Stem Cells: Nature's Solution To Fighting Inflammation

David Jockers, DNM, DC, MS
with **Christian Drapeau, MSc**

David Jockers, DNM, DC, MS
Welcome to the Conquering Chronic Inflammation Summit. I'm your host, Dr. David Jockers, and I have the honor today of interviewing Christian Drapeau. He runs a company called stemregen.co. This is all about how stem cells are the most potent anti-inflammatory cells in the body. Christian is a stem cell scientist and the author and creator of the first stem cell supplement. He holds a graduate degree in neurophysiology, and he's been involved in medical research for over 30 years, with the last 20 specifically dedicated to stem cell research. He is known as one of the leading experts in the world regarding stem cells. He authorizes five books, including the bestselling Cracking the Stem Cell Code. He's published dozens of scientific papers on brain research and biological processes. He coined the term endogenous stem cell mobilization, which we will talk about today. He's lectured in over 50 countries on stem cell research. Again, check out one of the most well-known world experts when it comes to stem cells. His potent stem cell mobilizer Stemregen at stemregen.co. Without further ado, let's go into the interview. Christian, it was great to connect with you and this whole world of stem cells. Fascinating. You're one of the world's leaders. I'm excited to have this conversation. Let's get started. For the listeners: Most of my people have heard of stem cells. But they don't understand them and their importance. Can you break that down for us?

Christian Drapeau, MSc
What is a stem cell? The best way to explain or understand what a stem cell is is to look at everything that we're normally used to looking at, which is not a stem cell, but a cell of the skin of the retina. The cell of the muscle. They're all specialized cells. They will all do one thing. They will never transform into something else. and then, to a large extent, will never multiply. A stem cell is completely at the other end of the end of the spectrum of all of this, which is at the other end of the spectrum, which is a cell that is nothing. As a stem cell, its real identity if you want, or its real role is in its ability to transform into another type of cell, which will be a somatic cell, and they will multiply in the bone marrow for the entire life of an individual. They are highly

proliferative and can become anything in the body. There's sort of the mother cell, if you want, of the body. What we have discovered in the scientific community. But we've discovered that they are the repair system of the body, which to me is probably the greatest discovery in this whole field of stem cells.

David Jockers, DNM, DC, MS
The body's constantly producing stem cells, but some people are producing them with better quality than others. What are some of the things that contribute to poor stem cell production?

Christian Drapeau, MSc
It's a big question because I don't think it's something that has been studied. We know through a lot of studies and observations that we do have what we call good mobilizes and poor mobilizes. This means the mobilization of stem cells out of the bone marrow into the blood circulation. A poor mobilizer will have fewer stem cells in circulation. Then there's the age factor that comes into the picture. As we age, red marrow converts into fatty marrow and yellow marrow, which do not make stem cells. The number of stem cells declines as we age. But the factors that will make you make fewer stem cells—I don't think this has been studied. I'm working right now. We're starting a whole investigative work with a scientist and an expert on stem cell, sorry, bone marrow physiology, because this has not been studied. To study the fact that what can modify the rate of conversion of this red marrow into yellow marrow? Is there a way to slow down that conversion? Is there even a way to reconvert bone marrow to make more red marrow? We know that some elements that are going to reduce stem cell function in the body are things like cigar smoking, alcohol, and stress. These are three things that will suppress stem cell function in the body. That's pretty much what is known right now in terms of what can be done to prevent the role of stem cells in the body.

David Jockers, DNM, DC, MS
It's interesting. We know that with chronic inflammatory conditions, the most common chronic diseases people are dealing with are related to chronic inflammation at their roots. How do stem cells play a role in that?

Christian Drapeau, MSc
There are two very interesting angles to that question. Number one: something that is rarely talked about, I would say, not known in the population because we talked about stem cells. We talk about regeneration, but stem cells are extremely anti-inflammatory. If we think of their natural role in the body. When a stem cell has an injury, that injury releases a slew of inflammatory compounds. The reason for these inflammatory compounds, to a large extent, is to increase the flow of blood and lymph in that area to allow immune cells to better navigate around the injury and remove bacteria, but also to bring stem cells to that area. Now, you cannot repair; as you have certainly seen, when you have an injury, when you repair, the inflammation goes away. You cannot repair it while having inflammation. That's why inflammation is always associated with a chronic problem that does not heal. The thing is that in the background when

a stem cell penetrates an injury, the first thing that the stem cell does is to shut down and reduce inflammation. They are powerfully anti-inflammatory. But very locally at the site of an injury. They are anti-inflammatory by nature. However, if you have a lot of these areas in the body that have chronic injuries, sometimes they're small like there's nothing that will make your life miserable. But is it the thing where you get up in the morning and you have little pain here and there? All these areas are called your problems. Damage-associated molecular pattern. There are all kinds of little areas with inflammation, and they leak. Over time, they raise systemic inflammation. What systemic inflammation does is that it blinds them to their ability to see where to go. It's almost like a vicious cycle. As you age, you will have fewer stem cells in circulation, so you won't have enough stem cells to repair all these small areas of injury. They leak, and they create systemic inflammation. Now whatever stem cells you have in circulation have a harder time finding where they need to go to repair. That's how stem cells are tied to inflammation, positively and negatively.

David Jockers, DNM, DC, MS
When somebody has systemic inflammation, they are shutting down their ability to utilize these stem cells. But at the same time, stem cells have an anti-inflammatory effect when they come out. They're able to suppress cytokine formation and help keep inflammation under control and balanced.

Christian Drapeau, MSc
Correct. For example, what I'm working with, I've been working with this for quite some time. But if we can reduce systemic inflammation, even temporarily, with things like curcumin or Phycocyanin with compounds that are known to suppress systemic inflammation, if you do this, you would almost like to reduce the noise in the bloodstream. By increasing the signal-to-noise ratio, stem cells can now better see where the signals are coming from. Now you allow stem cells to find these areas and repair them. Then you start to reduce through this feedback loop, reducing now the continuation of that systemic inflammation. By cutting this cycle, you can boost repair.

David Jockers, DNM, DC, MS
That's one of the great benefits of utilizing anti-inflammatory compounds like curcumin, or imagine omega-3 fatty acids—things like that that have been shown to reduce inflammation. They're going to allow the stem cells to be able to function more effectively.

Christian Drapeau, MSc
Correct.

David Jockers, DNM, DC, MS
That's great. How do we leverage the stem cells as a whole.? Are there ways that we can improve stem cell production?

Christian Drapeau, MSc
You need to understand that in this old world of stem cells right now, when stem cells were discovered, at first we did not have a good understanding of how our stem cells were regenerative. The whole field of medical research went to look at where we can find stem cells that we can utilize in the umbilical cord—embryonic stem cells. Then, little by little, we discovered that we have stem cells and fat tissue. Now we start to use adipose-derived stem cells. As all of this develops, we finally realize our stem cells and our bone marrow are just as effective. Now we kind of go back to the beginning, understanding that our stem cells have great potential. However, the research that's been done over the past 20 years has focused mostly on other types of stem cells coming from other sources. Most of the work that I have done is about how we can tap into the regenerative power of our stem cells. In that work, if I talk about the work that other teams have done, exercise, like very severe exercise or intense physical activity, will trigger the release of stem cells from the bone marrow. I don't think it's a strategy for overall repair in the sense that the reason why the body is calling for these stem cells is that if you have a bunch of micro lesions that you need to repair, they get called to repair muscles, so you don't necessarily have them going in other areas. to an extent. But if they go to other areas, then it's your muscles that don't repair very well. From a quantitative standpoint, they're released to repair muscles. The only thing that we know that can increase stem cells for healing purposes is fasting. Fasting for more than three days. I have not seen any documentation for intermittent fasting. It's all been documented for fasting for more than three days. If we want to do things to trigger the release of our stem cells, that's kind of the area that I've been studying for more than roughly 23 years right now: identifying plants that we have documented that trigger the release of our stem cells. I started with blue-green algae from Klamath Lake, which was the first one that I worked with. Once we documented the mechanism of action, the active compound, proof of concept, filing patents, and all of that, we launched our first product in 2005. But then, over the years, the other ones that I have seen, which, interestingly, are more potent than the first one that we discovered—the blue-green algae was just the first—we have sea buckthorn berry from the Tibetan Plateau, Aloe Macroclada from Madagascar, Pentax notoginseng from Northeastern China, and Fucoidan coming from various seaweeds. These are the main plants that we have documented that can trigger or stimulate the release of stem cells from the bone marrow, putting more stem cells in circulation, because that is the key parameter. The link here, when we look at the entire literature, is the link between how many stem cells you have in circulation and the body's ability to repair. If you can put more stem cells in circulation, your body will utilize them for repair.

David Jockers, DNM, DC, MS
Interesting. These plant compounds don't increase the amount of stem cells being produced, but they increase the endogenous stem cell mobilization from the bone marrow. They get them out of the bone marrow, where they're kind of in a storage tank, and get them into circulation, where they can have their desired effect.

Christian Drapeau, MSc
Correct. I need to put a little bit of a caveat here. We are limited by the instrument of investigation. The only access that we have to stem cells is to count them. We count them in the bloodstream. I don't necessarily know where they're coming from or how they get there. I just counted them in the blood. Now, as we documented the mechanism of action of the active plant that we have, the bioactive mechanisms of action all point very strongly to the fact that what we do is that we modulate the release of stem cells from the bone marrow. By now, it's pretty well accepted. That's what these plants are doing. But the bone marrow has an extremely strong homeostasis. When you release stem cells from the bone marrow, the level of stem cells in the bone marrow maintains itself pretty much where it was. As a consequence, you stimulate the production of stem cells. It's just that we can quantify it. They're happening almost together.

David Jockers, DNM, DC, MS
That makes sense. Have you outlined the mechanism for what these plants look like? Are there certain compounds that are in all of these plant compounds that you're studying? Is there a specific compound? What are they doing to trigger that endogenous mobilization of the stem cells?

Christian Drapeau, MSc
The blue-green algae is the one that we have studied the most because when we discovered this in 2001, the response by the scientific community was that it didn't mean anything. Putting more stem cells in circulation. Maybe it's bad for you. and if you don't have a mechanism of action, then what you're looking at can be just like an artifact. We had to dive deeply into all of that to investigate because we didn't know at the beginning. These are all genuine questions. to investigate what it was. For the blue-green algae, what we found is that it contains a blocker of L-selectin, which is an adhesion molecule that can be activated by shear force and also by an agonist by a molecule that binds to it. When that happens, it triggers the expression of a receptor that is specific for SDF1 which is the molecule released by an injured tissue or by the bone marrow. When the two connect, it makes the stem cell express an adhesion molecule, and it clings to the environment where it is. If it's in the bone marrow, that's the mechanism to keep the stem cells in the bone marrow. If you block L-selectin, you reduce the expression of the receptor. With fewer receptors, there's less of this connection. With less adhesion to the bone marrow, stem cells have a greater probability of getting detached from the bone marrow. That's the mechanism of action for the blue-green algae. Now, when we look at notoginseng, consumption of the notoginseng will do two things. It will increase the stem cell factor in the blood and in the bone marrow, which is a compound very well known to trigger both the multiplication or proliferation of stem cells in the bone marrow and also their release into the bloodstream. It also reverses the gradient for that molecule, the SDF one, that is constantly released in the bone marrow. It suddenly decreases in the bone marrow and increases in the bloodstream. Now stem cells are attracted to the blood compartment. These two together lead to a significant increase in stem cells in the blood circulation. That's the notoginseng. Now if we look at some of the other compounds, like the sea buckthorn berry, it seems to work by

increasing the concentration of the compounds that normally your body releases when you have an injury. Just like you have fasting-mimicking compounds, we can call these compounds injury-mimicking compounds. It fools your body into thinking that the body has an injury more or less. These are the three main mechanisms of action right now that we have documented in these plants.

David Jockers, DNM, DC, MS
Fascinating stuff. You guys have put together your formulation for the Stemregen.co when you're researching this. What have you found with that formulation blend? Is there a series of these things, or what are you finding?

Christian Drapeau, MSc
The idea of blending them is first, most of the time, in nature. In the human body, when you have one outcome, we're talking about releasing stem cells through various mechanisms of action. Then they sort of synergistically work with each other. You can also see on the curve that the release of stem cells like blue-green algae will trigger a release that will be an increase of about 25% in one hour and then it goes back to baseline within two or three hours. When you look at a Panax notoginseng and the sea buckthorn berry or aloe macroclada, you see a completely different behavior. There's an increase in the number of stem cells, and by three hours, it's still increasing. We know that this is more long-term. By long-term, a few hours of release. It tells you. But it's a different mechanism of action. We blended them. But the way that all these plants blend makes it very difficult to test the product itself. What we did was, once that blend was done, we moved on to the clinical trials that we're doing with various conditions. If you have stem cells, we know that there's good documentation that by increasing the number of stem cells and circulation, you can help the heart repair. We started this study with chronic congestive heart failure. This study is in Madrid, in Miami. The study is ongoing. We take individuals with at least two years of chronic, stable congestive heart failure. Individuals with whom medicine has done everything that could be done for them. All we do is add the Stemregen. The study is ongoing. But at this point, after analyzing ten patients or participants who have been in the study for six months, they have normal heart function. We are studying, and we started one in January on Parkinson's. We're too early right now to have data. We're starting one on COPD, like emphysema. and we're preparing studies on diabetes, spinal cord lesions, and other conditions that we have seen over the years with good results. As we publish them, as we finish these studies, we will publish them. But that's what we're focusing on right now—to say we put more stem cells in circulation. There is tons of scientific documentation showing that many aspects of human health can improve when you put more stem cells in circulation. Let's see what happens when we put more stem cells in circulation with that blend of plants.

David Jockers, DNM, DC, MS
Did you say that with the congestive heart failure study? It's not finished yet, but you said that there were ten of the patients who went from having congestive heart failure to normal heart function.

Christian Drapeau, MSc
Correct. What is even more impressive about that study is that it's ten out of ten. These are the first ten patients. All of them, after six months, had normal heart function, with which I was impressed. I didn't expect that. I don't know. At first, I did not expect that when we're done with this study with about 30 people, that would be 30 out of 30. But ten out of ten is beyond what I was expecting.

David Jockers, DNM, DC, MS
30 people are enrolled now, but these were the first ten that got started with it.

Christian Drapeau, MSc
Correct. We started with ten because the first part of the study was done to compare the Stemregen with stem cell injection. Then compare any of these two with a combination of both. Because I'm working with a cardiologist, we have seen over the years that we need both. That's when he sees the best results. We wanted to compare all of that. We have done that right now. We have had several patients in the three groups, and now we're boosting the number of people with just a Stemregen. Let's keep going. Hopefully, in another 12 months, we will have about 30 patients.

David Jockers, DNM, DC, MS
Those ten individuals were doing both. Were they getting stem cell injections as well?

Christian Drapeau, MSc
Just Stemregen.

David Jockers, DNM, DC, MS
There was no other lifestyle counseling that they were given.

Christian Drapeau, MSc
These are patients who were all getting lifestyle counseling—everything that is normally done for patients with congestive heart failure. Most of the time, from a purely medical standpoint, the best that is done is that they put them on beta blockers, high blood pressure medications, etc. and oftentimes there's a lot of medication that they add to this. It's not coming to mind right now. Probably diuretics.

It's a combination of those three. There could be a few others and medication, but that's all; it's nothing to help prepare the heart. It's all to reduce the pressure that is put on the heart. The quality of life increases to some extent, but at the same time, the performance goes down if you want, like they're not suffering, they're not damaging their hearts. They're not continuing to evolve as fast. But they walk, I don't know, five to 10 stairs, and they need to sit down and rest to catch their breath for ten.

After six months, the only difference is that they go on Stemregen, and after six months, they have improved about 21% in ejection fraction, which is the amount of blood ejection ejected from the heart with each heartbeat, which puts them at that point at about a 50% ejection fraction, which is normal ejection fraction. We do that for a six minute walking test. And the clinic in Madrid, which is on a slope. It's not a big slope, maybe; I don't know, like ten or 15 degrees. They make them walk that block and then see how they are after, and afterward, they all start, and they're completely out of breath if they can walk that block. At the end of the study, they all walked that block without any problems. I'm not telling you they're going to run a marathon, because that's not the aim of this study, but it's to help them just resume a normal lifestyle.

David Jockers, DNM, DC, MS
It's remarkable findings so far. It's interesting to see how that study continues to progress. Fitness. How are you? How would you compare the Stemregen to people? A lot of people are going; they're getting stem cell injections and are getting stem cell therapies. What are the pros and cons, and what's comparable to, utilizing the Stemregen?

Christian Drapeau, MSc
The only study that compares those side by side is the one that we're doing; it's this study on congestive heart failure. Right now, we have a 21% improvement in ejection fraction with Stemregen, about 30% with adipose stem cell injection, and about 40% with a combination of both. The only caveat, though, is that these were randomized patients. When we look at the data, the people who were in the Stemregen group started with an ejection fraction average of about 43%. The only reason you don't bring these people to go much higher than, let's say, 50 or 55%. The leverage here to have an improvement is less than the stem cell group that started with an ejection fraction of about 38% on average. They got a bigger increase. But it could be a bias just because they started lower to begin with. As we get more numbers in the Stemregen group, we will see how these statistics get better. But right now, with the data, we have 21% in the Stemregen, 30% when you check with the adipose stem cell injection, and 40, or 42% with a combination of both. That's so far what we see. Now, if I look at the stem cell literature, This is just a number comparison of what has been reported. Another study compares these two treatments side by side and these two modalities side by side. We have seen that injection, or injection itself, can bring benefits in many conditions. The gist though is that, generally speaking, 30% will tell you they get great results, and 30% will tell you it was good. I didn't waste my money, but I didn't get all the benefits that I wanted. and then another 30% will tell you it was a waste of money for them. Stem cells are always regenerative. Now, when they are in your body, they will

repair. To me, the question is, why even have they not worked with these people? If it comes back to what we talked about before, systemic inflammation and good capillary circulation. If stem cells do not reach capillaries, then you can have them in your blood circulation. They don't matter. There are other things to help, such as the circulation and the role of stem cells in the body. When we talk about Stemregen, what we have in the scientific literature is a lot of documentation using drugs that are known to trigger a stem cell release from the bone marrow but cannot be fully utilized for treatment because they have severe side effects if they're taken over longer periods. That's where Stemregen becomes very interesting. It's not made to cure anything, but it's natural and will help you release your stem cells with more stem cells in circulation, essentially enhancing, boosting, or supporting your natural repair system. But it is safe for long periods. As you do this, over long periods, two capsules of stem cells will release about 10 million more stem cells into circulation. Do this for a month. It's 300 million of your stem cells that you have released. Do this for three months with a billion of your stem cells that you have released. Over time, the benefit can become fairly significant.

David Jockers, DNM, DC, MS
That's powerful. I'm intrigued by the research that you guys are doing and what you're finding here. People can go to stemregen.co. That's the main website. You guys have good research and content there. People can learn more about stem cells, how to utilize them, and these plant compounds. They can purchase the product as well. What are you hearing from your customers?

Christian Drapeau, MSc
We hear everything that we would have expected. The moment you put more stem cells into circulation, there's tons of literature. If people want to go, I should have a lecture there on the website. If not, I'm sure there's one on YouTube. But when I present, I show all that data. Clear data shows that once you release your stem cells, they can go to the heart and help repair the heart. They can go help repair the pancreas, and deliver the lung, the brain, and the skin to join the spinal cord. Like everything—the liver, the lungs, everything in your body. That's the proof, essentially, that you're still alive today. The body is constantly going through a process of turnover. You get a new liver every two or three years, and a new pancreas every six years. Half of the new heart every 25 years. If you're healthy today and alive, it's because your stem cells are working. All we're doing is giving back to the body its ability to repair. When you were, let's say, 10 to 20 years ago, because that's what it is. Your number of stem cells declines as you age. The problems that you had at 50, you did not have at 20. The main reason is that you have plenty of stem cells to repair. By putting more stem cells in circulation, there's no cure or anything. It's not improving anything. It just gives the body the ability to repair itself. The results are what you would expect when you suddenly give your body its ability to repair. We just launched about three weeks ago at the biohacking conference in Dallas, and we launched two additional products because, over the years, I have seen that if we can, once you've released the stem cells, suppress systemic inflammation to now make stem cells better respond to signals coming from various tissues, then they can migrate. They're better. If you can open and improve the microcirculation by, let's say, nitric oxide precursors, making the blood more fluid with

nitrogenase, or adding noise that helps rebuild good environment vocabularies and polysaccharides to rebuild the glycol calyx, Then you suddenly provide everything that is needed for stem cells, which can be fairly big, sometimes two or three times the size of an actual capillary. To allow stem cells to squeeze into these capillaries, you need a good capillary structure. Now we've come up with these products to maximize the role of your stem cells. Once they have been released,

David Jockers, DNM, DC, MS
It makes a lot of sense. Guys, you can learn more. You can check out Christian's great book, Cracking the Stem Cell Code. Again, go to Stemregen.co where he's got a lot of great information. You can check out his Stemregen product as well. Christian, thank you so much for your time and your expertise, and I look forward to just continuing these conversations as you guys get more and more research and data. Thank you again for all the great work you're doing.

Christian Drapeau, MSc
Perfect. Thank you. David.