Preserving the Sea of Marrow
Understanding & Treatment of Multiple Sclerosis

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**HISTORIC TIMELINE OF MULTIPLE SCLEROSIS (MS) IN THE WESTERN WORLD**

1400 – Purported earliest written record of someone with MS- Lydwina of Schieden, Dutch patron Saint of Ice Skaters.

1838 - Medical drawings show what we today recognize as MS, apparently 19th century doctors did not understand what they were observing, recording.

1868 - Jean-Martin Charcot, professor of neurology at the University of Paris, wrote the first complete description of MS and the changes in the brain which accompany it.

1878 –The myelin sheath of axons was discovered by Dr. Ranvier.

1919 - Abnormalities in the spinal fluid were discovered in MS, but their significance remained puzzling for decades.

1920 - Men were thought to be more susceptible to MS than women. **Why?** Women were often diagnosed with "hysteria".

1925  - Lord Edgar Douglas Adrian recorded the first electrical nerve transmission. This helped illustrate how demyelinated nerve cannot properly sustain electrical impulses.

1928 - The oligodendrocyte cell that makes myelin was discovered.

1935 - Dr. Thomas Rivers demonstrated that nerve tissue, not viruses, produced an MS-like illness. Experimental allergic encephalomyelitis (EAE) an animal model of brain inflammation likened to MS and used in clinical trials for the past 60 years, paved the way to present theories of auto-immunity. The study of EAE demonstrated the body can generate an immunologic attack against itself. Controversy exists within the medical community regarding the appropriateness of using EAE to research etiology, pathogenesis and treatment of MS.

1965 - White blood cells that react against a protein in nerve insulating myelin were discovered in MS.

1970 - Discovery of different classes of T-lymphocytes: T-helper cells, T-suppressor cells, etc.

1972 - Negative results from attempts to find specific viruses in MS brain, cerebrospinal fluid and blood.

1981 - Identification of oligodendrocytes in MS brain with capability for regeneration of myelin (previously believed that regeneration did not occur in nervous tissue).

1982 - First use of MRI to image lesions in living patients

1983 - First report of temporary control of chronic-progressive MS with the immunosuppressive drug, Cytoxan (widely disputed throughout decade)

1989 - Initiation of clinical studies of specific monoclonal antibodies against T-cell sub-types in chronic progressive MS

1980’s-1990's  Proliferation of clinical trials, in 1980-1990’s pilot or definitive studies: copolymer I pilot study for relapsing/remitting disease (possible efficacy seen); copolymer I studies for chronic progressive disease (no efficacy); cyclosporine A (slight efficacy with significant toxicity); alpha and beta interferons (possible efficacy; continuing studies underway); 4 Aminopyridine and 3,4 Diaminopyridine (possible efficacy for symptomatic improvement); use of oral myelin to initiate tolerance (possible efficacy); and others

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**MS ETIOLOGY ~ HISTORY OF PREDOMINANT WESTERN MEDICAL VIEW**

Etiology Caused by

1890’s - supression of sweat; treated with herbs & bedrest; life expectancy after diagnosis ~ 5 years.

1910’s - unknown blood toxin; treated with purgatives & stimulants; life expectancy after diagnosis ~ 10 years.

1940’s - blood clots & poor circulation; treated with drugs to improve circulation; life expectancy after diagnosis ~ 18 years.

1960’s - allergic reaction; treated with vitamins & antihistimines; life expectancy after diagnosis ~ 25 years.

1996 - autoimmune reaction possibly linked to virus; treated with steroids & immune system regulating drugs; life expectancy after diagnosis is essentially normal for most.

Divergent opinions remain within the western medical community as to the etiology of the disease. ◆!
The discussion of any modern western medical diagnosis in terms of Chinese medicine is innately problematic. This is particularly the case when examining a disease which manifests with the type of heterogeneity of MS. There is a specific modern phrase in Chinese for MS [多发性硬化 duō fā xìng yìng huà]. However, outside of modern TCM texts there is no specific record of this diagnosis throughout the extensive annals of the medicine’s history. In name, this is a modern disease. Additionally, MS does not equate with any one diagnosis in Chinese medicine. This is not to indicate that the analysis of such conditions cannot be fruitful for the student or practitioner. In approaching such research, however one must consider a number of options:

- Comb classical literature for conditions which approximate the symptom presentation
- Delve into modern TCM literature to examine analysis, treatment, research
- Examine research conducted outside of Asia by those practicing Oriental medicine
- Consult with practitioners of this medicine for their empirical experience

Optimally, one would engage with all of these facets to gain as thorough an understanding as possible of the condition, even if only to learn that one particular facet is akin to barking up the wrong tree. Over time my research has drawn primarily from the following: 1) Western medical literature, 2) Modern research in both Chinese and English about MS treatment with Chinese medicine, 3) Empirical experience from practitioners locally and elsewhere in the US who have significant experience in treating MS, 4) My own assessment and synthesis of the above.

My primary goal in writing this paper is not to delve into the minutia of the neuroanatomy and physiologic processes of this disease. I would direct the reader to the Additional Resources section at the end of this paper to supplement their understanding as needed. I believe I can make the greatest contribution by 1) elucidating the wide scope of individual presentation and prognosis for patients with MS; 2) revealing that within the western medical community there are divergent opinions about the etiology and appropriate treatment of MS; 3) provide AOM practitioners with confidence that, in conjunction with lifestyle and dietary changes on the part of the patient, they can influence this condition.
WHAT IS MS?

MS is a disease that affects the central nervous system (CNS ~ brain, spinal cord, and optic nerve). MS is characterized by episodes of demyelination, meaning damage or deterioration of the myelin sheath of axons. This damage of the myelin leaves scar tissue called sclerosis, plaques or lesions. Microscopically these plaques consist of inflammatory cells, astroglial cells, increased water, and destroyed myelin fragments. *(For detailed outline of the neuroanatomy of MS see Additional Resources).*

When myelin or the nerve fiber is destroyed or damaged, the ability of the nerves to conduct electrical impulses to and from the brain is disrupted. It is both the acute inflammatory process and this residual scarring which produce the varied symptoms associated with MS. Symptoms range from mild numbness and tingling to blindness and broader disability. More recent research indicates that as the disease progresses neurodegeneration may occur independent of new episodes of ‘demyelination’.

There is disagreement as to whether MS is in fact one disease or possibly a syndrome with the biomedical pathogenesis being quite different for different people. 2 It is estimated that 400,000 people in the US, and between 2 and 3 million people globally have MS. It is estimated that 2/3rd to 4/5th of those are women. Presentation and diagnosis of the disease occurs most commonly between the ages of 20 and 40.3

Although MS occurs in all major ethnic groups, it is more common in Caucasians than those of African or Asian ancestry. Additionally, the presentation is quite different between ethnic
groups. In those of North African ancestry there is routinely poor recovery between relapses, more severe disease progression and poorer prognosis. Cases of ‘Asian’ MS have a higher percentage of demyelinating lesions on the optic nerve and spinal cord, and consequently a higher frequency of severe disability secondary to spinal involvement.

Neither a clear mode of genetic inheritance nor specific genetic factors which influence susceptibility to MS have been discovered. However, studies have shown a 31% increased risk for monozygotic twins of patients with MS contrasted with a 5% risk for dizygotic twins. Parents or siblings of someone with MS appear to have a 3-4% increase in risk.
compared to 0.1% in the general population.

Those living in moderate climates farther away from the equator are at highest risk for MS. However, this factor appears to be influenced by where someone was raised prior to adolescence. If one lives close to the equator until their early teens and then moves to a more temperate northern climate they appear to carry with them the lower risk of the environment in which they were raised. The converse is also true. It is believed by some, that this implies a viral factor in the initial pathogenesis of the disease due to early childhood viral exposure and immunologic development. This data in conjunction with global geographic distribution of MS has inspired research into genetic and viral influences, dietary factors, vitamin D deficiency, etc.

There is disagreement within the western medical community as to the different types of MS. Within the United States, many websites do not list ‘Benign MS’ amongst subtypes. Additionally a Progressive Relapsing type is commonly described, however is absent in this diagram. The schematic and criteria below are taken from the Multiple Sclerosis International Federation website. The information in italics regarding Progressive Relapsing MS was taken from the National MS Society site.
Benign MS

After one or two attacks with complete recovery, this form of MS does not worsen with time and there is no permanent disability. Benign MS can only be identified when there is minimal disability 10-15 years after onset and initially would have been categorised as relapsing-remitting MS. Benign MS tends to be associated with less severe symptoms at onset (e.g. sensory).

* Frequency - approx 20%

Relapsing-Remitting MS

Characterised by unpredictable relapses (exacerbations, attacks) during which new symptoms appear or existing symptoms become more severe. Relapses can last for varying periods (days or months) and there is partial or total remission attributed to the decrease in inflammation of the myelin. The disease may be inactive for months or years.

* Frequency - approx 25% (85-90% are diagnosed with RRMS at initial onset)

Secondary Progressive MS

In some individuals who originally have relapsing-remitting MS, there is the development of progressive disability later in the course of the disease often with superimposed relapses.

* Frequency - approx 40%

Primary Progressive MS

This form of MS is characterized by a lack of distinct attacks, but with slow onset and steadily worsening symptoms. There is an accumulation of deficits and disability which may level off at some point or continue over months and years.

* Frequency - approx 15%

Progressive-Relapsing MS

People with this type of MS experience a steadily worsening disease from the onset but also have clear acute relapses, with or without recovery. In contrast to relapsing-remitting MS, the periods between relapses are characterized by continuing disease progression.

Frequency: Relatively rare (10-20%).
What may be most clinically relevant for AOM practitioners in assessing the different types of MS is 1) the heterogeneity of disease progression, 2) envisioning the possibility of ‘Benign MS’ as a goal for practitioners, 3) recent research indicating an individual’s genetic risk for acquiring MS does not correlate with or determine disease severity or progression. Although an individual patient may have an underlying disordering process in the body, through treatment and lifestyle change the progression of the disease can be directly influenced.

In 1993 in the Journal of Chinese Medicine, Richard Blackwell and Hugh MacPherson outlined a model approaching treatment for MS with consideration of stages. Although they categorize each stage by a number, it is evident in their writing that the movement between stages is not necessarily a linear progression. Remission is equivalent to a return to Stage I. The stages are outlined as follows:

**Stage I** - Remission ~ asymptomatic presentation

**Stage II** - External channel problems ~ symptoms associated with disruption of the channels by pathogenic factors (predominant factors being damp-phlegm and damp-heat). They elaborate that the *invasion* may be *external* or the result of internal disharmonies, lifestyle factors etc.

**Stage III** - Persistence of channel problems accumulating and resulting in consequences for the Zang Fu. Locus of the disorder appears in the function of the Middle Jiao, particularly the Spleen and its ability to generate Qi and blood. They note that the possibility of complete remission is diminished at this stage. Prognosis is deemed poorer due to the patient’s condition including elements of both deficiency and excess.

**Stage IV** - Deficiency predominates in this stage. This stage appears to encompass the disharmonies of Stages II & III while the deficiency aspect has penetrated more deeply into the body.

In recent email correspondence with one of the authors, he indicated he has treated many patients with MS over the years and has continued to use the model above in his approach to diagnosis and treatment.
**Etiology**

From a western medical perspective, the etiology of MS remains unknown. Most theories point toward some precipitating factor resulting in a disruption of the blood brain barrier. This disruption results in the presence of immune cells within the CNS. In someone without MS, these cells are normally absent or present in much lower levels in the CNS.

Theories of precipitating factors include:

- **Environmental factors** in genetically susceptible individuals
- **Viral factors** as the initiator of pathogenesis (Measles, Epstein-Barr, Herpes virus 6)
- **Oligodendrocyte apoptosis** (as opposed to auto-immune ‘attack’, the etiology of the cell death remains unclear)
- **Genetic factors**
- **Metabolic changes influencing glial & neuronal function**

Within Chinese medicine, one can draw from multiple sources to elucidate basic ideas of etiology. These include research and articles from those practicing this medicine outside of China, translated works from China, and Chinese texts. Considering the heterogeneity of symptom presentation and the fact that the disease is routinely characterized by relapse and remission, there is no one Chinese medical diagnosis for MS. In elucidating possible etiology or pathogenesis, it may be valuable to consider some of the idiosyncracies of the disease as listed on the following page.
Diagnostically, MS is routinely cast in terms of Zang Fu pathology with focus upon Spleen, Liver & Kidney. In an effort to assess the general parameters of disease etiology I have translated a chapter (Appendix A) from a contemporary TCM text Neurologic Disease Clinical Diagnosis & Treatment. This text puts forward a root etiology of invading pathogenic influence with subsequent internal damage to the Zang Fu manifesting in patterns including

- Damp Heat Permeating
- Qi Deficiency & Blood Stagnation
- Kidney Yang Deficiency
- Liver & Kidney Yin Deficiency
- Spleen & Stomach Deficiency

In interviews with Acupuncture & Oriental Medicine (AOM) practitioners several themes came forward consistently regarding etiology of the disease. 1) Patients with MS tend to be people who push themselves to excel in life, who are involved in many things, and who give a lot of themselves to help and support others. 2) Onset or relapses are often preceded by acute periods of stress (corroborated by western clinical research). 3) A component of dampness and Spleen deficiency appears common whether it be constitutional or lifestyle induced. Based on his experiences over more than a decade, Charles Chace, LAc explained he has commonly seen individual patients with MS ‘toggle’ back and forth between a Spleen deficiency damp-heat presentation and a Liver & Kidney Yin deficiency. This oscillation has been echoed by the majority of practitioners with whom I have spoken.
Dr. Wu BoPing, MD, PhD explained that amongst his colleagues in China there is consensus that MS has a significant component of Kidney deficiency. Some research in the western medical community has examined the impact of childhood trauma on inflammatory processes in the body. The role of the Kidney is critical to consider in any chronic, degenerative condition. Be the origin of Kidney deficiency prenatal, due to childhood trauma, or later events and lifestyle choices, assessment of a patient’s most fundamental reserves is important. Dr Wu additionally commented that, from his view, the relapsing & remitting nature of the disease fundamentally indicates an element of wind.

As articulated before, there is no single etiology or pathogenesis for a western named diagnosis in Chinese medicine. In reviewing literature from China about MS, it is important to understand that there additionally appear to be differences between “Asian MS” and MS in “western” countries. In 2006 the International MS Journal conducted a meta-analysis of all articles published in English about MS over the past 35 years in order to elucidate these differences. The following limitations of this analysis were recognized: 1) many of the articles were hospital based cases studies, 2) assessing only articles in English significantly limits access to the breadth of existing literature, 3) limitation of diagnostic and clinical resources in many Asian countries curtail the ability to gain a clear picture of MS prevalence and progression in Asia. With these limitations taken into consideration, some general characteristics of MS in Asia, as elucidated through this meta-analysis, are noted above.

- higher prevalence of opticospinal involvement (particularly in Eastern Asia)
- cerebellar involvement less common compared to ‘western type’ MS
- higher mortality rates in some countries with the mean duration of disease being between 20 months and 8 years
- higher prevalence in Western Asia and the Middle East in comparison with Eastern or South eastern Asia.
- clinical course tends to be more severe (higher percentage severely disabled or bedridden)
- Lower incidence of MS in Asian countries extends to Asians living outside of Asia

**CHARACTERISTICS OF MS IN ASIA**
In considering the list of symptoms commonly associated with MS (refer back to pg 4), it is clear a patient with urinary frequency and weakness in the lower limbs may have a very different OM diagnosis than a patient with acute onset ocular pain or blindness. Based on my research of the subject, at this point in time it is my impression the etiology of MS includes factors of 1) constitutional weakness/predisposition, 2) a potential lingering pathogen in the form of viral exposure, and 3) an element of dampness caused or exacerbated by environmental (damp & cold), dietary, and lifestyle factors.

TREATMENT

Western Medical Treatment

In terms of conventional biomedical treatments in the US the primary approach is pharmacological. Interventions fall into two broad categories; those focused on short term symptom alleviation and those focused on influencing the innate mechanisms of the immune system. The intent of the latter is to reduce episodes of demyelination and alter the long term progression of the disease. Corticosteroids are commonly used for short term symptom relief related to acute inflammation following a demyelinating occurrence. Additionally, a variety of medications are administered to MS patients for symptoms ranging from depression & fatigue, spasticity, sexual and bladder dysfunction.

Experimental autoimmune encephalomyelitis (EAE) is the animal model of brain inflammation which has been used to study MS etiology, pathogenesis and treatment for the past 60 years. Since the 1990s, large, randomized, controlled trials in MS patients have been performed with a group of injectable drugs referred to as “disease modifying agents” (DMAs). These studies have led to the regulatory approval of a number of DMAs: Avonex®, Betaseron® (Betaferon® in Europe), Copaxone®, and Rebif® worldwide, and mitoxantrone (Novantrone®) and Tysabri® in North America.20 These injectable medications target the broader functioning of the immune system with an emphasis on reducing the frequency of clinical attacks, and reducing development of new MS plaques. They operate via a variety of methods including reducing MHC class II antigen expression, altering the pattern of cytokine
secretion, inhibiting matrix metalloproteinase activity and increasing antigen-nonspecific suppressor mechanism.\textsuperscript{21} Although there is some evidence of a reduction in frequency of relapse and delay of cognitive dysfunction, none of these agents have been shown to achieve sustained remission, completely halt further progression, substantially alleviate long-standing disability, or alter long term development of disability.\textsuperscript{22}

Note that this information comes from the International MS Federation website which presents a somewhat different perspective compared to the National MS society in the US and the pharmaceutical companies manufacturing these medications. Pharmaceutical trials and research are primarily funded by those companies with a vested interest in their efficacy. It has been repeatedly documented that when the sponsoring body has a vested interest in a product such ‘funding bias’ impacts clinical outcomes.\textsuperscript{23, 24, 25, 26}

In late February 2005, the medication Tysabri, which had also been FDA approved, was removed from the market. Three patients who had taken Tysabri in conjunction with one of the interferons developed progressive multifocal leukoencephalopathy (PML) and 2 subsequently died.\textsuperscript{27} In March 2006, on the condition of implementing a risk management plan, the FDA allowed the return of Tysabri to the market.

Although in clinical trials the interferons have reduced frequency of relapse and plaque accumulation, it remains unclear as to their impact on long term progression and concurrent disability. Side effects of the interferons include flu like symptoms, local skin reactions, depression and, in 38\% of patients, development of antibodies which effectively limit the action of the drug. Research continues to examine methods of immune modulation, regeneration of destroyed myelin tissue through stem cell transplants and other therapies.\textsuperscript{28}

Scottish neurologists Abhijit Chaudhuri & Peter Behan have published multiple articles disputing the notion of MS being an autoimmune condition. They outline important differences in the pathogenesis of EAE and MS. They articulate how these differences have serious implications for allopathic treatment. After nearly 60 years of research based in EAE and then extrapolated to apply to MS, none of the medications produced have acted to halt MS. The DMAs are touted for their action in reducing occurrence of new demyelinated
lesions. However, the long term disability associated with MS appears to be, at least in part, due to a process of neurodegeneration that may be independent of demyelinating occurrence. In their assessment the emphasis on auto-immunity has been to the detriment of research into neurodegeneartion and neuroprotection. The treatment approach, adopted by some neurologists, of using large doses of immune suppressive drugs in an effort to prevent postpartum relapse/exacerbation seems to fall in this territory. In the pharmacologic quest for moderation of the immune system, comparatively scant resources have been devoted to neuroprotection and prevention of the disease.

**Integrative ~ Oriental Medical Treatment**

In assessing the effectiveness of clinical treatment, it would seem quite natural to turn to one of the cornerstones of the empirical wisdom of AOM: the case study. However with MS spontaneous remission is normal component of the disease. Long term follow up information is not always available. Consequently, it can be problematic to draw causal links between interventions and therapeutic benefit. I find myself particularly skeptical when reviewing modern TCM research articles which boast some “98% effectiveness” ranging from complete recovery to ‘some effect’ reporting follow up at 6 months with no relapse.

One exception was a study involving 30 patients with MS treated with Chinese herbal medicine over a period between 3 and 13 years. A smaller group of 13 patients in a designated control group did not receive herbs. Although this study would not meet the requirements of the standard Randomized Controlled trial (RCT), clinical outcomes were measured with modern neurologic assessment tools including diagnostic imaging, evoked potential etc.

In the article, MS etiology and diagnosis were discussed strictly in terms of western immunologic vocabulary. Two formulas were employed concurrently in treatment: Ping Fu Tang (a modification of Shi Quan Da Bu Tang) and elements of Xiao Chai Hu Tang. The former was cited for its action in regulating imbalance of the immune system and associated deficiency of the body’s resistance (Zheng). The latter formula was also employed for its actions to support homeostasis, regulate immune function and the neuroendocrine system. It
was reported that of the 30 patients, 2 experienced minor relapses secondary to catching a cold. In the others no relapse occurred. Of those in the control group, over a period ranging from 6 months to 9 years, all patients experienced between 1 and 4 relapses. 3 patients in the control group died secondary to MS.30

Regardless of the stringency of the science involved in this study, the treatment approach and outcome reinforce several previously noted concepts: 1) Elements brought forward in the staging approach of Blackwell & MacPherson. 2) The western conception of a viral factor in pathogenesis {if one likens a lingering pathogen to such etiology as addressed with Xiao Chai Hu Tang}. 3) The element of deficiency (Spleen, Kidney and blood) as manifest by the benefit of the strong tonic formula in markedly reducing relapse.

Another long term case study was provided by Dr. Yun Wang M.D. (China ~ 1978), LAc. Dr. Wang moved to the US and has been practicing in the Seattle area since 1993. He began treating a male patient, Calvin Doe, with MS in 1995. Calvin has continued to receive primarily herbal treatment over the course of 13 years.

In telephone interview, Calvin recounted having lived a pretty hard lifestyle in his 20s (including athletic activity, martial arts, motor-cross competition, alcohol consumption etc.). The gradual onset of symptoms, which he traces back to this period, included heaviness and weakness in his lower limbs, fatigue disproportional to activity level, equilibrium problems, and difficulty writing smoothly. Like many patients with MS, he was seen by a half dozen different western medical doctors over a number of years with myriad inaccurate diagnoses.

The most acute manifestation of his MS arose subsequent to a period of tremendous emotional upheaval and stress. In his mid 30s, one evening as he sat on the couch he was struck by a sense of being split down the middle, a slow wave of numbness ‘poured’ down half his body like syrup. It originated at the vertex of his head and traveled down his face, arm, torso, genitals, leg, and foot. The following day as he went to work he struggled to walk in a straight line across the parking lot, walking instead as if drunk bumping into cars. He assertively sought out medical assessment, was finally referred to a neurologist for the first time, and via MRI was positively diagnosed with ‘advanced’ MS. He was essentially told to
go home and put his affairs in order with the impression his condition would deteriorate quickly. Calvin considered leaving his job and was extremely depressed. At this juncture he initiated AOM treatment with Dr. Wang.31

Throughout the years of treatment Dr Wang’s herbs focused on nourishing the Liver and Kidney, with additions to calm wind, support the Spleen, open the luo絡, and move the blood. Presenting symptomology is absent in Dr. Wang’s chart notes. However, they do document the modification of herbs prescribed over more than a decade and are noted in Appendix B. One can mentally trace symptom changes with modifications of the formula. Mi Meng Hua, Gou Qi Zi and others appear when Calvin was assumedly having more difficulty with his eyes. Shen Jin Cao & Sang Zhi appear indicating his experience of greater pain or heaviness in the body. Calvin reported that after taking herbs for those first three days in 1995 he returned to work and found an effortless flow to his handwriting that he had not experienced in years. Coworkers approached him and asked who had written certain documents, not recognizing his handwriting which had been customarily illegible.

In 1997, Calvin returned for western medical assessment. The neurologist performed a basic neurologic exam and explained that if he hadn’t known Calvin previously he would say he didn’t have MS. For 6-8 years Calvin took herbs consistently. The herbal medicine was titrated over time to increasingly small doses, one could argue borderline homoeopathic in nature. Over the years, Calvin has had episodic presentation of symptoms including difficulties with vision and hearing, parasthesias in his right arm and leg, fatigue, problems with gait and equilibrium. He commented there has not been a single symptom for which he has not felt relief from Dr. Wang’s herbal prescriptions. His condition is largely stable and he considers himself at 90-95% of health and functioning.

In addition to Chinese herbal medicine, Calvin has learned to listen to his body. He explained his fundamental principle is to treat MS like an allergy. “I pay attention to what feels good (in terms of food and activities in work and life). If it doesn’t feel good, guess what? I don’t eat it again. Or if I do I recognize that if I do it too much for too long, cumulatively I won’t feel as good.” He avoids things he believes will act as irritants to his nervous & immune systems. He honors going to sleep at a consistent time and
attempts not to expend more than 80% of his energy. Likening his body to a battery, he spoke of how once completely depleted recharging is difficult. He consumes blueberries daily for their protective affect on the blood brain barrier\textsuperscript{32,33} avoids dairy, and eats primarily pork as it is “the only meat he feels gives him energy.” He supplements, although somewhat inconsistently, with alternating Fish Oil or Cod Liver oil, Vitamin D and B3.

Calvin has additionally developed his own set of exercises to strengthen his eye sight and equilibrium (\textit{for details see below\textsuperscript{1}}). In his experience, these self designed \textit{calisthenics} “help reconnect his feet all the way to his brain when things are out of whack.” His description appears to exemplify recent research indicating that activity level along a neural pathway can augment myelination and consequently boost neural function\textsuperscript{34} This research was incorporated in a New York Times article looking at the optimization of the myelin sheath as a means of enhancing performance in professional athletes.\textsuperscript{35} Calvin is a firm believer in the ability of AOM to influence MS. Additionally, he embodies the type of multifaceted approach which I believe is necessary in approaching treatment. An additional case study with disease stability at 4 years follow up is included within the translated chapter in Appendix A.

\textsuperscript{1}

\begin{itemize}
  \item “[for equilibrium] if it feels a bit out of whack...I do like a golf swing, standing in my living room. I lift my arms all the way up and swing reaching my hands all the way down to the floor. It’s somewhere between a golf swing and a martial arts form. And then I repeat this, not lots, but maybe 5 or 10 times. Somehow it reconnects my feet to my brain. Also, sometimes I just walk the white line on the road or on the curb to test and train my balance.”
  \item “[equilibrium & eye sight] I stand in front of the French doors in my living room. I stare at the bolt, then I twirl around and make myself dizzy, around and around 5 or more times then I stop facing the door. I stare at the bolt until the dizziness goes away and I can focus on the bolt. Then I spin around and do the other way. The improvement in my balance is dramatic. It helps my eyes, and my ears (inner ear, equilibrium), everything.”
\end{itemize}
One of the hallmarks of an education at the Seattle Institute of Oriental Medicine (SIOM) is exposure to the multiplicity of approaches AOM practitioners adopt when assessing and treating a given patient. Even if several practitioners agree upon the fundamental diagnosis, how they treat the condition can vary dramatically. Furthermore, multiple different approaches can result in effective therapeutic outcomes. I find this flexibility to be one of the great strengths of the medicine. Born out of this experience the idea of citing a list of formulas or point prescriptions used to “treat MS” seems utterly futile. The treatment of any individual will be just that, individual, based on the patient and the practitioner. At the conclusion of this section I will outline some overarching principles I would recommend for consideration in treating patients with MS.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Needs Statement</th>
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<th>%</th>
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<tbody>
<tr>
<td>1</td>
<td>To have the support of family &amp; friends</td>
<td>330</td>
<td>93.4</td>
</tr>
<tr>
<td>2</td>
<td>To know that doctors are interested</td>
<td>314</td>
<td>88.9</td>
</tr>
<tr>
<td>3</td>
<td>To have a supportive family doctor</td>
<td>312</td>
<td>88.3</td>
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<tr>
<td>4</td>
<td>To feel productive in my life</td>
<td>308</td>
<td>87.5</td>
</tr>
<tr>
<td>5</td>
<td>To receive regular newsletter from the MS clinic</td>
<td>284</td>
<td>80.4</td>
</tr>
<tr>
<td>6</td>
<td>To be encouraged to maintain control of my life</td>
<td>284</td>
<td>80.7</td>
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<tr>
<td>7</td>
<td>To know that individual MS team members that I see are interested</td>
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<td>80.1</td>
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<tr>
<td>8</td>
<td>To hear information about the future as it relates to how my condition is now</td>
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<td>79.3</td>
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<tr>
<td>9</td>
<td>To know that concerns have been heard by the MS clinic</td>
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<td>77.9</td>
</tr>
<tr>
<td>10</td>
<td>To receive newsletters from the MS society</td>
<td>274</td>
<td>77.6</td>
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In 2006, a study was published looking at the ‘needs’ of patients with MS. A quantitative survey of 75 “needs statements” was administered to 353 patients with MS. In looking at the results, several themes are evident. There is a desire by patients to feel those practitioners providing health care are both supportive of and interested in them. There is a need to be informed (assumedly regarding new research, treatment approaches etc.) and also to be ‘in control’ of one’s life. Considering the nature of AOM and the clinical setting of most practitioners I believe we, as a profession, are well suited to accommodate and be a part of the network that meets these needs.
It is estimated between 50-80% of the MS population employ some form of Complimentary & Alternative Medicine (CAM). It is most likely that a patient with MS who seeks AOM treatment will already have multiple other modalities as a part of their care. This may be western pharmaceuticals, basic dietary and nutritional supplements or one of the other myriad forms of CAM.

An appropriate goal in treating any patient with MS is amelioration of symptoms and optimally a return to a stable asymptomatic Stage I presentation or Benign MS. Familiarity with and understanding of the other modalities a patient has incorporated, as well as communication with other practitioners involved will provide more cohesive, comprehensive and consequently optimal treatment. I believe AOM practitioners have a great deal to offer patients with MS.

### Treatment Considerations for Patients with MS

- **AOM treatment** (particular attention not limited to but including the below)
  - **Support the Spleen & Stomach** ~ Optimize digestive function including counsel regarding dietary regulation. Encourage the patient to explore available literature on the role of dietary factors and MS and ascertain an approach that works for them.
  - **The Kidney** - Signs of Kidney deficiency, even mild in presentation, should be taken into account. There appears to be consensus by many within in the AOM community that this is, at least as the disease progresses, a significant component of the diagnostic picture.
  - **The Luo** 経 – Although not discussed at length in this paper, I believe opening the movement of Qi and blood in the collaterals (the luo) is an optimal way to improve microcirculation to the axons, smooth conduction of neural impulses, and facilitate regeneration of the myelin sheath. This is, perhaps, a subject to explore in future research.

- **See Additional Resources** ~ AOM & MS, Dietary Factors & MS
**Omega 3 supplementation** ~ Cod Liver Oil with accompanying antioxidant to protect against oxidative damage (for lengthy discussion see Appendix C)

**Vitamin D supplementation** ~ Recent studies consider the lower limit of 32.0ng/mL to be a threshold for optimal health and consequently the RDA for Vitamin D (200–600 IU/d) inadequate. Circulating Vitamin D (25 OH) levels should be clinically assessed and appropriately supplemented.³⁷

*For supporting research see Additional Resources* ~ Vitamin D & MS

**Regular physical exercise the patient enjoys** ~ In addition to the myriad health benefits of regular exercise, refer back to research cited within the case study section. ‘Exercising’ the nervous system by engaging in activities which stimulate a given neural pathway augment myelination. Additionally, the benefits in terms of improving balance through practices such as T’ai Ji, and Qi Gong has been widely documented.³⁸,³⁹,⁴⁰

**Exercise the mind** ~ The principle of activity augmenting myelin applies not only to physical movement but mental functioning as well. [http://www.msakc.org/Articles/ExercisingYourBrain.htm](http://www.msakc.org/Articles/ExercisingYourBrain.htm)

**Encourage Personal Inquiry** ~ For an individual patient this may take the form of a meditation or Qi Gong practice, psychotherapy, reflective writing, other creative expression or a combination of all of these. Regardless of what course the disease takes, probing more deeply into one’s internal landscape will elucidate strengths, deficiencies and clarify the ‘tools’ in an individual’s proverbial tool bag, In dialogue with more than one practitioner, in their experience there is not only psychological but physical benefit (i.e. altering/slowing progression of the disease) for those patients who actively engage in inquiry regarding what this disease is for them, their life, choices they have made in the past and how they might choose differently in the future. Note if the nature of this process (or the individual’s character) tends toward obsessive or excessive rumination, this can have its own adverse consequences. I do believe this internal inquiry is a critical element of the equation.

**Support** ~ Ascertain the support system a patient has in place, help them identify additional appropriate resources and refer as necessary.

In personal communication with a dozen different practitioners of AOM over recent months, their clinical experience of efficacy in treating MS has varied widely. One practitioner articulated he has been more successful in alleviating symptoms and allaying progression of MS than any other degenerative diseases he has worked with. Another felt he was able to reduce the frequency of relapse with rates comparable to the western DMAs (reduction of roughly 30%). Multiple practitioners had varying experiences that fall
somewhere between these two. Others did not believe they had been able to provide relief from symptoms, or influence the course of disease.

Several months into my research, I had telephone contact with Dr Amy Chen, a local OMD who has been practicing Chinese medicine for 3½ decades. In response to my inquiry about basic principles of treatment for patients with MS she stated quite plainly, “Well, we pay attention to their symptoms and treat according to the pattern.”

Several weeks later, I interviewed Dr Bruce Milliman, a naturopathic doctor with decades of experience. He has a particular interest in MS dating back to his earliest studies in the fields of microbiology and immunology. As punctuation to a lengthy dialogue regarding the potential role of viral factors, regulation of the immune system and nutritional deficiencies he stated the following,

“You see, I don’t do anything for Multiple Sclerosis…I do things for people who happen to have MS, or diarrhea, or eczema, or RA. That question should come, but it shouldn’t be the first thing. [First I need to know the patient.] She’s the one with the condition. The book doesn’t have it, the lab doesn’t have it. She’s the one who’s got it. And she’s the one who is intimate and important to this whole discussion...

For me, there is no good reason for not really trying to find out [and understand], to the extent that that’s humanly possible, what it is about this individual at this time [that is resulting in this disordering process].”

There is no one panacea for MS, nor could there be. How MS manifests will be as unique as is the constitution, prenatal disposition, lifestyle and character of any given human being. As I have attempted to interweave knowledge from western biomedicine and Oriental medicine in this writing, I believe it is also appropriate to do so in approaching understanding and treatment of MS. Over time, I am hopeful that my understanding will continue to grow and that I will have more to offer both to the community of AOM practitioners on this subject and to those whose lives are impacted by MS.
Epilogue

I began focused research about MS in the autumn of 2006 in preparation for this paper. However, I have been passively observing the nature of this disease since neurologic symptoms presented in my own body in 1994. I have been actively studying it since my own diagnosis in the summer of 2004. This investigation has encompassed regular reviews of the medical literature, the disease biochemistry, pathogenesis, microbiology, pharmaceutical interventions, pattern differentiation and treatment in the context of Oriental and other alternative medicine. Additionally, I inhabit a body in which this disease process or ‘disordered’ process is purportedly present. Conscious or otherwise, everything that comes into my sphere passes through this filter.

On a daily basis I reflect and engage in a certain level of inquiry, “What is this disordered process? What is it for my mind, body, spirit? For others? How can it be influenced by therapeutic intervention from the outside? From the inside?” My intention is that the information drawn together in these pages will have elucidated certain aspects of MS and provoked further critical thought by the reader.

At present, I have precious little clinical experience by which to back up my understanding and perceptions. As a consequence, I have turned to professionals in and outside the Oriental medical community for their expertise. I am grateful to all those who have taken time in person, by email, or phone to communicate with me about their experiences. Their insight has been educational, affirming, and invaluable. In thanks to Dr. Wu Boping, MD, PhD, David Learner, LAc, Charles Chase, LAc, Kitty Bradshaw, LAc, Frank Butler, LAc, Dr. Amy Chen, LAc, O.M.D., Gregg Robinson, MSW, J. Lee Nelson, MD, Bruce Milliman, ND, Subhuti Dharmananda, Ph.D., Christy Fisher M.A., C.M.A., Hugh MacPherson LAc, Dr. Annette Wundes M.D., Bobbie Severson ARNP, Dr James Bowen, M.D. neurologist, and all the staff at the Evergreen MS Center.

Additionally, I appreciate the support of the SIOM faculty for their insight and willingness to engage in countless ‘small’ conversations about the subject over the course of my studies. With gratitude to Daniel Altschuler, L.Ac., PhD, Dan Bensky, D.O., Stephen Brown, L.Ac., Petra Eichelsdorfer ND, MS, Li Jin, B.T.C.M. (China), L.Ac., Paul Karsten, L.Ac., M.Ed., Craig Mitchell, L.Ac., PhD, Yi Wen Su, M.T.C.M. (China), L.Ac., Yun Wang, M.D. (China), L.Ac., Jing Yu, M.T.C.M. (China), L.Ac., Liangxi Zheng, M.T.C.M. (China).
**ADDITIONAL RESOURCES**

**AOM & MS**

- [http://www.itmonline.org/](http://www.itmonline.org/) Institute for Traditional Medicine (Site of Subhuti Dharmananda PhD in Biology (academic, editor, reviewer). Most of the articles below were written during a flurry of research at ITM regarding MS which culminated in 1996.

- Degenerative Diseases: Interpretation and Treatment with Chinese Medicine
- Autoimmune Diseases and the potential role of Chinese Herbal Medicine
- Chinese Herbal Treatment for *Multiple Sclerosis*
- Evaluation of DHEA Levels in *Multiple Sclerosis*
- Traditional Chinese Medicine and *Multiple Sclerosis*
- Modern Chinese Medical Methods for MS: Clinical Settings and Patient Reports
- Maximize Your Results: Suggestions for MS Patients at the ITM Clinics


- [http://www.ms-cam.org/documents/cmsc_poster2002%205-29.pdf](http://www.ms-cam.org/documents/cmsc_poster2002%205-29.pdf) The Rocky Mountain MS Center is one of the leaders in the US examining the role of CAM & MS. This particular document provides survey results from MS patients who have used AOM for symptoms ranging from fatigue to spasticity and pain. Additional resources on CAM & MS are available http://www.mscenter.org/index.php/

**Dietary Factors & MS**

- [http://www.direct-ms.org/](http://www.direct-ms.org/) Site created by Ashton Embry, research scientist in Calgary, Canada, who has researched MS extensively since his son’s diagnosis with MS in 1995. He has placed particular emphasis on cataloging the scientific research available regarding dietary factors. The site has a wealth of information and additional web links.


- [http://www.swankmsdiet.com](http://www.swankmsdiet.com) Site operated by the Swank MS Foundation, devoted to educating about the principles, research and benefits of the Swank Low Fat MS Diet (*See Appendix C*). Swank’s approach focuses on decreasing saturated fat and increasing polyunsaturated and specifically omega 3 fatty acids.

Vitamin D & MS


Additional Web Resources

- http://www.direct-ms.org/ See description above
- http://www.msrc.co.uk/ The Multiple Sclerosis Resource Centre (in the UK) good site outside of the US which includes information on both conventional and complimentary treatments.
- http://www.mscenter.org/index.php/ (see citation above)
- The Accelerated Cure Project for Multiple Sclerosis is a national non-profit devoted to curing MS. The two addressed below are hosted on the Accelerated Cure Site
  - http://www.acceleratedcure.org:8080/ MS News is an amazing resource. Updated daily, they comb the media for information, present studies/research, products for folks with disabilities, and they poll MS patients on subjects ranging from depression to birth order. There is a lot of emphasis on pharmaceutical trials, however, there are obscure gems that appear with some regularity. Additionally Art, the director of the Cure who does much of the posting has MS and a good sense of humor.
Preserving the Sea of Marrow  
Amy C. Darling  ~  24

1 Abhijit Chaudhuri; Peter O. Behan Multiple Sclerosis Is Not An Autoimmune Arch Neurol. 2004;61:1610-1612.
7 http://www.msif.org/en/
10 Personal communication with author 5/20/2007.
12 Abhijit Chaudhuri; Peter O. Behan Multiple Sclerosis Is Not An Autoimmune Arch Neurol. 2004;61:1610-1612.
16 Personal communication with author~ 1/15/2007
18 Personal communication with author ~ 8/2005
22 http://www.msif.org
28 http://www.myelin.org/
31 Personal communication with author ~ 4/27/07
41 Personal communication with author ~ 1/7/2007
42 Personal communication with author ~ 2/13/2007

Embedded Graphics
1 http://www.msif.org/en/
2 http://www.geocities.com/wanderingalbatross/ms/mri2neck.jpg
3 http://library.med.utah.edu/kw/ms/mml/ms_worldmap.html
4 http://www.uspharmacist.com/ce/105090/image1.JPG