



Volume 1, Edition 5

Mycology News is a newsletter for health care professionals dedicated to the dissemination of information on the clinical use of mushroom nutrition.

In this fifth edition, we outline the importance of mushroom nutrition in reversing a cytokine mediated TH1 - TH2 shift and it's application in the treatment of Myalgic Encephalomyelitis (ME)/Chronic Fatigue Immune Deficiency Syndrome (CFIDS) and HIV+ patients.



Cytokine TH1 Immune Response vs Cytokine TH2 Immune Response



Dr. Jean Monro (right)

The following is based on a presentation by Dr. Jean Monro¹ (Breakspear Hospital) at the 3rd International Symposium on Mushroom Nutrition in Milan, Italy on March 10th, 2001 (complete copies are available on request from Mycology Research Laboratoires Ltd. e-mail: info@aneid.pt).

Maintaining the correct balance between the cellular and humoral immune responses is fundamental to the body's ability to mount an effective immune response to viral and other challenges.

Several distinct sub-populations of T cells have roles as the effectors and regulators of the immune system. Of these the most important are two subsets of CD4+ T cells known as TH1 and TH2 (T-Helper Cell 1 and T-Helper Cell 2), so called because they both exhibit helper functions for B cells and other T cells.

The TH1 and TH2 patterns of cytokine response are mutually inhibitory and between them are responsible for maintaining the balance between the humoral and cell-mediated immune responses.

Peak production of the pro-inflammatory cytokines (TH2) occurs during the night and early morning, at a time when plasma cortisol is lowest (this explains why immuno-inflammatory disorders, such as rheumatoid arthritis and asthma, often exhibit night-time or early morning exacerbation). TH1 immune response peaks from mid-morning to early evening. (fig.1)

TH2 immune response is dominant in chronic viral conditions such as HIV and Hepatitis C and levels of TH1 cytokines and NK cells are decreased in these conditions. TH2 cells secrete Tumour Necrosis Factor as well as pro-inflammatory cytokines, including Interleukin-4, Interleukin-6, Interleukin-10 and Interleukin-11.

TH1 immune response promotes the transformation of CD8 suppressor cells into NK (natural killer) cytotoxic cells which have a vital role in the inactivation of virally infected and mutagenic cells.

TH1 Cytokines include:

IL-2 - The major growth factor for both CD4+ and CD8+ cells, which have anti-tumour, anti-bacterial and anti-viral effects, as well as a role in combating parasitic infections and in auto-immune responses.

Interleukin 12 - Activates NK cells, works synergistically with IL-2 in the induction of NK cells, augments the allogenic CTL response and enhances IL-2 induced proliferation of resting peripheral blood cells.

Interferon Gamma (INF)- produced by T-lymphocytes (T-Hi subtype) and (NK) cells.

The body is considered to be in a "balanced" immune state when there is a dynamic equilibrium between TH1 and TH2 immune states over a 24 hour period. However, if the body moves to a TH2 immune state and subsequently fails to return to a TH1 state, then a TH1 to TH2 shift has occurred. With a TH1 to TH2 shift the pattern of cytokines becomes locked in an inflammatory repairing pattern, with a concomitant lowering of NK cell levels and perpetuation of infectious diseases.

In particular, a TH1 to TH2 shift creates favourable conditions for the continued proliferation of TH2 conditions such as asthma and rheumatoid arthritis, as well as for the continuation of chronic viral conditions, including CFIDS (ME), HIV and Hepatitis C.

continues...

¹ Dr. Jean Monro (MB,BS, MRCS, LRCP, FAAEM, DIBEM, MACOEM) is the founder of Breakspear Hospital, a Hemel Hempstead based outpatient clinic devoted to immuno-compromised patients. Tel:44-1442-261-333/ Fax 44-1442-266-388). Dr. Monro is also Consultant Physician to Fachkrankenhaus, Nordfriesland-Bredstedt, Germany.

TH1 vs. TH2 Immune responses		
Cytokine TH1 Immune Response	Type	Cytokine TH2 Immune Response
Cellular Immune response	Humoral Immune response	
10:00 to 20:00	Timing	20:00 to 10:00
Anti-Viral Anti Bacterial Anti-Parasitic	Function	Pro-inflammatory
Interleukine 2 (IL2) Interleukine 12 (IL12) Interferon Gamma (INF)	Cytokines	Interleukine 4 (IL4) Interleukine 6 (IL6) Interleukine 10 (IL10)
Low	Cortisol Levels	High
High	Natural Killer Cell Activity	Low

fig 1.

FACTORS PROMOTING A TH1 – TH2 SHIFT

Multiple vaccinations.

Exposure to carbamate and organophosphate insecticides. These inhibit Interleukin-2 driven events that are essential for TH1 function.

Intake of steroids, such as Cortisol. Cortisol-induced development of a TH2 cytokine profile from naive cells has been demonstrated.

Stress, both psychological and physical. Stress activates the hypothalamopituitary-adrenal axis and leads to increased production of Cortisol. Excessive exercise and deprivation of food or sleep also result in a falling ratio of DHEA to Cortisol and an increase in a TH1 to TH2 shift. It is known that Epstein Barr Virus antibody titres rise amongst students facing examinations. This virus is usually controlled by a TH1 response. Stress causes loss of control resulting in increased viral replication and hence antibody production.

Cancer. Many of the risk factors for cancer, such as carcinogenic chemicals or tobacco smoke also cause long-term inflammation and lower TH1 levels. In particular, patients with colon cancer have been found to have unusually low levels of TH1. The reduction in TH1 levels impairs the body's ability to effectively combat tumour cells and in addition the enhanced TH2 (pro-inflammatory) responses engendered are responsible for creating new blood vessels around damaged tissues, which can allow the tumour to grow and spread.

MUSHROOM NUTRITION AND THE REVERSAL OF A TH1 TO TH2 SHIFT IN CHRONIC FATIGUE SYNDROME PATIENTS

Measurement of NK cell activity provides a valuable indication of the balance between TH1 and TH2 immune states. In a TH1 immune state, NK cell activity is high, while in a TH2 immune state, NK cell activity is low. NK cell activity is thus a key determinant in evaluating potential reversal agents for a TH1 to TH2 shift.

In her preliminary results with 15 Myalgic Encephalomyelitis (ME) /Chronic Fatigue Immune Dysfunction Syndrome (CFIDS) patients (Mycology News issue 4), Dr. Jean Monro of the Breakspear Hospital found an increase in NK cell cytotoxic activity from an average of 13 CMM at the start of the trial to an average of 31 CMM after 60 days with Coriolus-MRL supplementation (fig.2). NK cell cytotoxic activity in healthy individuals averages 41 CMM. (fig.3)

The above findings support the use of Coriolus-MRL as a reversal agent for a TH1 to TH2 shift. This is also suggested by the anecdotal evidence from Dr Monro's patients and from other researchers of CFIDS patients reporting increased energy levels after a supplementation schedule of Coriolus-MRL.

Dr. Monro is currently completing research on the use of Coriolus-MRL (500 mg tablets of non-extracted Coriolus versicolor) as a mediator to reverse TH2 to TH1 cytokine activity in sixty (60) patients.

WEEK	TABLETS/DAY	TOTAL TABLETS PERWEEK	90 TABLET BOTTLES
1	6	42	
2	6	42	
3	3	21	
4	3	21	
5	3	21	
6	3	21	
7	3	21	
8	3	21	3

fig 2. Dr.Monro - Supplementation Protocol - Coriolus-MRL

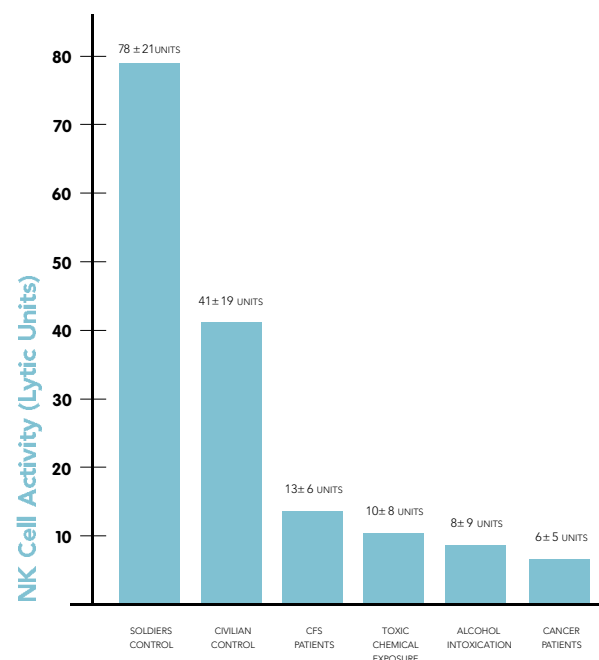


fig 3. CHART SUPPLIED BY IMMUNOSCIENCESLABORATORY INC.

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The Clinical Use of *Coriolus versicolor* Supplementation in HIV+ Patients and its Impact on CD4 Count and Viral Load

By Marjike Pfeiffer – Centrum Voor Integrale Geneeskunde, Amsterdam

The Centrum Voor Geneeskunde was founded in 1988 to provide the highest levels of healthcare through the integration of complementary and allopathic approaches to disease. Over the years it has grown to the point where it now employs fourteen therapists from a wide variety of disciplines.

My own work focusses on the treatment of patients with different immune disorders, including cancer, HIV and AIDS, using Traditional Chinese Medicine (TCM).

Most of the patients I'm working with are infected with HIV or have already developed AIDS. Some are on HAART but the majority do not use any allopathic medication. With the group of patients who choose not to use anti-retroviral therapy, my emphasis is on strengthening their immune system in order to prevent opportunistic infections, increasing their CD-4 count and decreasing their viral load. From a TCM perspective the most important energies involved are those of the Spleen, Liver, Kidney and Lung.

The TCM approach involves supporting the immune system of the patient rather than attacking the cause of the disease and it has at its disposal many strategies to achieve this. In addition the intestinal flora plays an important role in resistance to disease and I often find that it has been damaged by past use of antibiotics. In order to remedy this I frequently recommend supplements which assist the recovery of the intestinal flora, including pro-biotics.

Since the end of December 1999 I have been using *Coriolus*-MRL with a number of my HIV+ patients and the following case studies are from this group. The initial supplementation schedule is 3 tablets twice a day. After two weeks this is reduced to 3 tablets once a day in the morning. Acupuncture treatment is given approximately once a month.



Marjike Pfeiffer (right)

*Ms.Marjike Pfeiffer - Graduated in physiotherapy in Amsterdam (1978) and graduated from the Anglo-Dutch College of Acupuncture (1982). Ms.Pfeiffer gave up physiotherapy and founded the Centrum Voor Integrale Geneeskunde in 1988 with two partners with the aim of bridging the gap between complementary and allopathic medicine. The Centrum has grown to 14 therapists in 2001. Email:cig@xs4all.nl Fax:31-20-624-9710.

Patient A (Male, 41 years old)

HIV infected 3 years ago. Viral load was 152,000 and CD4 300, after half a year of acupuncture and Chinese herbs the viral load is 31,000 and CD4 460, stable for the last 6 months.

His main health problems are Candidiasis and diarrhoea. Both improved with acupuncture and Chinese herbs, but occur sometimes in stressful periods. He has his own business, which he is now in the process of selling and he is therefore going through a particularly stressful period at the moment.

Coriolus supplementation started January 10th, 2000.

February 7th

The patient has well formed stools and already feels stronger.

May 21st

The patient has not suffered from either candidiasis or diarrhoea since starting Coriolus supplementation. However, his stress levels have not improved (due to the fact that he has had to finish his own business and the end of his 15 year old relationship).

August 31st

Still taking 3 Coriolus-MRL tablets per day. Feels very strong, no fatigue, candidiasis or diarrhoea and his stress levels are slowly decreasing.

February 10th, 2001

Patient A is very energetic and continues not to suffer from candidiasis or diarrhoea. The stress connected with finishing his business is gone and he is pretty relaxed. He has started doing some sports again and feels very well. He is still taking 3 tablets of Coriolus-MRL a day.

Patient A

	Jan	May	Aug	Dec
Viral Load	31000	22000	12000	3200
CD-4 Count	460	540	520	630

Patient B (Male, 39 years old)

HIV positive for 5 years (does not know how he was infected). Viral load 1100 and CD4 650; both stable since diagnosis.

Suffers from bronchitis, diarrhoea, nightsweats, Hepatitis B. He does not have a healthy lifestyle, works at night and does not eat well. I have been working with him for a year and over this time his general health has improved. Started Coriolus-MRL supplementation January 15th, 2000

February 17th

Patient has put on weight and his liver is better; CD4 count and viral load are the same as before. He has more energy and did not get the flu (like the rest of Holland) or bronchitis. His stools have not changed yet.

May 21st

Patient B has not suffered from bronchitis or nightsweats since starting the supplementation. His diarrhoea is slowly improving in spite of a continuing unhealthy lifestyle. The liver function tests for his Hepatitis have improved.

August 31st

Patient C contracted gonorrhoea in July and had to be treated with antibiotics, after this his viral load rose to 2400 and his CD-4 count fell to 650. His bronchitis and night sweats have not returned. However, since taking antibiotics in July his diarrhoea has got worse, although it is improving at this moment. His liver enzymes remain the same as in May. I advised him to double the supplementation level to six tablets per day.

February 10th 2001

Patient B is taking 6 tablets per day of Coriolus-MRL. He recovered well from his gonorrhoea and diarrhoea and is trying to live more healthily. He has not suffered from his old problems of bronchitis and night sweats. His liver enzymes have improved further. He is very happy with his undetectable viral load, and this is encouraging him to drink less and eat better.

Patient B

	Jan	May	Aug	Dec
Viral Load	1100	800	2400	0
CD-4 Count	650	700	650	680

Patient C (Male, 51 years old)

HIV positive for 17 years. Viral load is 10,000 and CD4 count is 600, stable since starting acupuncture and Chinese herbs three years ago. Before this his CD4 count was 400 (no data for viral load), he felt very tired and had just had herpes zoster. He was suffering from herpes simplex once a month and his stools were loose.

After three years of acupuncture his energy has increased to 60%, his stools have improved and his herpes simplex only occurs every three months, instead of every month.

Started Coriolus-MRL supplementation Jan 24th 2000.

February 29th

The patient's stools have improved and he reports an increase in energy levels to 70% of normal.

May 21st

Stools normal, energy nearly normal. No herpes attack since January.

August 31st

Patient C feels his vitality is fully back now. He has had no herpes attack.

February 10th 2000

Still taking 3 tablets a day of Coriolus-MRL. Stools remain normal. No herpes attacks. Since October he has started working half days and is very happy with this. He is dealing better with stress related to his work (IT).

Patient C

	Jan	April	Aug	Dec
Viral Load	10000	6500	5000	2400
CD-4 Count	600	680	700	720

Patient D (Female, 32 years old)

11 years HIV+. She was on HAART medication from January 1998 to December 1999 because her CD4 cell count had dropped from 700 to 300 and she had a high viral load. With the HAART medication her viral load fell to 50 and her CD4 count rose to 850. However, she had to stop the medication because she was suffering from increasing side effects, including lipodystrophy and neuropathy. I have been working with her since November 1999.

Started taking Coriolus-MRL six tablets per day (3 grams) from the end of January 2000 and, unlike the patients in the other cases, she continued to take 6 tablets a day, rather than dropping to 3 tablets a day. This was because, when treating a patient who has ceased HAART therapy, my policy is to double the dose of Chinese herbs.

In February she suffered from flu and was very tired.

May 21st

Patient D felt more energetic, her lipodystrophy is slowly improving and the neuropathy is gone. She has started working again four days a week and going to the gym again.

August 31st

The patient is feeling strong, more energetic, her lipodystrophy is still improving (slowly) and the neuropathy remains absent. She has had only one flu attack and is still working four days a week. She continues taking 2 tablets of Coriolus-MRL 3 times a day. Her hospital specialist agrees with us that at this moment she doesn't need to restart the HAART medication, unless her CD-4 count drops and the viral load increases.

February 10th 2001

Patient E's CD-4 count has dropped a little. However, she had the flu just prior to the December tests. Her lipodystrophy is stable. She has crix-belly and in spite of all her gym exercises it seems to be at the final stage. However, she is content with this because she no longer looks as if she is seven months pregnant and people no longer ask her when the baby is due! She has had no further problems with her neuropathy.

She is now working five days a week, visits the gym 3 times a week and does not feel tired. She continues to take 2 tablets of Coriolus-MRL, 3 times a day.

Patient D

	Jan	Feb	March	April	Aug	Dec
Viral Load	10000	300000	200000	150000	90000	42000
CD-4 Count	600	200	280	320	550	480

One month after stopping HAART

One week after quitting HAART

Patient E (Female, 39 years old)

HIV positive for 13 years. I have been working with Patient F for eight years. Her viral load is 12000 and her CD4 count 450. Both have been stable for the last two years. Her main problems were Candidiasis, vaginal discharge and a stage 3-4 PAP smear test. With acupuncture and Chinese herbs her smear test has come down to 3 and the Candidiasis has improved.

She started Coriolus-MRL supplementation at the end of January 2000, six tablets per day for 15 days and then three tablets per day.

February 28th

Patient F was pre-menstrual and normally suffered from discharge, but was clear this time.

May 21st

Patient F has not had any signs of candidiasis. She has also experienced an increase in vitality. Her next smear test will be in June.

August 31st

Patient F's smear test had improved to a 2. Her viral load remains the same and she feels very energetic. She suffered from one week of candidiasis on her vacation, when she could not resist chocolate and cheese, but did not need to take any medication. It was treated successfully with acupuncture and Chinese herbs.

February 10th 2001

Patient F's smear test is back to 1, which has not been the case for six years. She feels very energetic and healthy, apart from a bout of candidiasis in September, which was treated successfully with Chinese herbs. She continues to take 1 tablet of Coriolus-MRL 3 times a day.

Patient E

	January	April	August	Dec
Viral Load	12000	10000	10000	6200
CD-4 Count	450	520	560	630

Patient F (Male, 53 years)

HIV+ for 17 years. Viral load 22,000 and CD-4 cell count 450. Both counts stable for the last three years. His main health problems are Hepatitis C, diarrhoea and chronic fatigue, which has forced him to stop his work as an art-director.

I have been working with him for five years and Acupuncture and Chinese herbs have helped stabilise his health. The Hepatitis C does not bother him, his liver enzymes are nearly normal and the diarrhoea has improved, although he still suffers from loose stools. His vitality is back to 60% of his "old" vitality.

Started standard Coriolus-MRL supplementation in April 2000.

August 31st

Feels stonger, more energetic and has not had loose stools for four weeks. At the end of this period he caught Chlamydia and had to take drugs. After that his loose stools started again, but this too has now improved.

February 10th 2001

At the end of October, Patient G developed prostatitis, which was treated by his medical doctor with antibiotics. After this his loose stools recurred. He also started working again in this period and experienced a lot of frustration. He had a drop in his energy around this time and developed a Herpes Zoster sore around the acupuncture point TH5, but recovered quickly in a week. Now he feels energetic again, and has decided to continue his work part-time. His liver enzymes have improved.

Patient F

	April	Aug	Dec
Viral Load	22000	15000	8300
CD-4 Count	450	540	590

Patient G (Male, 50 years old)

HIV+ for 16 years. He has been on every medication used to treat HIV+ patients over the past 12 years. He had to stop his last combination therapy in February and even with the HAART therapy his viral load was 125,000 and CD4 count 60. In March, one month after stopping HAART therapy, his CD-4 count was 20 and his viral load 300,000. He was suffering from multiple opportunistic infections and virtually every side-effect of the HAART therapy.

I started working with him using acupuncture and Chinese herbs in March 2000 and he started Coriolus-MRL supplementation in April. In view of the seriousness of his condition, the supplementation schedule was maintained at 6 tablets per day after the first 2 weeks.

May 21st

His neuropathy is slowly improving and he is able to walk outside his house with the help of a walking stand for half an hour every day. His diarrhoea (due to a cryptosporidium infection) has improved and he just has loose stools. Also his candidiasis is not bothering him so much. He sleeps better and his mental depression has reduced. His weight has increased from 40 to 42 kg. and his viral load has dropped from 300,000 to 92,000.

July 15th

Patient H's viral load has decreased to 35,000 and his CD-4 count has increased to 70.

September 30th Patient H's viral load has decreased to 20,000, with his CD-4 count has increased to 100. His weight has increased to 45 kg. Patient H feels stronger, is less tired and no longer suffers from depression. He still suffers from loose stools. He walks every day for 45 minutes but his neuropathy, although slightly better than in the beginning, is still bothering him.

February 10th 2001

Patient H's weight has increased further to 50 kg. He feels stronger every month. He sometimes gets loose stools, but this is only once a week, rather than three times a day. His neuropathy is slowly improving and he has started going to the gym 3 times a week.

Patient G

	Feb	March	May	July	Sept	Dec
Viral Load	125000	300000	92000	35000	20000	12000
CD-4 Count	60	20	20	70	100	80

One month after ceasing HAART

One month after starting Coriolus MRL

Conclusions:

1. For HIV+ patients (non-HAART), together with acupuncture and herbal formulations I would suggest Coriolus-MRL supplementation of 6 tablets per day (3 tablets in the morning and 3 tablets in the evening (30 minutes before meals) for 15 days, followed by 3 tablets in the morning for twelve (12) months.
2. For HIV+ patients (post-HAART), together with acupuncture and herbal formulations I would suggest Coriolus-MRL supplementation of 6 tablets per day (3 tablets in the morning and 3 tablets in the evening (30 minutes before meals) for twelve (12) months.
3. If during Coriolus-MRL supplementation the patient requires antibiotic treatment for acute infections, then Coriolus-MRL supplementation should be suspended and resumed after the completion of the antibiotic treatment.
4. Given Patient E's reversal of PAP smear test results over a twelve month period, further research in the use of Coriolus-MRL supplementation in HPV infection should be considered.

The following are additional references for the use of Coriolus versicolor supplementation in viral conditions:

1) "The Effectiveness of Coriolus versicolor in the treatment of secondary phenomena Associated with HIV" by Dr. Grazia Rotolo, PZZA San Theodoro, 27100, Pavia, Italy (Presented at the 10th International Congress of Mucosal Immunology in Amsterdam, June 28th - July 1st, 1999). (http://www.aneid.pt/mrl_rd_bt.htm)

To contact Dr. Grazia Rotolo, please contact grotolo@venus.it

2) "The Effectiveness of Coriolus versicolor Supplementation in the Treatment of Kaposi sarcoma in HIV+Patients" by John Tindall and Elizabeth Clegg, Gateway Clinic, Community Health, South London, NHS Trust 108, Landor Road, London SW9 9NT England. (Presented at the 10th International Congress of Mucosal Immunology in Amsterdam, June 28th - July 1st, 1999). (http://www.aneid.pt/mrl_rd_bt.htm)

To contact Mr John Tindall please contact Yuan Clinic at:

Yuan Clinic
c/o Green Healer
7 Clapham High Street
London SW4 7TS
United Kingdom
Tel/Fax:+44-207-622-9079.

3) Clinical Cases Using Coriolus versicolor-by Christopher Hobbs (http://www.aneid.pt/mrl_rd_bt.htm)

To contact Mr.Christopher Hobbs please contact: www.christopherhobbs.com

Where Can I Find More Information on Mushroom Nutrition?

1. Medicinal Mushrooms, An Exploration of Tradition, Healing & Culture by Christopher Hobbs, (L.Ac., A.H.G.) - Interweave Press Inc. This book is available from MRL distributors or contact Christopher Hobbs at www.christopherhobbs.com
2. Please review MRL's website. <http://www.mycologyresearch.com> or <http://www.aneid.pt>
3. Participate in John Tindall's* lectures series to be held in the United Kingdom, Norway and the Netherlands (see below).

*In 1989, John Tindall founded the Gateway Clinic which was an outpatient clinic devoted to using acupuncture and complementary practices for patients undergoing alcohol and drug withdrawal.

In 1999, Mr.Tindall left the Gateway to found Yuan College and the Yuan Clinic (Tel/Fax: 0207-622-9079).



Christopher Hobbs

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DEC 1-2 LONDON	DETOXIFICATION PROGRAMME	YUAN COLLEGE LIVER WELLNESS PROGRAMME	ANDREA TEL: 0207-622-9079

CHAD WINS AGAIN!

CHAD WINS KONA HALF-IRONMAN TRIATHLON AGAIN!

On Sunday May 27th, with 850 participants, Chad Hawker, the iron man tri-athlete sponsored by MRL, won the 19th Annual Keauhou Kona Half-Ironman Triathlon. With this win, Chad has won this event three times in the past five years. His supplementation schedule includes the use of Coriolus-MRL to support his immune system during training and prior to competition and Cordyceps-MRL to reduce recovery times after competition. For more information on Chad Hawker and his supplementation schedule please see the following website:

<http://www.mycologyresearch.com> (under R&D section-Section 6)



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For comments or suggestions please contact:

Editors:	William Ahern	info@aneid.pt
	Martin Powell	purehealth@zetnet.co.uk
Graphic Design by:	Allan Parker	pureland@dircon.co.uk