Interview with Dr. Barbara Brewitt: the fundamental role of cell signaling in healing and relevance to autism

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Abstract

Cell signaling provides the fundamental information the body needs to heal itself. Cell signaling underlies all mental and physical activities including repair and regeneration processes at the cellular level. Complex disorders are involved with autism and other pediatric developmental disorders, including HIV. Similarities between autism and HIV are discussed. Autism disorders involve damage to basic defense and developmental systems including nervous, immune, endocrine and biological. A unified approach to treating these DNA, RNA, gene and cell signaling disorders is to identify and support for basic foundations the body has established for healing. Use of oral and topical cell signaling natural medicines provides the body with what it needs, in safe and low enough concentrations, to potentially evoke healing and repair without stimulating adverse side effects such as further toxicity or lactic acidosis. Cell signaling involves growth factors normally found in the body at very low concentrations. Cell signaling natural medicines are one way to talk to the body using normal, natural, signal transduction pathways that are initiated when G-proteins are turned on via growth factor cell receptors. G-proteins act as a universal on/off switch that are frequently damaged by mercury or other toxic heavy metals. Growth factors are one of the methods the cell has evolved to use for repair of G-protein and cell membrane damage. Cell signaling treatment approaches are discussed in this phone interview from the perspective of science, clinical study efficacy, HIV study results on infected children in South African subsistence living settlements and case study reports.

Keywords: Autism, cell signaling, HIV, DNA, and mercury toxicity, vaccine, growth factor, measles

Today, we're learning about cell signaling's fundamental role in healing, the relevance to autism, the similarities between pediatric AIDS and autism and how cell signalers have been used successfully with children affected by AIDS and autism. It's our privilege to be joined by Dr. Barbara Brewitt.

Dr. Brewitt's doctoral work involved biological structures and cell signaling. Her specialty is growth factors, and Dr. Brewitt trained and worked at the National Institute's of Health research in growth factors. She is the Chief Executive and Chief Scientific Officer at Biomed Comm, Inc., a company she founded to further develop the innovative post-doctoral research she did at the NIH. Dr. Brewitt was a visiting scientist at the University of Washington School of Medicine at Jones Research Associate at Bastyr University Research Institute and has a Master of Divinity. Barbara Brewitt is world renowned for her unique and clinically proved applications of natural cell signaling medicines. She developed cell signal enhancers as a result of research into the importance of cell-to-cell communication for optimal health.

In 1999, parents of children with Autism Spectrum Disorder (ASD) asked Dr. Brewitt to involve herself in ASD research and formulate a new homeopathic FGF-2 product. Together, the parents and Dr. Brewitt began a tireless journey of research, education, innovation and problem solving, dedicated to curing ASD. Barbara Brewitt has been involved in clinical studies on homeopathic growth hormone and growth factors, and her peer-reviewed work on these cell signaling proteins range from autism and HIV in the United States and pediatric HIV in South Africa to healthy aging, longevity and models of rapid aging. Research of Dr.Brewitt has been validated through No.1 ratings of her clinical findings and grant proposal awards at the NIH Office of Alternative Medicine and other peer-reviewed complementary and alternative medicine conferences.

Thank you for joining us.

Thank you, and good morning to you.

Dr.Brewitt, we need to start with some fundamental information. Please describe the cell membranes, cytoskeleton, and cell cycle.

Cell Membrane Cytoskeleton

Okay, let's start from imagining you have a body, and the body is composed of lots of cells. The cells are like little fortresses, so the cell membrane is the outer area of the cell, which has a double layer that is electrically charged. It is a lipid membrane so that things can move around, (and the cell membrane is like jelly, it is fluid). It's the buffer zone between the outer world and the inner world. The cytoskeleton is like a grid within the cell, similar to a city grid. It acts as a web so that the little teeny organelles inside of the cell moves around on this grid almost like a highway. This is the manner that the organnelles can then do their functional activity. You also wanted me to describe –

Cell cycle.

The cell cycle—cells have a lifecycle. There are four classical stages to the cell cycle. They start with cell division, M stage where they divide; they go next to a stage that is simply called G-1 stage, where all of the major decisions about the life

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and fate of the cell are made, such as will the cell divide; will the cell die, or will the cell specialize? After those decisions are made, the cell goes into its next phase, which is called the S-phase or the DNA synthesis phase. Then there's a G-2 stage, in which luxury proteins are made—it's not a critical aspect to the cell; it just is preparing the cell for the cell division, M-Phase. And so there are those four areas of the cell cycle, G-1, S, G-2 and M.

In autism, let me just say that there is a problem between the cell division stage (M) and G-1 phase. During M phase, the cell has gone through quite a bit of energy expenditure with cell division and uses a resting phase often called G O to recover before starting G-1. The cell rests after it divides. When people are ill, including autism, they often get stuck between the G-O phase and the G-1 phase.

Thank you for that very detailed explanation. That's very helpful. What is meant by cell signaling? Please explain the physiological mechanisms and the composition of a cell signaler.

Cell signaling is essential for survival because it's the common language of the immune, endocrine and nervous system. They all use the same communication language, which is cell signaling. Cell signaling is the mechanism used by the body to communicate cell-to-cell and system-to-system. It' creates a harmonious balance within the body allowing the body to work optimally and healthily. Through cell signaling, cells are able to coordinate healing, and they protect the immune, nervous, and endocrine system. These are the major defense systems in the body.

Okay, through cell signaling, cells coordinate healing and can protect the nervous, endocrine, and immune systems. Is that what you're saying?

It's an easy way to go; cells talk to each other communicating vital information and providing information between the different systems all the time.

Okay, what is the composition of a cell signaler?

A cell signaler is a small protein that carries information from outside the cell to tell the cell about what other cells are doing in its community. So, cell signalers are proteins that swim around and talk to their neighbors, and sometimes they talk far away to cells farther away from themselves providing feedback with the purpose of gaining more balance and harmony throughout the body. For cell-to-cell communication, a messenger is needed to carry the information between the cells. They never get into the cell but transfer their "message" or information via cell receptors on the cell membrane.

Okay. What's a growth factor, and what's the difference between a growth factor, a hormone, a cytokine and a G protein?

And let me throw in the word "neuropeptide". A lot of people have heard that word, so a growth factor, growth hormone, a cytokyne and a neuropeptide are all the same. They're small information proteins. They're really cell signalers, as I just defined them. A classical hormone, like estrogen, has a benzene ring in it, and it has other compositions, thus is not a cell signaler. Growth factors are only proteins; no benzene ring, no nothing; only small proteins—so they're very different in how they work.

Cell signalers, or growth factors – I'll call them cell signalers, just so I can talk about the whole family of them, travel only to the surface of where the cell membrane is, and they have a very specific and unique receptor that catches them. A hormone has a cell receptor that is down inside the nucleus of the cell into the interior of the cell, and hormones travel only in the blood. They have a cycling of maybe days to months; whereas, cell signalers have signals of 3 minutes to 90 minutes, a very fast turnover. Hormones and cell signalers are very different than what a G-protein is. A G-protein is actually like an on/off switch that lives inside of the cell membrane. We talk about the cell membrane as having an outer face and an inner face, and the G-protein is located on the inner face, facing inside of the cell. The cell signaler receptor faces outside.

If signal transduction doesn't work right, what else can't function optimally, and you can explain signal transduction too, if you would?

Yes, Teri, that's an excellent question. Signal transduction is this amazing thing that cells do. When cells talk to each other, and because each cell is its own fortress, they have developed through evolution an amazing cascade of tag-team activity, and that's called signal transduction by scientists. What it means is a cell signaler is an information protein. It's caught by an antenna, which is called the cell receptor on the outside of the cell membrane. When th cell receptor is activated, the G-protein moves over, actually in the fluid cell membrane, to that antenna/receptor, linking to it and throwing a switch on or off. The switch then causes the G-protein to take the information packet to the next tag-team messenger, who carries it to the next messenger, who carries it to the next messenger, who carries it to the next messenger, and so on until there is a final tag team messenger who carries the message to the final messenger. It activates an electrical charge, and the information packet is delivered all the way down to the DNA, where the cell has new information from the outside. The new information helps DNA change its expression to change cell behavior appropriately to come into balance, adjust gene expression and mRNA expression and protein expression and a lot of other things occur.

Cell signaling is the prime mover. If you can imagine damaging the prime mover, everything downstream, or everything else in the cell goes wrong or can go wrong. You have nervous system dysfunction; you have immune dysfunction; you have endocrine dysfunction; you have enzyme dysfunction; you have mRNA dysfunction; you have DNA dysfunction; everything goes wrong.

What happens to cell signalers and cell signaling when kids are ill or have toxicity issues, such as with mercury?

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Well, I think maybe many of your listeners are familiar with Boyd Haley's work, and if you aren't, then I encourage people to find out about Boyd Haley. He has a video that shows mercury in a very small petri dish with a neuron, and it shows an immediate damage, within seconds, to tubulin – well, in nerves in general—so mercury does a lot of damage to the very fragile grid highway or cytoskeleton and the signaling switches that are so essential for healing the body and bringing the body back into balance.

Once there's an internal imbalance in cell signalers, does this cause a vicious cycle where it causes internal damage and that further whacks out any ability to regain balance in cell signaling?

Yes, if we're talking about autism specifically, and we're basing it on the idea that there is heavy metal toxicity or there's a virus or there's a bacteria, which also can damage the cell membrane and the G-protein which is the fundamental switch; then you can expect that the body is out of balance. Dr. Mary Megson has written a hypothesis that autism reflects damage to the G-protein that has a little sub-unit called, alpha. When the G-protein is broken the cascade of cells talking to each other is disrupted and the cell being able to heal itself is disrupted and thus unable to come back into balance. You've got a damaged highway; you have damaged tag-team messengers; the body doesn't really know how to come back into balance.

Now, if I can just jump to the fact that cell signalers are important because they've evolved. The body is so amazing in its ability to heal, so cell signalers have anticipated, in a way, these kinds of problems, and they're evolving to try to bring the body back to healing, which is why I'm trying to develop them as therapies to help the children heal.

And we appreciate that. Is it okay if I backtrack a little bit?

Yes.

Okay. What do bolus doses of vaccines do to an infant's networking process between the immune, nervous and endocrine systems?

Well, I'll tell you, these are really profound questions. So a child, whether it's a bolus dose or even just a small dose; if a child has the genetic susceptibility or they get higher than normal amounts of mercury, which I believe that all children can get, then you have fundamental damage at the core common language of the nervous, immune, and the endocrine systems. Whether it's a vaccine that gives a live virus or it's a vaccine that gives aluminum as what is called an adjuvant or "a helper," but it's a toxic helper or it's mercury; you have fundamental challenges to a very vulnerable human life. And children in development; while they're not 3 years old yet, they haven't actually fully developed the grid highway in themselves for their communication and healing potential in the immune, nervous, and endocrine systems. Thus, the feedback loops that establish balance and harmony throughout the body haven't been laid down and matured yet.

So it's too early of a time period to be challenging these children with several vaccines all in the same day or at the same time. The body's just not ready for that kind of an insult.

Do early childhood infections, in fact, actually strengthen the body for later resistance to acute or chronic disease; for example, by activating growth factor production and system-to-system feedback?

Actually, that's been well researched in both Israel and in Africa, where vaccines are not standard. There were studies done between children living out in rural areas and those that were living in city areas that were getting vaccinated. It was found that the children living in the rural areas, which were being exposed to animals, bacteria and a lot of pathogens; became stronger in their immune functions. The broad exposure to bacteria and other pathogens actually diversifies that developing immune system that I just spoke about. These children have amazing capacities, and as they have exposures, their body is diversified in learning how to strengthen itself. That's just normal.

Vaccinations in the studies were found to prevent that immune system diversification and cause allergies and more autoimmune disorders and inabilities for the immune system to have its breath and its depth- diversify.

What an excellent, excellent point. What does the gut pathology that autistic children have; have to do with impaired cell signaling? Is that connected too?

Actually, it's very important, and it is connected. So we know just lately that there has been some work published not only from Dr. Andrew Wakefield on gut dysfunction, but others too.

Oh, Dr. Elizabeth Mumper?

Yes and then there's someone from the FDA—it's S. Jill James, Ph.D.—who showed that gut function and glutathione levels are very, very low in autism.

I have been doing a lot of research with HIV over the last decade and a half, and they have an enormous amount of gut problems. Autism has very many similarities to HIV, and that's to say gut problems. If you look at some of what Dr. Wakefield has presented at Autism One and DAN conferences, he showed the guts of children with Autism, showing exactly the same damage as those people with HIV. You cannot see the differences. The low glutathione level is extremely common in HIV, as it's common in autism.

Glutathione is a very important antioxidant, and it's just been also known that growth hormone, which can be made homeopathically, for which we have priority rights, controls all the glutathione expression in the body. Growth hormone also controls mRNA expression in the body, and it controls gut ability to utilize nutrients appropriately. So upstream from glutathione and gut dysfunction is growth hormone dysfunction.

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Okay, so if I may reiterate, low glutathione is common to both Autism and HIV. Growth hormone controls all of the glutathione expression, and messenger RNA and gut's ability to use nutrients. Is that a correct summary?

Yes, and let me just say one more thing; that children and – well, there's just a whole population of us that are susceptible to —and maybe it's genetic susceptibilities—but we're not able to detoxify our body very well. We can't talk about low glutathione without talking about an inability to detoxify. There's a condition that's called lactic acidosis or just acidosis, which builds up in the body when you don't have the ability for utilizing antioxidants. And growth hormone is the body's natural way to have detoxification in the body. I want to add that growth hormone is really a cell signaler; it's a growth factor. It is not a hormone because of the pathway that it uses to influence, signal the DNA, and where its receptor is located on the outer surface cell membrane.

Okay. Could you tell us about the relationship between the cell cycle, growth factors, viruses and DNA or gene regulation?

Yes, okay. So, let's take it from the top again. Imagine this outer circle—that's the cell membrane. And it has an antenna on it, and that's where the cell signaler is—whether that's a growth factor, a cytokine, growth hormone, or a neuropeptide—the cell membrane has receptors on it. Then the cell signaler's goal is to send a message down to the DNA to change expression or to repair something in the cell or the body without ever entering the fortress, and the fortress is the cell.

After the cell signal activates the cell antenna the signal begins. The antennae moves, changing its shape, and the G-protein goes over to it, opens up like a switch, and then you have cell signaling via tag team messengers all the way down to where the DNA is and influences the expression of the DNA and the RNA.

Okay, thank you for reiterating that for us, and we'll see that's going to be relevant to something we'll be talking about shortly. Now, you've mentioned similarity between autism and HIV. Can you tell us in what ways measles virus is similar to HIV?

Okay, there were studies done that showed that the structure of Measles and the structure of HIV are exactly the same. They're both what's called RNA viruses, and a RNA virus is basically genetic material surrounded by a protective armor. It's like having a coat on, and the coat swims around because that's the only way it's protected until it finds an entry point, and it inevitably, whether it's HIV or measles; finds an entry point to the cell, basically, an immune system receptor. It can also use a growth factor receptor for an entry point.

Oh, this is really important.

Yes. So, it's using a receptor that could be either a growth factor receptor or an immune system receptor to enter into the cell. When it enters into the cell, it takes its coat off at the surface, which changes the cell membrane fortress makeup, and it actually changes the electrical profile of the cell. The genetic material gets into that cytoskeleton, tries to get down to the nucleus and inserts itself into the DNA. Measles and HIV use exactly the same mechanisms, and the same cascade of signaling that cell signalers use. So the three of them all use the same method to go to the DNA, DNA isn't the same throughout the strand. At the DNA, there's something called a regulatory site, which tells what part of the DNA strand must be utilized and regulates the DNA via instruction, "Read this part of the DNA. Don't read this part, and make about a trillion copies of this part of the gene." So growth factors, or cell signalers, regulate one part, and HIV and Measles, of course, are going to only want their own DNA expression, and so they use the same regulatory site, and then go, "Read me and make more of me."

The reason that cell signalers, I think, are so powerful is because they use the same regulatory site and the same entry point as retroviruses do. They can competitively inhibit the cell from having it be taken over by the viruses.

Okay, so let me see if I can summarize this correctly. It sounds to me as if HIV and measles compete with cell signalers for receptors or regulatory sites or pathways and that cell signalers use, thus correct cell signaling can prevent viruses, such as measles, HIV or even chicken pox from capturing the cell. Is that correct?

Yes, that's an excellent summary. I do want to clarify that chicken pox is a DNA virus and is in the herpes family of viruses. Cell signaling can create balance then for both types of infections, whether from RNA or DNA viruses.

I would say what the goal is –let's say we have a normal child, and everything's going along fine. What happens is the Measles or HIV or, like you say, if the Chicken Pox, takes over the cell, and the cell doesn't have the diversity or the strength to recapture the cell, so you get what's called aberrant or abnormal cell expression.

Now, when the cell signalers are able to prevent this capture of the cell, is this before infection, during chronic infection or after infection or all of these?

It's all of them.

I don't know if using cell signaling preemptively, before you have a vaccine is going to 100% prevent that potential damage to the body. I think strengthening and increasing the diversification of the immune system is very, very fundamental to our health. After infection or during an infection, what's happening is, especially in Autism, the toxicity is increasing because the body no longer has the gut function, the liver function, the brain function, the nervous system, the immune, the endocrine functions necessary for health, repair and development – they're not talking to each other.

Right; it's just a mess.

And when the cell signaling has to integrate and rebalance the body, the body begins to detoxify; it begins to talk to each other, and wow—all of a sudden, you're seeing healing, which is pretty miraculous.

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Yes. Are there different cell signalers for different kinds of viruses?

There are. The cell – you have to realize I'm a researcher, and researchers often study bacteria and viruses, that are just other forms outside of our human form that carry genetic material, and they're trying to survive and evolve. We just don't want them using us as hosts. It's kind of an "us against them," so we need to be strong, and viruses and bacteria disrupt the cell because they're like capturers that are capturing our body to do whatever they want, and we have our own plan and purpose.

All right. I want to backtrack a little bit. What are the similarities between the brain damage in HIV and the brain damage in Autism? I know we've talked about gut a little bit. I would assume that there are similarities between the cell signaling dysfunction in both HIV and Autism.

Yes, when I just gave my talk at the Autism One Conference, and because we've just finished a study in South Africa, what's called "pediatric HIV," we were amazed, as I simultaneously looked into both conditions' commonalities; i.e., autism and pediatric HIV. There is the neuro-damage in the brain with neuron tangles in the brain. The two brains are very vulnerable. In autism during development, like I said, the neurons are still connecting to their immune system and their gut cells. What happens with HIV is that you get aberrant signaling, then you don't get the normal tag-team connections you need between large defense systems, like nervous, immune and endocrine. What a child is all about is learning how to be connected, how to problem-solve, how to figure out, "What am I doing in this body in this life right now?"

And when you have a virus infecting you or you have damage from a heavy metal that is damaging nerve cells, then that neuro-development doesn't happen. You get brain tangles; you get cell death, which causes something called necrosis, which is like rotting cells, things that aren't really supposed to be there are there. Cells are breaking down, and you have kind of like a garbage dump in the brain.

Oh! And we talked about the gut dysfunction. Are there any other immune system dysfunctions that are common to both HIV and Autism?

One of the things that we spoke on earlier, glutathione; there's been some excellent correlations between dysfunction of natural killer cells, which is a part of the immune system, and low glutathione and depth dysfunction. Natural killer cells are this amazing part of the immune system that just goes, "I'm the superhero, and I'm going to go out there, and I can tell what is myself and what is something abnormal;" like a cancer cell, for instance. And the natural killer cells will go out there and go, "There's a broken cell; that's abnormal; I'm just going to kill it and make sure nothing else happens," and then something called a macrophage, which is also called the "big eater;" swims in that area and cleans up the mess.

Now, the hormones that regulate natural killer cells, are not working properly in HIV, and also not working in autism. Macrophages, these big eaters, that naturally swim around and gobble it up are abnormal, are dysfunctional in both autism and a huge problem in HIV. Often, a virus will use that macrophage as a way to trick the body and continue to infect through it. Macrophages don't get infected and die, they continue to carry the infection and infect other cells.

Can you specify the similarities between the areas of the brain affected by Measles and the areas of the brain affected by Autism?

Oh, okay. This is how I really learned that the Measles virus is very dangerous to Autism. People that get a chronic measles infection get encephalitis or an inflammation in their brain in the area of the limbic system or the cerebellum, which is kind of where our motor function comes from or some of our complex reasoning; it is exactly the same areas that are described as damaged in Autism. My lights just went on when I saw the connection. I went, "Oh, my goodness."

Here, we have infected adults in the medical literature that are extremely well characterized; for brain inflammation. Everything that's wrong with this adult's chronic measles infection, is also wrong in autism. You could put the two on top of each other. They're so identical.

So I want to thank you. We're not done yet, but I want to thank you for illustrating that Measles, HIV and Autism all share similarities.

Yes, let me say one more thing about HIV, so we all know that HIV, as it gets progressed and goes into AIDS; people can live, but they get this thing called Dementia; the HIV goes into the brain area of children and it begins to cause that same kind of damage as seen in autism. It causes necrosis or these garbage-dump areas; it causes these brain tangles. Everything is happening the same, and we call it Dementia in an older person, and a younger person; it's not the same as Dementia, but it's a different stage of life, and it's called Autism or developmentally disabled.

I really appreciate your drawing that analogy. I think I have heard someone link those two before. I think it may have been Boyd Haley, so I really want to thank you for bringing that up today. What's the relationship between measles, mercury, magnesium and manganese?

Wow! That's a hard question. That's a good one, so mercury; you have to appreciate is damaging the switch, and G-proteins, again, are a switch. G-proteins are the first stage of that cascade of signaling into the cell. When cell signaling occurs, that antenna or that cell signal receptor moves, it changes its shape, and the G-protein swims over. An electrical charge from the outside of the cell goes inside of the cell, and the cell membrane opens up and allows electrolytes, magnesium and calcium to enter the cell because those are fundamental to physiological processing. So when mercury damages the G-protein and it damages the tubulin and it damages the switching of on/off signals at the cell membrane that initiate signal transduction processes. The cytoskeleton which is the grid highway that enables tag-team messengers to carry information packets

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to the DNA are not working when the cell membrane is not signaling, so you have a lot of problems.

Measles, specifically, and I'm still tracking down reference papers on this– I found a paper that showed that measles, upon exposure to heavy metals or altered manganese can evoke measles to mutate ten times faster than HIV.

Can you repeat that please?

That manganese or specific other heavy metals in the presence of measles, can evoke measles mutations that are ten times faster than HIV, and HIV is one of the fastest mutating viruses that we know about. We've been studying HIV for 20 years, and researchers can't get past all those mutations.

Okay, wait. Did you say when measles is exposed to manganese?

That's right. Heavy metals, including aluminum such as in vaccines can cause chromosomal gene mutations and other physiological aberrations, such as mutation of chronic viral infections, like measles.

In the presence of mercury, when you already have things dysfunctional, and then you have a measles infection at the same time, which is a chronic infection, the body can't heal itself, so you have chronic measles; you have manganese getting in and exposing the cell to high levels because the other minerals are not in balance; then the measles begin to mutate, and without chromosomal gene control, measles mutates really rapidly.

Now, none of us would inject HIV into ourselves as a way to strengthen the immune system, and it's foolish to inject a live measles into the body with this capacity for mutation.

Amen. Okay, and how does magnesium fit into things? Is that because it's inhibited?

Okay, so magnesium and calcium have a balance, and also glutamate is very important. Magnesium is really important to to the gut and the heart muscle; it's just an essential mineral to muscle fibers, and the heart is just a big muscle. All the other muscles – can be affected negatively by acidosis, thus magnesium is also very important in acidosis, lactic acidosis conditions. Magnesium is very, very important to rebalance the body and protect muscles and generally buffer the body from acidosis. We know that children that have seizures or I've had adult patients that had a lot of dental work with mercury; that were having seizures. The first time I learned about magnesium was from a patient who was having seizures like six times a day. I said, "Huh, I've never heard of this," and she started taking mega doses of magnesium and stopped the seizures completely.

So there's something about magnesium that helps counterbalance the mercury, reduce the acidosis, generally balance the physiology. Magnesium also counterbalances the abnormal glutamate in calcium toxicity in the body in the brain, thus helps in many diverse ways to maintain health and vitality.

Okay. What homeopathic preparations and homeopathic growth factors have been observed to have helped with measles-related deficits or pathology?

Okay, I want to start out by saying that homeopathy is known to restore balance to the body. It was developed 250 years ago, formally, by Dr. Samuel Hahnemann, although it could be traced back to the Delphi Oracle, 2,000, 3,000 years ago, 1200 BC. People always knew "that which wounded could heal." So homeopathy can balance the body and bring it to healing.

Growth factors or cell signalers are fundamental to that process, as well, restoring balance in the body. As we've discussed cell signalers affect the cell and initiate that cascade of signals down to the DNA and RNA expression. Measles uses the same pathways as growth factors to try to take over the DNA and RNA expression of the cell. I came up with the idea of, "Well, if that's true, why don't we prepare cell signalers, homeopathically, to competitively inhibit measles pathogenic pathway?"

What I mean by a competitive inhibitor is that if the body is being stimulated by itself, to talk to itself; it's like picking up a child when it's crying and just patting it on the back. The pat on the back soothes the child and stops the crying while the homeopathic cell signaler doesn't allow the virus to infect the body. You can only use the highway or grid one time at a time, either the cell signaler or measles virus, not both at the same time. Once that electrical charge is happening along the highway of signal transduction, everything else is buffered out of the signal transduction pathway. Refractory is the scientific word, which means the measles can't get in through the cell receptor or past the buffered cell membrane while the cell is signaling to itself.

And if we think that the measles and HIV are similar, we have clinical data showing homeopathic preparations and cell signalers were able to decrease HIV viral logs a half a log in six weeks. Now, that's stunning.

Okay now, let's go on to that. Tell us about the research on the kids with HIV; how the cell signalers have helped them, and again, why this is relevant to our kids with autism.

So I as I have said pediatric HIV and autism have similarities. We talked about brain damage, but it also has a lot of similarities in terms of cognitive impairment, their growth – a lot of children with autism have stunted growth, and it is actually definable of pediatric HIV. They all have stunted growth. Children with HIV have chronic immune problems; they're chronically ill; they have chronic throat infections; it's just like PANDAS in autism; they don't heal well because their immune system isn't working, and that's true in autism. They have vomiting on a regular basis, which is true in autism. Diarrhea is like a huge, huge problem for children with HIV, and children with HIV have seizures, and many of the children with autism have seizures because of the brain damage.

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So there was an independent group at the University of Johannesburg, who decided to pull together a multidisciplinary team. Monica Da Silva was the clinical investigator who came up with the clinical study. She decided to try to use our homeopathic growth factors or homeopathic cell signalers to treat these children in South Africa, who have bare-survival nutrition. They basically ate corn meal, white rice, beans and sardines if they got them and porridge. That was it, so their nutrition is just minimal; no fruits, no vegetables, no enzymes, no supplements. They're starving, and I didn't know if the homeopathic cell signalers would work as well as in the clinical studies in the United States on HIV patients since they all had very good first world nutrition. I hadn't sorted the nutritional component out.

What we found was cell signaling is far more important than nutrients for these HIV-infected children, so they did not change their diet at all. They ate corn, porridge, peanut butter; they did get Wonder Bread, sardines; that was about it. And yet they took the growth factors homeopathically, three times a day. What we found was not only did their immune system go up—and it went up better than the anti-retro viral drugs caused—their height increased significantly; they grew two and a half to three inches in 12 weeks.

Two and a half to three inches in 12 weeks?

Right, which is amazing. They overcame their stunted growth. We were able to reverse the stunting that was happening. Their energy went up; their appetite went up; their strength went up, so they became more like normal children. Their lymphadenopathy which means swollen lymph glands, which I found out happens in autism as well—that went down. These are statistically significant; vomiting went down; the diarrhea went down; the chronic infections went down. These children were on their way to dying or progressing in their illness, and this was pretty much reversed.

And this is now almost a year later. I have emails from the sister, the nun in the community where these children live outside of Johannesburg in a bare, subsistence settlement that said the children are doing so well that they are now thinking of having intramural sports. This was something they never could even think of before. The children had so much diarrhea, they sat at the very last row in the classrooms and had to run out to the bathroom all the time. Going to school for these children meant receiving their bare essential meals that was provided by the school.

But they then began sitting in the front of the classroom and won some awards for their leadership, being able to learn quickly and talking to other kids, and they were playing, and their social interactions started, where before, they were too weak to interact, learn and participate in childhood games.

It changed the whole community, and I just got an email from Dr. da Silva three days ago. They went to begin another clinical study in a new community in South Africa. People there already knew about the earlier study with the children and thus were lining up to get into this next clinical study.

That's really wonderful.

It's very exciting. I mean, it's more than just healing. It's bringing hope back to peoples' hearts. None of us need this kind of damage. These children don't need their lives to be stolen away from them, and these parents don't need to be suffering in this way, and all of us in community, and Teri, I thank you so much because it's through these dialogues of community that we can make change. We can come together, and we can solve this, and it's going to take all of us.

Well, that is really beautiful. Thank you for sharing that and expressing that. What are the body's core cell signalers? Could you please tell us what types of things each addresses, particularly as is specific to autism?

Okay, I don't want to go into everything—there's more than 150 different cell signalers.

Well, then, I need to tell people that we're going to run a little bit long.

That would be a little too long for all of them, but I could talk about a few that, in your introduction you had mentioned. Some parents had come to me and asked me to develop very specific growth factors. The first one was called FGF-2 or Fibroblast Growth Factor-2, FGF-2, and we prepared that homeopathically; did a little pilot study with 12 children with autism, and we found that within two weeks to four months, the children improved their awareness of the external environment, they improved their social interactions and their awareness of wanting to be with other people besides just their parents. They had a sense of their outside world. They improved reciprocal sharing. They also increased their non-verbal and verbal interactions. They began to figure out how to work in a social system.

They were actually able to understand abstract concepts for the first time. Their fixations decreased and their frustration tolerance changed. Enormous frustration, such as when a person is locked inside of a body, but they just can't communicate outside—they have so much frustration, and that seemed to change in a way that the children were less frustrated and could decide to take on new activities. They were willing to go beyond and start learning. So, it's very exciting. So, homeopathic FGF-2 is just fundamental in treating autism.

What we've done is the development of a combination of four growth factors that control the cell cycle and the healing of that matrix inside of the cell, the cytoskeleton. The detoxification ability is a combination of four growth factors that we've used with HIV, and it was amazing to me that it worked just as well, if not better, with autism because you have so many similar problems.

Now, I know you said with the children in Africa that the cell signal enhancers worked better than the anti-retro viral drugs that they used. Is that correct?

Okay, let me clarify. In South Africa, this is horrible, and we don't understand it in the United States, in the public health sector, both adults and children only qualify to receive antiretroviral drugs once they are AIDS, this means a CD4 cell count below 200. Someone infected with HIV and advances to

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AIDS is very sick and can die. So what we did was looked at the published history of anti-retroviral medicines with children around the world treated with anti-retroviral therapies and also looked at age-matched control published data, then compared what we did with these children in this one community to what anti-retroviral medicines were doing with children in other communities. We saw that the results we had were better than everything that had been published.

Okay, and are homeopathic remedies often safer than their allopathic counterparts?

Homeopathy is designed to be safer than any kind of pharmacological or pharmaceutical prescription drugs, and that's really the secret of what all homeopaths know. A drug has an effect on the body, no matter what concentration; however, if you give the drug at a high concentration, it's predictable. The person will have an adverse side effect, a toxic effect because it's too strong on the body. So homeopaths take that, and they dilute it down in a way that makes it effective; it's still going to have an effect on the body, but it's not going to generate a toxic, adverse side effect.

What we do where I work at Biomed Comm is to take these cell signalers, which already have cell receptor antennas and prepare them homeopathically in a way that allows the cell to specifically pick up the message, generate the healing and block these viruses and heal the toxicity without any adverse side effects. That's different than most homeopathic remedies that don't have any antenna receptors to pick up the message.

Okay, that's a good point, and did you actually look at the side effects of administration of allopathic growth factors when formulating the homeopathic preparations?

Oh, I did do that, so after my work at the National Institutes of Health, I had friends that were dying of HIV, and I wanted to try to solve that problem, so I began looking at the medical literature. There are a lot of doctors who knew that growth factors are fundamental to the immune system and that these growth factor signals are disrupted by HIV. So researchers had tried some of these pharmacological doses of specific growth factors in the past, and they found that using, for instance, insulin-like growth factor-1 or growth hormone—well, the growth factors in these high concentrations killed more patients than the placebo group because the growth factors were so potent in the body at very low concentrations normally that they were toxic at these abnormally high concentrations. They also tried to use something called granulocyte macrophage colony stimulating factor. That's a mouth word. Granulocyte macrophage colony stimulating factor, GM-CSF, and in the Bay area in the early 1990's, again, they had HIV-infected adults on treatment with increased viral loads that were three to four times higher than was normal, and they had terrible toxic side effects compared to placebo controls who did not use this treatment. Then they tested another one in a petri dish, like a culture dish, and that was called transforming growth factor, beta-1, TGF-Beta-1, and they found, again, that sometimes it worked, but sometimes it didn't. Sometimes, it increased the virus replication tremendously, and they couldn't control it.

So, given all of that, I knew that we should take these growth factors that they'd already tested, put them into a homeopathic formula, put them in a combination and test them. I did my Ph.D. on growth factors, so I knew a couple of other growth factors to put into the possible combination. The HIV formula we developed homeopathically is the same one that we're using with autism very, very effectively.

What kinds of positive results have been documented via the use of various cell signal enhancers specific to children with autism, and please tell us about any clinical trials or published clinical studies?

Oh, I could go on a long time here, and I'll try to be brief. So, in autism, I have some really great videotapes that some mothers have sent to me, and this is not a clinical study; it's more like a case study, where a young boy could not cross over to the other side of his body. He had bilateral motor dysfunction, which means he had a hard time reaching across his body and tying his shoe. Couldn't ride a bike; couldn't hit a ball; couldn't swim. I think we're all familiar with these kinds of things, and as he took IGF-1 homeopathically after trying a lot of different things. Her son, all of a sudden, began to – she has a video showing he could now tie his shoe; now he could play baseball and he could ride a bike. I kept saying, "Wow," and that happened over the course of about six months.

Then we had a child, who was 15, a young girl in another case study, where she had not spoken for 11 years after having a vaccination of the MMR. She took the HIV formula basically, CSE-20 we call it, and while her mother was on the phone to one of her sisters, the young girl who hadn't spoken in 11 years, ran over to the phone, grabbed the phone and said, "Hi, Marguerite."

The mother just about fell over. Now, Dr.Mary Megson can describe similar things. It's like it's all inside the child, and once you throw the switch, the G-protein is the switch; the child just goes, "Oh, the lights just came on." And that's what these cell signalers are doing; they're repairing the damage at the G-protein level, then you need to then start working with viral problems, but these growth factors, I said, are inhibiting what I think is what's going on with the viral infection, and so you start having the immune system say, "You know what? I'm taking the body back."

Other clinical studies that we have published; we looked at healthy people, and we used growth hormone homeopathically in three different studies with over 126 people, and we saw that they gained more muscle mass, lean mass in their body. They slept better; anxiety went down; their gut; their digestion actually improved; they're frustration tolerance or their ability to handle stress changed quite dramatically toward the better. There was an increase in their quality of life.

We also worked with people with depression, and used homeopathic IGF-1 in a double blind placebo-controlled study in Portland OR. The clinical coordinator could actually tell who was on treatment or who was on placebo. Their characteristics of depression changed pretty dramatically within a three-to-four week period. There was eye contact, and the person started standing up straighter and wanted to interact in their groups, where before these adults when depressed, were hanging over

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in a slouched like manner., They had a different demeanor to them after using homeopathic IGF-1.

Then we've done five different double blind placebo-controlled studies on HIV and published them, and it's very well documented that the endocrine and the gut system is much better; that the nervous system improved in what's called conduction or the ability of the body to hold its electrical charge, and also, of course, in improving the immune and endocrine systems, and the appetite. HIV viral loads went down; quality of life went up; there were no opportunistic infections and no hospitalizations.

So, it sounds to me as if cell signalers can directly repair cellular damage, and you talked about, I think including repair of G-proteins, and does that extend to DNA somewhere down the line?

Yes, because anything that is happening on the outside of the cell, the cell signaler's whole intent is to communicate with the DNA and evoke repair processes when needed.

Okay, and it sounds as if your work is consistent with Dr .Mary Megson, with regard to the visual challenges; kids with autism have and how they improve?

You know, I haven't looked into the visual challenges as much in terms of measuring how they are seeing better rather than looking kind of from the side, but the theories that Dr. Megson and I have are completely synergistic and basically a lot of the same theory, so I'm very impressed with the work that she's doing.

When you talk about IGF-1, that reminds me of Dr. Richard Deth's work that showed a possible adverse effect between Thimerosal and IGF-1, so it seems to me like your work is probably consistent with that as well.

Dr. Jeff Bradstreet sent me an email, and he said, "This is blowing me away because Dr. .Deth is independently confirming what you've been saying all along, and you're the only one who's talking in the same way." And just to remind listeners, Dr. .Deth's work is basically saying that normal neural development requires IGF-1 and that a child does not develop normally if IGF-1 is damaged in any way.

Then he goes on to show that mercury and aluminum are capable of damaging the enzymes that would cause IGF-1 to form. So he correlates damage to the enzymes and IGF-1 to autism, attention deficit disorder (ADD), and fetal alcohol syndrome. Alcohol can also damage IGF-1. And, in fact, homeopathic IGF-1 can actually – I've had the hypothesis— can address problems with alcoholism and that craving, and IGF-1 homeopathically we've already shown balances people's appetite, and it can address anorexia, thus a lot of different dysfunctions arising out of the brain and feedback loop communications.

Okay, you and Dr.John Green both have mentioned early puberty, and the Geiers talk about high rates of precocious puberty and children with neuro-developmental disorders. What do you see as the connection between mercury, neuro-developmental disorders, aberrant cell signaling and puberty?

Okay, let's go back to this whole concept of the G-protein. I call it the universal switch. It's like an on-and-off switch, and if mercury is damaging the G-protein, which it is, because the G-protein links with tubulin, and Boyd Haley has shown that mercury damages tubulin, then the switch is not able to throw on and off. Part of being alive and healthy is that we can change from one thought to another thought just like that—like a lightening bolt. It's just like throwing a switch. With autism, the switch is thrown on – " I just can't get it to throw off", or maybe it'll be off, the switching doesn't happen quickly like it should, so it's not a normal switching gear. And so it could be turned off or on, which can cause precocious puberty however the G-protein isn't switching back and forth often as it does normally.

Hormones or precocious puberty can be, for instance, a situation where the switch is on, the signaling continues, continues, continues, you don't have a normal feedback loop. The feedback loops are in the body to help balance what is normal, so you throw something on, you have an open system, you get feedback if cells talk to each other, and the switch goes off again, and so that hormone level is turned off. Precocious puberty, if the switch is on, the hormones are flowing, flowing, flowing, but there's no feedback that goes, "Turn it off, will you?"

That's the same as being fixated. I think as the switching happens, either on or off, first of all the hormone levels get balanced, and the fixation stops, and the frustration tolerance goes up, so you have less of the acting out and the damage to the body. I actually think some of the mutilation is happening because the children do have some pain and they're trying to stimulate themselves when they're jabbing themselves, but they can't get the signal to switch off and stop the behavior.

You mean pain in their heads?

Pain in their body, whether they're sticking a pencil in their eye or in their head or in their gut or wherever.

Tell us about the relationship between cell signal enhancers and GABA and Dopamine and how balancing these can produce positive benefits for our children.

GABA has a lot to do with pain receptors. The nervous system has exquisite ways to tell if something is noxious or toxic or is threatening to existence. There's something innate about us that, as we develop, we get increasingly sophisticated on how to live in this external world, and we begin to understand. You know that gasoline doesn't belong inside the body—that's a noxious stimuli and it would cause pain. Or if I have a trauma, a psychological trauma, where I see my little brother fall down off the bike or something, well, it's shocking; or a dog barking at me; well, that's GABA switching on and off, on and off.

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And again, it's a neurotransmitter, so it's an electrically activated process that's really important for our survival, and GABA levels are just totally thrown off in autism and in many diseases. Dopamine is also a neurotransmitter and does many of the same things, and Dr. Deth's work and some other researchers have shown that the neurotransmission or the electrical currents and signaling of dopamine, which has a lot to do with pleasure or sensory kinds of input, are damaged by mercury. It's all about electrical activity in the body, so signaling, because it's part of that same level of common communication in the immune, the nervous, and the endocrine systems—those are part of the healing because it's at the same level in the body. Does that make sense to you?

That's fine. Are there any side effects to the cell signal enhancers? Do you have to be careful about the dosage that you use?

A really nice thing about homeopathy and homeopathic cell signaling is that it's not toxic to the body. It's been designed to be not toxic. Now, let me tell you one thing that we discovered when we brought out the FGF-2 homeopathically. The reason that parents had come to me was because FGF-2 or FGF-1, Fibroblast Growth Factor-2 or 1, respectively; there's nine types, sprout neurons in the body, and so does Epidermal Growth Factor, which is another one that we have homeopathically.

Now, I have described some of the damage in the brain as like a garbage dump. If you have a garbage dump, you don't want to be sprouting new neurons and gain greater awareness because you're not detoxified. We didn't know whether the person should be detoxified before they use FGF-2 or not. Some people have used it very successfully without detoxifying their child, but I don't know how toxic; I mean, what is that hope? Everybody's toxic. Some children; however, when their parents gave them the FGF-2 homeopathically for the very first time; they noticed there was an increase in frustration, and what I have imagined, and I don't know it for a fact—I haven't measured it—is that sprouting new awareness's because a new neuron is gonna give you new awareness, and so you're becoming more aware of how toxic you are.

Why grow a flower in a toxic waste dump? Why not clean up the garbage, and then sprout the flower?

Now, we had gone to a homeopathic physician, and he thought that my son's actions, excuse my language, which showed he was"P.O'D" was actually a good thing; that it did signify enhanced awareness.

Well, I know that Greg Ellis is particularly interested in bringing up the life force, so you might see hyperactivity at first because you're getting a response. And I know through our research that by getting a little hyper; it's a lot easier to bring a hyper state into balance than a very low, chronic, depressed state up into health. So it's a good thing. I only mention it – I don't mention it as an adverse toxic side effect. I mention it as an observable thing that parents told me.

Right, I think that that happens with other types of treatments as well.

I have heard that.

But, that's not to be confused with if a child's in a hyperimmune or autoimmune state. This isn't contraindicated.

No, that's definitely not; I mean, if you think – both of those states, whether it's a hyperactive immune system or a hypoactive immune system, it's an imbalance, and it's due to aberrant cell signaling. Homeopathic cell signaling will bring the hyper state down and the hypo state up to get the body back to balance. The best analogy that I can think of is a teter totter, so that the teeter totter; you don't want one end to be really high and one end to be really low; you want it to be kind of level so that both children are having a good time. There is a point when they are not having a good time since going way up too high makes them feel they'll fall off.

Okay, and can you reiterate for us why cell-to-cell signaling is vital to resist the effects of cellular toxins, such as heavy metals, other environmental pathogens and pollutants, and give us examples of cell signalers that would help with this?

Okay, cell signaling is the body's natural process to heal itself, repair itself and bring it back into balance. So when you have situations that are driving it out of balance, using homeopathic cell signaling stimulates the natural process the body uses, and you're just reminding the body how to come back to balance over and over and over again. It's so fundamental to the body that the body knows how to do that. It's almost like being in school and go, "You know I forgot how to heal myself," and so you go to school, and you go, "Oh, now I'm remembering," so every time you take the homeopathic cell signaling, the body goes, "Oh, yes, now I remember."

Any examples of cell signalers that would help particularly with these pollutants, pathogens and metals?

Well, I wanted to pick up on a thought, and this is a good time. We talked about low glutathione, and we talked about autism having a lot of immune dysfunction. One of the most common problems is candidiasis or candida or thrush on the tongue or in the body, and I have seen homeopathic growth hormone—we have a topical— people put on their tongue, we did it in Africa, and I've done it here, and it can get rid of yeast within three minutes when topically applied, and I've researched why does growth hormone particularly do that? Because of that—remember, I talked about natural killer cells—natural killer cells go in and just grab that bacteria and communicates, "Outta here!" And it's instant, and also, it has that growth hormone effect that controls antioxidants and mRNA expression, and so it can kill the bacteria, and then awaken the natural healing process of oxidants and antioxidants in the body.

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Then we talked about in the interview today, about IGF-1, and Dr. Deth's work, showing that it's so fundamental, to normal neuronal development; that a homeopathic IGF-1—we have it in three different concentrations—can just help the body deal with a lot of its basic healing, and it actually can heal histones, which– I just introduced a new word—histones help the DNA duplicate itself. IGF-1 can heal parts of the nucleus that the DNA require. I wanted to say I know a lot of parents that have children with herpes or just every kind of virus you could possibly imagine.

It turns out that herpes uses a very specific growth factor receptor called Fibroblast Growth Factor, FGF-1 and FGF-2 that we've talked about; that's how herpes gets into the cell, via the FGF2 receptor. When using a homeopathic FGF-1 or FGF-2, we've seen people block viral outbreaks of herpes completely.

Then general immune strengthening; you know, that combination of growth factors that we've been studying for 15 years with pediatric HIV, adult HIV; that can really help. Many of the bacterial infections that people have, whether it's candida or other problems, those are considered opportunistic infections. When the immune system is down, other bacteria and pathogens get in the body and just cause chronic suffering, so you want to strengthen your immune system. That's the first line of defense, as well as our nervous system and our gut. We are what our gut takes in, and we are what we think, so what I'm all about is trying to get the immune system, the nervous system, and the endocrine system to talk to each other, because when the body's systems talk to each other, it heals. Homeopathic growth factor cell signaling awakens the vital force, and a lot of excitement comes, and these kids, even the ones in Africa, are returned to health, excitement, laughter, play, social interactions, and you see amazing things happen.

You're letting the kids be kids.

Yes, and you're building a community because the parents get happy; I mean, people—let's help each other heal. Let's help each other be stronger.

Dr.Brewitt, I'd like to thank you for working on restoring balance, energy and health to afflicted children and for providing the medicine of encouragement, restoring people from a state of despair to a state of hope.

Wow! Thank you very much. It's been my total pleasure, and what you're doing, Teri—it's essential to educate all of us and bring our ideas together to further our ability to heal each other and heal ourselves.

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