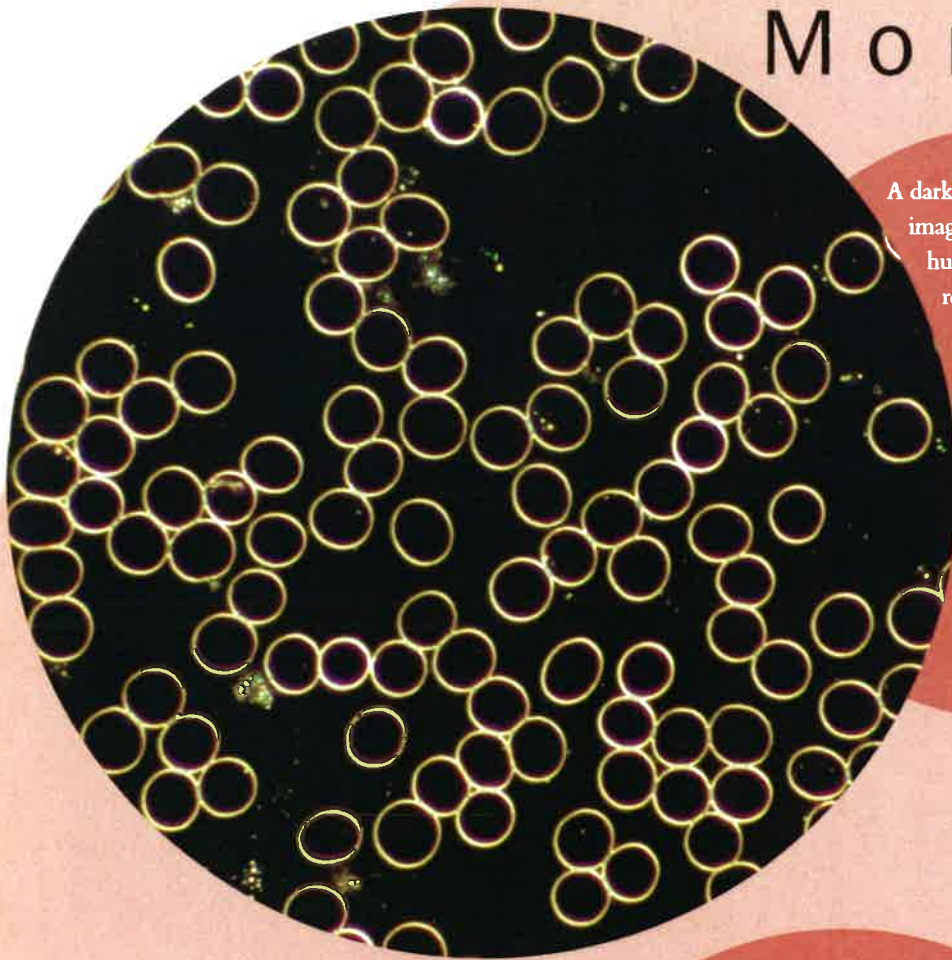
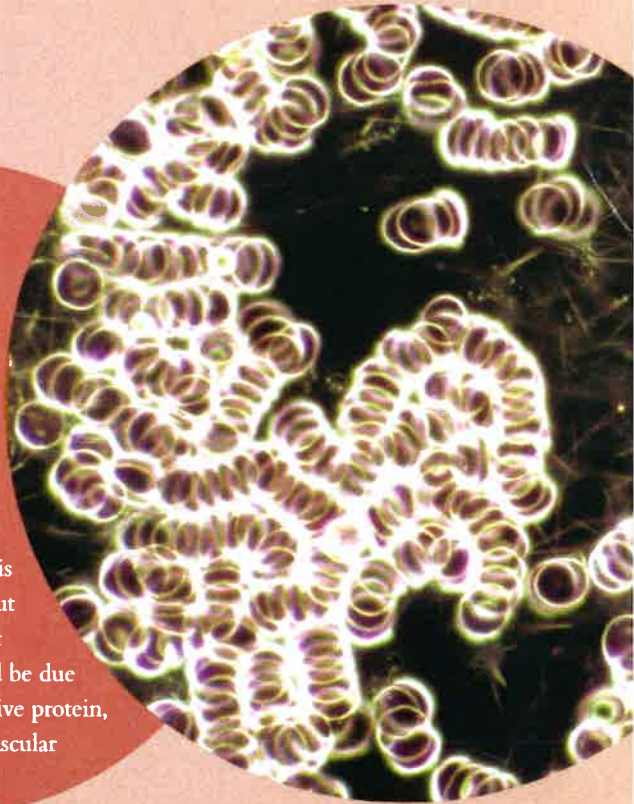


# Monitoring



A darkfield microscope image of relatively healthy human blood. The circles are red blood cells. Consistently round shaped without too much variation in size, they are not stuck together and are evenly dispersed. The plasma (the fluid portion of the blood, appearing as the dark background) does not show abnormal numbers of white blood cells, platelets, cellular debris or foreign organisms.

This image shows agglutinated blood with an excess of fibrin. The red blood cells are sticking together in what is called a rouleau pattern—from the French word for a roll of coins. Such a condition diminishes the ability of the red corpuscles to perform their primary task of oxygenating the tissues. The fibrin appears like dandelion spores. Fibrin is essential for the clotting of blood, but in excess is a risk factor for a heart attack. This blood pattern could be due to elevated levels of C-reactive protein, an indicator of cardiovascular disease.





# the River of Life

**Doctors use darkfield microscopy to detect early signs of disease in the blood—but its use as a tool to educate and motivate patients can be of even more value.**

Your bloodstream is like a river. It transports oxygen, nutrients and other life-giving agents throughout your body to maintain health. It is also the medium for detoxification, delivering cellular waste to the liver and kidneys for elimination from the body. By its very nature, blood can serve as a predictor of health and provide an indication of illness well before symptoms appear.

Alternative medicine researchers and practitioners are well aware that blood samples demonstrated through conventional testing to be normal are often extremely unhealthy. Instead of a river, unhealthy blood can resemble a swamp, and it's a sure indication of latent or undiagnosed problems. →

**By Larry Trivieri, Jr.**



## Darkfield Microscopy

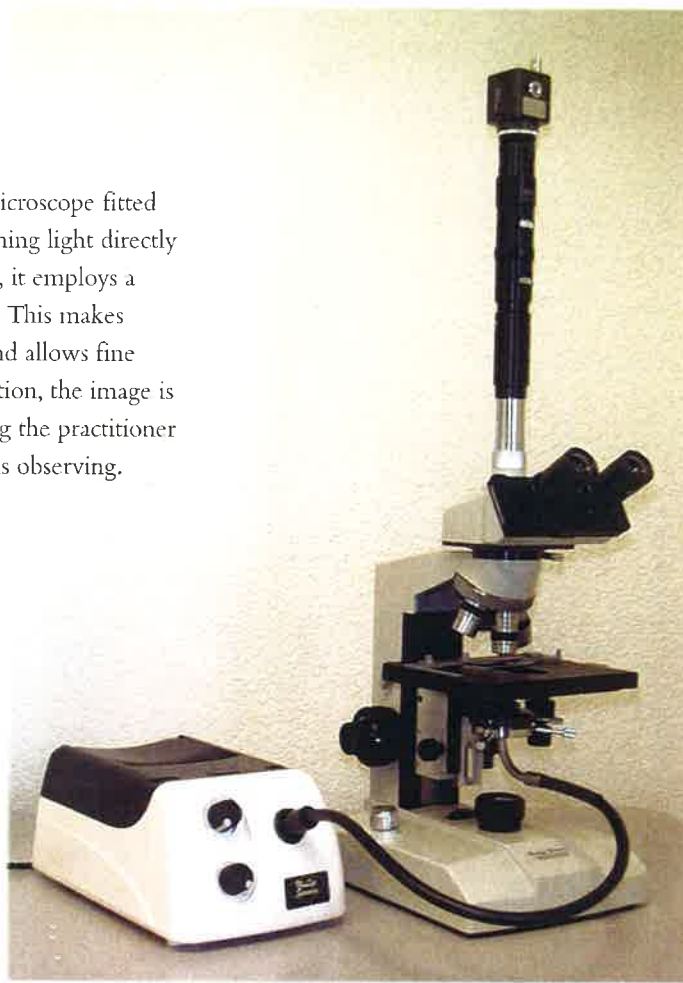
A **darkfield microscope** is basically a standard microscope fitted with a different illumination system. Instead of shining light directly through the sample, which can overwhelm the eye, it employs a light condenser to illuminate objects from the side. This makes them appear to glow against a black background and allows fine structures to remain visible. In a darkfield examination, the image is magnified 1,500 times onto a video screen, allowing the practitioner to show and explain to the patient what he or she is observing.

Because of this, growing numbers of alternative medicine practitioners are turning to darkfield microscopy, a technique that allows them to look at live blood and see things not revealed by standard microscopes or blood tests. Darkfield microscopy not only helps physicians assess the health of their patients; it is also an educational tool. It provides patients with a live picture of their own blood, and it creates a powerful incentive for them to take more responsibility for their well-being.

### What is darkfield microscopy?

A darkfield microscope works the same way a standard microscope does, but it uses a different system to illuminate the specimen. A standard microscope passes light through a slide and up into the eyepiece, which can overwhelm the eye and render small structures invisible. A darkfield microscope uses a light condenser to illuminate the specimen from the side. Cell structures and microorganisms appear to glow against a black background.

Specimens aren't viewed through the eyepiece alone. Live blood samples are magnified 1,500 times and displayed on a video screen, allowing



practitioners to discuss with patients what they are observing. Using darkfield, practitioners can detect early signs of illness by studying the shape and functioning of red blood cells, white blood cells and platelets, and the presence of metabolic byproducts and pathogenic microorganisms.

Distortions of red blood cells and their inability to stay intact on the slide, for example, can indicate a nutritional deficiency, oxidative damage caused by free radicals, or undesirable bacteria or fungi in the bloodstream. The vitality of white blood cells can also be determined by observing the condition of the cell walls (smooth, ragged or leaking cytoplasm).

As part of an overall assessment, practitioners can use specific techniques to "stress" the blood "One technique involves adding a little saline, which dehydrates the blood cells and pulls out their contents through the cellular pores," explains Michael Coyle, president of NuLife Sciences in Petaluma, California, who has

At the center of this image is an aggregation of platelets, disc-shaped blood components that play an important role in blood coagulation. Sticky platelets are attracted to inflammatory sites in the arteries and allow the build-up of arterial plaque, a chief cause of heart attacks and strokes. The small, doughnut-shaped dots in the platelet aggregation could be mycoplasmas, infectious microorganisms that have been linked not only to cardiovascular disease but also to autoimmune diseases and cancer.



trained more than 3,000 healthcare professionals in darkfield microscopy. "This helps physicians show patients the disintegration that is going to occur in their blood naturally over a period of months or years." Healthy blood does not show variations, Coyle says, but the blood of a person who is unhealthy can reveal a va-

**Stressing the blood sample helps doctors show patients the disintegration that is going to occur in their blood naturally over a period of months or years.**

riety of abnormalities. Other tests can identify what these abnormalities may indicate; are they simply benign fragments of the stressed cells, or are they pathogenic organisms? If pathogens are identified, therapies can be employed to neutralize them.

### Benefits of darkfield microscopy

Darkfield's main benefit is its usefulness as an early detection tool; it also allows physicians and patients to monitor the effectiveness of a particular therapy. "The device enables me to examine the patient's total cellular terrain, and may yield a different picture than whatever symptoms, if any, are currently being presented," says Daniel Dunphy, N.D., P.A., of San Francisco, who uses darkfield microscopy as an integral part of his practice. "Many times the blood may look terrible, yet the patient feels terrific." Coyle echoes this view: "When you look at blood, you hardly ever see samples that are optimal. What is considered 'normal'



## Darkfield use and pleomorphism

**Darkfield microscopy** is used almost exclusively by alternative, rather than conventional, physicians. The reason is not that darkfield microscopes are exotic: They are standard equipment employed by microbiology researchers in laboratories. With their unique benefits, then, why is darkfield not used by primary care physicians?

Under managed care, of course, few doctors have the time to look for themselves at their patients' blood, let alone show patients what they see and explain what it means. Neither does darkfield work into the modern medical paradigm of "one disease, one drug, one outcome." Darkfield shows the complexity and variability of the entire blood ecology. It is preventative, and it is best used before any symptoms appear. According to today's standards of practice, that makes it useless.

Another reason for conventional medicine's resistance to darkfield is its use by medical pioneers such as Gunther Enderlein, Royal Rife and Gaston Naessens in formulating controversial theories of "pleomorphism." Simply put, pleomorphism is the theory that the cells and organisms in human blood are capable of changing shape and function depending on cell conditions. The implication is that benign microorganisms—even our own cells—can mutate into disease-causing forms; in other words, they can evolve into pathogens.

Today, most scientists accept pleomorphism as a fact, but only within the narrow definition that a single organism can exist in distinctly different shapes.

Bolstering a more radical theory, however, studies by researchers such as Virginia Livingston-Wheeler, M.D., and Lida Mattman, Ph.D., have produced significant evidence that pleomorphic microorganisms are capable of changing not just their shape but also their functioning and even their genetic make-up. Clinicians at the U.K.'s Lister Institute of Preventive Medicine discovered that bacteria, when treated with antibiotics, break down into smaller parts, yet still contain the DNA of their original form. This means that antibiotics, while capable of slowing the progress of microorganisms, do not necessarily eliminate them.

"The Lister Institute discovered that these particles could build back up into bacteria again. They mutated into new—and antibiotic-resistant—forms," says Michael Coyle. "Understanding pleomorphism and using viable alternative therapies that enhance immune function has clear advantages over standard antibiotic therapy, and darkfield microscopy can be an essential tool for monitoring that process."

## Darkfield Microscopy

blood is almost always less than optimal.”

In the experience of practitioners who use darkfield, if the health of the blood does not improve, disease symptoms will inevitably appear, even when patients had initially insisted there was nothing wrong. Darkfield assessment, they say, offers an early warning sign so that changes can be made before disease conditions occur.

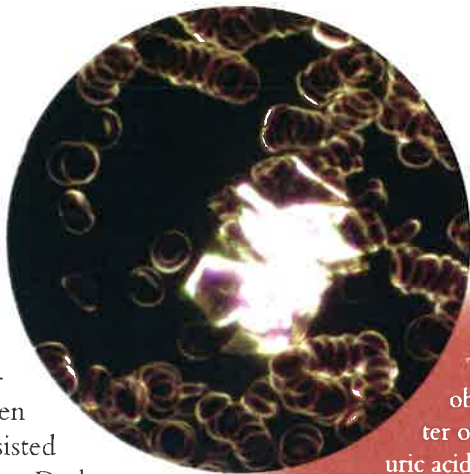
According to Coyle, practitioners using a darkfield microscope can detect evidence of vitamin and mineral deficiencies (including the need for antioxidants to repair free-radical damage); toxicity (including dental amalgam poisoning); poor circulation and oxygenation; abnormal blood-clotting; abnormal liver function; arteriosclerosis; allergic reactions; abnormal immune system function; abnormalities related to hormonal imbalances; pathogenic microorganisms (bacteria, parasites, fungi, yeast); and digestive enzyme and hydrochloric acid deficiencies. Using darkfield, a practitioner can make an educated guess as to the cause of a particular condition, which can be confirmed or disproved by specialized laboratory testing—or simply by following a noninvasive protocol designed to remedy the condition.

### Educational benefits

Darkfield microscopy is a general assessment tool; by itself it can't provide precise diagnoses. While it does offer useful information to the doctor, darkfield's ability to involve the patient may be of even greater value.

“One of the biggest problems with health care today is that most doctors don't have the time to devote to their patients,” says Coyle. “Patients need and want education, and darkfield microscopy is a good way of providing that, because it's not a readout of fixed numbers and graphs and so forth. You can show patients pictures of what blood looks like in a state of optimal health and then show them their own blood in real time on the video monitor. They can actually see the difference. In the process, they become much more motivated to follow the treatment protocols prescribed by their physicians.”

“I have my patients view their own blood as a reminder to maintain their prescribed nutritional pro-



The white object in the center of the slide is a uric acid crystal, surrounded by agglutinated red blood cells in the rouleau pattern. Uric acid crystals are most often due to overconsumption or poor utilization and absorption of proteins, especially animal proteins.

**“Many times the blood may look terrible, yet the patient feels terrific,” says Daniel Dunphy, N.D., P.A., who uses darkfield microscopy**

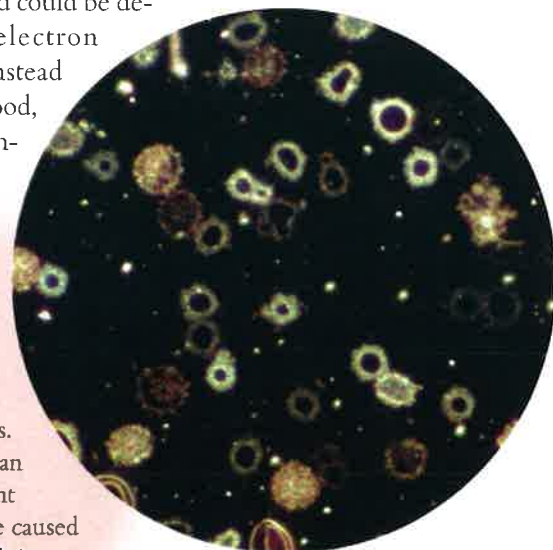
**as an integral part of his practice.**

gram,” explains Douglas Brodie, M.D., a cancer physician in Reno, Nevada, where a number of alternative physicians routinely use darkfield. Katrina Tang, M.D., of the Century Wellness Clinic in Reno, also emphasizes darkfield's interactive benefits. “It's an educational tool,” she says. “When I try to explain the different kinds of white blood cells, my patients give me a blank look. But when I show them a neutrophil on the video and I explain, ‘It's a security guard in your blood,’ they understand. It's fun and the patients love it.”

### Living blood vs. numbers

Like many physicians, Maarten Klatte, M.D., a homeopathic physician and founding director of Vitality Research in The Hague, Netherlands, once believed that all of the essential components of blood could be detected by an electron microscope. “Instead of looking at blood, I looked at num-

In this blood sample, the red blood cells exhibit a wide range of distortions and variations; many appear to be disintegrating and have tendrillike growths on their exterior. The plasma is dotted with foreign objects. The overall blood ecology indicates an acid/alkaline imbalance and deficient nutrient assimilation. This could be caused to a great extent by a diet too high in carbohydrates with lowered utilization of amylase, the enzyme that breaks down starch into simpler compounds.





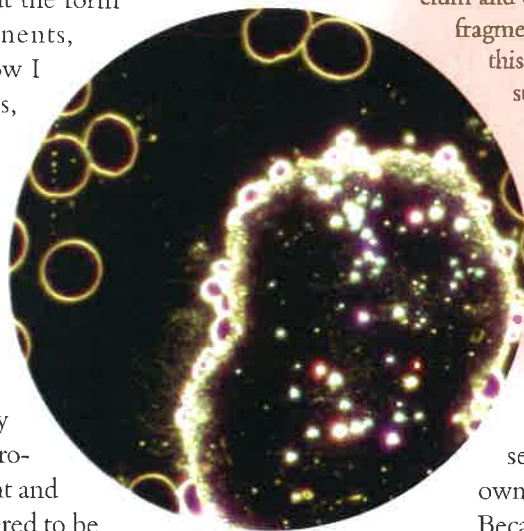
bers,” he says. “These days, I look at the form and motion of the blood components, which include living organisms. Now I realize that the old blood analyses, based on measurements, told us relatively little about the true condition of the blood.”

To illustrate the value of the technique, Klatte cites an example: taking a cancer patient’s white blood cell count. The white count is a measure of the concentration of neutrophils (Dr. Tang’s “security guards”) in the blood. The standard procedure is to obtain a total white count and then compare it to the range considered to be normal. If the patient’s white count falls within that range, it is presumed to be normal. But, according to Klatte, what is normal quantitatively can be found to be abnormal in a qualitative or “functional” sense under darkfield scrutiny. While the white count may appear normal, the condition of those cells may be far from healthy. “If most of the cells look paralyzed or broken,” Klatte explains, “then a ‘normal’ cell count means nothing.”

Klatte invites his patients to look at their blood before, during and after treatment. “They now regard their blood as a living part of who they are, rather than as an abstraction, which is the perception they got from viewing numbers instead of seeing blood in its live condition,” he says.

## Finding darkfield practitioners

Coyle points out that, in addition to physicians, a number of other healthcare practitioners are becoming trained in the use of darkfield microscopy. “The number one type of person who wants to know about this is the nurse or nurse practitioner who is working behind the doctor and wants to be able to tell what isn’t being done for the patient that could be done,” he says. “After that are M.D.s, followed by naturopaths, chiropractors, dentists and nutritional therapists.” In addition to providing certification training, Coyle hopes to establish the International Microscopy Association, “to establish the proper standards and make this as standardized as possible within the perspective of complementary and alternative medicine.” Meantime, NuLife Sciences offers a referral service to practitioners it



The large object in this image is a piece of free-floating plaque. Plaque consists of proteins, calcium and other mineral salts, lipids (fats), cell fragments, debris and toxins. The colors in this bit of plaque suggest chemical exposure and possible metals toxicity.

Depending on the patient’s symptoms and health goals, a physician seeing this might order a blood analysis to screen for heavy metals and for chemicals to which the patient might have been exposed in his or her occupation or environment.

has certified (707-781-9557); other companies selling darkfield microscopes also offer their own training programs.

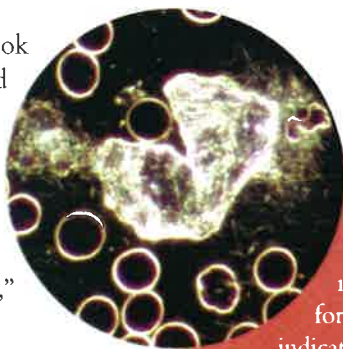
Because of the imprecise nature of darkfield, it is important to find a practitioner who adheres to sound scientific principles in interpreting the results. “Observing is one thing; interpreting is another,” says Dunphy, who describes darkfield as a “microscopic physical examination.” “For example,” he says, “just like a nervous patient’s heartbeat can be elevated at the beginning of a work-up, the shape of white blood cells can be stressed at first but return to more regular shapes as the patient relaxes.”

Coyle recommends that people work with certified practitioners “who are using darkfield microscopy in an educational rather than a diagnostic vein, to motivate patients and show them their results as their treatment progresses.

“Let’s say, for example, that at the beginning of treatment, on a scale of one to ten, with ten being the most serious, your condition is an eight. As you start to implement the protocols your healthcare provider recommends for you, this technology will let you see the changes that occur in your blood as it moves from being a swamp to being a river.

And your blood is a river. If you clean up the river, you put fresh water everywhere—and all of the nutrients and oxygen that are carried in it. That’s the real benefit of this. People can literally see this cleanup process happen.” **AM**

*Larry Trivieri Jr. is a recognized lay authority in the fields of holistic and alternative healing. His most recent book, The American Holistic Medical Association Guide to Holistic Health, was published by John Wiley & Sons in May 2001.*



The spicules—clusters of needle-like forms—can be an indication of liver toxicity, often associated with alcohol, tobacco or excess sugar.

Reprinted with permission  
from *Alternative Medicine* magazine, issue #48.  
800-333-HEAL ■ [www.alternativemedicine.com](http://www.alternativemedicine.com)