Combating Biofilms
Why Your Antibiotics and Antifungals Fail

Solutions for Lyme Disease, Chronic Sinusitis, Pneumonia, Yeast Infections, Wounds, Ear Infections, Gum Disease, Intestinal Disease, Bad Breath, Cystic Fibrosis and Implants

A Major Missing Piece in the Chronic Disease Puzzle

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What is a Biofilm?

The simple, scientific biofilm definition: any group of microorganisms in which cells stick to each other on a surface. They are typically inside a layer they create called “slime.”

Compare a biofilm to a fried egg. The yellow yolk in the center of the fried egg is the bacterial or fungal infection.

The larger white part that surrounds the yolk can be called the “biofilm.” It protects the inner infection, or yolk, from both antibiotics and the human immune system.

The outer edge of the egg shows some very small fried edges. They are easy to miss due to the size of the egg. We are going to pretend they are antibiotics, or infection-killing chemicals. They are useless due to the fact that they never get past the outer white edge of the egg. The egg white is like a wall to them.
Who Has Biofilm Infections?

When you learn about the massive diversity of locations and situations in which biofilms are common and consider that that are often the routine state of bacteria and fungal organisms, you start to realize anyone may have a biofilm infection or infections.

What Are We Looking For in This Book?

The following material will show many ways to break through the “egg white,” or biofilm. Once that happens, it is usually much easier to destroy the infection represented by the egg yolk or yellow center.

Biofilms Are a Leading Cause of Suffering and Death

Biofilm Body Locations and Situations

- An infection lasting over 2 weeks
- The leading cause of death in children under 6 years of age
- Dental plaque—the human mouth harbors about 25,000 species of bacteria, about 1,000 of which reside in the dental plaque biofilm.
- Yeast infections
- Postsurgical infections
- Cancer
- Bad breath
- Gum disease or periodontitis*
- Tooth decay
- Lung infections
- Urinary system infections
- Oral bacteria—can harm heart arteries and cause death and increase intestinal cancers
- Chronic ear infections
- Sinus infections**
- Chronic tonsillitis
- Wounds
- Tooth brush heads — including sonic moving head styles
• Catheters to allow urine removal
• Artificial knees, hips, and other replacements
• Heart valve infections
• Lesions or sores
• Lyme disease
• IV catheters of any type
• Urinary catheters
• Contact lenses
• Implanted devices—any implanted or inserted device can send bacteria to the brain, liver or kidneys.
• Chronic prostate infections
• Legionnaire’s disease and many other biotoxin bacteria that explode in any indoor water
• Mold illnesses—which can arise from mold build up in any standing indoor water, i.e., flooding, roof, basement or window leaks, humidifiers, unused Waterpik™ or other tooth cleaning devices, condensation in AC ducts, etc.
• Cystic fibrosis—excess mucus production in the airways allows bacteria like Pseudomonas aeruginosa to beat bacteria killers behind a biofilm coat.
• Lost body parts
• Skin, hair or nail infections
• Arthritis
• Endocarditis
• Bone infections
• Acne

Many other things could be added to the list, including profoundly serious issues of biofilm contamination in water and dozens of other health-related and manufacturing practices.

*Doctor David Kennedy, a retired dentist, lamented that most adult Americans have gum disease—another bacterial biofilm condition involving chronic infection. So just how widespread is this stealthy healthcare epidemic?

**At Ondine Biopharma, an interview [with Richard Longland] revealed that 38,000,000 people in this country have (or had) a chronic sinus problem.

***Ricardo Murga; Terri S. Forster. Role of biofilms in the survival of Legionella pneumophila in a model potable-water system. Microbiology (2001), 147, 3121–3126.
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To Lieutenant Brent Miles

A man who has inspired me to believe some great people still serve in the criminal justice system.

A husband who supported and loved his wife for the ten years she valiantly fought breast cancer. She will be missed.

A father who loves his children.

A man’s man, a gentle giant, and a superior leader.

I am honored to call you a brother.

JS
Making Current Biofilm Life-Saving Answers
Clear and Rock Solid

Right now you could read two years worth of biofilm-defeating options in papers, blogs and books. This would take you 1,000-1,500 hours. And you would have a number of options to propose. Here are some examples of options you would find in those papers, blogs and books:

- Avoid magnesium
- Avoid sugars and grains
  - NAC
  - Norspermidine
  - Cis 2- Decenoic Acid
  - Lumbrokinase
- EDTA
- DMSO
- Vancomycin
- Gentamicin
- Banderol
- Avoid fats
- Royal Jelly
- Thyme
- Lemon-grass
- Serrapeptidase
- 2-Aminobenzimidazole
- Echinocandins

How Do You Find Reasonable Marketing and Confidence in a Biofilm Agent as a Solution?

Tom and Lisa blog that product “x” and prescription “d” are exceptional treatments to undermine biofilm infections in Chronic Fatigue (CFS) and Fibromyalgia (FM). People are excited since their regular doctor has no major solution and no interest in biofilm infections.

The trouble is that “x” or “d” might have a use in undermining a biofilm or helping overcome an illness. But be careful to make fast links. Treatment “a” may only work in the biofilm of ten infections, and we only have proof it works in three infections.

Our goal is to show you what good research shows so that you and your physician can start with facts and will be able to understand the reason behind any possible biofilm trial.

For example, your infection might be like Lyme in its use of iron. Saito and many others report that unlike all other known organisms, Borrelia, the cause of Lyme disease, can exist without iron, a metal that all other life needs. Instead, Borrelia uses manganese.

What if your biofilm-based illness in the future is found to have the same ability to live well without iron? It might mean that a biofilm agent that undermines Lyme disease’s biofilm might work for yours. Bacterial and fungal infection biofilms tend to share a similar vulnerability to a biofilm disruptor. Knowing how your infection works may help to determine what biofilm agent will work.

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A Medical Revolution

The theory of biofilm infection is a profound revolution in the study of infections which can be painful, disabling and in fact, are a top killer depending on one’s age.

Infections are starting to return us to the days when people died of simple infections. The new biofilm infection world could kill more people than WWI and WWII combined if things do not quickly change in both developed and undeveloped nations. Due to a slow understanding of the importance of biofilms and therefore, a slow adoption by physicians of new biofilm solutions, even cutting edge doctors might only take biofilms seriously when it has been proven that more people are becoming disabled and die due to them. Currently, most miss biofilms as the cause of suffering and death. So, biofilms without solutions are as serious as polio in the 19th century without a vaccine, and in terms of numbers of victims, they are far more devastating than HIV/AIDS.

Most bacteria live in communities that typically have unique protective biofilms. 1% of bacteria infecting humans or impacting human life are floating alone and when they are found in blood, they would not be found together with any biofilm slime.

The National Institutes of Health estimates that more than 80% of microbial infections in the human body are caused by biofilm, many of them creating chronic and reoccurring problems. Or, is Glowacki right and 99% of bacteria live in a biofilm? Whether you use NIH's 80% or Glowacki's 99% as the estimate, biofilms are a serious consideration in infections.

5 stages of biofilm development

- Stage 1: initial attachment of individual bacteria
- Stage 2: irreversible attachment
- Stage 3: maturation I
- Stage 4: maturation II
- Stage 5: dispersion

Each stage of development in the diagram is paired with a photo.

Introductory Biofilm Images

A new genetically unique biofilm-producing single-celled parasite named FL1953 or *Protomyxzoa rheumatica*. (This special smear is the best way to detect these single-celled parasites in human bodies, since DNA or PCR testing is not always positive).

The hundred dark ovals on the outside of this image shown above are 8 micron sized red blood cells (RBCs). The center mass is a biofilm ball with many red blood cells in the mass of the biofilm.

This biofilm shown above is commonly found in those with tick-borne infections such as the very common Bartonella, the Lyme disease Borrelia bacterium, and deadly Babesia. While some tick-borne diseases may be worse than others or more common than others, all are potentially deadly unless eradicated. This parasite shown above is a single-celled infection related to Babesia and malaria, and when it is stripped of its biofilm, it looks like immature malaria. **According to the Centers for Disease Control, this is a unique protozoan. It is neither Babesia nor malaria. This infection is called FL1953 or Protomyxzoa rheumatica.** It makes huge amounts of biofilm and the huge center mass in this picture contains hundreds of red blood cells.
A Common Bacterium Found on All Human Skin

*Staphylococcus aureus* showing a biofilm found on the surface of a catheter. The webbing of the biofilm is easily observed. This is a profoundly common bacterium found on the surface of human skin.

(Source: CDC. RM Donlan and J Carr, 2005).
“Staph” Infections Have Become Resistant to Most Antibiotics

What do we offer this child when all patented synthetic antibiotics no longer work for this child's visible infection? Perhaps the new and helpful information gained from reading a book like this one, which assumes routine, tough and resistant infections like MRSA and those in cystic fibrosis, will provide a solid start.
A white blood cell, (a) shown above, is seen as white. White blood cells fight infections and are larger than the smaller red blood cells. Seen in the background, red blood cells are seen as black and are either round or oval in shape. Two large complex white biofilm community structures are observed. Advanced complex stain technology was employed. Red blood cells contain the ring-shaped single-celled parasite, FL1953, that makes this biofilm. These rings are not genetically related to Babesia rings or young malaria rings. The ring form is not shown in this slide. This is a newly discovered organism, genetically different than other single-celled parasites, living in red blood vessels (Fry Laboratory 2013).
Dental plaque can be associated with biofilm makers. Dental hygiene such as teeth cleaning is healthy because it kills bad bacteria and allows “good” bacteria to survive.
Increased gum disease can increase the risk of a heart attack. Dangerous plaque is due to the species of bacteria present and not the severity of the plaque.

A reviewer, “Michael,” read this book and recalled that Listerine did little without addition of essential oils. In order to treat his halitosis (bad breath), he paired eugenol from cloves (Clovanol) and cinnamon (Cinnamol) from North American Herb and Spice Company with Listerine. He used a mixture of 90% Listerine and 10% essential oils: Clovanol at bed time and Cinnamol in the morning. After 7 days of using this mouthwash, the biofilm cells that were responsible for his bad breath were destroyed.
A lung infection routinely creates a biofilm which causes antibiotic penetration to be hindered.

We believe you can undermine biofilm lung infections by agents that are inhaled or carried by blood to the area of the infection.
Sinusitis is inflammation of the sinuses. It occurs as the result of an infection from a virus, bacteria or fungus.

38 million people in the USA have sinus infections each year. These infections are often profoundly painful, to the point that a person suffering from one can have diminished function at work and in his or her personal life. These infections, often thought to be minor ailments, can even cause death.
Any foreign body can develop a biofilm. Compare a biofilm in the body to a boat with huge growths on the hull. They are biofilm agents, cause huge drag, slowing the boat and consuming energy just as biofilms do in the body.

The image above shows a catheter to remove urine. If biofilm infections grow on metal, plastic or ceramic, they can grow on virtually anything. This means biofilms can grow on silver coated objects placed in the body to defeat biofilms. Bacteria can live in silver mines.
Urinary tract infections (UTIs) are among the most common bacterial infections, accounting for a significant part of the workload in clinical microbiology laboratories. Intestinal or enteric bacteria (in particular, Escherichia coli) remain the most frequent cause of UTIs, although the distribution of pathogens that cause UTIs is changing. More important is the increase in resistance to some antimicrobial agents, especially the resistance to trimethoprim-sulfamethoxazole or Bactrim as seen in E. coli.
One problem in both the bladder and vagina is the presence of the wrong sort of bacteria. Vaginal probiotics seem to have helped many women suffering from this problem, and Natren Gy-Na-Tren is one respected option for them. Too many patients, however, suffer needlessly due to never being taught that spermicides kill the required good vaginal bacteria and that lack of flora results in yeast infections.

As we are looking at different organs and causes of biofilms, we should not leave out a vector of biofilm infections carried by over 200 living things in at least three continents—the Ixodes tick. It carries at least two serious biofilm makers: FL1953 and the highly complex genetically advanced Lyme bacteria. We are still learning about all the possible infections it carries.

Please note the hair looks like large grass, so this tick is a fraction of this size. When you combine invisibility with a bite that has a pain killer, an anti-histamine, an anti-coagulant and an anti-inflammatory agent, you have a stealth infection carrier. One tick saliva chemical, Sialostatin L, is such a good immune suppressing enzyme that it may inhibit asthma (Horka 2012).
Dogs can be man's best friend, but not if you touch their saliva and not if they bring ticks or fleas into your home or car. Assume that every dog and cat that lives outside a city probably has had tick or flea bites.
We strongly suggest not routinely wearing the foreign body known as contact lenses while you sleep. Storage containers can have biofilm bacteria even in the presence of hydrogen peroxide and chlorine cleaning and storage systems. Many studies have shown the presence of diverse classes of fungi with biofilms present in the eye infection. A biofilm significantly adds to the power of bacteria and fungi to harm the eye. Some researchers feel biofilm eye infections are more common than we believed in the past, and some of these bacteria can harm the eye.
This toe appears to have fungal and bacterial infections which can have biofilm protection. This infection is not trivial and in a diabetic patient might result in an amputation or death.
A physician is doing an ear exam with a very patient girl. He is going to check for infections in the ear canal, infections against the tiny membrane that moves slightly with sound and to look through this tympanic membrane or "ear drum" to see if fluid or pus exists on the other side. This exam will also help to determine if the tube going from behind the ear drum, called the eustachian tube, is infected. This small tube connects the middle ear to the airway in the back of the nose.

Many parts of the visible ear, the inner ear and the tube between the inner ear and the top of the throat can have biofilms that ignore routine antibiotics. The ear drum is often as far as you can see into an ear. If infections repeatedly live behind this thin membrane, "ear tubes" are considered. Ear tubes can also collect biofilms.

We do not want any infections, and certainly not biofilm infections. Some self-healers feel a number of plant based treatments help ear infections that are not defeated by common antibiotics like amoxicillin or stronger Augmentin, which has a resistance fighter combined with amoxicillin. I caution everyone to read fully about treatment in terms of how it impacts the middle and inner ear, before tossing in an acidic oil that quickly makes contact with the very sensitive outer ear.
Biofilms are Ignored by the Medical Community

When was the last time any professional licensed healer mentioned this word to you? “Biofilm.” The good news is that research all around the world is finding solutions and more are coming, but, often knowing them requires self-study.

The causes of low biofilm knowledge in healers include the immense time and expense involved in training physicians and the massive volume of information available. Therefore, the science used by doctors is usually conservative and limited to that being used at the time of their training, which can strongly limit creative solutions in medicine. Many new doctors limit their reading to three journals because their teachers felt these three journals were the best to stay current. Biofilms may not even be mentioned in them yet.

Most physician education is limited to current synthetic medications. Synthetic medications can help destroy some biofilm infections, but it is common for the infection eventually to defeat the synthetic antibiotic biofilm treatment and also to defeat its back-up antibiotic.
Making “Biofilms” Clear

A biofilm is like a dime in the center of a pool of olive oil, and on the outer edge of the oil is pepper representing infection killing cells. They cannot move in to destroy the dime. Biofilm bacteria communities are the usual state of most human infections. We have been taught that infections are isolated bacteria floating around and this is a serious error. It shows how far we need to go in science if the main form of bacteria—biofilm bacteria communities—is a new, but crucial, concept. When I made a list in 2004 of twenty-five options to kill biofilms, there wasn’t much interest.

Today, the inability to destroy biofilms with diverse options is literally a health disaster.

The goal in writing and publishing this book is to make an affordable research-based set of options along with other possible options, to present a pure book of solutions offering the newest possible current and up to date solutions for the hundreds of diseases associated with biofilms. The barrier of a biological film can be utterly impossible to remove or penetrate with the routine options used by physicians, infection specialists, naturopaths, alternative medicine schools, essential oil practitioners, acupuncturists, nurse practitioners or herbalists.

With this book we hope to serve you and your physician/healer by the exploration of options available now. We searched the past five years of publications on PubMed—the massive database for medical science—for “biofilm treatment.” The range of options is impressive and not always things you might expect. This book is meant to give you broad options to prevent your suffering, disability and even death.

After years of research and study, I have come to realize that the infectious disease “experts” on biofilm may have long since lost the war, and in fact, many may not ever have been aware of all the battles. Pa-
tients and researchers were learning basic things about infections in 2012 and 2013 which shatter trust in infection specialists. **Most people, and infectious disease doctors themselves believe that an infection physician knows all infections.** Much of their work is related to HIV, Hepatitis B and C, Tuberculosis, strong pneumonia, the antibiotic resistant staph infection MRSA, sepsis [bacteria in the blood], post surgical infections, Flu, Meningitis, Rotavirus, Streptococcus, Clostridium difficile (caused in part by lack of knowledge of the benefits of high quality probiotics), infections of various body part implants, and a finite number of other serious infections. Many of these are very hard to treat, such as AIDS, which requires the care of someone trained in very advanced medical science.

The point is, however, that infection physicians do not usually have the time to research all the options to handle biofilms because even to become an infection “expert” on just one infection, it takes about a year to read all the applicable articles, ponder, and see how they may apply to many people. Therefore, our goal is to advance this area involving all healers and millions of patients.

Most traditional healers are limited by the options of pharmaceutical companies. I have appreciated receiving small grants awarded by some of these companies in the past. They have given me grants knowing the resulting information published was outside their control. It is not true that all synthetic medications are bad, however, some can be dangerous to use and some can be far worse options than those used in functional medicine or by integrative physicians. On the other hand, the situation could be better if the education on effective dosing, delivery flexibility and risks of many alternative treatments, herbs, etc. were better.

Starting with hospitals and traditional medicine, the current approach of removing biofilms using another antibiotic or other patented synthetic agent will fail today or next year in many or some cases. Profoundly unique agents that block signals between the bacteria involved in making the biofilm “fort,” or the use of virus carriers to attack some part of the biofilm, will likely be introduced soon, along with dozens of other
advanced options. Much to our detriment, we do not have them now. The FDA approval hurdle is massive and takes many years.

The current treatments offered in integrative, alternative or functional medicine are often too simplistic, but some useful ones you may see are available today. At the other extreme, routine allopathic MD medicine seems to feel that only prestigious schools have solutions right now from multi-million dollar studies—they do not. Even some patients with biofilm infections who are very sick or dying in many traditional hospitals or under routine medical care are frankly “left by the side of the road” to suffer, become disabled or die.

Alternative or functional medicine options often result from very poor reasoning based on limited information. The most common trouble might be that treatment “d” or “e” or a mix of treatments “abcdefgijklm” helps Tom or Ann, so they are excited. They have found gold in the backyard, and in their sincere joy, they post this information. When research assistants follow up with these patients in one to three years, they are typically worse.

Smart physicians and other healers of any philosophy or training do not appreciate that destroying pathological biofilms is like trying to open a steel door using a banana as the key to a two ton lock. The limited treatment and supposed cures of many physicians and healers trying to remove biofilms did not take place when checked by long term follow up.
Preventing Suffering, Lower Functioning, Disability and Death from Biofilms

New Profound Education of “Biofilms” is a Health Emergency

As you are reading this, you likely have some infections hiding in their fortresses of biofilm. When you ponder your loved ones and closest friends, some may feel great, and some may feel fair or poor due to this slime defense that makes the immune system and routine treatments utterly useless.

Let me say this very clearly.

It is highly likely that some of you or your relatives have biofilm infections today that are not able to be treated because no optimal treatments are known to your healer. Clinicians and even full-time researchers do not have this information. Either you, your loved ones or both may become disabled or even die due to an infection or infections in biofilms and nothing will work in traditional or alternative medicine. We want to change that reality.

I was talking to a fellow scientist the other day, and after he read this book, he was fairly shaken, and said, “Oh my heavens, this is deadly serious stuff!” In contrast to other books, information about biofilms applies to every age and every reader. Biofilms cause disability and death in millions of people worldwide.

I once had a pool that taught me the power of biofilms to make medicine completely and utterly useless. It shows why your precious time is not wasted here.

After skipping two weeks of pool cleaning, a five by five foot patch of dark algae was at the bottom in the shallow end. Since no one was going to use it for many days, I placed immensely powerful four inch solid
round chlorine tablets to boost the ozone cleaner, and afterwards placed these very strong tablets directly on the algae…to no effect. So I added high potency acid that could rip off skin, also to no effect. Adding more chlorine, acid and algae killers did nothing.

So, since all was lost … and I was out of ideas, I read the owner's manual.

“Brush?” I thought. “This is the age of technology and super science.” I left and came back the next day. The algae were doing the tango and eating bonbons, happy and living the high life. So I brushed it. In two minutes the algae were utterly obliterated. I removed the thick clear film covering it, and all my excessive poisons rushed it like a tidal wave.

That is what this book is about, reversing health failures caused by this routine defense-biofilm slime layer around infections.
Eliminating Biofilm First Makes Antibiotics Effective

To understand fully what you are reading, and see how it can help reverse pain, annoying persistent health troubles, disability and prevent death—we offer this potentially life saving information. Around the world, resistance is rapidly increasing to commonly used antibiotics, such as thirty million pounds used in USA food animals and aquaculture to increase the speed of growth—this is 80% of all American antibiotics (WedMD).*

“Resistance has emerged for all known antibiotics in use…[Resistance]…has…[emerged]…in hospitals, farms and aquaculture ponds. Strains of bacteria resistant to antibiotics were shown to exist all around the world as early as the 1950s. In past years, only one new antibiotic class has been invented, the first since the 1970s. “We’ve come to a point, for certain infections, that we don’t have [antibiotic] agents available,” says Michael Blum, an FDA antibiotic expert.**

Part of the resistance to infections is caused by biofilms more complex than the simple algae film in my former pool. They are more like advanced military castles.


Very Short Samples of People and Biofilms

In 2004, Richard Longland recovered very poorly from a mystery disease after spine surgery. In the months that followed, he suffered from many problems—headaches, joint pain, and later cardiac and brain issues, brutal fatigue and trouble thinking.

The medical system opposed him, but finally, in 2007, he was treated for mycoplasma that came from a possible surgery process, any place in the hospital or in a public location or a tick.

Most of my patients have seen 3 to 200 doctors before coming to me. I understand his experience. Mr. Longland had to see over twenty doctors for a diagnosis. During this difficult period, he created a superior film called “Why Am I So Sick?” He is a patient-champion of using pharmaceutical and naturopathic agents to rid his body of systemic bacterial biofilms.

***

Edward is 78 years old and he has three daughters and eight grand children. He was hospitalized for shortness of breath. He has a bad pneumonia or an infection in his lung. He is getting worse. Individuals have recovered using agents that defeat many biofilm-protected pneumonias.

***

Linda has been tired for some years and has trouble with school. I recently found she has a number of tick infections which have caused over fifteen lab results to be abnormal. Yesterday she called, and due to a pain behind her knee, I told her to go to the ER. In less than a day, she was found to have 23 clots in her lungs and legs. She suspects it is Babesia, inflammation and FL1953. We had agents that killed these agents, including FL1953, in 2006.

***
Kelly has had sinus troubles on and off for many years. She has read a vast range of books and some treatments help, but the sinus trouble comes back eventually. On special imaging, it was found she had a couple of infections showing a high amount of biofilm protective material. Her treatment was adjusted with options in this book to undermine her biofilm infections, and for fifteen months she has had no more sinus trouble.

***

Leonard has had aches in his sinus area for many years. Four surgeries and eight medical visits later, he still had daily left and modest right cheek pain. He followed some of the options in this book with his doctor and is doing exceptionally well.

***

There are likely over 100 major common illnesses involving these biological films.
• If resistance to antibiotics continues to increase in large part due to improper use in humans and over-use in food animals, and biofilms grow in frequency and toughness, we may return to the pre-antibiotic world where a simple infection killed you or your loved ones.

• Biofilm infections are the number one medical cause of death for children under six.

• Many infection doctors notice an antibiotic fails due to a resistant infection in a biofilm, but the only option they have is another synthetic antibiotic. That is like trying to use a pea shooter to break down a steel wall.

• Thankfully, there are dedicated research clinicians interested in solutions: people who think and treat ill people and also take immense time to read and research.