RHEUMATOID ARTHRITIS AND AMOEBA

Rheumatoid Arthritis (RA) is called an auto-immune disease, because it attacks the body tissue in and around certain joints to cause swelling and pain. Doctors know that the weak link or the overused joint is effected, the immune system attacks itself, hence the name auto-immune; it is assumed to be an automatic response, possibly caused by long term daily stress, an allergy or infection. In RA the synovial membrane (or joint capsule) is affected and then there can be general degeneration of the joint and deformity. After some years it will often develop into osteo-arthritis. RA generally just attacks the smaller joints of hands, fingers, etc. It can cause serious deterioration to the cartilage around the joint. There are other theories as to the cause of RA, and one of these was put forward by Prof. Wyburn-Mason who was able to see and identify certain amoebae that parasite the joints (1). Certain common minerals in the blood, such as boron, can control these parasites. Others blame stress or allergies.

Allergies mean that certain things act as a poison to upset or damage some tissue or other. There are a number of blood tests that will confirm a diagnosis of RA. RA is generally associated with other bodily symptoms such as general malaise, fatigue and muscle pains. There are often nerve problems and blood disorders associated with RA. Novak you are pointing to a place that shows Amoebic infection not rotator cuff. The pain in your shoulder is most likely from amoeba since you are from Serbia.
There is an excess of Amoeba in Serbia and all of my Patients who visit there get this exposure. I need to evaluate this and treat you and put this to rest.

**CALIFORNIA STATE JOURNAL OF MEDICINE**

**THE AMOeba AS THE CAUSE OF THE SECOND GREAT TYPE OF CHRONIC ARTHRITIS**

**Preliminary Note**

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By the second great type of arthritis we mean that form of arthritis hitherto described by the Germans as arthrosis deformans, by the English as osteoarthritis, by Goldthwait as hypertrophic arthritis, by Nichols and Richardson as degenerative arthritis, and by other writers under various titles. This is the senile form of arthritis, the chronic rheumatism of the elderly. For want of a better name some writers have called it metabolic arthritis, a singularly unfortunate and quite meaningless term.

Entamoeba coli and Entamoeba hartmanni

Bad Food - Bad Water ingestion when stomach acid is weaken from stress or dilution. Dysentery results, but some Ameoba get into the lymph system thru the intestinal tract and they migrate to areas of synovial fluid to escape the white blood cells.

Once in the Synovial Fluid they can propagate in peace and within as little as five years they can multiply enough to cause joint inflammation and thus the beginning state of Rheumatoid Arthritis.

They are difficult to diagnose and to treat.

Synovial Fluids most chosen are Knee, Shoulder, Low Back, and Elbow. Smaller joint infections can happen later.
Most RA is certainly due to an infection by an amoeba or other parasite. Long term daily low level stress makes this auto-immune inflammation worse, and emotional stress increases can make a flare-up. Some doctors will say there is a virus, but in this case the term virus is just a medical term that means ‘I don’t really know’. Some foods can act as an allergen to cause RA. Some meats contain many parasites, particularly pig meat and some of these parasites can get into the body to cause RA. We all have macrophages circulating in the blood, and their work is to identify any foreign cells in the body. Then killer lymphocytes are called in to attack the foreigner. These can be bacteria or amoebae or still smaller cells such as a true virus. Some of these invading cells seem to take shelter in the synovial membrane around a joint, possibly because there is no direct blood supply to the synovium and then many doctors will say that the body’s own lymphocytes are attacking our own tissues. And they call it auto-immune disease. The Jews in Palestine have less than 1% with arthritis of all sorts, and very little RA. They do not eat pig meat and this is an indication that the parasites in pig are dangerous. Europeans eat more pig meat than any other race and this is probably the reason for so much RA. Some researchers say that meat does aggravate arthritis, but none of them have ever sorted out the different kinds of meat. Other sources of infection can be mosquitos or other insects, especially those found in the tropics. If a person feels they picked up their RA while visiting the tropics then they were probably bitten by something that injected a parasite into them.

Patients with RA also feel tired, exhausted and irritable which indicates that RA is a disease of the whole body and not just a disease of the joints. They often have night sweats and have a slightly higher than normal temperature. Some RA victims also have problems with their eyes, heart, nerves, kidneys and lungs which all seem to be infected by the same whole body disease. RA can start suddenly, just overnight, or it can take weeks to develop, and this all fits the theory that some sort of parasitic infection has caused the problem. These can be introduced a little and often. Or there can be a massive invasion of parasite after, say, a feed of poorly cooked sausage. RA is often worse in the fingers and feet, the joints that are used most of all. If the knees are badly affected do not put a pillow under them at night, as then they may become bent permanently and this is bad.

Over the last 20 years a number of my RA patients have used the mineral boron with a blend of safe Mexican herbs for amoeba. These patients will often experience a Herxheimer reaction which is a worsening of the problem after a day or so, but then when they continue with the therapy they will be relieved of all pain and inflammation. This is because the boron and herbs will kill the amoeba parasites in the body and then when the dead parasites are still floating around the blood we can feel worse for a while. But when the white blood cells can get rid of all the dead parasites, one can end the pain forever.

Boron is needed in trace amounts for healthy bones and for the metabolism of calcium, phosphorus, and magnesium. It’s also one of the trace minerals that enhances brain function and promotes alertness.

Most people are not deficient in this mineral. However, elderly people usually benefit from taking boron supplements of 2 to 3 milligrams daily because they have a greater problem with calcium absorption.

Boron deficiency accentuates Vitamin D deficiency.
This trace mineral helps to prevent postmenopausal osteoporosis and build muscle. A study conducted by the U.S. Department of Agriculture indicated that within eight days of taking boron supplements of 3 milligrams in their daily diets, a test group of postmenopausal women lost 40 percent less calcium, one-third less magnesium, and slightly less phosphorus through their urine than they had before beginning boron supplements.

Natural Food Sources of Boron

**Foods high in Boron:**

- apples
- carrots
- grapes
- green leafy vegetables
- nuts
- pears
- grains not containing gluten

Traditional doctors will say that RA cannot be cured and can only be treated by drugs that relieve pain and reduce fever and inflammation. They will use aspirin or a similar non-steroidal anti-inflammatory drug but these have side effects and can cause stomach ulcers and internal bleeding and death. Others will use corticosteroids which are very powerful anti-inflammatory drugs, but they also have powerful side effects affecting the stomach, heart and bone adversely. They can also cause skin problems and cause the face to swell. These often have to be taken for the rest of one’s life, so they say. Some doctors want to have surgery to affected joints, but that does not attack the disease that affects the whole body. Please never use steroids they greatly upset the natural balance and hurt the adrenals.
Amoebas are one-celled protozoa. There are several varieties found in humans that are not considered to be disease producers. However, such virulent strains as *Entamoeba coli* and *Entamoeba hartmanni*, can produce mild diarrhea and dysentery. Most amoeba infestations, however, do not produce clinical symptoms.

Amoebas generally have a two-phase life cycle: the infective dormant cyst and trophozoite, a later form that is motile and active. When cysts are ingested, they are carried to the small intestine, where they are released as trophozoites into the colon. This form dwells mainly inside the bowel lumen, where it grows and multiplies. The incubation period varies from a few days to three months. Changes in the host's immune system, or in the organism's pathogenicity, can lead to tissue invasion. The trophozoite can then penetrate through the intestinal lining and invade the liver, lungs, brain, and heart. Subclinical symptoms include the following: upper-right quadrant pain, cramps, occasional nausea, and loose stools. In more serious cases, pronounced abdominal distention, dysentery, fever, and hepatitis may result. Extreme infection can cause abscesses in the liver, the lungs, and the brain.
Chronic diarrhea, gas, and massive food and environmental allergies have all been reported when amoebas are found in the system. Amoebic hepatitis can be mistaken for viral hepatitis; genital amoebiasis for carcinoma; amoebic colitis for ulcerative colitis; and amoebiasis in the brain for a brain tumor. Only a few cysts are needed to cause infection. Amoebic cysts resist iodine and chlorine if concentration of these chemicals is too low.

Two other amoebas responsible for human infection are from the genus *Naegleria*, which live in freshwater lakes, natural warm water springs, or streams, and can produce encephalitis in swimmers. Although rare, the disease is often fatal. The protozoan *Naegleria fowleri* is often found in natural warm water springs. It causes a very rare form of meningitis. The amoeba is inhaled and burrows inside the nose, travelling to the brain. Once there, fatal meningitis progresses rapidly. Bathing in the Roman Baths in the city of Bath is no longer permitted because of this protozoa, that has contaminated the water source.
Acanthamoeba species live in soil, as well as fresh and stagnant water, but can be found anywhere. Infections often come as a result of contact wearers not cleaning their lenses with proper solutions, but
rinsing them off with tap water. This contamination can lead to eye infections, especially of the cornea, resulting in reduced vision or the removal of the eye (enucleation). The amoeba is also responsible for a severe eye infection called *Acanthamoeba keratitis*, which results in pain and inflammation around the cornea. If the disease progresses to an ulcer, a corneal transplant is often required. Since relatively few cases are reported, it is assumed that, this too, has been misdiagnosed as another condition.

*Endolimax nana* is a relatively new member of the pathogenic group of amoebas. It is the smallest of the intestinal amoebas, causing researchers of the past to overlook its potential virulence. This amoeba lives in the lower bowel, but the larvae can sluggishly travel to other parts of the body. It has been linked as a possible cause of rheumatoid arthritis, as well as a host of other collagen-related diseases. (See *The Causation of Rheumatoid Disease and Many Human Cancers: A New Concept in Medicine*, by Roger Wyburn-Mason, MD, PhD). Typically, other researchers disagree and are looking for another cause.

*Entamoeba histolytica* is the cause of amoebic dysentery after being transmitted in cyst form from fecally contaminated food or water by way of food handlers (usually asymptomatic carriers), flies, cockroaches, etc. and from certain sexual practices. The disease (amoebiasis) produces abdominal pain and cramps and diarrhea, containing blood, pus, and mucous. A milder form of the disease can display alternating diarrhea and constipation. This disease affects more than 400 million people worldwide, causing mortality second only to malaria. The infective cyst stage develops in the small intestine into the trophozoite stage, where it grows and multiplies in the open spaces of the bowel, feeding on bacteria, tissues, and blood cells. Trophozoites readily die once outside the body, but, inside, they release an enzyme that dissolves tissue, allowing them to penetrate into the intestinal mucosa, where lesions develop and can turn into extensive ulcerative areas that cause dysentery with watery stools containing blood. If the disease disseminates to various internal organs, abscesses usually develop on the liver and possibly on the brain, lungs, heart, or other tissues, and death can result. Most cases are of a mild diarrheal nature or no symptoms at all.
In acute amebic dysentery, the contents of the intestinal tract pass rapidly through the system, in which case, the amoeba does not have time to develop into the cyst stage, and only the noninfectious trophozoites are released. When the contents of the intestines start to slow down, this allows time for the development of cysts. Therefore, by the time the person thinks he is getting better, he is really becoming infectious.

If the stool movement is stagnant or sluggish, the organism usually develops into a cyst before leaving the bowel, where it can survive in water and soil until ingestion reactivates it. The cysts are very resistant to certain chemicals, and have been known to survive up to seventy-two hours in chlorine solutions routinely used in public water supplies. They can also survive in water for a month in temperatures up to 50°C (122°F) and, since the 1960's, more and more antibiotic-resistant strains have been emerging.
**BRAIN-EATING AMOEBA**

*Naegleria fowleri* is a microscopic amoeba that lives in warm, fresh waters. It can enter the nose and pass through the sinus membranes into the olfactory bulb, reproduces by fission and spreads throughout the brain. The amoeba consumes brain tissue, causes swelling of the brain and finally death.

There are three stages in the amoeba's life cycle: cyst, trophozoite and a flagellated form. The trophozoite is the infectious form.

SOURCES: SHUTTERSTOCK/CLIPAREA, STANFORD UNIVERSITY

KARL TATE / © LiveScience.com
Chapter 1
Amoeba Provide Insight into the Origin of Virulence in Pathogenic Fungi

Arturo Casadevall

Abstract Why are some fungi pathogenic while the majority poses no threat to humans or other hosts? Of the more than 1.5 million fungal species only about 150–300 are pathogenic for humans, and of these, only 10–15 are relatively common pathogens. In contrast, fungi are major pathogens for plants and insects. These facts pose several fundamental questions including the mechanisms responsible for the origin of virulence among the few pathogenic species and the high resistance of mammals to fungal diseases. This essay explores the origin of virulences among environmental fungi with no obvious requirement for animal association and proposes that selection pressures by amoeboid predators led to the emergence of traits that can also promote survival in mammalian hosts. In this regard, analysis of the interactions between the human pathogenic fungi Cryptococcus neoformans and amoeba have shown a remarkable similarity with the interaction of this fungus with macrophages. Hence the virulence of environmental pathogenic fungi is proposed to originate from a combination of selection by amoeboid predators and perhaps other soil organism with thermal tolerance sufficient to allow survival in mammalian hosts.

The Pathogenic Fungi

The human pathogenic fungi comprise a highly diverse group of organism that can be broadly classified into two broad groups: dermatophytes and systemic mycoses. The dermatophytes are relatively common pathogens and include such agents as Tinea pedis, a cause of athlete’s feet. Dermatophytes cause troublesome conditions but are rarely life-threatening. In contrast, systemic mycoses are rare in immunologically intact human populations. In comparison to bacterial and viral diseases that are known since antiquity, systemic appear to be relative latecomers to the parade of human pathogens. Diseases such as cryptococcosis, blastomycosis, histoplasmosis and coccidiomycosis were only described in the late nineteenth or early twentieth centuries. In fact, most pathogenic fungal species were identified in the twentieth century and the overwhelming majority is exceedingly rare, thus related to case reports. Although sporadic systemic fungal diseases almost certainly

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This study was performed in the field by practicing Biofeedback technicians. Data was collected and the study supervised by the Ethics International Institutional Review Board of Romania. The Data analysis and study presentation is done By the The Centro Ricerche, University of Venice + Padova, Italy

Abstract:

This study demonstrates the safety and effective qualities of the SCIO device used in a large scale study. A large scale study of over 97,000 patients with over 275,000 patient visits reported their diseases. Many of them reported this disease. And the results of their therapy is reported in this study.

There were 43,023 patients with reported infections. Infections ranging from amoeba to virus to worms, bacteria to fungus, and ricketsia to pion. This study chronicles their SCIO treatment in general terms.

Introduction:

Over View:

This Large scale research was designed to produce a extensive study of people with a wide variety of diseases to see who gets or feels better while using the SCIO for stress reduction and patient monitoring. The SCIO is a evoked potential Universal ElectroPhysiological Medical apparatus that gauges how a individual reacts to miscellaneous homeopathic substances. The device is registered in Europe, America, Canada, S Africa, Australia, S. America, Mexico and elsewhere. The traditional software is fully registered. Some additional functions where determined by the manufacturer to be worthy of evaluation. Thus a study was necessary to determine safety and efficacy. (As a result of these studies these additional functions are now registered within the EC)

An European ethics committee was officially registered and governmental permission attained to do the insignificant risk study. Qualified registered and or licensed Biofeedback therapists where enlisted to perform the study. Therapists were enrolled from all over the world including N. America, Europe, Africa, Australia, Asia, and S. America. They were trained in the aspects of the study and how to attain informed consent and transmit the results to the ethics committee or IRB (Institutional Review Board).

2,569 therapists enlisted in the study. There were 98,760 patients. 69% had more than one visit. 43% had over two visits. There were over 275,000 patient visits recorded. The therapists were trained and supervised by medical staff. They were to perform the SCIO therapy and analysis. They were to report any medical suspected or confirmed diagnosis. Therapists personnel are not to diagnose outside of the realm of their scope of practice. Then the therapist is to inquire on any reported changes during the meeting and on follow-ups any measured variations. It must be pointed out that the Therapists were free to do any additional therapies they wish such as homeopathy, nutrition, exercise, etc. Therapists were told to not recommend synthetic drugs. Thus the evaluation was not reduced to just the device but to the total effect of seeing a SCIO therapist.

Part 1. The emphasis was on substantiating safety followed by efficacy of the SCIO.

Part 2. Proving the efficacy of the SCIO on diseases (emphasis on degenerative disease)

Part 3. Proving the efficacy of the SCIO on the avant garde therapies of Complementary Med

Part 4. QQC standardization
Methods and Materials:

SCIO Device:

The SCIO is an evoked potential Universal Electro-Physiological Medical device that measures how a person reacts to items. It is designed to measure reactions for allergy, homeopathy, nutrition, sarcodes, nosodes, vitamins, minerals, enzymes and many more items. Biofeedback is used for pre-diagnostic work and or therapy.

The QXCI software will allow the unconscious of the patient to guide to repair electrical and vibrational aberrations in your body. For complete functional details and pictures, see appendix.

Subspace Software:

The QXCI software is designed for electro-physiological connection to the patient to allow reactivity testing and rectification of subtle abnormalities of the body electric. If a patient is not available a subspace or distance healing link has been designed for subspace therapeutics. Many reports of the success of the subspace have been reported and thus the effectiveness and the safety of the subspace link is part of this test. Many companies have tried to copy the subspace of Prof. Nelson and their counterfeit attempts have ended in failure.

SOC Index:

The SCIO interview opens with a behavioral medicine interview. This is called the SOC Index. Named after the work of Samuel Hahneman the father of homeopathy, he said that the body heals itself with it’s innate knowledge. But the patient can suppress or obstruct the healing process with some behavior. Hahneman said that the worst way to interfere with the healing natural process was allopathy or synthetic drugs. Theses upset the natural healing process by unnatural intervention and regulation disturbance. Other ways to Suppress or Obstruct the Cure are smoking, mercury amalgams, stress, lack of water, exercise and many others. This behavioral survey then gives an index of SOC.

The scores relate to the risk of Suppression and Obstruction to the natural Cure. The higher the scores the more the Suppression and or Obstruction. The scores of 100 or lower are ideal. A copy of the SOC index questions appear in the appendix.

Study Technicians:

The study technicians were educated and supervised by medical officers. The study technicians were to execute the SCIO therapy and analysis. All were trained to the standards of the International Medical University of Natural Education. Therapists from all over the world including N. America, Europe, Africa, Australia, Asia, S. America and elsewhere were enlisted to perform the study according to the Helsinki study ethics regulations.
They were to chronicle any medical suspected or confirmed diagnosis. Therapists personnel are not to diagnose outside of the realm of their scope of practice. Then the study technician is to inquire on any disclosed observations during the test and on follow-ups report any measured changes.

To test the device as subspace against the placebo effect, two of the 2,500+ therapists were given placebo SCIO devices that were totally outwardly the same but were not functional. These two blind therapists were then assigned 35 patients each (only 63 showed). This was to assess the double blind factor of the placebo effect as compared to the device. Thus the studied groups were

A. placebo group, B. subspace group, and C. attached harness group.

Cross placebo group manipulation was used to further evaluate the effect.

**Important Questions**: these are the key questions of the study

1. **Define Diseases or Patient Concerns**
2. **Percentage of Improvement in Symptoms**
3. **Percentage of Improvement in Feeling Better**
4. **Percentage of Improvement Measured**
5. **Percentage of Improvement in Stress Reduction**
6. **Percentage of Improvement in SOC Behavior**
7. **What Measured+How (relevant measures to the patient’s health situation)**
8. **If Patient worsened please describe in detail involving SOC**

After the patient visit is was complete the data was e-mailed to the Ethics Committee or IRB for storage and then analysis. This maneuver minimized the risk of data loss or tampering. Case studies were reported separately in the disease analysis.

**Results:**

Before we review the direct disease improvement profiles, we need to review the overall results. The first most basic of question in the results is the basic feedback of the generic patient conditions.

1. **Percentage of Improvement in Symptoms**
2. **Percentage of Improvement in Feeling Better**
3. **Percentage of Improvement Measured**
4. Percentage of Improvement in Stress Reduction

5. Percentage of Improvement in SOC Behavior

The SOC index gives us great insight to this study. Each disease has a different cut off where the ability of the SCIO to help was compromised. In this infection group the SCIO cutoff was 90. This was particularly low for this type of study.

The below reported statistics are not reflective of this cut off, but rather reflect the entire statistics.

The Large scale study had over 98,000 patients and 275,000 patient visits we have direct evidence of the safety and efficacy. A placebo group was used for the large scale test to help validate the results.

INFECTION UNSPECIFIED

This disease group number was 43,023. There were 93,890 patient visits

Subspace Treatment 24,516 patients, 18,507 SCIO Harness Patients

OVERALL ASSESSMENT

A. Subspace Treatment 25,516 patients

There were 238 cases were patients reported a negative Improvement.

None of these cases were reported any major difficulty.

There were

439 cases reporting negative improvement of Symptoms, .0173% of Subgroup
69 cases reporting negative improvement in feeling better, .0001% of Subgroup
32 cases reporting negative improvement in stress reduction .0001% of Subgroup

23%--- Percentage of Improvement in Symptoms

40%--- Percentage of Improvement in Feeling Better

21%--- Percentage of Improvement Measured
34%-- Percentage of Improvement in Stress Reduction

19%----Percentage of Improvement in SOC Behavior

5,431 patients reported measured infections. There was a 32% measured improvement over a one month period.

B. SCIO Harness Treatment 18,507 patients

There were 50 cases of patients who reported a negative Improvement.

None of these cases reported any major difficulty.

There were

531 cases reporting negative improvement of Symptoms, .0028% of Subgroup

12 cases reporting negative improvement in feeling better, .0001% of Subgroup

13 cases reporting negative improvement in stress reduction .0001% of Subgroup

43%---- Percentage of Improvement in Symptoms

43%---- Percentage of Improvement in Feeling Better

32%----Percentage of Improvement Measured

68%-- Percentage of Improvement in Stress Reduction

23%----Percentage of Improvement in SOC Behavior

7,800 patients reported measured infections. There was a 56% measured improvement over a one month period.

CASE STUDY REPORT CONDENSATION:

“I purchased the devise 2 years ago after a LONG journey with Lyme disease. I use it on my self and feel it is an extremely important tool that assists me in balancing my stressors and helps me prevent "recurring/relapses" that are often part of the "picture" of Lyme disease.

My brother was then diagnoses with Barrett's esophagus (he had severe digestive troubles for many years) and developed severe arthritis. He rarely goes to physicians. He is retired military and was finally
persuaded to go to the VA hospital. Fortunately he was well treated (physically and emotionally) and returned home.

He then came to see me and experienced EPFX. He is quite "skeptical" of my holistic health focus but agreed none the less (he has been impressed in the improvement in my health during the past 2 years). He was amazed. . . . He said he couldn't not remember the last time he felt "this good". and returned home to "rave" about it to his wife.

A year later he was "scoped" to monitor the Barrett's esophagus, and was told there was no sign of it. In addition to EPFX, he made dietary changes and utilized nutritional supplements. The EPFX helped him see the value in addressing all aspects of health, mind, body, spirit and emotion that I doubt he would have otherwise even considered.

I have VERY strong feelings about being an American and having FREEDOM of choice. My brother served in the Army for 23 years and "fought" for this right. WE MUST include the EPFX and holistic health as our right to choose the health care that is in alignment with each individual's belief system.

Thanks you, Dr. Nelson, for all you do and have done to provide this "state of the art" devise and wisdom to us.

Mississippi, U.S.A."

“"A 42 year old female presented to me for lower back pain release, she had had physio but found it too painful to continue, everywhere the physio touched caused her tremendous pain and she could not continue. I saw her for 5 sessions of stress reduction and it became apparent during our sessions that she had been emotionally abused and abandoned by her mother at an early age. My client then decided to go onto antidepressants during our early sessions and by the 5th sessions she was off the medication, mainly pain free apart from some occasional sciatic pain, could now continue with her Pilates which she had to discontinue due to pain. The client had been referred to me by her physio who contacted me to inform me of the incredible changes in the client’s pain and emotional state.

A 4 year old boy was admitted to my local hospital with meningitis following chicken pox, he was confused, disorientated and had not slept for 2 days. The parents asked me to do a subspace session on him once the diagnosis was confirmed and within 10 minutes of the subspace session commencing the child fell asleep, the first time for 2 days, remained asleep for most of that day and night, woke up the following morning, temperature was down, he was orientated and discharged later that day.

City unknown”

“My first experience of having a Quantum session was quite amazing.

I had not said anything to the technician that my eye sight was cloudy when I would look in the distance. I had been telling myself that I should go to the eye doctor and see what he would have to say about it. But that wasn't even a concern that day of my session, and I never mentioned it, or even thought of mentioning it to her.
Anyway the next morning my eye sight was clear and has been since. This is about 4 years ago. I researched this and found that this was one type of a cataract. And because of this, I researched the device and had one session a month for 6 months before buying a device for myself.

I also had eye floaters and they are gone too.

I have fibromyalgia. It has been 4 years that I have had my device. When I over do muscles with cleaning windows, painting and etc. it would take me about a week to work out the pain using my hot tub and then applying essential oils at bed time.

Now I don't feel any stress caused by pain the next day when I use the hot tub, oils and do a session on myself before going to bed.

I had colon cancer 8 years ago followed with 6 months of chemo. I had awful chemo brain fog. My head felt awful and my concentration was really bad. I gained 35 pounds in 35 weeks. My joints were so painful that I would cry. I was dizzy and I couldn't stand the humid weather. I tried a couple drugs but they made me feel worse. I then found coral calcium and took a mega dose of it for 6 weeks and in 3 weeks my sore joints were all gone and my weight gain quit as soon as I started the coral calcium. I started on a mega dose of oxygen drops and my dizziness went away in about one month, and my body felt much better from my fibromyalgia. This was because the oxygen drops helped with the lack of oxygen to my brain (my dizziness) and with fibromyalgia, which I have read is one cause of lack of oxygen to the tissues.

But my concentration and memory was still very bad when I got my device. I was scared!

When I started working on my stress in the NLP panel the rectification numbers were way down in the teens and single numbers, and they went up and down, up and down, in that area for several sessions before going higher and higher. I also had many stressed areas of the brain. It took me 10 months to clear the stress. Each month I think back at the month before how I felt, and I knew I am making improvements each month, with all my stress. I often wondered if the brain would of been the place my cancer would of returned if it weren't for all my natural health.

I also take a lot of whole food supplements. I still take my oxygen drops every day. I take only 1/4 of a sleeping pill which I got hooked on them when I had chemo. But I'm down to just 1/4 of one.

I have not doctored with any health problems for 4 years.

I have had some nerve problems in my arm when I would drive in the car and my arm would rest on the door handle arm rest area to long. When I get it, I do a session and the pain is gone the next morning. It is longer and longer between times when I get it now.

Years ago I would get neuritis (Pain)in my head when we would go snowboarding and I would have to go in and get a shot for it. Last winter I got it just from going without my head being covered in the cold (Minnesota winters). Well I did stress management for it and in 3 days it was all gone.
I would get a bad sinus infection every winter and would sometime have to take a couple rounds of antibiotics. I have not been to the doctor with that problem for several years. I also use essential oils for it. Since I got my device, my nose does not run all the time like it used too.

My husband had a sty that would come and go quite often, several times a year. When addressing that stress with a stress management session, it was gone the next morning, and its been over a year, and it has not returned.

A friend of mine put her back out lifting on a client of hers. She had been to the Chiropractor twice and Massage therapist twice. She then come to me on a Sunday afternoon. She was experiencing a lot of stress due to pain. She could hardly walk up my steps and it was very painful for her to sit and stand up again.

The next morning she was pain free with just a sore spot - to the touch - in one area of her behind.

City unknown”

“It has been some years ago, when during the X-mas holidays a friend of mine called, excused herself and asked me if I -though we had holiday - would treat a friend of hers, who went through a couple of days in the ambulance room of the hospital due to intense pain and immobility in her lower and upper back. She could not sleep and move anymore because of pain and distortion. Nothing had helped, she had gotten all kind of injections. I agreed that I would help immediately. The client, a woman of 28 years, hardly could walk up to the 1. floor, where I live. She climbed up with a stick, her back bent deep down. I must admit when I saw her my heart pounded. She had 2 people to help her to half sit half lie so that I could put the strings on. I went through the whole spinal program, spinal fluid, scanned the bacteria and virus and send homoeopathics related to the spine and pain, she also had a very bad stomach infection. After an hour she more and more relaxed, lying straight on her back and when I asked her to slowly roll over her side to get up and stand, I was hit by astonishment and joy of everybody involved. The patient stretched herself in full length, amazement on her face and with a big sigh she said this is the first time since 10 days that I feel painless and I can stand up straight.

City Unknown, Germany”

“In 2003, the mother of an 8 yr old boy presented with warts on hands, trunk and feet along w/frequent diarrhea and skin problems. She had taken him to two doctors who were unable to stop the warts from growing. The scan revealed the papilloma virus.

1. After zapping virus for some time and activating the point probe to present to the mother wart, the family was given nutritional education, diet changes were recommended and he parasite cleanse herbs
and an immune booster. Four weeks later, they returned very elated that the warts were disappearing, diarrhea had disappeared and he was feeling better. Four weeks later, the warts were virtually gone and he was a healthy child. The Mom proceeded to tell her D. O. about the success and the D.O. then referred other clients to me.

Tulsa, U.S.A.”

“A retired 66 year old male presented with sores on the tips of his toes. He ate well and exercised and was in great health otherwise. He'd had prostate cancer years earlier. He played golf and the sores on his feet interfered with his enjoyment. The EPFX device has cleared up the sores on the tips of his toes + an additional point probe treatment to a sore knuckle, allowed the finger to expel a huge pus pocket to completely clear the irritation with the knuckle.

Tulsa, U.S.A.”

“My four year daughter developed an urinary tract infection and would scream while urinating. I scanned her with the EPFX and urinary tract infection had a high reaction on the scan. I “zapped” that item and after the EPFX session my daughter urinated without pain.

I had a severe sore throat. The EPFX scan showed strep as a high reaction. I “zapped” that item and in the morning my sore throat pain was gone.

My six month old daughter would not sleep one night and was screaming. I had no idea what was wrong. I scanned her with just the head harness and ran the recommended programs. She stopped crying and fell asleep.

Twice I have been out of town with my EPFX and my daughter has become ill. After scanning her remotely, her condition has improved each time.

My daughter started vomiting repeatedly one night. After I repeatedly “zapped” the pathogens with the highest reaction, the vomiting ceased.

City Unknown”

“1>The first two months my eye disease (I hope to spell it correctly)
Mylacular Degeneration is totaly gone (I wasn't even working on it).

2>I have lost fifty pounds this year and I didn't even diet. IN fact I had a horrible diet since I was traveling so much. I still have fifty
or so to go. I am told by several people that the EPFX has got my metabolism normal so the weight is coming off. What ever I am happy

3> My ten year old grandson is ten and his entire life he has bad lungs. by Sept / Oct every year of his life he has pneumonia but not this year.

City Unknown"

"I started with Acne, thyroid, candida, herpes and exhaustion. After a couple of treatments long distance I noticed more energy, no candida and less herpes breakouts. I love it. It has really helped my overall health." - (Pasadena, CA)

“One middle-aged female client came to see me to relieve some of the stress related to physical discomfort/pain/muscle weakness/stiffness she was experiencing in her sacrum, right knee, and right foot. She was combining chiropractic, physical therapy/exercise, and stress relief to increase her quality of life. After three sessions, here are some words of testimony she provided:

"Between all that I’ve been doing for this (quantum biofeedback, chiropractic, and exercise), I managed to go dancing with my husband last Tuesday and was pain-free for the entire dance 40-minute dance session. I recognize I have a ways to go in getting all muscles engaged, balanced, and toned and I’m very encouraged. Thank you for the part biofeedback is playing in this!"

Another middle-aged female client had been diagnosed by her medical doctor as having an acute infection in surgical incisions on both her feet. She came to me for a session to relieve the stress associated with the pain of the infection. Here are her words of testimony:

"Thank you for the quantum biofeedback work. The infection is almost completely out of my system. My feet feel tremendously better than they did last week. My podiatrist assisted my healing by creating new orthotics to fit my newly shaped feet. These have taken my pain level down by 50%. The other pain I have is caused by the over-extended nerves, which I inflamed by my off-balance walking. Nerves tend to
take more time to settle down. Between your quantum biofeedback and that which my doctor is doing, I am feeling so much better. Thank you!!!!"

I also did three sessions for a 12 year-old feline to relieve stress associated with an old fracture in her tail. After the sessions, her tail no longer contained the kink associated with the fracture and she tolerated petting along her back and hindquarters, which she was intolerant of previously, due perhaps to the stress and pain of the old injury.

Idaho, U.S.A."

“The EPFX device has saved my life and given my children the opportunity to live with a healthy mom. I purchased my device in March of 2007, and attended training in Springfield, MO in July of 2007. While there, I participated in the healing opportunities that were available to the participants. It was determined that my chronic fatigue and pain were due to Lymes, which had most likely entered into my spinal cord and cerebral-spinal fluid. Most likely I had had Lymes and when I received the lumbar puncture for the deliverance of interthecal morphine during labor, and the Lymes followed the blood into the spinal cord.

After I had my daughter in 2001, I was never quite the same. I had "meningitis" type symptoms - crushing fatigue, stiffness in my spinal cord, and pain upon movement and bending. I couldn't think as clearly as before. My eyes were extremely photo-sensitive and being in large spaces or with large crowds was overwhelming to the point I had to limit my lifestyle. (Prior to this, I had been a Flight Attendant and worked in large multi-national corporations with no problems - this was new.) The fatigue was life-altering. I had about 4 "good" hours per day in which I could function - not enough for a mother of an infant! I was terrified to try allopathic medicine as I was concerned that I would receive the label of "depressed" without any attention given to my physical state of being. I was currently using my knowledge in Oriental Medicine to turn my situation around, but I couldn't get to the root of the problem.

After my sessions in Springfield, I returned home and continued to balance myself on the EPFX as well as take the homeopathic formulae that could best help me. What happened seems miraculous, although the explanation is clear. At first, I felt "worse" - as my body stopped working in "status quo" mode, making the best of a bad situation and trying to maintain homeostasis, but instead kicked in and started fighting off the Lymes, Ameobas, and various fungi and bacteria - I really felt the truth of my health state. After 6 weeks, I started to feel better! Now, nine months later, I am thrilled to report that I can
rise in the morning with my children, no aches or pains, care for them, care for our home, AND run my business! I have been given my life back!!

City Unknown”

“We have overcome several sufferings, such as pain and stuffiness in the sinus area.

My three-year-old granddaughter was diagnosed with pneumonia, he ER doctor gave a prescription and agreed that biofeedback and therapeutic grade essential oils would probably do the trick as well and his scrip. He was right.

City Unknown”

“On May 5, 2006, my daughter ten aged 38 suffered an accident which impacted her face. After two CAT scans, and several other investigative procedures, it was decided that she had broken the part of the bone just above the intra orbital groove, under her left eye. She suffered from double vision, violent headaches, her sinuses were also affected with an infection and she also had mandibular problems, some of her teeth being a little loose.

As it was an injury sustained at work, she was taken on by the Workers compensation Board and was assigned several doctors including her own GP, a GP from the WCB, an eye specialist and an orthodontist.

As the infection was not subsiding, in August, she was put on a course of daily intravenous antibiotics – and for this she had to attend the hospital daily. ON her return from the hospital she felt almost worse than before she went. She was very tired and prevented from doing any kind of lifting, going up and down the stairs, standing for any period of time. Her life was being put on hold.

BY September, it was decided that she should be operated on, come what may and that a metal plate would be inserted to replace the missing bone. But, as an emergency procedure, that operation would take place at the earliest in May 2007 – that is a full year after her accident. She was also told she would have to grin and bear it until then. This is when she called on a friend of hers, a Doctor of Chinese Medicine who is also an EPFX practitioner. The upshot of it all is:

1) He first saw her at the end of September – and dealt with her obvious stress.

2) She had two more sessions with the EPFX, one at the end of October and another one in the third week of November

3) Finally, she had her last one with this doctor in the second week of December.

The same doctor each time explained to me what he was doing and he taught me how to use the EPFX so that I could keep providing my daughter with the support she needed. I purchased an EPFX, which I
received in March 2007. Until then he kept on providing my daughter with subspace sessions and under his guidance at first, then on my own once I had received the proper instruction, I carried on.

The end result is that my daughter was back at work on the first week of January 2007 with restricted duties - but when she was finally discharged from all “medical care” at the end of February, the last investigation she received showed the bone had regenerated on its own and that she would not after all need an operation. Her vision was back to normal, the headaches had disappeared and her lower jaw bone had clamped back properly around her teeth.

Vancouver, Canada”

“For years of unanswered questions as to my urinary tract infections. My clueless doctor threw every anti-biotic at me that he could think of and then some! With absolutely no success. Then, I found the EPFX (what a GOD send). This illness was not just contained to my urinary tract (bladder, kidneys and urethra) but it also created these life crippling muscle CRAMPS (Charlie Horses) in my back. It took the EPFX approximately 3 minutes to find the stressors and several sessions and life changes (recommended by the system) to free me of what I thought would be a life long condition. I say this because, my grandmother(gone now) and my mom (86 years old now) both have suffered from this and being the guinea pigs to multiple doctors for many many years. My grandmother dead living with this condition, but now I am at peace knowing that my mother and myself no longer have to suffer!

City Unknown”

“I am a 50+ year old female diagnosed with Lyme in 2003. Since June 2006 using the SCIO I have kept the stressors of this disease in check and have not had to revert back to using antibiotics to keep this illness at bay. I love having a healthy, drug free life and find several alternative health means to keep me healthy, the SCIO biofeedback device being one of these. Without the use of the biofeedback I believe I would still be going from my bed to the couch and the couch back to the bed. It is instrumental in my health regime and will continue to be so.

City Unknown”

“I had been diagnosed with a severe bladder infection and told to take antibiotic for 2 weeks then come back and do a second round of antibiotics to make sure that the infection was gone. I called a fellow practitioner to please do a session for me for the bladder infection. She did the session and I felt better. She did a session for me every 3 days for 2 weeks, 4 in total. I went back to my doctor and she said that the infection was gone and said that she would make sure to give me the same antibiotic in the future
because it worked so well. I told her that I did not take the antibiotic, that I had a biofeedback practitioner do sessions for me, on her EPFX/SCIO biofeedback device, to get rid of the infection, as I don’t want to take medicine unless I really have no other alternative. She said, well great, as long as it worked.

City Unknown”

“Age 27, female, infected sweat glands in arm pits and groin for past 3 years. Initial session was July 19/06. After two weekly sessions, she reported on Aug 3/06 40% less swelling and pain. After 2 more sessions, on Aug 16/06, she reported 70% improvement.

City Unknown”

“A 22 year old female, with a reoccurring eye infection was unable to wear her contact lenses and was told by her optometrist and ophthalmologist that she would have to give up wearing her contact lenses. During a three month period, she made approximately 7 visits to her optometrist who conferred with his partner optometrist, and then she went to an ophthalmologist. She had been given antibiotics, which somewhat cleared the infection for a few days, but it continued to reoccur. They were unable to help her and advised she was allergic to wearing any type of contact lense. I used multiple eye therapies from the QXCI and looked for reactive pathogens in the main matrix. After each session she would improve and after the fourth session there was no reoccurrence and she has been clear and wearing her contact lenses for four months.

City Unknown”

Discussion:
The results show significant improvement in symptoms and feeling better. Items measured included bacterial culture, throat swabs, anti-body test, etc. The Collective results show a dramatic benefit to the SCIO therapist visit.
The effects of infection and injury on the body require a complete discussion.

Inflammatory conditions and major tissue injury are frequently associated with a wide range of systemic responses which embrace vascular, metabolic, endocrine, neurological and immunological functions. Those occurring soon after the onset of infection or injury are called the acute phase response. The acute phase response has the outstanding characteristic of being a generalised host reaction irrespective of the localised or systemic nature of the initiating disease, and several components of the response are remarkably constant despite the considerable variety of pathological processes that induce it. This uniformity of reaction points to the involvement of relatively few mediators in the overall 'orchestration' of the acute phase response. The major mediator coordinating the response is interleukin_1, aided and abetted by tumour necrosis factor (TNFa). Thus the mononuclear phagocyte system, which serves as the major source of these cytokines, plays a pivotal role.

Mononuclear cells are stimulated to produce IL_1 and TNFa by:

1. Bacterial endotoxin _ lipopolysaccharide (LPS), especially when complexed with LPS_binding protein.
3. Intact micro_organisms following phagocytosis.
4. Other cytokines produced by activated lymphocytes and macrophages.

Interleukin_1 and TNFa have a multiplicity of biological activities at the following sites:

1. Hypothalamus _ fever
2. Bone marrow _ neutrophilia
3. Neutrophils _ activation
4. B_lymphocytes _ antibody production
5. T_lymphocytes _ IL_2 production
6. Liver _ acute phase proteins
7. Fibroblasts _ proliferation and collagen synthesis
8. Muscle _ protein catabolism with amino_acid release
COMPONENTS OF THE ACUTE PHASE RESPONSE

A. Fever

Body temperature is controlled partly by reflexes initiated by the thermosensory nerve endings in the skin, but principally by a central control mechanism in the hypothalamus. The central mechanism can be likened to a thermostat, and this thermosensory centre (shown in animals to be in the anterior hypothalamus) responds to variations in the temperature of blood flowing through it. Signals from the thermosensory centre influence the activity of other hypothalamic centres which regulate the physiological processes responsible for heat production and heat loss, thus controlling the core temperature. In fever the thermostat is set high and a rise in temperature is achieved by increasing heat production and inhibiting heat loss by:

1. Cutaneous vasoconstriction:
   (i) Coldness and pallor of the skin at the onset of fever
   (ii) Contraction of the erector pili muscles (‘gooseflesh’) maintains an insulating layer of air next to the skin

2. Higher metabolic activity particularly in skeletal muscles and in the liver

3. Shivering associated with increased catabolic activity and heat production in skeletal muscles.

Fever is accompanied by general malaise and anorexia. If the temperature rises to 41.6°C (107°F) there is a danger of direct thermal injury to various tissues, and particularly to cerebral neurones. However, a potentially beneficial effect of hyperthermia is augmentation of the immune response by T-helper cells. The high setting of the thermosensory centre in fever is brought about by interleukin_1. The effect of interleukin_1 on thermoregulation is mediated by Prostaglandins, in particular by PGE2. This mechanism underlies the value of drugs like aspirin, an inhibitor of prostaglandin synthesis, in reducing fever.

B. Neutrophil leucocytosis
Normally the neutrophil count is between 2.5 - 7.5 x10^9/litre. In infections this rises to 10 - 20 x 10^9/litre, particularly with pyogenic bacteria.

Lesser degrees of neutrophil leucocytosis occur in:

(i) Pregnancy
(ii) Strenuous exercise
(iii) Severe mental stress
(iv) Injection of glucocorticoids or adrenaline
(v) Following necrosis of tissue, e.g. myocardial infarction

Leucocytosis may develop within a few hours of the onset of a bacterial infection and is of diagnostic value. This early rise is due partly to release of many polymorphs which normally lie marginated in the venules of the lungs and elsewhere, and partly due to release of immature polymorphs lying in the sinusoids of the red marrow. The leucocytosis is maintained, however, by an increased rate of formation in the marrow. As polymorphs have a life span of about 12 hours, death and loss of polymorphs in exudation, for example in a suppurating infection requires a large output requiring hyperplasia of the myeloid or granulocyte series in the bone marrow.

Interleukin-1 has a central role in neutrophil leucocytosis. It promotes:

(i) Release of neutrophils from their marginated state
(ii) Increases granulopoiesis

Actions on neutrophils themselves include:

(i) Release of granules
Lactoferrin _ Iron_chelation
Lysozyme _ Antibacterial properties
(ii) Increases oxidative activity
(iii) Increased hexose mono_phosphate shunt activity

C. Acute phase and stress proteins

In febrile conditions or following injections of endotoxin or
interieukin_1 there is a dramatic increase in the synthesis of intracellular stress (heat shock) proteins and some proteins by the liver. These latter proteins enter the circulation and can be detected within a few hours of the onset of fever which is why they are labelled acute phase proteins.

1. Acute phase proteins These include:

(i) C_reactive protein
(ii) Fibrinogen
(iii) Haptoglobin
(iv) Ceruloplasmin
(v) Amyloid A and P proteins

Interieukin_1 promotes protein catabolism in skeletal muscle and a flux of amino acids into the liver where protein synthesis is substantially increased. There is evidence of independent regulation of each of the acute_phase proteins. Some of these proteins, for example haptoglobin (an (x2 globulin capable of binding free haemoglobin) and fibrinogen are normally present in substantial levels in plasma but increase 2 or 3 fold after interieukin_1 injection. Others which normally occur at low levels, e.g. C_reactive protein, increase several hundred fold. Likewise some appear rapidly, but others require several days to reach maximum levels. C_reactive protein is capable of binding in a non_immunological way to 'foreign' antigens and activating the classical complement pathway. It thus acts as an opsonin and prepares material for phagocytosis.

2. Stress proteins

Stress (or heat shock, HSP) proteins are present in all living systems and are among the most highly conserved in nature. Their intracellular production is induced by rises in temperature and synthesis commences rapidly (within 5_15 minutes) after the onset of 'heat shock'. Other stimuli which induce the synthesis of stress proteins include:

(i) Cytotoxic agents
(ii) Free radicals, e.g. in reperfusion injury
(iii) Cellular poisons, like alcohol and heavy metals
(iv) Certain viral infections

Stress proteins together with ubiquitin are involved in the transport and degradation of proteins denatured by cell injury so that, for example, proteins 'tagged' with ubiquitin can undergo proteolysis.
and be recycled into the cell’s economy, while HSPs and other chaperones regulate the assembly and disassembly of proteins and provide a means of shuttling polypeptides between molecular structures.

D. Nutritional responses

Following major infection or injury the body goes into substantial negative nitrogen balance, part of which meets the increased caloric needs of fever. Accelerated muscle protein degradation leads to myalgia and reduced physical performance. Interleukin_1 acts directly on skeletal muscle to promote protein catabolism, an effect mediated by an accumulation in the muscle of PGE2 which ultimately activates proteolysis in the lysosomes. This brings about amino_acid release from muscle which helps to satisfy the increased energy requirements via gluconeogenesis, but also contributes to the synthesis of proteins in proliferating immunological cells and the synthesis of acute phase reactants released from the liver.

Changes in trace metals

The serum levels of iron and zinc are depressed in the acute phase of bacterial infection. There is evidence that the decrease in serum iron is probably important in protecting the host against various bacteria as a reduction in iron suppresses the growth rate of various micro_organisms. Iron appears to be sequestrated by the binding substance lactoferrin, and lactoferrin/iron complexes are deposited in the tissues. Interleukin_1 has been shown to activate lactoferrin release from neutrophils. There is also an increase in serum copper levels in keeping with the increase in the coppertransport protein ceruloplasmin. Copper is involved in enzyme and transport mechanisms but its role in fever is unknown.

E. Vascular responses and shock

Selective arterial constriction increases peripheral resistance and tends to compensate for diminished cardiac output. The main vessels involved are those of the skin and splanchnic circulation, whilst blood flow to the heart, brain and skeletal muscle is maintained at normal levels. When vasoconstriction fails to maintain normal blood pressure the clinical picture of shock develops. Underperfusion of tissues leads to accumulation of acid metabolites and vessels may cease to respond to normal constrictor stimuli. Progressive and irreversible arteriolar dilatation occurs and blood is 'sequestrated' in the greatly enlarged capillary reservoir. Intractable hypotension results and this constitutes a lethal condition sometimes termed 'irreversible shock'.

Main types and causes of shock

1. Hypovolaemic
(i) Haemorrhage

(ii) Loss of plasma, e.g. burns

(iii) Loss of fluid and electrolytes, e.g. severe diarrhoea

2. Cardiogenic

(i) Myocardial infarction

(ii) Major pulmonary embolism

(iii) Following cardiac surgery

(iv) Myocarditis and other causes of acute cardiac failure

3. 'Septic'

(i) Endotoxic, mediated by bacterial lipopolysaccharide e.g. endotoxin

A from Pseudomonas aeruginosa

(ii) Exotoxic, e.g. exotoxin from Staphylococcus aureus (toxic shock syndrome)

4. 'Vascular'

(i) Anaphylactic

(ii) Neurogenic, e.g. spinal injuries

Pathogenesis

1. Hypovolaemia _ a fall in cardiac output resulting from reduced blood volume

2. Cardiogenic _ a fall in output resulting from inadequate heart function ('pump failure')

3. Septic shock

(i) Release of TNFa and IL_1 in high concentration

(ii) Induction of nitric oxide synthetase in endothelial and vascular smooth muscle cells leads to a build up of nitric oxide (NO) which is responsible for sustained vasodilation and hypotension

(iii) Activation of complement with release of anaphylatoxins C3a/C5a

(iv) Activation of neutrophils leads to endothelial damage resulting in capillary leakage
Activation of Factor XII initiates coagulation and bradykinin formation. The former may lead to disseminated intravascular coagulation.

4. Vascular mechanisms
   
   (i) Pooling of blood in
     
     a. Large peripheral vessels due to loss of vasomotor tone
     b. Capillaries resulting from persistent venular constriction
   
   (ii) Increased vascular permeability
   
   (iii) Slowing of blood flow resulting from 'sludging' of red cells

Disseminated intravascular coagulation (DIC)

This is a condition in which the activation of coagulation factors leads to deposition of platelet-fibrin thrombi in small vessels throughout the body. The consumption of coagulation factors and activation of fibrinolysis frequently leads to life-threatening haemorrhage.

F Metabolic reactions

Features of the early metabolic reaction are: 1. Hyperglycaemia 2. Fall in body temperature 3. Decreased oxygen consumption 4. Alteration of intracellular oxidative mechanisms

5. Loss of albumin from plasma due to transcapillary escape

Irreversible shock

Features include:

1. Reduced oxygen consumption
2. Diminished heat production
3. Increasing hypoxia
4. Metabolic acidosis
5. Hypotension
6. Hypoglycaemia
G. Hormonal reactions

Increased production of:

1. Catecholamines which
   (i) Increase cardiac output
   (ii) Constrict arterioles
   (iii) Increase gluconeogenesis

2. Corticosteroids which bring about
   (i) Retention of Na+
   (ii) Excretion of K+
   (iii) Catabolism of proteins

3. Aldosterone
   Potassium deficiency

4. ADH
   Water retention

PATHOLOGICAL LESIONS IN SHOCK

1. Kidneys
   (i) Acute tubular necrosis
   (ii) Glomerular microthrombosis
   (iii) Acute cortical necrosis (rare)

2. Lungs _'shock lung' or adult respiratory distress syndrome Features
   (i) Congestion and intraseptal oedema
   (ii) Microthrombi
   (iii) Hyaline_membrane formation
   (iv) Atelectasis
(v) Interstitial pneumonia

3. Liver

(i) Centrilobular ischaemic necrosis

(ii) Fatty change

4. Adrenals

(i) Lipid depletion (compact_cell change) in cortex

(ii) Focal necrosis of cortical cells

(iii) Massive haemorrhage (Waterhouse_Friderichsen syndrome)

5. Heart

(i) Subendocardial haemorrhage

(ii) Contraction bands within myocytes

6. Gastrointestinal tract

(i) Acute ulceration of the stomach and duodenum (Curling's ulcers)

(ii) Haemorrhagic gastroenteropathy

Focal or more extensive haemorrhage into the stomach or intestinal mucosa associated with local superficial ulceration, probably resulting from hypoxia

7. Brain

Anoxic or hypoxic encephalopathy (see p. 338)

8. Pituitary

Necrosis following hypovolaemia (most commonly due to postpartum haemorrhage) giving rise to:

(i) Acute insufficiency _ Sheehan's syndrome

(ii) Chronic insufficiency _ Simmond's disease

LATE REACTIONS TO INJURY AND INFLAMMATION

A. Metabolic reactions

Catabolic phase
1. Rise in oxygen consumption
2. Rise in body temperature
3. Catabolism of protein increased
4. Increased mobilisation of fatty acids
5. Increased gluconeogenesis from amino acids derived from muscle

Anabolic phase

1. Positive nitrogen balance restored
2. Electrolyte equilibrium regained

B. Haematological reactions

1. Increased formation of platelets
2. Increased fibrinogen production
3. Decreased plasminogen
4. Anaemia
5. Lymphopenia

C. Hormonal reactions

Increased production of

1. Insulin which stimulates glucose uptake, and glycogen, fat and protein synthesis
2. Growth hormone _ possibly involved in the mobilisation of adipose tissue
3. Thyroxine

D. Immunological reactions

1. Reactive changes in lymphoid tissues, e.g. hyperplasia in lymph nodes, splenomegaly
2. Production of IgM antibodies directed at various components of the injured tissues
E. Amyloidosis

Although the synthesis of amyloid precursor proteins is part of the acute phase response to inflammation, when inflammation is prolonged the sustained increase in the serum concentrations of these proteins leads to the appearance of fibrillar material (amyloid) in many different tissues. However, amyloid is not a specific protein. It can be composed of one or more proteins or glycoproteins all having a characteristic b-pleated fibrillar appearance on electron microscopy. Thus, amyloid complicating long-standing inflammation is made up of amyloid A (AA) and P (AP) proteins derived from partial degradation by macrophages of SAA and SAP proteins. Another major form of amyloid is composed of AL protein which is derived from immunoglobulin light chains, mainly of lambda type. In addition, a heterogeneous collection of amyloid types (some of which have not been characterised) are found in certain hereditary or familial conditions and as localized deposits.

Diseases associated with amyloid deposition

1. AA/AP amyloid
   (i) Chronic infections (of long standing)
      a. Tuberculosis
      b. Bronchiectasis
      c. Osteomyelitis
      d. Pyelonephritis
      e. Leprosy
      f. Syphilis
   (ii) Chronic inflammatory disorders
      a. Rheumatoid disease
      b. Crohn's disease
      c. Systemic lupus erythematosus
      d. Pustular psoriasis
   (iii) Malignant states
      a. Hodgkin's disease
b. Carcinomas of bladder, kidney, stomach, bronchus, ovary

2. AL amyloid
   (i)  Multiple myeloma
   (ii) Waldenström's macroglobulinaemia
   (iii) Solitary plasmacytoma (localised)

3. Hereditary/familial types
   (i)  Amyloid polyneuropathy
   (ii) Amyloid cardiomyopathy
   (iii) Amyloidosis associated with Mediterranean fever
   (iv) Familial amyloid nephropathy, urticaria, and deafness
   (v)  Familial cutaneous amyloid

4. Localised amyloid deposition
   (i)  Senility
      a. Heart
      b. Brain _ also in Alzheimer's disease
      c. Islets of Langerhans
      d. Seminal vesicles
   (ii)  Endocrine tumours
      a. Medullary carcinoma of the thyroid (AMCT)
      b. Pituitary adenoma
      c. Islet_cell tumours of the pancreas
   (iii) Non_endocrine tumours
      a. Naso_pharyngeal carcinoma
      b. Basal cell carcinoma
   (iv) In the islets of Langerhans in diabetes mellitus
Tumour-like deposits in:

a. Larynx, trachea, bronchi, and lung
b. Genito-urinary tract
c. Eye
d. Tongue
e. Heart
f. Skin

Pathogenesis

It is believed that amyloids are produced by partial degradation of precursor proteins. Degradation of AA protein takes place either in endothelial cells or in fixed macrophages of the RES, particularly in sinusoid lining cells, and this may explain the tendency for amyloid to be deposited in relation to vascular basement membranes. The abnormal, or incomplete, degradation of the precursor proteins may be under the influence of a further protein synthesised by the liver which has been termed amyloid enhancing factor (AEF).

AL amyloid is thought to arise by partial degradation of immunoglobulin light chains produced in excess by abnormal populations of plasma cells.

Detection of amyloid

1. Of historical interest, iodine and dilute sulphuric acid produce blue coloration similar to that obtained with starch (Latin_amylum)
2. Congo_red and Sirius_red stain amyloid orange/red and when viewed under polarised light gives apple_green birefringence
3. Thioflavine_T staining gives rise to yellow fluorescence in ultraviolet light
4. Amyloid has a characteristic ultrastructural appearance being composed of parallel arrays of fibres 7 to 10 nm diameter
5. Potassium permanganate staining reveals different structural forms

Organ involvement in amyloidosis
1. Kidney

Amyloid is deposited in:

(i) Glomeruli (mesangium and basement membrane)
(ii) Tubular basement membranes
(iii) Blood vessel walls

Results in:

(i) Nephrotic syndrome
(ii) Renal vein thrombosis
(iii) Haematuria
(iv) Nephrogenic diabetes insipidus

2. Spleen Deposited in:

(i) Malpighian bodies (sago spleen)
(ii) Diffusely in the walls of sinusoids

Results in:

No significant disturbance of function

3. Liver

Deposited in:

(i) The space of Disse between the sinusoid lining cells and the hepatocytes
(ii) Blood vessel walls

Results in:

(i) Pressure atrophy of hepatocytes. In extreme cases this may lead to liver failure
(ii) Portal hypertension if involvement of the central veins leads to outflow obstruction

4. Heart

Deposited in:

(i) Subendocardial zone
(ii) Interstitial connective tissue

Results in:

(i) Cardiomegaly and cardiac failure
(ii) Disturbances of rhythm

5. Adrenal glands

Deposited in the zona glomerulosa and then advances throughout the cortex

Results in Addison's disease (rarely)

6. Gastrointestinal tract

Deposited in:

(i) The vicinity of epithelial basement membranes
(ii) Walls of small blood vessels
(iii) As plaques in the submucosa

Results in:

(i) Malabsorption syndrome
(ii) Diarrhoea
(iii) Protein-losing enteropathy
(iv) Pseudo-obstruction
(vii) Ulceration of plaques

7. Skin

Forms:

(i) Lichen amyloidosis
(ii) Localised nodular amyloidosis
Calcification other than that normally occurring in the teeth and skeletal system (heterotopic calcification) is seen in the following circumstances:

1. Associated with advancing age Deposits are found in:
   (i) Pineal gland
   (ii) Tracheal and laryngeal cartilages
   (iii) Costal cartilages
   (iv) Dura mater

2. In dead or degenerate tissue (dystrophic calcification) Examples
   (i) In old tuberculous lesions
   (ii) In scars
   (iii) In dead parasites
   (iv) In degenerate tumours, especially uterine leiomyomata (fibroids)
   (v) In atheromatous plaques

1. In association with increased levels of calcium (or occasionally with increased phosphate) in the blood and tissues, usually derived from the skeleton but also involving increased absorption from the intestine and decreased loss through the kidneys. Such calcification occurs in previously normal tissues and is referred to as metastatic.

   It is found in:
   (i) Hyperparathyroidism

Primary, due to:
   a. Adenoma
   b. Hyperplasia
   c. Carcinoma (very rarely)

Secondary, due to:
   a. Chronic renal failure
   b. Renal tubular acidosis
c. Malabsorption states
d. Pregnancy and lactation

(ii) Carcinomatosis with or without skeletal involvement, especially with bronchial and breast cancer.

(iii) Myelomatosi

(iv) Vitamin D sensitivity, as in sarcoidosis and infantile hypercalcaemia

(v) Excessive administration of vitamin D

(vi) Paget’s disease of bone (when immobilised)

(vii) Hypophosphatasia

(viii) Milk_alkali syndrome

(ix) Hypoparathyroidism (deposits in the basal ganglia)

Sites of metastatic calcification

(i) Kidneys, producing nephrocalcinosis which may lead to renal failure

(ii) Stomach

(iii) Lungs, on the elastic fibres of the alveolar septa

(iv) Blood vessels

(v) Cornea

4. In calculi (stones)

Many calculi include calcium salts among their constituents.

Calculi are found in:

(i) Urinary tract

a. calcium phosphate

b. calcium oxalate

c. calcium carbonate

(ii) Biliary system

a. calcium bilirubinate
(iii) Salivary glands
(iv) Pancreas
(v) Prostate

5. In neoplasia

Microscopic laminated calcified bodies _ calcospherites are found in association with:

a. Adenocarcinoma of the ovary
b. Papillary carcinoma of the thyroid
c. Meningioma (psammoma bodies)
d. Benign and malignant breast lesions
e. Oligodendroglioma

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Crne kose, raspletene, bujne, using SCIO preparing for Next Match of US Open

Datum: 01.09.2010, Novak Djokovic, Američki odboj

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