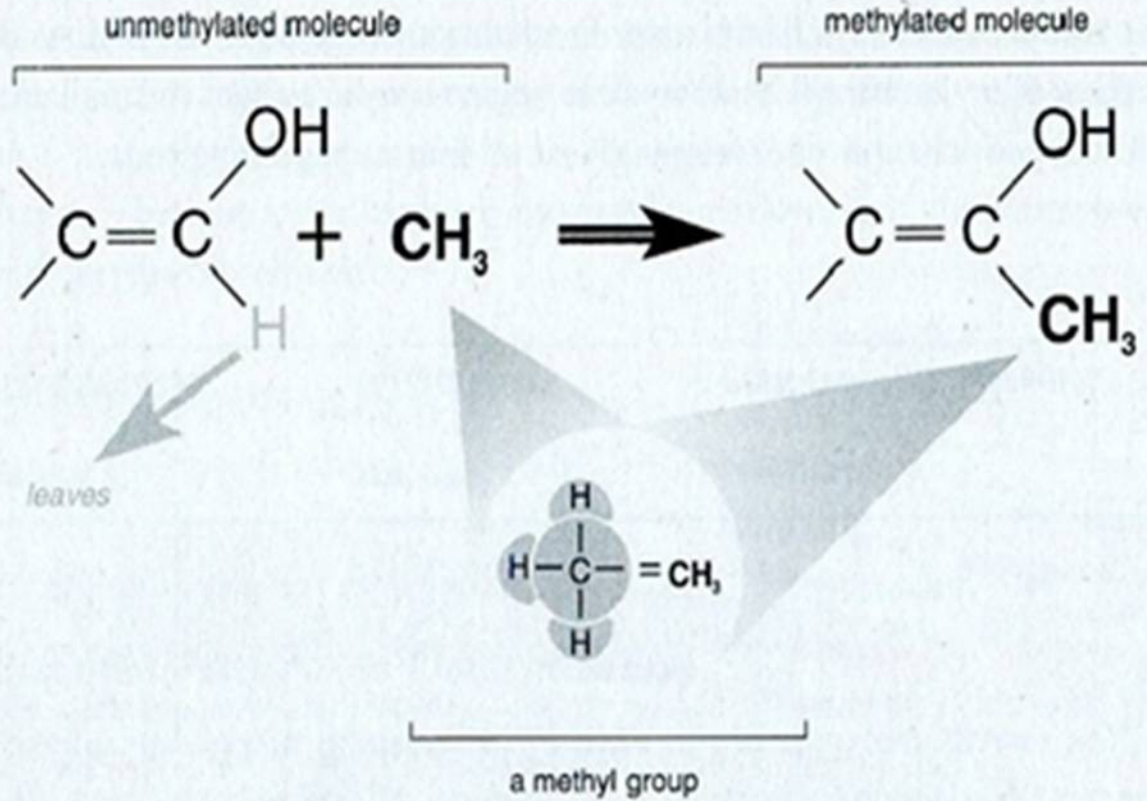
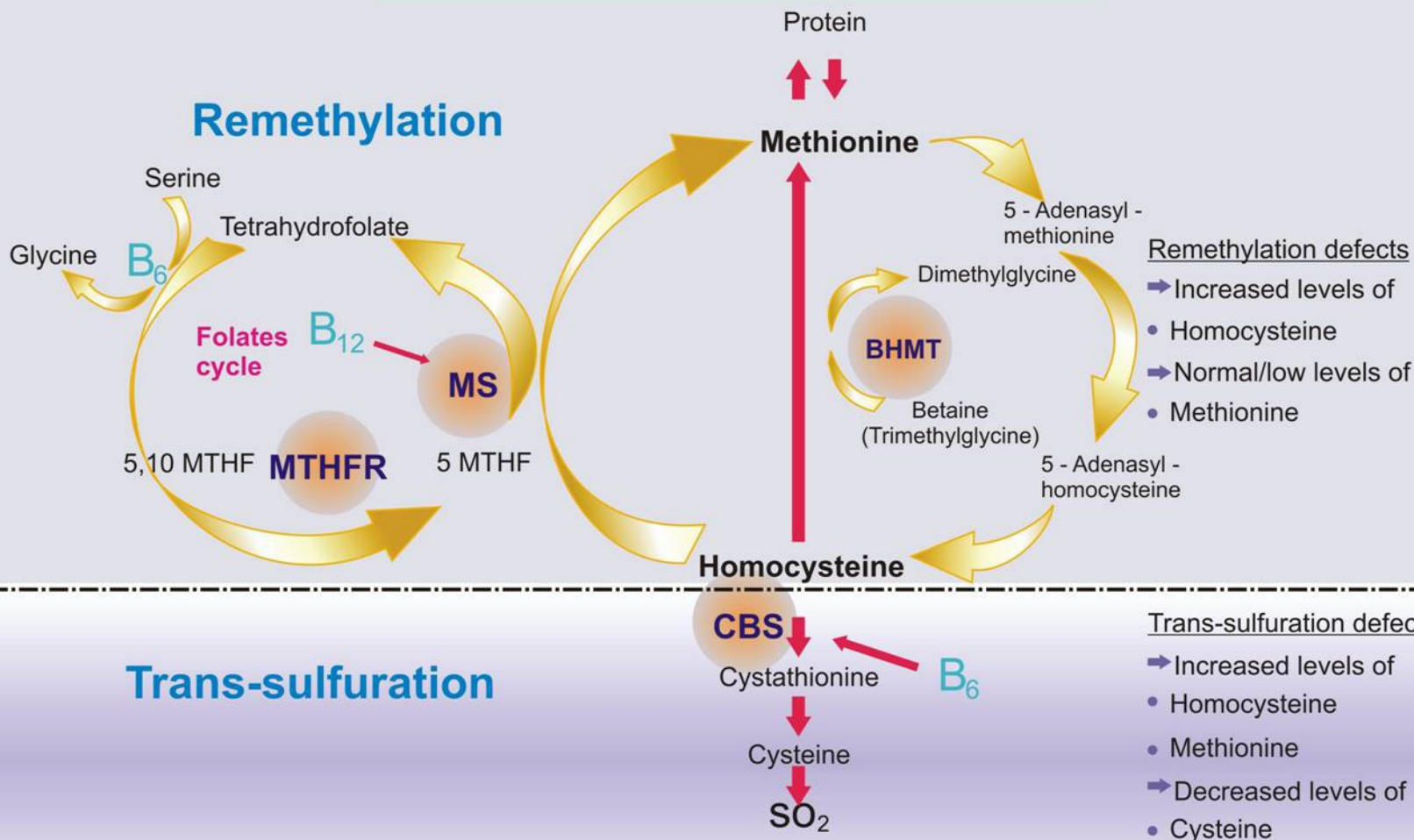


FIGURE 13-1. THE METHYLATION PROCESS

The most simple method to check whether methylation is normal, is to measure the level of homocysteine, folic acid, vitamin B12 in blood. Increase of homocysteine level is a result of decrease of its methylation.



- Decreased level of vitamin B12 – 18%;
- Increased level of vitamin B12 (intake of megadoses or cerebral deficiency) – 21%;
- Revealed in gas chromatography metabolites which point at vitamin B deficiency – 47%.

- Choosing treatment dose of vitamins is based on 3 items:
 1. Patient's age (a dose corresponds to age norms);
 2. Initial levels of vitamins in blood;
 3. Level normalization or its absence in the process of dynamic observation.



■ In DAN! therapy no one from mentioned criteria is considered!

Dangers of overdose of vitamins B (hypervitaminosis):

- Initial metabolism disorder impairs by a new intoxication;
- Parenchymatous organs are affected (first of all the liver);
- Allergic reactions;

Excess of vitamin B12 leads to hyperactivity, in future there is possible hematopoiesis inhibition;

- Hypervitaminosis of vitamin B6 causes polyneuropathy, motility in patients;
- Excess of folic acid is often trigger of oncopathology development.

- Treatment with megadoses (often with positive effect) and ignorance of abrupt increase of vitamin level in blood can be compared with one of type of drug abuse, when energotonics are used — a person receives the positive effect in the form of good mood, clear thinking, long working capacity... The outcome in a year is known for everybody...

Vitamin B6 improves magnesium absorption from the gastrointestinal tract and its cell penetration. If magnesium level (in blood and urine) is within norm, there is no necessity in its additional intake! Exclusions are disorders of dopamine metabolism, when positive effect is observed from treatment with vitamin B6 together with magnesium (under the control of homovanillic acid in urine).

In DAN! therapy it is accepted to prescribe vitamin B6 only with magnesium, not knowing initial values of metabolism...

- Gas chromatography (24% of cases) showed decreased level of vitamin B5 (pantothenic acid). We have seen that in some children with autistic spectrum of behavioral disorder, such deficiency was combined with specific body and mouth odor. Correction of vitamin B5 level led to odor disappearance.

In some cases, the most prominent positive effect was observed in nutrition correction by dietary enrichment with products with a high content of necessary vitamin



Deficiency of macro- and microelements

The following deficiencies are revealed by gas chromatography more frequently in children with autism and autistic spectrum of behavior disorder: magnesium deficiency (23%), zinc deficiency (9%), selenium deficiency (9%) and molybdenum deficiency (7%).



Magnesium deficiency

- Disorders of carbohydrate metabolism;
- Disorders of neurotransmitter metabolism;
- Long deficiency leads to accumulation of Ni, Pb, Cd, Be, Al in the body.

Hypotonia, weakness, sleepiness occur in the case of overdosage of magnesium drugs .

Zinc deficiency

- Disorder of oxidative system function;
- Hormonal imbalance;
- Disorder of genome function (is included in zinc-containing nucleotides);
- Accumulation of heavy metals;
- Immunologic accumulations, including allergy;

Selenium deficiency

- Decrease of thyroid gland function;
- Accumulation of toxins and heavy metals (selenium is antagonist of mercurous and arsenium; defends the body from accumulation of cadmium, lead, thallium);
- Decreased energy metabolism (if selenium participates, 80% of molecules of take part in Q10 coenzyme synthesis);
- Decreased selenium function;

Molybdenum deficiency

- Increased irritability, hyperactivity;
- Methylation disorder (molybdenum is included in sulfite oxidase content);
- Inhibition of methionine catabolism;
- Accumulation of copper in the body.

Thus, deficiency of vitamin B, macro- and microelements is diagnosed in children with autism and autistic spectrum of behavior disorder. Normalization of their level should be individual and then controlled by blood and urine analysis.

Thanks for your attention!

