


When less is more



One of the most novel ways of boosting the immune system is with micro-immunotherapy, using tiny substances to communicate with our body's immune messengers. Cate Montana reports



Micro-immunotherapy is to the immune system what psychotherapy is to the brain,

says Dr Sarah Myhill, a naturopathic physician in the UK. “So many inflammatory conditions are driven by allergy, autoimmunity or chronic infection, and conventional medicine only has blunt tools to deal with these—steroids, antibiotics, NSAIDs—all with the potential for long-term harm. Micro-immunotherapy is a subtle tool to ‘re-educate’ the immune system to direct its inflammatory fire at the causative agent. And the potential for harm is negligible.”

Micro-immunotherapy (MI) is a treatment designed to coordinate the body’s own immune system communication and actions, stimulating its regulation and regenerative functions without impacting the natural homeostasis or balance of the body.

MI was developed in the 1970s by Maurice Jenaer, a Belgian allopathic doctor and surgeon and homeopathic physician. Disturbed by the ravaging side-effects of the accepted cancer treatments of his day, Jenaer set out to find an alternative approach to help strengthen his cancer patients’ immune systems, enabling them to survive and stabilize while undergoing cancer treatment.

Intuitively he knew that communicating with the immune system was a delicate procedure, and he experimented with creating highly dilute homeopathic solutions of DNA and RNA—the two organic molecules that carry and convert the genetic code cells need to function—and giving the remedies to patients under the tongue. Encouraged by the results, he went on to experiment with cytokines, the protein messengers of the immune system, thus establishing the field of micro-immunotherapy.

Throughout the latter half of the twentieth century, the question of the effectiveness of immunotherapy itself—stimulating the body’s immune system to fight disease, and especially cancer—had been under debate. In the 1950s, researchers conducted animal experiments that proved tumors induced by environmental carcinogens, once removed from the host, could be used to immunize other animals against the same tumor cells.

The first immunotherapy agent, an antitumor cytokine called interferon-alpha-2, which influences the immune system by regulating cytokine receptors, was approved by the US Food and Drug Administration (FDA) in 1986, opening the door to the approval of other immunotherapy drugs. In 1998, the FDA approved interleukin-2 (IL-2), a growth factor that aids in immune system regulation and boosts the production of T-cells that help fight infections.¹

Although both immunotherapies were effective, they also triggered side-effects. “The immune system works in a physiological matter with dilutions of about 10^{-14} [one part in 100 trillion],” says Dr Gunter Schlegel, an expert in micro-immunotherapy from Freiburg, Germany. “Working in these areas, this is one of the main things Jenaer had in his mind. He wanted remedies to have no toxic side-effects.”

Today it is widely known that interferon-alpha, for example, can produce side-effects that range from skin rashes to low white blood cell counts, diarrhea, nausea, vomiting, respiratory issues and more. It also triggers depression.² “If you give interferon in a high dose, people get depressive,” Schlegel says. “They kill themselves sometimes. This is the kind of thing Jenaer was trying to avoid.”

Timing is everything

Over the last 50 years, micro-immunotherapy and immunotherapy have basically remained separate fields. European doctors and researchers familiar with the principles and effectiveness of homeopathy and high-dilution remedies have focused on developing the micro approach that they feel is more aligned with the function of the immune system itself, using the small protein cytokines and other molecules found in the human body such as specific nucleic acids, transcription factors and growth factors.

“Less is more” has been the prevailing attitude in the medical field of homeopathy ever since its founder, the German physician Samuel Hahnemann, discovered that the greater the dilution of a substance, the more powerful it is as a medicine.

Critically aware that full-strength medications frequently caused negative side-effects, after much experimentation Hahnemann hit on the method of doing a series of dilutions of individual substances derived from minerals, plants and animals, interspersed with violent agitation called succussion, which created highly diluted yet extremely potent and safe medicines.

Today, the most powerful homeopathic remedies—some of which use immune system components—have been diluted and succussed over a thousand times and often don’t contain a single molecule of the original substance within them. Although that sounds counterintuitive, studies of homeopathic remedies have shown effectiveness with many conditions. As Italian researcher Andrea Dei put it: “The action of drugs is not suppressed by ultrahigh dilution.”³

Because the homeopathic and low-dose cytokines and other immune substances used for MI are given at the same or lower levels than the body produces itself, they pose a low risk for side-effects. Additionally, the MI approach mimics the cascade of immune processes in what is called sequential signaling.

For example, because interferon is produced upon the entry of a virus into a cell, it is most efficient to introduce interferon to a patient at the initial stages of an infection. Introduced later, it would be out of the sequential signaling order and thus could be harmful by giving rise to pro-inflammatory conditions.

"Micro-immunotherapy respects this kind of timing," says Dr Pascal Mensah, a member of the British Society of Immunology from Mallorca, Spain, who specializes in MI. "Cytokines are the basis of MI because they represent the 'words' the immune cells use to communicate together. Each cytokine plays a role and can drive a cell into a specific fate."

Cytokines are administered orally under the tongue. Dosages are fixed in a formula and cannot be changed, and to date there have been few reported side-effects of MI formulas. "There is a pharmacovigilance group dedicated to registering all side-effects," says Mensah. "But so far we have few, as we are respecting the physiological doses and sequences of the immune system itself."

The dose makes the poison

In the United States, instead of focusing on *mimicking* immune system

responses, allopathic physicians primarily focus on basic immunotherapy—*stimulating* immune responses, especially as this process can be applied to oncology. The suspicion most American doctors hold for homeopathy—dismissing it as "quackery"—is a large part of the problem.

The "bigger is better" philosophy of the US, which led to the creation and sales of the massive, gas-guzzling, boat-like cars of the '50s and '60s and enormous portions of food on American plates, has been mirrored to a degree in allopathic medicine, with predictable results. Current evidence suggests that about 75 percent of adverse drug reactions in the US are dose related.²¹

There are also anecdotal reasons for American doctors' relative disinterest in micro-immunotherapy.

"I once read a really interesting article about penicillin use during World War II," says Donese Worden, a naturopathic medical doctor and global health educator from Mesa, Arizona, who regularly uses MI in her treatment of patients. "During the war there were penicillin shortages, and doctors decided to give their patients smaller dosages. And when they did, people started getting *Staphylococcus* infections.

"So there was this rapid spread of a belief that things get worse when you give less than what is considered to be a 'normal'

How the immune system works

The immune system is a network of organs, tissues, cells and molecules designed to work together to protect the human body from toxic substances and infectious bacteria and viruses.

There are two branches of the immune system: the innate immune system we're born with that stands as a general defense against harmful materials and pathogens, and the adaptive immune system, which handles novel threats over the course of our lives.

The adaptive immune system quite literally remembers all the pathogens (mainly viruses and bacteria) the body has come into contact with by building a library of proteins called antibodies that each recognize a unique protein sequence—called the antigen—from a particular pathogen.

Then if the body is exposed to that antigen again, even decades later, it can quickly marshal a defense. Antibodies released into the bloodstream can physically attach to invader cells, setting off a complex chain of events coordinated to destroy them.

The thymus gland, spleen, liver, lymph nodes, bone marrow, tonsils, adenoids and blood are all involved in the immune system. White blood cells, also called leukocytes, are created in the bone marrow and then differentiate into

specialized cell types including T cells, B cells, neutrophils, and macrophages that perform the many necessary functions across the innate and adaptive immune responses (see box, page 49).

There are five major classes of antibodies, all with different functions: IgG, IgA, IgM, IgD and IgE. IgE antibodies are created to fight allergic reactions, for example, while IgM antibodies provide important protection during the early stages of an infection.

And then there are immune system messengers, including cytokines, growth factors, hormones and neurotransmitters. Cytokines are proteins created by many cell types, but especially cells of the immune system, that can either provoke or suppress an inflammatory response (pro- or anti-inflammatory).

Some well-known cytokines include interferons, which instruct immune cells to ramp up their defenses, and interleukins, which stimulate the production, differentiation, dispersion and adhesion of immune cells.

Growth factors, a subset of cytokines are signaling proteins that stimulate cell growth and differentiation, with implications for both inflammation and tissue repair.

Hormones also affect the immune system. In addition to the stress hormone cortisol, which has potent, direct effects on the immune system, estrogen has an immune-enhancing effect and testosterone is immunosuppressive.

Neurotransmitters—chemicals that transfer impulses between cells of the nervous system—can further modulate immune system functions.

Complicated? Absolutely. And this is just the tip of the iceberg.

About **75%** of adverse drug reactions in the US are dose related

amount of any sort of drug. Which is fine if you're going after a bacterial infection that is about to kill you. Most likely you need a big heavy dose of something in that situation. But if you want to stimulate your immune system, you need to stay in the middle. You don't want to push the immune system into a cytokine storm."

The other issue, says Worden, is the practitioner's intention: whether they want to subtly keep the immune system active as a preventive measure or they want to stimulate a healing response. "Are you trying to get cancer not to come back? These are the kinds of things that are starting to be discussed—and micro-immunotherapy lies in that discussion space."

Schlegel concurs that attempting to regulate the immune system is a delicate operation that does not lend itself to a ham-fisted approach. "The immune system has two functions which are a little contrary," he says.

"On the one hand it must fight against viruses and bacteria and so on. The other main thing that is quite important is that the immune system must tolerate and control its own fight. If the fight is going too far, the immune system has the ability to kill us. This is what is happening with Covid-19 patients. The immune system works too much, and the virus triggers a cytokine storm. Patients are dying from the cytokine storm, not the virus itself."

Schlegel points out that the immune system works very fast and that with MI, cytokines and other immune system components need to be delivered at the right dilutions and at just the right time.

"You have to understand how the immune system works," he says. "Then you have to know what state it is in so that you can give it the right frequency of dosages. If you have an acute disease, we give up to four capsules a day. If you have a chronic disease, we give 10 capsules at once. There are a lot of things regulating the process. A therapist needs about a year of education before he or she knows how to employ this methodology."

Growing interest

There are plenty of clinical studies showing the effective use of immunotherapy for various diseases. For example, immunotherapy with cytokines and so-called "immune checkpoint inhibitor" molecules as well as "cancer vaccines"—where the immune system is directed to attack specific sequences on cancer cells—have been shown to be effective with patients suffering from triple-negative breast cancer.^[5] These types of immune-based cancer treatments are also being developed to treat cervical, colorectal, esophageal and other types of cancer.^[6]

Immunotherapy with an extract of colonic proteins is also being used to treat Crohn's disease,^[7] and some patients with multiple sclerosis (MS) have responded well to immunotherapy with a molecule that mimics one of the major protein targets of errant immune cells in the disease.^[8]

Although there are currently few clinical studies on the effectiveness of MI, their number is growing. In one such trial, MI with the homeopathic medicine 2LALERG was found to resolve local and systemic inflammation caused by pollen.^[9] Another MI medicine, 2LARTH, which targets cytokines involved in

Cells of the immune system

Basophils, eosinophils, neutrophils, macrophages, mast cells . . . the sheer number of different kinds of immune cells and their complex interactions within the human body is staggering. These cells are all white blood cells, born in the bone marrow. Here is a short description of the "major players" and their functions.

Neutrophils rapidly ingest microorganisms, help heal damaged tissue and make up the majority of immune cells.

B cells can produce antibodies and present them to T cells to

neutralize infectious microbes.

T cells are classified based the functions they carry out:

Cytotoxic T-cells kill infected cells and recruit other immune cells to the site of infection

Helper T-cells activate T cells and B cells and help them perform their functions

Dendritic cells process antigen material and present it to T cells. They also act as messengers between the innate and the adaptive immune systems.

Natural killer (NK) cells recognize and kill infected cells and tumor cells by producing proteins that form holes in the target cell.

No two people's body chemistry and conditions are exactly the same, and MI takes that into account

inflammation, was found to reduce inflammation and other signs of rheumatoid arthritis in mice.^[10]

Another MI homeopathic drug, 2LPAPI, was effective in reducing cervical lesions in women infected with high-risk strains of human papillomavirus (HPV), which are linked to the development of cervical cancer.^[11] And at the cellular level, treatment with ultra-low-dose tumor necrosis

factor-alpha (TNF-alpha), a pro-inflammatory cytokine linked to inflammatory pathways in autoimmune disease and cancer, was found to have an anti-inflammatory effect on immune cells, reducing their own secretion of TNF-alpha in response to a toxin.^[12]

In alternative healing circles, MI, also called low-dose immunotherapy, is being used to treat MS, Crohn's disease, Lyme disease and ulcerative colitis,^[13] and it's even being considered as a treatment for autism.^[14]

"Low dose is becoming very popular in biomedicine, using biology, biochemistry and physics to try to explain some things," says Worden. "I think the more the physics world and the medicine world come together, the more we're going to be looking at these ultra-low doses."

In the meantime, Worden says one of the biggest blocks to global acceptance of MI is a fundamental confusion over what it is, how it works and what methodologies it incorporates. For example, when introduced to MI, most people in the US automatically ask questions about what formula would be prescribed to treat breast cancer, pollen, MS, etc. But the answer is always the same: it depends on the individual being treated.

No two people's body chemistry and conditions are exactly the same, and MI takes that into account. That said, there are some formulas on the market from a company called Labolife, an international pharmaceutical group that produces MI medicines, that are broadly

used to treat such things as Epstein-Barr virus and chronic inflammation.

“Some Labolife remedies work as an anti-inflammatory and are frequently prescribed in all kinds of inflammation situations,” says Schlegel. “Dosage is from one to a maximum of four capsules a day, sometimes only 10 days per month. It depends on the acuteness of the treated illness. All are complex formulas used in combination in different diseases.”

Emerging directions

Considering the precision, complexity and almost infinite nuances involved in dealing with the human immune system, it's no wonder there is confusion about MI. “The definitions are all over the place,” Worden says. “It's being used by all different types of doctors for different reasons in different ways all around the world.”

Vaccines, which use minute amounts of weak or inactive parts of a pathogen as an antigen to trigger an immune response in the body, arguably fall under the category of micro-immunology, although they also contain many other substances to kickstart the immune system (like thimerosal) that can have side-effects.

Nanomedicine, involving the use of nanoscale materials (only 10 times larger than an atom) as part of medical delivery systems, is also in the running for inclusion. Isopathy uses substances you can barely measure.

Homeopathy, dealing as it does with vastly diluted remedies, many of which are designed to work with the immune system, is an accepted part of micro-immunology to the degree that it is frequently considered the same discipline.

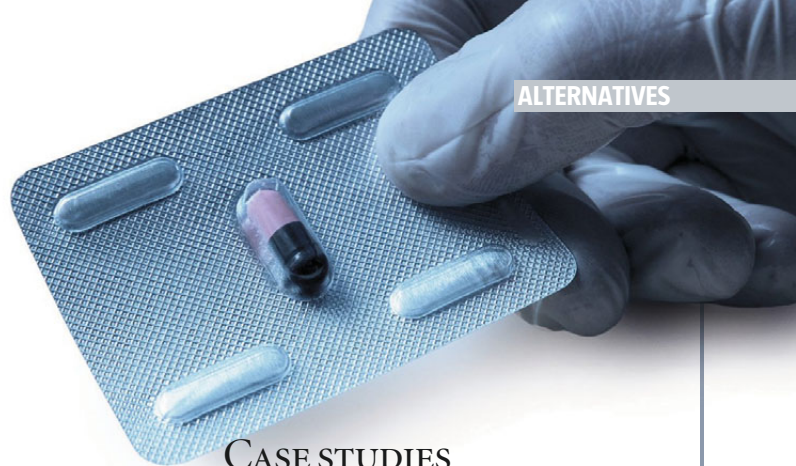
“I have thousands of cases where homeopathy has worked, especially with the strange immune system conditions where traditional medicine can't really help you,” says Worden. “Homeopathy is brilliant for immune system problems, but it takes an experienced homeopath.”

As an example, she describes a patient who came to her with terrible allergies and sleep issues. She had been to allergists and had had all the allergy shots. She'd taken Claritin and Benadryl and went to an alternative practitioner who put her on all sorts of supplements. She was treated for leaky gut and worked on her gut microbiome, which was great, because the immune system is modulated by the gut, but it wasn't enough.

“She spent thousands and thousands and thousands of dollars doing all the traditional things that alternative and integrative medicine will do. But it was homeopathy that helped her,” says Worden. “And that's where micro-immunotherapy comes in. You can find the thing that works, but your immune system is different every minute.”

“Fortunately, we've gotten to the place where we finally recognize that the body is smarter than us and smarter than any kind of treatment or therapy will ever be. We've always had macro-scale drug delivery. We've always thought the more the better.

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CASE STUDIES

C.E., a 43-year-old woman, had been suffering from continuous sinus and bronchial infections for six months and also complained of a deep tiredness. Laboratory findings by the family doctor were inconclusive. She consulted with an ear-nose-throat specialist who treated her with no success.

Dr Schlegel ran tests and concluded that her adaptive immune system was hyperactive and that she showed signs of Epstein-Barr virus.

He treated her with a Labolife formula specific for Epstein-Barr, giving her one capsule of 2LEBV daily for three months. He also supplemented with another formula, 2LEID, for one month. (The 2LEID formulation supports the immunological defense against infections.) After that she took 2LEID capsules only 10 days per month.

“Currently she is free from infection, not tired anymore and feels ‘comfortable,’” Schlegel reports.

M.F. had been suffering from a chronic inflammatory bowel disease. Her husband had hay fever, and her children occasionally developed viral infections. Her family doctor recommended micro-immunotherapy for her entire family, and since they all started on MI she says the family's health has become much more stable.

“The children rarely have infections anymore,” she says, “and my husband's allergy symptoms have almost completely disappeared. I too feel livelier again and much less restricted in my day-to-day life.”

Each member of the family takes a different MI preparation. The capsules are opened, and the granules contained in them poured under the tongue.

“This makes the treatment easy to take, especially for children. These days, my husband and the children mainly use it for prevention.”

“Now we've gotten past that, and people are understanding that the micro- and nanoscale approach looks interesting and that we really should be doing more studies on that,” Worden adds. “We're getting more and more of the larger research centers saying ‘Why have we just dismissed anything that wasn't this macro approach? We've got to look elsewhere.’ And that's a very good thing.”

Resources

Dr Sarah Myhill: www.drmyhill.co.uk

Dr Gunter Schlegel:
www.private-arztpraxis-gunter-schlegel.de

Dr Donese Worden: www.drworden.com

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