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Cell Therapy and regenerative medicines... do they work?

Much controversy exists surrounding cell therapy and other regenerative medicinal techniques used by anti-aging practitioners. Jennifer Phillips questions the validity of these claims, and explores the origins of cell rejuvenation therapy.

Up in a nice sunny meadow in Switzerland, less than 500 miles from where Elizabeth Bathory bathed in the blood of over 600 murdered virgins to keep young, we arrive at Clinique La Prairie. Here, instead of blood, guests are relieved of their cash in return for a level of decadent luxury and body improvement undreamed of by lesser mortals.

The clinic is the brainchild of Dr. Niehans's quest to combat the effects of aging with "Live cell therapy". He founded the Clinique La Prairie and claimed to treat over 30,000 patients with this method from 1931 until his death in 1976.

Had Elizabeth Bathory been alive then to attend the clinic in its early days, she would have received injections of live cells (not blood, but probably liver) over a few days. The liver cells would have

been from calves, not humans. Fewer people would have died, indeed, compared to her do-it-yourself rejuvenation treatments.

Scientific validity

Would she have achieved any true benefits? Clinique La Prairie says yes. Dr. Niehans himself claimed his treated patients had one fifth the death rate from cancer and other causes compared to the regular

population. However, any scientific data is impossible to find, and peer-reviewed papers written by Dr. Niehans are nonexistent.

The limited "research" cited by Clinique La Prairie that this author located was a total of 3 papers, all coauthored by the current scientific directors, with other scientists, some now dead. The research cited includes an internal journal published by the institute itself. Presumably a brochure. Efforts to contact

Clinique La Prairie and old colleagues of Otto Westphal (one of the directors) about their research went unanswered.

What these documents claimed was that bovine cellular extract provoked an immune system response. However, this is unsurprising and is to be expected. Injections are a good vehicle for inducing immune reactions, from bee sting allergies to modern-day vaccinations.

How did Niehans hit on the idea

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Jirapa Casanova (L) prepares a client in Bangkok for treatment at the Thai branch which opened in 1997, of the exclusive Swiss spa, Clinique La Prairie. The first branch of Clinique La Prairie ever and the only one planned for Asia. Jirapa opened the spa with hopes of attracting the Thais who regularly flock to Switzerland along with some of the world's best known movie stars, royalty and world leaders. THAILAND CLINIQUE BANGKOK 17/12/1997

BY 1957, IN WEST GERMAN HOSPITALS ALONE, 80 CASES OF SERIOUS IMMUNOLOGICAL REACTIONS, 30 OF THEM FATAL WERE REPORTED IN CELLULAR TREATMENT RECIPIENTS.

of injecting liver into people? Glandular therapy was in vogue in the early 1900's, as people studied endocrinology for the first time in the West. In the East, traditional Chinese practitioners were already prescribing oral extracts of glands and other substances, as they had for centuries. The Kama Sutra suggested drinking buck testes in milk for male vigor.

Of course, animal gland extracts given orally to counteract glandular deficiencies do often work, for the reason that many (not all) hormones are able to survive the digestive process and be absorbed by the body. The track record for male remedies such as tiger penises, rhino horns, and various snake substances is much more dubious.

In the West, medicine was still coming out of the "heretic

medicine" trend into the scientific age, with the advent of the germ theory and antiseptics and new techniques learned in wartime. But in a way, the spirit of "cure the disease or kill the patient" remained. Many adventurous doctors took things much further—specifically xenotransplantation—transplanting tissue from animals into humans. Interestingly, the gland of choice tended to be the testes.

In America, particularly, there was John R. Brinkley, who would be known as the infamous "Goat gland doctor." He reportedly did 16,000 operations in which he implanted men with tiny tissue from the testicles of young goats from 1917-1940. He brilliantly warded off customer complaints by telling his patients up front that the operation worked much better for intelligent men than "the stupid type." The therapy

was never proven to work any better than placebo.

However, many serious physicians tried xenotransplants. Since oral gland extracts had to be taken regularly, replacing the gland could be a real cure. Immunology was not understood nor was it a science at that point in time. Blood groups had only been identified in 1900, and blood transfusions became possible. Nobody realized then, that all cells contain various antigens that can lead to rejection, let alone the existence of viruses. That would take decades of study.

Dr. Niehans belonged to the same group those doctors attempting xenotransplants for seriously ill patients. In 1931, he ground up a parathyroid gland from a calf and injected it in a patient too seriously ill to operate

on, and the patient not only lived, she recovered her vigor and lived for another 30 years. Apparently as a result, Niehans concentrated on cell therapy thereafter, rather than glandular therapy due to this amazing success.

Getting shots rather than being cut up proved to be popular with his patients. He began using fetal calf liver extract, on the basis that the liver seemed to be a very active organ, which is accurate. However, injecting people with animal cells would prove to be unsafe.

Risks of Cellular therapy

Some of the immune system's reactions are dangerous. Numerous side effects from cellular therapy have been reported: polyradiculitis, leukoencephalitis, Guillain-Barré syndrome, immune complex



CLONED COWS STAY YOUNG. Scientists who cloned six cows (five shown here) said the animals show signs of being even younger than their chronological ages, and said this could mean cloning technology offers a true fountain of youth. The findings, published in the journal *Science*, are surprising because the most famous cloned animal, Dolly the sheep, appears to be older than her chronological age.

vasculitis, encephalopathy, and a blistering skin disease resembling bullous pemphigoid, all reported to be caused by cell therapy injections. No regeneration or rejuvenation was apparent. The FDA has banned the import of all cell therapy extracts intended for injection as of 1984, with some shipments of Niehan products destroyed as long ago as the 1960's.

By 1957, in west German hospitals alone, 80 cases of serious immunological reactions, 30 of them fatal were reported in cellular treatment recipients. In 1975, 35 deaths in Germany were traced to physicians using Dr. Niehan's technique. Also, allergic reactions to calf thymus tissues were reported in a study of patients with histocytosis. In 1975, two men died from gas gangrene in Florida after injection with fetal sheep cells. In 1987, *Lancet* reported the death of a popular female athlete who died

after receiving several hundred injections of cellular therapies. She developed a nerve disease and went into fatal shock.

Xenotransplantation of whole animal organs, not just animal cells, was studied as late as the 1990's due to human organ shortage.

However, xenotransplantation bypasses many of the natural defenses of the body against infection, and the strong immunosuppressive drugs required to allow the patient to tolerate the organ further weakens the patients' defense system against infection. Therefore, all animal tissue to be introduced into humans must be free of disease—any disease. The same concerns exist for cellular therapy.

I asked Dr. Cliff Conn, an emergency room veterinarian in

reviewed another interesting claim regarding cell & placenta anti-aging therapies.

Instead of live cells, cellular extracts from sheep placentas are used, which are given orally or by injection. Dried placentas actually have had a place in traditional Chinese medicine, although it is not used as an overall cure for illness, and certainly not injected.

Placentas are quite nutrient-rich and potentially hormone-rich organs as they do nourish embryos. However placentas offer no unique nutrients that might not be obtained by other methods. Certainly organ meats, which are not eaten much in the West due to their cholesterol content, offer richer sources of various nutrients than muscle meat does. Chinese cooking traditionally makes chicken broth from the whole bird without feathers, rather than only parts of the chicken as many western cooks do. Cooking the whole chicken imparts more nutritional value to the broth.

I explored the possible hormonal value of placentas. Unfortunately, some of the hormones that may survive digestion are not of much value to anybody but a pregnant woman. However, a promising and understudied class of molecules are eicosanoids—the class that involves prostaglandins and leukotrienes. Placentas are rather high in these, and since they are fats, are unlikely to be injured by either drying and may survive digestion.

As regards Clinque La Prairie's claim about disease free herds, Dr.Corn comment was: "No, a disease-free herd has never existed and never will."

Other Cellular therapies

Cellular therapy continues to find new ways to reinvent itself. I

"NOBODY KNOWS WHAT WOULD HAPPEN IF YOU TRANSPLANTED AN ORGAN FROM AN INFECTED PIG INTO A HUMAN BUT NO ONE WANTS TO FIND OUT. I DON'T BELIEVE IT WILL EVER BE SAFE TO XENOTRANSPLANT. TOO MANY UNKNOWN VARIABLES EXIST."

in the diet can interfere with eicosanoid metabolism.

However more prostaglandin is not always good. Many women suffer menstrual pain due to high prostaglandin production in their uterine tissue, which induce spasms and pain. The other side effects of wooziness and nausea are also related to overproduction of prostaglandins.

Hence if dried placentas do have potent levels of eicosanoids, it would be dangerous to have these sold with a "cure all" claim, being potential harmful to anyone taking it without a diagnosis.

Further claims are being made that the cell extracts can be carried in oral capsules that protect them from digestive acids in the stomach. Such technology is currently being intensively researched, and patents are out for transporting insulin safely through the stomach—by targeting the protein structure and distorting it briefly to allow it to pass through the membranes.

To have the ability to produce a general carrier that can transport a whole cell with thousands of proteins safely through the stomach, but not market it for insulin and other high-demand profitable drugs is highly unlikely.

But then, if there is no gimmick then it's a rather expensive tidbit of dried meat to sell.

This miracle carrier would also sound suspiciously familiar to investigators who worked on the mail fraud cases for "Zellen Cell Live Cell Therapy" products. A promotional flyer for this said: "Vigorous young [sheep] cells, with their life force still active, are injected into a human host". According to Dr. Niehan's theory, they circulate from the site of the injection until they recognize and congregate at the human counterpart of the organ from which they are taken (liver cells go to the liver, sex cells go to the sexual organs, heart cells go to the heart, and so forth). These young cells which are a functional organ specific but not species specific, imprint their

vigor upon old, tired and degenerating cells, stimulating them to function with renewed efficiency. The organ itself then retains its vigor and vitality.

The Live Cell Therapy tablet is designed to pass the stomach and reach the lower intestine where it is absorbed directly into your blood stream *

What would happen if this kind of carrier was actually possible? I contacted some food allergy researchers at the FDA, who kindly explained to me that only a bit of the protein has to be intact and able to be bound by immunoglobins to provoke allergy. Our digestive system normally breaks proteins down

well beyond that point; therefore undigested protein tends to be more allergenic, but not always. Nobody knows what would happen if people could really take such pills, but the chances are it would cause problems similar to injected cell therapy.

The quest for regenerative medicine has made people do gruesome things such as bathe in blood of 600 virgins and poison themselves with arsenic. It is not a trait exclusive to any culture or any era. Ironically, it seems that once a "treatment" is invented, it never does die, but remains ever fresh, ever profitable, with endless names.

Regenerative medicines do work—on themselves. ●

In 1987, Australian researchers reported on a study which compared children with Down syndrome who received cell therapy with similar children who did not. The study found no evidence that the cell therapy was effective. In 1990, another Australian physician reported that cell therapy had failed to help a 34-year-old woman who had entered a become quadriplegic after a horseback riding accident. Blood tests found no evidence of that the woman had formed antibodies to animal cells that supposedly were in the cell preparation, which means that the preparation used might not have contained any cells better than placebo.





A Sunnier method of regenerating health

Sun as well massage, herbs, diet, exercise (particularly yoga), meditation, and breathing are important in boosting rejuvenation and longevity the Ayurvedic way. All treatments are adjusted to the season and the metabolic type, always seeking a way to balance the natural tendency towards extremes. Sun and regular yoga is considered particularly important for health, and in fact, a lack of

sunshine and/or range of movement are particular health problems for many elderly in the West.

Living Long and Balanced, the Chinese Way

Traditional Chinese medicine treats according to the general metabolic disease, with herbs, acupuncture, Tui Na massage, bone manipulations, and Tai Chi exercise. Again, the philosophy is in balancing the body, not finding immortality. Nowadays Tai Chi is increasingly used in the

West to help seniors regain their strength, balance and flexibility to avoid falls.

The trap of Immortality: Alchemists in China during the Han Dynasty (200 BC-200 AD)

Taoist Immortalists (Hsien) developed various exercises, rituals and ascetic practices in their quest for immortality. They also developed a habit of poisoning themselves with heavy metals (arsenic, mercury in the form of cinnabar), thinking as metals change

so would they change. They died young, as did any emperor who had tried their immortality elixirs. The preservative effects of mercury and arsenic upon the corpses, though, were taken as proof of immortality.

In 220 AD Chang Chung-ching salvaged herbal medicine, devoting his treatise to nontoxic herbs and ranting against the "witch doctors". However the Hsien legacy lives on to this day as many herbal medicines in China are still made up with cinnabar, a toxic mercury compound.

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Medicine continues to evolve to provide



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The Innovation Mindset