

Multiple Sclerosis

A tissue mineral analysis revealed high levels of almost every toxic element we tested for including Mercury!

Initial Symptoms-

- ✓ Multiple Sclerosis
- ✓ Difficulty Walking
- ✓ Unable To Drive
- ✓ Balance Problems
- ✓ Vision Deteriorating
- ✓ Bladder Control Problems
- ✓ Taking Copaxone
- ✓ Muscle Weakness

In just 5 months-

- ✓ Can Walk Up & Down Stairs
- ✓ More Independent
- ✓ Off All Prescriptions
- ✓ Vision Improving
- ✓ Able To Walk On Toes
- ✓ Increased Energy

“The patient is a new lady, walking with confidence on both her toes and heels and able to balance on either leg. She even did a little dance to show how much she improved..”

-Dr. Van D. Merkle

PATIENT UPDATE -

04-30-08 – Forget about walking, this patient improved so much she is dancing “the grapevine” around town- literally. She struggles with keeping a consistent exercise program so her husband adjusted his schedule and they workout together, incorporating dancing into the workouts to make them more enjoyable. This is also great for coordination practice. We did yearly testing for this patient and also decided to retest the hair. Over the course of the past year, her anemia has improved and the ESR (an inflammatory marker important to MS) is better than ever!

Results of Blood Test 04-15-08:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
Alkaline Phosphatase 25-150	04/15/2008	40.00	lo	36.00	😊	65.00 - 108.00	25.00 - 160.00
Creatine Kinase		73.00	Opt	56.00	😊	64.00 - 133.00	24.00 - 173.00
LDH		173.00	hi	142.00	😞	120.00 - 160.00	100.00 - 250.00
Total Cholesterol		168.00	Opt	174.00	😊	140.00 - 170.00	100.00 - 199.00
Triglyceride		49.00	lo	41.00	😊	80.00 - 115.00	10.00 - 149.00
HDL Cholesterol		64.00	HI	72.00	😊	50.00 - 55.00	40.00 - 59.00
VLDL Cholesterol		10.00	Opt	8.00	😊	5.00 - 20.00	4.00 - 40.00
LDL Cholesterol		94.00	hi	94.00	😞	50.00 - 75.00	6.00 - 99.00
Total Cholesterol / HDL Ratio		2.60	Opt	2.40	😊	0.00 - 4.00	0.00 - 5.00

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Results of Blood Test 04-15-08 Continued:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
	04/15/2008			03/31/2007			
T4 Thyroxine		8.70	Opt	8.20		7.10 - 9.00	4.50 - 12.00
T3 Uptake		32.00	Opt	34.00		29.00 - 35.00	24.00 - 39.00
T7 Free Thyroxine Index (FTI)		2.80	Opt	2.80		2.61 - 3.60	1.20 - 4.90
TSH		2.02	Opt			1.00 - 2.50	0.35 - 5.50
White Blood Count		4.30	lo	4.20	☺	5.00 - 8.00	4.00 - 10.50
Red Blood Count		4.06	LO	3.93	☺	4.50 - 5.50	4.10 - 5.60
Hemoglobin		13.10	lo	12.60	☺	13.30 - 15.20	11.50 - 17.00
Hematocrit		37.70	lo	36.10	☺	39.50 - 47.00	34.00 - 50.00
Polys/Neutrophils (SEGS-PMNS)		33.00	LO	34.00	☹	55.00 - 65.00	40.00 - 74.00
Lymphocytes		56.00	HI	56.00	☹	25.00 - 40.00	14.00 - 46.00
Monocytes		8.00	hi	7.00	☹	5.00 - 7.00	4.00 - 13.00
Eosinophils		2.00	Opt	2.00		0.00 - 4.10	0.00 - 7.00
Basophils		1.00	hi	1.00	☹	0.00 - 0.00	0.00 - 3.00
ESR-Erythrocyte Sed Rate, Westerg		2.00	Opt	6.00		0.00 - 6.00	0.00 - 20.00

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The effects of chelation therapy appear in the latest hair test with lower levels of toxic elements and more balanced levels of essential elements, specifically calcium and magnesium. With fewer disruptive toxic elements, the essential elements can be used for other tasks such as healing and repairing the body.

Results of 2nd Tissue Mineral Analysis:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
	04/16/2008			01/05/2006			
Toxic Elements							
Aluminum		3.10	hi	5.20	☺	0- 2.20	2.21- 7.00
Antimony		0.04	Opt	0.03	☹	0- 0.04	0.05- 0.07
Arsenic		0.06	HI	0.02	☹	0- 0.03	0.04- 0.06
Beryllium		0.01	Opt	0.01		0- 0.01	0.02- 0.02
Bismuth		0.61	Opt	0.17		0- 1.00	1.01- 2.00
Cadmium		0.05	Opt	0.21	☺	0- 0.05	0.06- 0.10
Lead		0.06	Opt	0.17		0- 0.20	0.21- 1.00
Mercury		0.34	Opt	0.27		0- 0.50	0.51- 1.10
Nickel		0.17	Opt	0.51	☺	0- 0.20	0.21- 0.40
Silver		0.01	Opt	0.06		0- 0.08	0.09- 0.15
Tin		0.18	hi	0.89	☺	0- 0.15	0.16- 0.30
Titanium		0.54	hi	0.92	☺	0- 0.50	0.51- 1.00
Total Toxic Representation		2.00	Opt	3.00	☺	0- 2.00	2.01- 3.00
Essential Elements							
Calcium		958.00	hi	3,870.00	☺	663.00- 753.00	300.00- 1200.00
Magnesium		180.00	HI	640.00	☺	53.00- 62.00	35.00- 140.00
Sodium		22.00	lo	15.00	☺	37.00- 45.00	12.00- 90.00
Potassium		23.00	hi	5.00	☺	14.00- 18.00	8.00- 38.00
Strontium		6.10	hi	41.00	☺	2.00- 2.90	0.50- 7.60
Sulfur		42100.00	LO	37,100.00	☺	45000.00- 45500.00	43000.00- 50000.00
Barium		1.30	hi	11.00	☺	0.70- 1.20	0.50- 5.00
Cobalt		0.01	LO	0.02	☹	0.02- 0.03	0.01- 0.05
Iron		12.00	hi	17.00	☺	6.80- 8.50	5.40- 14.00

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The levels of toxic elements pulled out during the DMSA challenge are higher than the previous year. These toxins are in our environment so we are constantly exposed to them. The important thing is to get them out of the body so they are not able to cause disruptions and in the patient's case allow her MS to accelerate. We will continue our use of chelators to keep her levels of heavy metals as low as possible.

Results of 4th Chelation Challenge:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
Agent		DMSA		DMSA			
Dose		1500mg		1500 mg			
Interval		6		6			
Toxic Elements							
Aluminum (UA)		0.00	Opt	0.00		0- 13.00	13.01- 35.00
Antimony (UA)		0.00	Opt	0.00		0- 0.50	0.51- 1.00
Arsenic (UA)		11.00	Opt	7.60		0- 70.00	70.01- 130.00
Lead (UA)		5.70	HI	1.90	⊖	0- 4.00	4.01- 5.00
Mercury (UA)		3.80	hi	2.10	⊖	0- 2.00	2.01- 4.00
Nickel (UA)		1.70	Opt	0.00		0- 6.00	6.01- 12.00

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Patient Profile:

11-29-05 - The 44-year old patient was diagnosed with Multiple Sclerosis (MS) 15 years ago and as symptoms progressed began taking Avonex. About 8 months ago her symptoms flared up so she switched to another drug called Copaxone which treats relapsing forms of the disease. At the time of the initial visit, she weighed 132 lbs at 5'6" and her blood pressure was 108/70. Her symptoms had progressed to the point where she was no longer able to drive and suffered muscle weakness on the right side. She also experienced vision problems and loss of bladder control.

Patient's tests results:

01-05-06 – There were no major red flags in the patient's blood work but several tests were not within optimal ranges. The low BUN and high lymphocytes show signs of some G/I dysfunction and poor digestion. High ESR, LDH and Basophils mean possible infection or inflammation and the low T7 shows a poor metabolism which in turn produces a slow rate of healing.

Results of Initial Blood Test:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
BUN (Blood Urea Nitrogen)	12/05/2005	10.00	lo			13.10 - 18.00	5.00 - 26.00
Creatinine		0.80	Opt			0.61 - 0.90	0.50 - 1.50
BUN / Creatinine Ratio		13.00	lo			13.10 - 20.00	8.00 - 27.00
Sodium		139.00	lo			140.10 - 144.00	135.00 - 148.00
Alkaline Phosphatase 25-150		44.00	lo			65.00 - 108.00	25.00 - 160.00
Creatine Kinase		151.00	hi			64.00 - 133.00	24.00 - 173.00
LDH		161.00	hi			120.10 - 160.00	100.00 - 250.00
Total Cholesterol		177.00	hi			140.10 - 170.00	100.00 - 199.00
Triglyceride		59.00	lo			80.10 - 115.00	10.00 - 149.00
HDL Cholesterol		66.00	Opt			50.00 - 55.00	40.00 - 59.00
VLDL Cholesterol		12.00	Opt			5.10 - 20.10	4.10 - 40.10
LDL Cholesterol		99.00	hi			50.10 - 75.10	6.00 - 99.10
Total Cholesterol / HDL Ratio		2.70	Opt			0.00 - 4.00	0.00 - 5.00
Triglyceride/HDL Ratio		0.89	lo			1.00 - 2.20	0.50 - 4.00
T4 Thyroxine		8.00	Opt			7.10 - 9.00	4.50 - 12.00
T3 Uptake		33.00	Opt			29.10 - 35.10	24.00 - 39.00
T7 Free Thyroxine Index (FTI)		2.60	lo			2.61 - 3.60	1.20 - 4.90
White Blood Count		4.40	lo			5.10 - 8.00	4.00 - 10.50
Red Blood Count		4.17	lo			4.51 - 5.50	3.80 - 5.60
Hemoglobin		12.70	lo			13.30 - 15.20	11.50 - 17.00
Hematocrit		38.10	lo			39.51 - 47.00	34.00 - 50.00
Polys/Neutrophils (SEGS-PMNS)		33.00	LO			55.10 - 65.00	40.00 - 74.00
Lymphocytes		58.00	HI			25.10 - 40.00	14.00 - 46.00
Monocytes		6.00	Opt			5.10 - 7.10	4.90 - 13.00
Eosinophils		2.00	Opt			0.00 - 4.10	0.00 - 7.00
Basophils		1.00	hi			0.00 - 0.00	0.00 - 3.00
ESR-Erythrocyte Sed Rate, Westerg		12.00	hi			0.00 - 8.00	0.00 - 30.00

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While the blood results were fairly mild, a tissue mineral analysis gave great insight as to the toxic load on the body - almost every toxic metal tested came back high. These toxins are grabbed by essential elements like Calcium and Magnesium and flushed from the body. Based on the high levels of several essential elements we can see the body is expending its stores of vital nutrients to rid the body of damaging toxins. This means there are less essential elements available to aid with healing and repair.

Results of Initial Tissue Mineral Analysis:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
Toxic Elements							
Aluminum	01/05/2006	5.20	hi			0- 0.50	0.51- 8.00
Antimony		0.03	hi			0- 0.03	0.04- 0.05
Arsenic		0.02	hi			0- 0.00	0.01- 0.06
Beryllium		0.01	hi			0- 0.01	0.02- 0.02

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Results of Tissue Mineral Analysis Cont:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy		Clinical	
Toxic Elements									
Bismuth	01/05/2006	0.17	HI			0-	0.05	0.06-	0.10
Cadmium		0.21	HI			0-	0.00	0.01-	0.10
Lead		0.17	hi			0-	0.01	0.02-	1.00
Mercury		0.27	hi			0-	0.00	0.01-	1.10
Nickel		0.51	HI			0-	0.20	0.21-	0.40
Silver		0.06	Opt			0-	0.07	0.08-	0.15
Tin		0.89	HI			0-	0.15	0.16-	0.30
Titanium		0.92	hi			0-	0.50	0.51-	1.00
Total Toxic Representation		3.00	HI			0-	2.00	2.01-	3.00
Essential Elements									
Calcium		3870.00	HI			663.00-	753.00	300.00-	1200.00
Magnesium		640.00	HI			53.00-	62.00	35.00-	120.00
Sodium		15.00	lo			37.00-	45.00	12.00-	90.00
Potassium		5.00	LO			14.00-	18.00	8.00-	38.00
Strontium		41.00	HI			2.00-	2.90	0.50-	7.60
Sulfur		37100.00	LO			49200.00-	49500.00	44500.00-	52000.00
Barium		11.00	HI			0.70-	1.20	0.26-	3.00
Cobalt		0.02	lo			0.02-	0.03	0.01-	0.05
Iron		17.00	HI			6.80-	8.50	5.40-	14.00

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The extent of toxicity was further revealed in a chelation challenge. The column labeled "Pre Chall" represents the amount of toxic elements eliminated by the body thru the urine. The column labeled "DMSA" is toxic elements eliminated with the help of a chelating agent within a six hour period of time.

Results of Initial Chelation Challenge:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy		Clinical	
Agent	12/10/2005	DMSA		12/09/2005					
Dose		1750 mg		Pre-Chall					
Interval		6		6					
Toxic Elements									
Aluminum (UA)		0.00	Opt	0.00		0-	12.00	12.01-	25.00
Antimony (UA)		0.00	Opt	0.00		0-	0.50	0.51-	1.00
Arsenic (UA)		210.00	HI	50.00	⊗	0-	70.00	70.01-	130.00
Lead (UA)		12.00	HI	2.60	⊗	0-	4.00	4.01-	5.00
Mercury (UA)		18.00	HI	3.00	⊗	0-	3.00	3.01-	4.00
Nickel (UA)		0.00	Opt	1.90		0-	6.00	6.01-	12.00

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Doctor analysis:

01-10-06 – Mercury causes significant damage to the body by debilitating and destroying parts of nerve cells. In this case, Mercury overload was quite possibly the main factor affecting the

patient's MS so we placed her on a 10-week chelation cycle to start eliminating these metals at a more rapid pace. The high level of Mercury and other toxic elements also caused a few vitamin and mineral deficiencies so we recommended a supplement regimen to boost the low levels indicated on the test results.

Patient assessment:

04-01-06 – After completing the 10-week chelation cycle, the patient did another chelation challenge and the results were very encouraging. The Mercury level dropped from 18 to 8.5, the Lead from 12 to 2.4 and the Arsenic from 210 to 84 showing that the stores of toxic elements in the body have been significantly reduced.

Results of 2nd Chelation Challenge:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
Agent		DMSA		DMSA			
Dose		1750 mg		1750 mg			
Interval		6		6			
Toxic Elements							
Aluminum (UA)		0.00	Opt	0.00		0- 12.00	12.01- 25.00
Antimony (UA)		0.80	hi	0.00	☹	0- 0.50	0.51- 1.00
Arsenic (UA)		84.00	hi	210.00	☺	0- 70.00	70.01- 130.00
Lead (UA)		2.40	Opt	12.00	☺	0- 4.00	4.01- 5.00
Mercury (UA)		8.50	HI	18.00	☺	0- 3.00	3.01- 4.00
Nickel (UA)		2.20	Opt	0.00		0- 6.00	6.01- 12.00

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A few key improvements also showed up in the patient's second blood test. The LDH and ESR, which show infection or inflammation, moved into optimal ranges as did the T7 which relates to metabolism. Her triglycerides and LDL cholesterol came down lowering the total cholesterol, and the BUN and lymphocytes each showed small improvements. This means better G/I function and digestion. There were no dramatic results in this test, but overall it was a good start toward turning her health around.

Results of 2nd Blood Test:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
BUN (Blood Urea Nitrogen)		12.00	lo	10.00	☺	13.10 - 18.00	5.00 - 26.00
Creatinine		0.90	hi	0.80	☹	0.61 - 0.90	0.50 - 1.50
BUN / Creatinine Ratio		13.00	lo	13.00	☹	13.10 - 20.00	8.00 - 27.00
Sodium		139.00	lo	139.00	☹	140.10 - 144.00	135.00 - 148.00

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Results of 2nd Blood Test Continued:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
Alkaline Phosphatase 25-150	04/01/2006	40.00	lo	44.00	⊖	65.00 - 108.00	25.00 - 160.00
Creatine Kinase		145.00	hi	151.00	⊕	64.00 - 133.00	24.00 - 173.00
LDH		145.00	Opt	161.00	⊕	120.10 - 160.00	100.00 - 250.00
Total Cholesterol		161.00	Opt	177.00	⊕	140.10 - 170.00	100.00 - 199.00
Triglyceride		30.00	lo	59.00	⊖	80.10 - 115.00	10.00 - 149.00
HDL Cholesterol		70.00	HI	66.00	⊖	50.00 - 55.00	40.00 - 59.00
VLDL Cholesterol		6.00	Opt	12.00		5.10 - 20.10	4.10 - 40.10
LDL Cholesterol		85.00	hi	99.00	⊕	50.10 - 75.10	6.00 - 99.10
Total Cholesterol / HDL Ratio		2.30	Opt	2.70		0.00 - 4.00	0.00 - 5.00
Triglyceride/HDL Ratio		0.42	LO	0.89	⊖	1.00 - 2.20	0.50 - 4.00
T4 Thyroxine		8.10	Opt	8.00		7.10 - 9.00	4.50 - 12.00
T3 Uptake		34.00	Opt	33.00		29.10 - 35.10	24.00 - 39.00
T7 Free Thyroxine Index (FTI)		2.80	Opt	2.60	⊕	2.61 - 3.60	1.20 - 4.90
White Blood Count		3.50	LO	4.40	⊖	5.10 - 8.00	4.00 - 10.50
Red Blood Count		3.99	lo	4.17	⊖	4.51 - 5.50	3.80 - 5.60
Hemoglobin		12.40	lo	12.70	⊖	13.30 - 15.20	11.50 - 17.00
Hematocrit		36.70	lo	38.10	⊖	39.51 - 47.00	34.00 - 50.00
Polys/Neutrophils (SEGS-PMNS)		34.00	LO	33.00	⊕	55.10 - 65.00	40.00 - 74.00
Lymphocytes		55.00	HI	58.00	⊕	25.10 - 40.00	14.00 - 46.00
Monocytes		7.00	Opt	6.00		5.10 - 7.10	4.90 - 13.00
Eosinophils		3.00	Opt	2.00		0.00 - 4.10	0.00 - 7.00
Basophils		1.00	hi	1.00	⊖	0.00 - 0.00	0.00 - 3.00
ESR-Erythrocyte Sed Rate, Westerg		7.00	Opt	12.00	⊕	0.00 - 8.00	0.00 - 30.00

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With the level of toxic elements being flushed from the patient's body, I thought it would take longer for her to physically notice any results but the patient says she can already independently walk up and down stairs. Her vision has also improved along with her energy level. Overall the patient's balance is not very good and she cannot yet walk on her heels, but she does well walking on her toes. Her bladder control problems are better but she still has weak muscles on the right side. The patient has changed her routine and now regularly exercises, follows the recommended diet, and takes all recommended supplements. I believe this compliance is part of the reason she is doing so well.

12-16-06 – Over the past six months, the patient has maintained her healthy lifestyle, continuing with all vitamin recommendations and chelation therapy. In an odd coincidence I ran into the patient at a local health food store and she is a new lady, walking with confidence on both her toes and heels and able to balance on either leg. She was ecstatic about the results and even did a little dance to show how much she improved. With her new coordination and strength also came the ability to drive, something else she had been incapable of doing for months.

03-28-07 – It's now been a year since the patient's last test and she is off all MS medications, so we ran another chelation challenge and blood work to check her overall status. The DMSA dosage was lowered for this test which may account for some of the reduced values however the challenge still showed phenomenal results with Mercury dropping to 2.1! There were no major changes in the blood work except for the Creatine Kinase which dropped from 145 to 56 showing a reduction in muscle breakdown.

Results of 3rd Chelation Challenge:

Test Description	Date:	Current Result	Current Rating	Prior Result	Delta	Healthy	Clinical
Agent		DMSA		DMSA			
Dose		1500 mg		1750 mg			
Interval		6		6			
Toxic Elements							
Aluminum (UA)		0.00	Opt	0.00		0- 12.00	12.01- 25.00
Antimony (UA)		0.00	Opt	0.80	😊	0- 0.50	0.51- 1.00
Arsenic (UA)		7.60	Opt	84.00	😊	0- 70.00	70.01- 130.00
Lead (UA)		1.90	Opt	2.40		0- 4.00	4.01- 5.00
Mercury (UA)		2.10	Opt	8.50	😊	0- 3.00	3.01- 4.00
Nickel (UA)		0.00	Opt	2.20		0- 6.00	6.01- 12.00

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Dr. Merkle's Final Thoughts:

Have you ever heard the expression "mad as a hatter"? The phrase actually derives from an early industrial occupational disease when felt hats became a fashion staple in North America and Europe. Hatters started with a pelt of fur (typically rabbit) then layered on a solution of mercurous nitrate to roughen the hair fibers and make them mat. The fibers were shaved off and turned into felt, which was immersed into a boiling acid solution to make it thick and hard. Finally the workers steamed and ironed the felt to form a hat. In all these steps, hatters worked in poorly ventilated warehouses breathing in Mercury compounds. Due to the accumulation of this heavy metal in their body, hatters often suffered mercury poisoning and developed trembling (known as hatter's shakes), loss of coordination, loosening of teeth, slurred speech, irritability, loss of memory and other personality changes.

Back then, the public was unaware of the damaging effects of mercury and the phrase "mad as a hatter" came to be. Today, Mercury is known for its toxicity and has been linked to debilitating diseases such as Autism and Alzheimer's. A study out of the University of Calgary actually demonstrates how this toxic element affects the body. Dr. Fritz Lorscheider and two associates extracted neurons from the brains of snails and exposed them to the same concentration of mercury that appears in the urine of a person with 7-8 amalgam dental fillings. Within 30 minutes, the mercury ions

caused microtubules (which are like the scaffolding that gives cell walls and membranes their shape) to break down, stripping the neuron of its protective layer. About 15 minutes later, these damaged neurons became tangled together forming aggregates similar to those seen in Alzheimer's patients. The rate of neuron degeneration was filmed and can be viewed at '<http://commons.ucalgary.ca/mercury/>'.

How does Mercury fit in with Multiple Sclerosis? MS is a demyelinating disease that affects the central nervous system. An inflammatory process creates leaks into the nervous system allowing a special set of lymphocytes known as "T-Cells" to sneak in. These T-cells then attack the myelin sheath which acts as a protective layer for neurons. When the myelin sheath is damaged, it disables the conduction of signals to and from the brain causing impairment in sensation, movement, cognition and other functions.

With T-cells cutting into the myelin sheath of neurons and high levels of mercury destroying neuron microtubules, this patient could not heal quickly enough to keep up with the damage; thus her MS symptoms progressed at a more rapid rate. By eliminating one source of these problems and using essential vitamins and nutrients to get her body back to its healthiest state, she stands a greater chance of healing and repairing herself.

-Dr. Van D. Merkle

This case report showcases a real patient's results using the Science Based Nutrition™ system of analysis, which takes into account hundreds of numeric data and their roles, combinations and inter-relationships as related to disease diagnosis. This patient is/was under the care of Dr. Van D. Merkle, creator and founder of Science Based Nutrition™, Inc. and is meant to serve as an example of results achieved using the Science Based Nutrition™ report. Contact your local health professional and ask him/her to provide you with the Science Based Nutrition™ report. Results will vary based on patient ability/willingness to follow the recommended nutritional protocols, among many other factors. Any suggested nutritional advice or dietary advice is not intended as a primary treatment and/or therapy for any disease or particular bodily symptom. Nutritional counseling, vitamin recommendations, nutritional advice, and the adjunctive schedule of nutrition is provided solely to upgrade the quality of foods in the patient's diet in order to supply good nutrition supporting the physiological and biomechanical process of the human body.