

## CFS Radio Program March 28th, 1999

**Roger G. Mazlen, M.D.** Host

with **Dr. Gustavo Bounous, Dr. Allen C. Somersall** and **John Molson**

**Dr. Mazlen** We have a one hour show today. We'll be here with live guests. We have authors here today discussing a new book called "**Breakthrough in Cell Defense**" and the authors are **Dr. Allen C. Somersall** and **Dr. Gustavo Bounous**. As well, we have **John Molson**, a Vice President of Immunotec Research. We're going to have a great show. We're going to start off by introducing the authors of this new book, this exciting book which deals with the **glutathione revolution**. So let's start off first with **Dr. Gustavo Bounous** who actually is the person who discovered the clinical applications of the glutathione type of modulator which is called **Immunocal**. **Dr. Bounous**, welcome to our show.

**Dr. Bounous** Thank you.

**Dr. Mazlen** Tell us a little bit about how this happened.

**Dr. Bounous** Well, it happened a long time ago, close to **20 years ago** as most of this thing happened by pure serendipity or I would say by accident. I was then working at McGill University on the effect of nutrition on the immune system and when you work on that particular aspect, you use mice as an animal of preference. And I was observing certain interesting findings until I received a package from Europe, namely from Switzerland. At the time as you probably know the cheese was manufactured and the whey, which is the resulting supernatant of cheese production was thrown away. It was a waste product which caused a great pollution for the river and a tremendous fee for the cheese industry. So they decided to concentrate and remove the water by ultra filtration and they were now having this powder which was very rich in nitrogen and protein.

They didn't know what to do with it and they sent to me. So I fed my mice this powder in a 20% formula diet and I noticed that it was nutritionally very adequate, actually very good, but the mice were growing at the same rate as their normal counterparts, **but if they were challenged with antigens or bacteria, they were responding more vigorously, and we're talking about a 5 fold difference in antibody production**. That sounded interesting and I compared this which was actually a protein mixture which was called whey protein concentrate with several other purified proteins and it was indeed this one that was the best in terms of enhancing the immune response.

Now, the answer of the mechanism, why this happened, came when this product stopped working, which, unfortunately, for me happened in 1988. Nutritionally, this product was still good, but when I was challenging my mice, they were responding just like normal controls. And you can imagine my state of mind. I couldn't throw away 8 years of research. Something had to be done so I had to become smart and see what this mixture was made of and if I tell you how the real story happened, to be honest with you, I was watching a television program from Switzerland in which two chefs were complaining about the changing texture of the cheese, and were ascribing that to the fact that **the pasteurization temperature of milk was raised from say 73 to 78 centigrade to make sure that all the salmonella were killed**. That was in response to an epidemic of salmonella in France. And that happened worldwide and this is why all the whey protein concentrates we were trying analyze from where ever they were produced, whether Australia, Denmark or the United States was ineffective in this particular property.

So, then I consulted with a protein milk chemist and I found that in that range of temperature in the liquid phase, not in the dried phase, this protein can be unfolded,

*partially or totally and this thing that happened, where you unfold this type of protein, you split the disulfate bond.*

*Now I have to open a little scientific parentheses if I may. The two molecules which are essential for the formation of glutathione are cystine and glutamic acid. Now, cystine is found in the whey protein. It's found particularly in the human milk, in the egg white and more effectively can be concentrated. But you have to **be careful not to heat it because otherwise you split that bond**. If you do split that bond, the cystine becomes 2 cysteine which is very good, which is actually what the cells need to fabricate it's own glutathione, **but it doesn't travel in the blood. It is destroyed because paradoxically, it is toxic**. So you have to have this thing in what is called the "undenatured" form, in other words to preserve the two molecules linked together.*

*Fortunately, for us this bond is not split by tripsin during digestion, so what happens is, it goes through the stomach, through the intestine and is absorbed mostly in the form of cystine, that's two molecules linked together. Dr. Droge has done extensive work on this. Now when they reach the target cell they are split into the 2 cysteine and then they can go ahead and make glutathione.*

*So, I had to backtrack what had happened and make my own cheese in a university laboratory in Canada and with low temperatures, 73 centigrade and then use a micro filtration, I was able to resume to find this property again. Now, glutathione you probably heard about but it's something certainly we'll hear a lot about certainly in the future.*

**Dr. Mazlen** *You're going to hear a lot even on this program very shortly. Let me just go over to Dr. Somersall for a minute. How did you get involved with this amazing discovery?*

**Dr. Somersall** *Well, thanks for having us on the show, Dr. Mazlen. My interest goes back, obviously, to my training in chemistry. I actually have a doctorate degree in chemistry from the University of Toronto and as a result of that got introduced to the whole area of vitamins and food supplements and **for 20 years I had been a strong advocate of supplementation and of self-responsibility** as being one of the bottlenecks to improving the health of industrialized societies. And really, when I met Dr. Bounous about a year and a half ago I was literally overwhelmed by what he had discovered. First, I was overwhelmed because I had been exposed to this whole field in a sense, to people who had come into it, through the back door if you like.*

*When I met Dr. Bounous, I realized here was an avante garde mainstream scientist who had come right into this field and into the industry right through the front door. In fact, he had pushed the front door down.*

*Here was a physician trained, specialized in a research laboratory, in a university setting in a hospital doing classic research and just by coincidence stumbles upon what seems to be a **most important secret of nature** and I understood immediately the implications, because having studied medicine and practicing medicine I long thought that if we could only find some way to impact the human cell so as to empower it, that is the cell, to do what it does best, not so much what we as doctors do, but as what the human cell does, because I've always felt that the mystery of life is within the cell itself and not in our human hands or our human minds and what Dr. Bounous had done, as I understood it at the time, **was to essentially find a way to encourage the cell to do more of what it wanted to do in its own defense**. And that's really where glutathione comes in.*

**Dr. Mazlen** *We're talking about a new book entitled "**Breakthrough in Cell Defense**". This book is recently published. It will be available in the major book stores by mid April. It's also available right now on Amazon.com. It's published by Golden Eight*

*Communications which is located in Toronto, Canada and Atlanta, Georgia. For information on the book later on, if you want to know about ordering it, you can dial 1-800-501-8516. We have a question right now from Florence in Queens. Florence welcome to our show.*

**Florence** *I'm reading all about it and I'd like to know if it can be, I'm sure it won't hurt someone suffering with lung cancer, but is there any evidence that it can help.*

**Dr. Mazlen** *Dr. Bounous is going to answer your question.*

**Dr. Bounous** *I don't know if the law will allow me to say. I have anecdotal evidence of three cases of lung cancer which are personal friends of mine and these are non-small cell carcinoma of the lung which had really showed substantial benefit. I'm talking about only 4 or 5 months ago, so I don't know what the long term is, to the point that I'm hoping to have a clinical trial of lung cancer with this product. If you ask me the mechanism, it is completely hypothetical at this stage. I would suggest, if I may have a half a minute, that as I mentioned the roll of glutathione in the lymphocyte, it is a crucial antioxidant that allows the immune cell to perform without being hampered by the development of oxygen free radicals. There arrives a time on the long term after several years, that some of these cells are running out of glutathione. They get depleted. So, I think, in my humble opinion, that natural killer cells, the NK cells, are the most potent anticancer cell because they do not require sophisticated mechanisms of interaction and they are known to become depleted of glutathione on the long run, so it's nice if you can provide them the precursor so they can reconstitute their own antioxidant and now perform effectively to attack the cancer cell. This is just an hypothesis.*

**Dr. Mazlen** *We're going to be talking some more about the work with Immunocal and its work in clinical applications. One of the first studies, as I understand according to your book, was done on children with AIDS in Montreal. I would like to hear something about that work.*

**Dr. Mazlen** *We're going to take one more question before another break and that one is from Frank in Long Island and he is asking whether or not the product is approved my Medicaid and we're going to have John Molsen answer that one for you.*

**John Molsen** *Yes, the product is approved by Medicaid and as you understand once you get federal approval then you have to go to the states individually and that process is ongoing currently. I believe we have approval from 18 states individually. If you want to call the office on Monday, which is at 450-424-9992 and ask for me John Molsen, extension 234, I can get you the states that are in abeyance currently.*

**Frank** *Is that Medicare too?*

**John Molsen** *That's correct. Also for Medicare\**

*\*(Note: Medicare pays for tube feeding) USA*

**Dr. Mazlen** *Now, we're going to be talking about something very important. Additional clinical research which has been done recently, some of which was done by Dr. Paul Cheney, an eminent scientist who's well known and highly regarded in the field of Chronic Fatigue Syndrome and we're going to go back to Dr. Bounous who's going to tell us a little bit about what Dr. Cheney found in treating Chronic Fatigue Syndrome patients with Immunocal.*

**Dr. Bounous** *Well, Dr. Cheney was on this program recently and we were extremely privileged and lucky to have one of our distributors to provide Dr. Cheney with a sample of Immunocal at the beginning of last year and Dr. Cheney was impressed by*

*the fact that it helped one of his patients. So, being open-minded and inquisitive-minded he wanted to know more about it and he started a protocol and he studied in depth 8 number of cases at different stages of the syndrome. This is an extremely complex syndrome which goes through different stages and I believe Dr. Cheney, with Dr. Peterson is accredited with having first identified this syndrome. About the same time that AIDS, in the same location that AIDS was seen. And he explained to me when he was attending the International Conference at Harvard last October the complexity of this syndrome and the result he was beginning to have, at that time he had not completed his study, which he has now completed and he was very impressed by several things.*

*For one thing, lipid peroxidation which is the sign of the presence of free radicals and the low activity of glutathione was reduced to within normal ranges in these patients, so their clinical symptoms had improved. In addition, the lymphocytes obtained from this patients which were non-responsive as a antimicrobial were now extremely effective against a host of microbia, or microbes, including chlamydia and others which are involved in other diseases. So, he had this thing analyzed in different laboratories at Harvard and elsewhere. So you can imagine his interest to have a natural non-toxic product producing these effects. He had originally experimented with NSC which is a drug which delivers cystine to the cell but like most drugs has substantial side effects including cerebral symptoms and nausea and vomiting at the clinical dose levels. So he was very happy to move to Immunocal and he's now treating his patients with this product.*

**Dr. Mazlen** *Well, that's an exciting piece of information for those in our audience and there are many who have Chronic Fatigue Syndrome. We have a question about that from Donna in New Jersey about Immunocal and Chronic Fatigue Syndrome. Donna, what is your question in this regard.*

**Donna** *I've been diagnosed with Chronic Fatigue Syndrome and I'd like to know if Immunocal is contraindicated for people with celiac disease? I'm not supposed to ingest anything with wheat or gluten in it.*

**Dr. Bounous** *I can answer you. **There's no gluten and there is no wheat in Immunocal.** It's milk derived. In fact primarily it's made up of lactalbumin and serum albumin and lactoferon. So there's no case seen actually. I don't think I would worry at all unless you have a specific milk protein allergy which is a very rare situation, we see no contraindication.*

**Dr. Mazlen** *We're going to talk more about this work with Chronic Fatigue Syndrome and viruses. Dr. Somersall there was a mention that Immunocal may have some effect on mycoplasma and chlamydia. You want to talk about that also?*

**Dr. Somersall** *Yes, it's rather interesting. In fact, I will broaden the question somewhat if I may because, you know when you think of any form of therapy medically, we tend to think of specific application of therapy for a specific diagnosis or a specific pinnacle symptom. So, you take this for that. When you think in terms of health, the body doesn't really function in that mode at all. That is really an artifact that we impose with our model and cells, essentially, require common defense mechanisms against a wide range of challenges and toxins and so when you think of bacteria and micro-organisms generally, or we think of viruses we classify the viruses by different characteristics and we take specific measures as physicians to try to combat the different viruses. The cell doesn't do that. The cell has this broad based, generalized approach whereby its own defense it mounts specific responses which seem to have this widespread capability and one of the good things of being able to stimulate glutathione is you really empower the cells to make them super cells and they have this wide spread defensive capability against a wide range of viruses, against wide different types of bacteria. Against mycoplasma, against chlamydia, and its really common mechanism is because these various challenges and organisms are*

*mediated through common pathways and the cells are concerned about those common pathways and the most common defense at the common pathway as it were is glutathione.*

**Dr. Mazlen** *Okay, in that regard we have a question from Jim, who's upstate in Monroe, New York about macular degeneration.*

**Jim** *My son-in-law is a surgeon in Italy and he tells me that Italy is more advanced in implantation of minuscule cells that feed the blood into the retina. Can you tell me if there are any advances that you know of?*

**Dr. Bounous** *That's a very interesting question because I practiced surgery in Italy myself, in fact I trained there. I venture to ask you whether this is in the town of Rome or Pisa?*

**Jim** *Rome and Sicily.*

**Dr. Bounous** *Because there is a very good surgeon-ophthalmologist down there so... Unfortunately, I cannot answer your question because I have been away 30 years from it and don't know how it has evolved, but I hope that she gets benefit from this procedure. I'm not familiar with that procedure.*

**Dr. Mazlen** *What about the effect of the raising of glutathione in macular degeneration?*

**Dr. Bounous** *This is the question I'm often asked from people in Canada who have macular degeneration and although we have no specific study my general answer to this is that to the extent that free radicals or oxygen derived radicals are involved in the initiation or development of disease, **to boost the level of glutathione in the area involved could only help.** And this is where I stand at this moment. It could be beneficial although I have no proof except a couple of anecdotes that seems to be favourable.*

**Dr. Mazlen** *So you're saying that just protecting against free radical production in the area of the macular may be of benefit in patients and in that sense would Immunocal be used in these patients, obviously it wouldn't be a short term thing...*

**Dr. Bounous** *No, a long term thing.*

**Dr. Mazlen** *You have to use it for a while.*

**Dr. Allen** *If I may add Dr. Mazlen, **that's generally true of such a wide variety of diseases.** I mean, if you think of things like the formation of cataracts in the eye, or if you go into the central nervous system and think of something like Alzheimer's and perhaps the role of metals or free radicals in general, you may go into the gut and think of the pathogenesis of things like Crohn's Disease and so on, or you may go into the skeletal muscles and heart. It doesn't really matter because as far as the cells are concerned, they are just seeing these common threats, and **when the cell is empowered to answer the threat of oxidation or the threat of free radical damage or the threat of xenobiotics, the cell mounts one common response** and all we're able to now is to **empower the cells to do that and make them super cells.***

**Dr. Mazlen** *We have a question from Barbara in Brooklyn who's taking ATP right now,*

**Barbara,** *Hi, Dr. Mazlen. I'm taking ATP and glutathione injections. What would be the better thing to take, Immunocal or these injections twice weekly?*

**Dr. Somersall** Obviously, I'm not going to be your physician at a distance, or even out of state, so I really don't know what your condition is.

**Barbara** Chronic Fatigue Syndrome.

**Dr. Somersall** Let me just tell you. We just heard about that. Dr. Paul Cheney's work on Chronic Fatigue Syndrome. What we do know is that **glutathione is unstable in the blood stream** which means that **by the time it gets to the cell a lot of it gets degraded**. And then we also learned that **glutathione does not effectively cross the cell membrane** which means if we inject it into the circulation it does not actually enter into the cell where it needs to do it's job and until this breakthrough by Dr. Bounous where **we're able to provide the precursor that effectively goes into the cell to produce the glutathione** we did the best we could. So we took the glutathione by mouth and sometimes it was injected. Now, we have a method that is safe, effective, and convenient. It's safe, unlike injected glutathione and certainly NAC taken in large quantities and so on. It is effective because it is stable to digestion, stable in the blood stream and effective in crossing cell membrane which brings me to effective. When your doing all that, when you take Immunocal, your intracellular glutathione levels rise and when those levels rise you see all beneficial effects and as Dr. Paul Cheney has shown recently in Chronic Fatigue we can definitely get the benefits by using Immunocal.

**Dr. Mazlen** All right, we're going to talk a little bit now about some important research being done by Dr. Lands. Dr. Bounous tell us about that.

**Dr. Bounous** This is a very interesting study. Dr. Larry Lands is the chief of the Cystic Fibrosis Clinic of Pediatric Hospital of McGill University. He has started a study on cystic fibrosis but initially he wanted to see what the Immunocal does in healthy humans and to his great pleasure he found in a double blind study, in other words, in a scientific method with placebo, that he had two groups of healthy young men and women between 20 and 23, that they took the powder not knowing what they were taking, the placebo had the same appearance as Immunocal, but at the end of 10 months he found that **the group who had taken Immunocal were now able to perform increased volition on muscle activity to the tune of 13% increment. That, you know, could make the difference between a gold medal and arriving last in an Olympic game.**

It also showed that there is an increasing glutathione in the lymphocyte which is surprising in a way because it was almost a dogma to say in health people glutathione is at optimum level in the blood cells, but these were city dwellers so may have indicated since the second major function of glutathione is to detoxify all those terrible pollutants we are facing everyday where we are breathing and where we are eating, it is used up, because when it does that function it links with the carcinogenic, whatever the pollutant is and it leaves the body with it and so it has to be resynthesized.

Anyway, he found the study and the study was acclaimed by the American Thoracic Physiology Association and one other as the best study to be presented out of 5,000 to be presented to the media because it had never been found that an antioxidant can increase the strength of the muscle, the volition of the muscle. It was found that an antioxidant can increase the muscular response to electrical stimuli, but never to the volitional muscle. That is, of course, the background of clinical studies.

We now know why patients, for example, with advanced cancer, when they take this protocol, **all of a sudden they feel stronger, they increase their energy level and that is documented in healthy volunteers**. And Dr. Lands is now undertaking the second phase which is cystic fibrosis because the muscle of the thoracic respiratory muscles are weakened in cystic fibrosis, and he thinks that plays a role and also oxidative stress is very crucial to the development of bronchial mucosa changes. We have a

*study in Brazil, but not on this subject, it's done on the effect of this product on wasting in cancer patients,*

**Dr. Mazlen** *Cachexia in cancer patients. We're going to be talking some more about the interesting research that's being done but I first wanted to ask Dr. Bounous a comment on about whether all whey proteins are equivalent.*

**Dr. Bounous** *That's an interesting question. I happen to be an expert in failure because, as I mentioned earlier in the introduction, in 1988 this product in which I had found the property had stopped working. And I spent 3-4 agonizing years trying to find out why and there is nothing worse for a scientist to having 12 years of work being destroyed by oneself. I couldn't rest until I found the reason so I checked every product available from New Zealand, Australia, United States and Europe and they were all ineffective. Nutritionally they were all good.*

*So we had to reconstitute what was necessary. It's not an esoteric, extraordinary exploit. What you have to do, you have to use a special ultra filtration system which is so clean that it does not require a second pasteurisation because it's a balancing act between the bioactivity of this protein which required it to be native in the form--confirmation--and the bacteria, of course, you want to kill as many bacteria, especially the pathogens, so you have to heat it. So you have to use microfiltration. You have to use low level pasteurisation, but more importantly you have to have in house microbiologists to check every step of the way that you are doing the right thing.*

*So, I'm not prepared to say that all whey protein which may be cheaper on the because industry doesn't care about the bioactivity, they only care about the nutritional aspect and the low bacterial content, so I'm not prepared to say that all these products are good but I'm not also prepared to say that they're necessarily bad. I think the most the right answer was given by Dr. Cheney who was asked a similar question. His answer was "I don't know." And this is what a scientist should say. He has not tried the other. I don't think he's going to spend another two years of work to see if the others are equally effective.*

**Dr. Mazlen** *We have Marla in New Jersey. Her son has hepatitis C. She has a question about the Immunocal for that and Dr. Bounous is going to answer you.*

**Marla** *I would like to know if glutathione would be helpful or would it affect his liver negatively?*

**Dr. Bounous** *OK, I can give you an answer of a study being terminated in Japan by Dr. Watanabe (sp?) at Gilter University. He used Immunocal in patients with hepatitis B which is almost epidemic in the Orient and also in hepatitis C. What he found in hepatitis B is that the **virus of hepatitis, like the virus of AIDS, is very sensitive to glutathione** and this patient's liver had low glutathione levels. They have done few biopsies but glutathione is indicated by the lymphocytes which is a good indicator of what the liver has. He was able to raise glutathione but the raise improved the clinical situation and he has two laboratory data which I found interesting. A substantial, a 4-fold increase in natural killer cell activity, not only in the number but in their activity. And natural killer cells have, of course, a powerful....as I mentioned earlier the first line of defense against infected cells or cancer cells.*

*There is a rationale for that and the low glutathione in the liver, which is one of the mechanisms that predisposes them to eventually cirrhosis later on has been substantially improved. Now, the hepatitis C was effective but, unfortunately, the number was not sufficient so what Dr. Watanabe is doing is a study of hepatitis C in a larger group, but indications are that the virus of hepatitis C will be equally affected by raising glutathione levels through Immunocal which I found, apart from the*

*benefit that I hope your relative will have, but what I found fascinating from a purely scientific point of view is that **non-specificity of glutathione against several types of viruses** and this is probably why the virus effect doesn't bother to mutate in front of glutathione because he knows he's going to get it whichever form he is in and this is what I think, I hope, to have the results soon.*

**Dr. Mazlen** *We have David in New Jersey whose wife has Chronic Fatigue Syndrome. David, what is your question.*

**David** *The question is I would like to know if Immunocal requires a doctor's prescription and if so, would it be covered by drug prescription plans? How much does it cost?*

**Dr. Mazlen** *OK, if it's going to be given for Medicare or Medicaid benefits, it should be on a doctor's prescription.*

**David** *What if it isn't?*

**Dr. Somersall** *However it doesn't require a doctor's prescription. **It's an over-the-counter product and, obviously, with no side effects and no medical consequences**, it really does not require that but **because of it's clinical benefits, doctors are now electing to use it as part of their treatment regime** in a number of specific conditions, Chronic Fatigue Syndrome being one of them.*

**Dr. Mazlen** *Dr. Adante Accosta, you have a question on Multiple Sclerosis, Dr. Adante.*

**Dr. Accosta** *I'm sorry my question was directed more toward the **viral load**. Dr. Bounous, I was wondering if by raising T-cell count would the Immunocal as a result of lowering oxidative stress, would that in turn lower viral load?*

**Dr. Mazlen** *In what condition?*

**Dr. Accosta** *Well, for MS, hepatitis.*

**Dr. Bounous** *I would think so. The stimulus or replication of the virus is strictly related to the production of free radicals, mostly oxygen derived free radicals in the cell and cytoplasm and **it is known as long as glutathione is there to quench these free radicals, the virus doesn't replicate very well**. It is when the level of glutathione goes down below 50%, say, the virus begins to be very happy and starts to multiply. And it seems that everything the cells don't like, the virus loves. So, I would suggest that if one can raise the glutathione levels especially in the area of the mitochondria and in the vicinity that will slow down viral replication, any type of virus.*

[The opinions expressed during the interviews on the radio show represent the opinions of the individuals and not that of Immunotec Research LTD.]

Transcribed by [Carolyn Viviani](#)

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