Can Nutrition Cure Depression?

Mary Ann Block, DO, PA
October, 2012
Mary Ann Block, DO is Medical Director of The Block Center in the Fort Worth/Dallas area. The Block Center is an international clinic for adults and children with chronic health problems. Dr. Block was compelled to go to medical school at the age of 39 to save her daughter after doctors made the child ill with inappropriate use of drugs for bladder infections. Dr. Block was honored by the Ladies` Home Journal and The Lifetime Channel for helping her daughter in such an inspirational way.

She is the author of No More ADHD, No More Ritalin, No More Antibiotics, Raising Great Kids, Just Because You’re Depressed Doesn’t Mean You Have Depression and Today I Will Not Die. Dr. Block was the recipient of the Wayne O. Stockseth Award for Osteopathic Excellence and has served on the Board of Governors of the American Academy of Osteopathy.

She has been featured on the CBS news show, 48 Hours, MSNBC’s Scarborough Country, and The Montel Williams Show, and interviewed on CNN News, NBC`s Home Page, Fox Network News, TBN and The Today Show in New York as well as such magazines as Better Homes and Gardens and radio and newspapers across the country.
What is depression?

It is a psychiatric label!
Depression:

According to American Psychiatric Association:

Have depressed symptoms for at least 2 weeks and symptoms cannot be due to other physical conditions or illness or the unexpected side effects of medication or substance abuse.
This implies that all conditions, illnesses, medications and substance abuse have been ruled out.
Conditions & Illnesses

- Hypothyroidism
- Allergies
- Hormone Imbalances
- Hypoglycemia
- Nutritional Deficiencies
Hypothyroidism

• Depression is symptom of Hypothyroidism

• T3 alone improved depression scores in 25% of those not helped by antidepressants

mayoclinic.com

Am J Psychiatry, 1992
Nutrients Needed for the Thyroid

- L-Tyrosine-converts to T4
- Selenium-helps convert T4 to T3
- Manganese-helps convert L-Tyrosine to T4
- Zinc-helps the liver convert T4 to T3
Effects of L-Carnitine on Thyroid Hormone

L-Carnitine was shown to modulate thyroid hormone action in peripheral tissues.

Horm Metab Res. 2005
Selenium on Thyroid Disorders

• Se levels were significantly decreased in cases of sub-acute and silent thyroiditis as well as in follicular and papillary thyroid carcinoma.

• Patients with benign or malignant thyroid diseases can present low Se levels as compared to controls.

BMC Endocr Disord. 2008
Allergies

- Unless allergies are treated, depression will remain

- Tricyclic antidepressants are potent antihistamines
  Richarelson, 1982

- More than 70% depressed patients had allergy history
  Bell, 1991

- Depressed have higher allergy rates
  J. Watch Psychiatry, 2002
Food Allergies

- Greater cognitive-emotional symptoms with sublingual food antigens than with placebo
  
  Biol Psychiatry, 1981

- Allergic Disorders more common among depressed, 33% in depressed vs 2% in control
  
  J Affective Disord, 1981
COQ-10 and Allergy

Children with recurrent food intolerance and allergies may acquire CoQ10 deficiency with disease progression

Mitochondrion. 2010
Vitamin C and Allergies

Histamine levels were depressed 38% following Vitamin C supplementation

J Am Coll Nutr. 1992
Hormones

The effects of progesterone on the treatment of depression, fatigue, crying, anxiety, helplessness, strange thoughts, poor appetite and night sweats were all statistically highly significant. In fact, the incidence of these symptoms decreased significantly.

Pope Paul VI Institute Research, 2004
Nutrients for Hormones

- Vitamin B12-enhances ability to process estrogen
- Choline-enhances ability to process estrogen
- Zinc-helps progesterone levels (Wilson, 2011)
Nutrients for Hormones

- Vitamin E - May reduce PMS symptoms and inhibits growth of breast cancer cells

- Magnesium - Helps excrete estrogen & promotes estrogen detoxification & deficiency may cause PMS

Hall, 2011
Choline and Estrogen

Because of their lower estrogen concentrations, postmenopausal women have a higher dietary requirement for choline than do premenopausal women.

Am J Clin Nutr. 2010
Nutrients for Hormones

• B Vitamins (B6, B12, Folate)-Important cofactors for enzymes involved in estrogen conjugation and methylation

• B6- Attenuates the biological effects of estrogen

• Vitamin C, E, selenium-Detoxifies estrogen

Hall, 2011
PMS with Depression

• B6, 100mg/d showed significant improvement  
  Practitioner, 1984

• Multiple crossover trial, B6, 50mg, significantly improved symptoms  
  Hum Nutr Appl Nutr, 1982

• B6, 80-100mg followed by improvement in 50%  
  Curr Med Res Opin, 1977
Pyridoxine and Estrogen

• 19/39 depressed women on oral contraceptives had absolute B6 deficiency

• When given B6, 16/19 improved in mood compared to 8/20 controls

Lancet, 1974
Pyridoxine and Estrogen

- Estrogen blocks B6, accelerating metabolism of tryptophan, making it less available for conversion into serotonin and causes depression.

- Impaired B6 found in women on oral contraceptives

- 40mg daily restored normal values & relieved clinical symptoms

Acta Vitaminol Enzymol, 1982
Blood Sugar and Depression

• With insulin resistance blood sugar levels tend to rise, triggering more release of insulin which may cause a sudden descent of blood sugar and expose the brain to excess stress hormones

• Study of 1200 hypoglycemic patients, 80% were depressed

Stephen Gyland, MD
Hypoglycemia Health Assn. of Australia
Nutritional Deficiencies

Nutrients are needed for biochemical processes
Tryptophan-Serotonin Pathway

- Iron
- Folate
- B3

Tryptophan → 5-HTP → Serotonin

- P-5-P
- Zinc
- Magnesium
- Vitamin C

SPECTRACELL LABORATORIES
ADVANCED CLINICAL TESTING
There were significant differences in symptoms of depression scores in the supplement group compared with the placebo group at 6 months. The effect of supplements was seen in all patient groups including those with symptoms of depression, mild depression and those with severe depression.

**CONCLUSION**: Oral nutritional supplementation of hospitalized acutely ill older patients led to a statistically significant benefit on depressive symptoms.

Clin Nutr. 2007
Our results suggest that moderate consumption of riboflavin may be protective against postpartum depression

J Affect Disord. 2006
Vitamin B5

Symptoms of a vitamin B5 deficiency may include fatigue, insomnia, depression, irritability, vomiting, stomach pains, burning feet, and upper respiratory infections.

University of Maryland Medical Center
Pyridoxine (B6)

- Necessary for conversion of tryptophan into serotonin
  48% lower plasma levels in depressed
  

- 75% depressed patients had inadequate B6 intake
  
  Br J Psychiatry, 1979
Thiamine

5/9 normal men developed marked depression and irritability when placed on thiamine deficient diets.

Br J Psychiatry, 1982
Folic Acid Deficiency and Depression

• Folic Acid lowers brain serotonin

• Depression associated with folate deficiency probably related to low brain serotonin levels

Prog Neuropsychopharmacol Biol Psychiatry, 1989
Folic Acid Deficiency and Depression

- Patients with major depressive disorder had significantly lower serum & RBC folate levels

- The lower the folate levels, the greater the severity was the depression

Acta Psychiatr Scand, 1989
Vitamin B12

Percentage of hospital mental patients with low B12 was 30 times higher than general population

Acta Med Scand, 1965
Vitamin B12 and Folate Serum Levels in Newly Admitted Psychiatric Patients

About 30% of patients had low folate values compared to 2.5% in the control group

Clin Nutr. 2006
Folic Acid and Vitamin B12

Both low folate and low vitamin B12 status have been found in studies of depressive patients, and an association between depression and low levels of the two vitamins is found in studies of the general population.

J Psychopharmacol. 2005
Vitamin C

• While Vitamin C deficiency is associated with scurvy, the first sign of scurvy of depression

• 32% of patients in psychiatric hospitals were low in Vitamin C

American J of Clinical Nutrition, 1971
Vitamin C

• Suicidal group had significantly less intake of ascorbic acid from diet than controls
  J Orthomol Med, 1987

• Patients of all ages who were affected by depression responded to IV ascorbic acid 50mg/kg/d
  Orthomol Med, 1989
Effects of Vitamin D Supplementation on Symptoms of Depression

- Subjects with serum vitamin D levels < 40 nmol scored significantly higher (more depressive traits) than those with serum vitamin D levels ≥ 40 nmol.

- In the two groups given vitamin D, but not in the placebo group, there was a significant improvement in Depression scores after 1 year.

J Intern Med. 2008
Vitamin E Levels in Major Depression

• Findings suggest that plasma levels of alpha-tocopherol are lower in depression

Eur J Clin Nutr. 2005
Biotin

• Improvement is depression symptoms with 5 days of biotin, 300mcg

  J Parental Enter Nutr, 1983

• After 10 weeks of biotin deficiency diet, patients were depressed

  JAMA, 1940
L-Tyrosine

Decreased Depression with supplementation for 4 weeks, 100mg/kg/d in 3 divided doses

Med World News, 1984
Lower CoQ10 plays a role in the pathophysiology of depression and in particular chronic fatigue in depression. It is suggested that depressed patients may benefit from CoQ10 supplements. Since statins significantly lower plasma CoQ10, depressed patients and in particular those with chronic fatigue represent populations at risk to statin treatment.

Neuroendocrinol Lett 2009
Effect of Supplementation with Selenium of Postpartum Depression

Findings suggest that supplementation with selenium during pregnancy might be an effective approach for the prevention of postpartum depression

J Matern Fetal Neonatal Med. 2010
Magnesium

• Over 350 metabolic processes
• Natural tranquilizer
• Relaxes nerves, muscles, bronchials & blood vessels
Magnesium

- Low plasma levels in depressed patients

- IV treatment led to faster recovery

- More effective on PMS symptoms than placebo

- Supplement of 200-400mg/day may help depression
Rapid Recovery from Major Depression Using Magnesium Treatment

Case histories showing rapid recovery (less than 7 days) from major depression using 125-300 mg of magnesium (as glycinate and taurinate) with each meal and at bedtime.

Magnesium was found effective for treatment of depression in general use. Related and accompanying mental illnesses in these case histories including:

- traumatic brain injury
- Headache
- suicidal ideation
- Anxiety
- Irritability
- Insomnia
- postpartum depression
- cocaine, alcohol and tobacco abuse
- hypersensitivity to calcium
- short-term memory loss
- IQ loss also benefited.
Rapid Recovery from Major Depression Using Magnesium Treatment

Dietary deficiencies of magnesium, coupled with excess calcium and stress may cause many cases of other related symptoms including:

- Agitation
- Anxiety
- Irritability
- Confusion
- Sleeplessness
- Headache
- Delirium
- hallucinations and hyperexcitability
- with each of these having been previously documented.
Magnesium ions regulate calcium ion flow in neuronal calcium channels, helping to regulate neuronal nitric oxide production. In magnesium deficiency, neuronal requirements for magnesium may not be met, causing neuronal damage which could manifest as depression. Magnesium treatment is hypothesized to be effective in treating major depression resulting from intraneuronal magnesium deficits. These magnesium ion neuronal deficits may be induced by stress hormones, excessive dietary calcium as well as dietary deficiencies of magnesium.

Med Hypotheses. 2006
Postpartum Depressive Symptoms and Serum Zinc Levels

The results demonstrated a relationship between severity of depressive symptoms and decreased serum zinc concentration in postpartum depression.

Pharmacol Rep. 2006
Zinc: The New Antidepressant?

Low serum zinc levels have been linked to major depression

Nutr Rev. 2006
Higher Zinc Intake Buffers the Impact of Stress on Depressive Symptoms in Pregnancy

Evidence showed that zinc intake moderated the association between stress and depressive symptoms; being in the highest zinc quintile appeared to buffer the impact of stress.

Nutr Res. 2010
Zinc and Depression

Increases in serum zinc concentrations were associated with decreases in depression and anxiety in a community-based sample of children at risk of zinc deficiency.

Am J Clin Nutr. 2010
Role of Zinc in the Development and Treatment of Mood Disorders

Not only has zinc deficiency been shown to induce depression-like and anxiety-like behaviors, supplementation has been used as a treatment for major depression. Zinc administration improves the efficacy of antidepressant drugs in depressed patients and may have a particular role to play in treatment-resistant patients. Recent investigations into the molecular mechanisms responsible for these observations suggest a role for zinc in the regulation of neurotransmitter systems, antioxidant mechanisms, neurotrophic factors, and neuronal precursor cells.

Curr Opin Clin Nutr Metab Care. 2010
Calcium

• Depression & anxiety most common symptoms in psychiatric patients with primary hyperparathyroidism

• Affective & organic symptoms are dominant in hypercalcemic patients. Severity of symptoms unrelated to degree of hypercalcemia
  Br. J Psych, 1984

• Significantly higher serum calcium levels seen in long standing depression
  Acta Psychiatr Scand, 1989
Antidepressant & Nutrient Depletion

Antidepressants include tricyclic and SSRI medicines cause the following depletions:

- B-Complex Vitamins
- Selenium
- Zinc
- L-Glutathione
- Calcium
- Magnesium
- Vitamin C

Canadian Journal of Health and Nutrition, June 2000
Antidepressant Side Effects

- Depression
- Suicide
- Hostility
- Hallucinations
- Paranoid Reactions
- Personality Disorder
- Psychosis
- Delusions
- Confusion

- Agitation
- Sleep Disorder
- Ataxia
- Apathy
- Neuralgia
- Abnormal EEG
- Coma
- Dystonia
- Stupor

Physicians Desk Reference
Do Antidepressants Cure Depression?

“NO!”
SpectraCell Micronutrient Testing

33 Different Nutrients
Functional Test
White Blood Cells
Vitamins

✓ Vitamin A
✓ Vitamin B3
✓ Folate
✓ Vitamin D
✓ Vitamin B1
✓ Vitamin B6
✓ Vitamin B12
✓ Pantothenate
✓ Vitamin B2
✓ Biotin
✓ Vitamin C
✓ Vitamin K
Minerals

✓ Calcium
✓ Magnesium
✓ Manganese
✓ Zinc
✓ Copper
Amino Acids

✓ Asparagine
✓ Serine
✓ Glutamine
Antioxidants

✓ Alpha Lipoic Acid ✓ Coenzyme Q10
✓ Cysteine ✓ Glutathione ✓ Selenium
✓ Vitamin E
Carbohydrate Metabolism

✓ Chromium
✓ Fructose Sensitivity
✓ Glucose-Insulin Metabolism
Fatty Acids

✓ Oleic Acid
Metabolites

✓ Choline
✓ Inositol
✓ Carnitine
Easy to Read Reports
Can Nutrients Cure Depression?

“YES!”
Commonly asked questions

1. Will I receive a copy of the presentation slides?
   
   Yes

2. Is the presentation being recorded?
   
   Yes

**You will receive an email linking to both within the next 24 hours. It will also be available on our website at www.spectracell.com in our webinar library.**