Healing with Light

by Nina Mikirova, PhD, Director of Research and
Ron Hunninghake, MD, Chief Medical Officer

Phototherapy is the medical use of light to activate the healing properties of the blood. Phototherapy has been used for over 80 years to treat a wide spectrum of ailments, including everything from acne to fibromyalgia to serious infection.

Phototherapy makes use of ultraviolet (UV) bands of light. Most of us are familiar with the UVB band of sun light. Excessive time in the sun can result in a bad burn due to UVB. The UVC band of sun light is known to kill germs. The UVA band is thought to modify the immune response of cells and may have anti-inflammatory and anti-cancer properties.

The medical use of ultraviolet light takes two forms. Both involve the irradiation (exposure to light) of blood or blood components with one or more of the UV bands of light. We will briefly discuss the form of light therapy called photopheresis. We will then turn our attention to the current revival of the light therapy now being offered at Riordan Clinic: UBI (ultraviolet blood irradiation.)

Photopheresis is a technique that exposes isolated white blood cells to both a photoactive drug and UVA light. The treatment was introduced in 1987 and is approved by the U.S. Food and Drug Administration (FDA) to treat cutaneous T-cell lymphoma and immune-mediated diseases such as graft-versus-host disease (a complication related to bone marrow or stem cell and organ transplants). The treatment is thought to control these diseases by inducing the death of certain white blood cells called lymphocytes. The overall effects of photopheresis on the immune system remain poorly characterized. Patients that respond well to the treatment notice significant improvements in their quality of life. Toxicity is minimal. Compared with control groups, patients treated with photopheresis have better survival times.
An older and easier-to-administer form of ultraviolet light therapy is called UBI. This is also called autologous blood irradiation—autologous meaning "the use of one’s own blood."

In the early 1920’s, Emmet Knott developed a method for drawing a small amount of the subject’s own blood and passing it safely through a chamber where it was treated with UV light and then returned to the body. He used the same wavelengths of UV light that come from the sun in order to make use of its healing properties.

Knott irradiated the blood of his first human subject—a case of sepsis, or blood-borne bacterial infection. The patient recovered within 24 hours of the treatment. By the summer of 1942, over 6,500 patients had been treated with this therapy with a success rate that was greater than 95% with no harmful side effects.

In 1943 medical authors reported on the use of UBI in a series of cases involving viral pneumonia. They noted a complete disappearance of symptoms in 24 to 76 hours following a single treatment. All coughing disappeared in 3 to 7 days. Lung X-rays cleared in 24 to 96 hours.

**Mechanisms of UBI treatment**

How does UBI work? Two basic hypotheses have emerged from various practitioners and researchers:

1) The UV treatment of the blood in the treatment chamber destroys or alters bacteria and viruses in the extracted blood in such a way as to create a kind of vaccination effect when the killed germs are returned to the body. This provokes an activation of the immune system which in turn hunts down and destroys the remaining bacteria or virus in the body.

2) The treatment of this small fraction (about 5 percent) of the blood then propagates throughout the entire volume of the blood, emitting a secondary irradiation of biophotons that have been induced by the UV light in the treatment chamber.

Knott and other early researchers suggested that UBI has a complex effect on the immune system. On the one hand, the UVC lights in the UBI machine act in a germicidal way. On the other hand, the UVA lights (the machine contains both) act to modulate or alter in some way the functioning of the white cells that are having an auto-immune effect.

Proponents of UBI published their findings in dozens of scientific articles. Thousands of patients were treated at medical centers. UBI fared well in several clinical trials, but most of the published studies consisted of a series of cases without controls.

One critical study (Moor et al.) pointed out the lack of controls and the unclear criteria for success in the articles published by UBI’s proponents. It also claimed that UBI had no effect on bacteria or toxins.

In another critical study (Schwartz et al. in 1952) funded in part by the American Medical Association, the researchers showed that it was not the direct treatment on the blood that destroyed the bacteria.

It is important to mention that The US Foundation for Blood Irradiation (FFBI) manual emphasizes that UBI is a nonspecific therapy, as its exact mode of operation is unknown.
In Gratitude...

As a not-for-profit organization, we rely on many to make our vision a reality. So many come together to provide our patients with a place of hope, health and healing. Here are just a few we’d like to thank.

- All staff members who made financial donations to establish the Mavis Schultz Patient Scholarship Fund. Your contributions will help the Riordan Clinic provide care for patients in need. We’d also like to thank everyone who came out to wish Mavis goodbye at her retirement party. Your presence and words meant so much.

- All individuals and groups who have donated to our cause through financial support, including:
  - Lee A. Riordan, Fox Point, WI
  - B.R., New York, NY
  - J.T., Wichita, KS

- Crestcom International for event/meeting space rental

Ultraviolet Therapy for Patients with Inflammation

UBI therapy is practiced in Russia, Germany, the United States, and many other countries. There are many published studies that demonstrate its effectiveness in the treatment of many serious forms of infection, such as peritonitis, septicemia, tuberculosis and post-surgical infections. They all affirm that UBI is an effective tool in hospitals and clinics. Most of the completed studies were conducted in Russia. Short descriptions of these studies are presented below.

On the basis of the analysis of the results of the treatment of 115 patients with acute sepsis (life-threatening blood infection) the authors established that transfusion of autologous blood irradiated by UV rays reduced the likelihood of death by almost three-fold.

An analysis of UBI in 85 patients with various surgical diseases has shown the method to be simple, available and highly clinically effective. The experience with the use of ultraviolet irradiation of the blood in 98 patients with purulent-inflammatory disease was described. UBI of the blood considerably improved the results of treatment of these patients. The highest effectiveness of UBI of the blood is noted in treatment of sepsis.

Analysis of the results of clinical immunological study of the use of UBI in pediatric pneumonia indicated that it corrected the immune response of the child to the bacterial aggression through adequate production of monocytic phagocytes and plasma cells. It also influenced the completeness of immune response and the reduction of T-lymphocyte deficiency in the acute phase of the disease. UBI considerably reduced the mortality rate of this disease in young children.

Eighty-one patients with inflammatory diseases responded favorably to UBI.

In another study, 199 patients with different forms of peritonitis enabled the authors to recommend the inclusion of UBI. It reduced lethality two fold.

An experience with treatment of 1,527 patients with different forms of acute inflammation was analyzed. UBI was an effective method of treatment for these conditions, resulting in rapid arrest of local and general symptoms of the disease. The number of complications and recurrences were also reduced.

Ultraviolet Therapy for Patients with Diabetes

The effect of UBI on treatment of diabetes was analyzed in several studies. Below are presented data of several Russian and German studies of ultraviolet irradiation of autologous blood in the complex treatment of patients with diabetes mellitus.

In one study, a single reinfusion of UV-irradiated autologous blood was performed in 76 patients with non-insulin-dependent (NID) and insulin-dependent (ID) diabetes mellitus. Lipid peroxidation, the activity of glycolysis and pentose cycle principal enzymes, red cell cyclic nucleotides, hormones concentrations, and glucose utilization were investigated. The study showed that general physiological action of UV radiation is primarily due to the lipid peroxidation and damage
A complete blood count (CBC) is also recommended. By measuring the number of red and white blood cells, the total amount of hemoglobin in the blood, and platelet count, the CBC helps doctors assess many different conditions and symptoms of disease. The results can reflect problems with fluid volume (such as dehydration) or loss of blood. The test can reveal problems with RBC production and destruction, or help diagnose infection, allergies, and problems with blood clotting.

A doctor’s order or referral is not needed for laboratory services. To schedule your appointment, call 1-800-494-7785.

Why should you have these levels tested?

In general, all illnesses and injuries are accompanied by inflammation. This inflammation, seen as a defense mechanism, can be detected and quantified by laboratory tests. Although the test results are non-specific, elevation of inflammation test results alerts the physician to investigate and, if possible, identify the condition causing the abnormal results. Conversely, normal results in the Inflammation Panel point to wellness, reassuring to both the patient and physician. A list of conditions marked by inflammation is endless, but examples include cancer, arteriosclerosis, infection, and autoimmune disorders. Treatments of inflammation include the use of antioxidant nutrients. Blood levels of inflammation markers and antioxidant levels are monitored.

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Another paper was concerned with the results of a study of the effects of a single reinfusion of photo-modified (UV light irradiation) autologous blood on the levels of plasma hormones, lipid peroxidation and antioxidant system of erythrocytes, the activity of the main enzymes of glucose metabolism in erythrocytes, and the state of cellular immunity in 45 patients with non-insulin-dependent diabetes mellitus in the 2-day and the 14-day periods following treatment. The treatment was shown to cause prolonged activation of intracellular glucose metabolism, a decrease in the endogenous insulin consumption by tissues, and a decrease in the blood concentration of insulin.

Several recent clinical reports demonstrate positive experiences with UBI in a scenario of prevention or long-term delay of diabetic complications. The use of laser treatment did not vary greatly, but patients’ vision was improved and was maintained at a constant level for an extended period—in many cases, for decades. These experiences were supported by long-term improvements of blood pressure amplitude, lowered plasma viscosity and thrombocyte hyperaggregability. Diabetic foot ulcers could also be avoided.

Ultraviolet Therapy for Patients with HIV Infection

Ever since it was shown that UV radiation has an effect on viruses in vitro, the possibility that UV therapies may affect the progression of HIV disease has attracted the attention of clinicians and laboratory scientists. Additional in vitro and animal studies made it possible to determine types of UV exposure and dose ranges that have HIV-deactivating potential.

The safety of UV phototherapy for patients infected with the human immunodeficiency virus (HIV) remains controversial. Ultraviolet light from artificial and natural sources was first shown to enhance HIV growth in experiments using cell culture systems. In vivo studies using transgenic mice, with HIV, further indicated that sunlight and artificial UV-B in doses as low as 9 ml/cm2 can potently stimulate viral replication in the skin. In these experimental systems, ultraviolet radiation was thought to activate viral replication.
Marie’s creations began in 1983 after her son was diagnosed with Type I Diabetes. Making healthy, made-from-scratch meals and low sugar treats became her specialty. Marie has recently moved her café into the Riordan Clinic and continues to provide a healthy menu focusing on sandwiches, wraps, salads, soups, along with breakfast and vegetarian choices, plus HCG friendly meals and catering options. Marie’s Café & Bakery bridges the gap between gourmet and healthy foods. It’s worth the wait.

“Caring for the whole person has always been our focus.”
—Marie Hunt, Owner

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Know Your Nutrients: Cranberry
by Amanda Hawkinson

Known by many names, cranberry is a small, evergreen shrub that grows throughout North America. Primarily, cranberry is used for preventing and treating urinary conditions (specifically urinary tract infections), and it has a long history of use among Native American Indian tribes. Cranberry juice and extracts are used as medicine.

Cranberry is also used for neurogenic bladder, a bladder disease that affects the control of the bladder due to nervous system damage. Plus, it helps to deodorize urine in people with urinary incontinence. Other common uses of cranberry are to increase urine flow, kill germs, speed skin healing, and reduce fever.

Some even use cranberry to treat type-2 diabetes, chronic fatigue syndrome (CFS), scurvy, inflammation of the lining around the lung (pleurisy), and cancer.

But how does it work? An old theory indicates that cranberry makes the urine acidic and, therefore, unlikely to support the growth of bacteria. New research, however, believes that some of the chemicals in cranberries keep bacteria from sticking to the cells that line the urinary tract so they cannot multiply.

Cranberry, like many other fruits and vegetables, contains a significant amount of salicylic acid (this is an important ingredient in aspirin). It is believed that drinking cranberry juice regularly will increase the amount of salicylic acid in the body, which can reduce swelling, prevent blood clots, and can have antitumor effects.

Did You Know? UV Light

• UVB exposure induces the production of vitamin D in the skin at a rate of up to 1,000 IUs per minute.
• Ultraviolet radiation is used to treat skin conditions like psoriasis and vitiligo.
• In 1903, a Nobel Prize was awarded to Niels Finsen for treating skin lesions caused by tuberculosis with UV light.
• UVB has the ability to break cellular structure and eventually mutate it.
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Select Supplements that Help Prevent & Treat Infection

Bio Vegetarian
Regular: $36.98
Sale: $31.43
Bio Vegetarian is used to treat and prevent the common cold and flu, infections, chronic sinusitis, postnasal drip, allergies, and Candida. It is also used to increase the body’s ability to fight biological elements. Bio Vegetarian is an excellent source of support for the immune system. It is a 100% vegetarian formula and can be used to prevent or as a powerful agent against infection.

Prolive
Regular: $32.40
Sale: $27.54
Prolive contains standardized extract of olive tree leaves and is formulated to protect low density lipoprotein (LDL) against copper sulphate-induced oxidation. It is also known to produce dilation of coronary blood vessels and lower blood pressure. It is important to increase water consumption while using this product.

Cranberry Extract
Regular: $13.02
Sale: $11.07
Cranberry supports the health of the genitourinary tract. While using this supplement drink plenty of pure water and avoid the excessive consumption of sugar, which can lead to increased bacterial levels; and reduce caffeine and alcohol, which may irritate the bladder. Cranberry is beneficial in prevention and treatment of urinary tract and bladder infections.

d-Mannose Powder
Regular: $36.12
Sale: $30.70
d-Mannose is a simple sugar found naturally in cranberries and pineapples. It is metabolized in small amounts, the remainder of which is excreted via urine. As it is flushed out of the body, d-mannose maintains a healthy environment for the mucosal surface of the urinary tract. d-Mannose, the active urinary tract support ingredient of cranberries, provides concentrated support for proper urinary function.

Vitamin A 10,000IU
Regular: $4.78
Sale: $4.06
Vitamin A is essential for the health of the skin and is necessary for the proper functioning of the immune system. It is important for good vision and is needed for the maintenance and growth of teeth, nails, bones, and hair. Vitamin A works synergistically with vitamins C and E.

Vitamin A 25,000IU
Regular: $9.47
Sale: $8.05

500MG Time Released Vitamin C
Regular: $24.48
Sale: $20.81
Vitamin C contributes to healthy teeth and gums and is necessary for the proper functioning of the immune system. It is required for the production of collagen and is an antioxidant. Vitamin C enhances the absorption of Iron and the effectiveness of B-12, Folic Acid, and B-6. It works well with vitamin E.

1G Vitamin C
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Sale: $19.94

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Each supplement, for sale in the Riordan Clinic Supplement Store, is a high-quality, pharmaceutical grade product and is carefully selected by Riordan Clinic physicians in an effort to support our mission of “…stimulating an epidemic of health worldwide.”

Source: from the websites of the product manufacturers.

To place your order, visit our website at www.riordanclinic.org or call 1-800-447-7276
Patient Profile
by Kameron Hodges, RN

In March, a 70-year-old man came to the Clinic with a chronic, and at times life-threatening, condition that kept a dangerous bacteria lingering in his system. When active, the bacteria caused severe inflammation and swelling, fevers, and skin lesions. At its worst, the offender crept into his bloodstream, causing a life-threatening condition known as sepsis. He had battled this unknown bacterial assailant for more than 9 years before it was identified in September 2011 as Burkholderiapseudomallei (also known as Pseudomonas pseudomallei). The bacterium is so rarely found in the North American continent that only four to five cases are reported annually in the United States. Additionally, it is often resistant to antibiotic treatment. Once the bacterium was identified, the mainstream medical community prescribed and administered some of its most powerful front-line antibiotics, Vancomycin and Meropenem. He was informed, by a confident infectious disease specialist, that his condition was cured but that he would need to keep a potent antibiotic prescription on hand at all times, just in case. Within four months, the gentleman was back in the hospital for a five-day stay being infused with IV antibiotics.

Once at the Riordan Clinic, a thorough medical history, focused assessment, and series of laboratory tests were completed. While his white blood cell count was within normal limits (he was free of an active infection) his C-reactive protein, an indication of inflammatory levels, was found to be nearly double the normal value. His vitamin D level was also significantly diminished. A treatment plan was developed that called for the patient to receive ultraviolet blood irradiation (UBI) and oral vitamin D supplementation. UBI, also known as Biophotonic Therapy (BPT), photoluminescence, photopheresis, and photodynamic therapy, is a process of exposing blood to ultraviolet light to stimulate the immune system to first destroy and then

Patient Profile continues on page 8...

A Letter for Hope and Health...
June 2012

Dear Friends of the Clinic,

Mavis wanted to make sure that we thank all of you who attended her recent retirement party. She was extremely touched by the stories and kind words that were shared; encouraging, thoughtful, and dedicated were just a few qualities mentioned.

The Riordan Clinic staff has a passion for helping others. There is no better example of this long-term devotion than Mavis Schultz, ARNP, who has retired after 35 years of service in order to spend time with family. As our Patient Advocate and the first contact with each individual and their families, Mavis exhibited caring and compassion, traits that continue into all aspects of our patient care. Mavis always showed concern for those who were suffering but did not have the financial means to receive medical services. Our staff felt a fitting tribute for her many years of service was to establish the Mavis Schultz Patient Scholarship Fund. Contributions made by staff—and matched by the Riordan Clinic—will help us provide care for patients in need.

We would like to give you the opportunity to honor Mavis and help others with a gift to this scholarship fund. Examples of those you could help are a mother of five, diagnosed with stage 4 cancer, and a senior citizen who has used all available resources on treatments elsewhere without the outcome for which he had hoped.

Please mail your tax deductible contribution to the Riordan Clinic c/o Mavis Schultz Patient Scholarship Fund at 3100 N. Hillside, Wichita, KS 67219 or go online to www.riordanclinic.org and make your gift with a credit card. We will provide Mavis with a list of those who participate in this tribute. Thank you for helping others and honoring one of our very best.

With much appreciation,

Ron Hunninghake, MD
Chief Medical Officer

Donna Kramme
Chief Operating Officer
to develop antibody defenses to viral, bacterial, and fungal pathogens.

After the second UBI treatment, the patient regained the ability to breathe through his right sinus passage, something he had not been able to do in almost 50 years, and following the fourth treatment, his vision became noticeably sharper. The patient continued having UBI treatments twice a week, and after the fifth treatment, was able to come off the daily antibiotics, which over the years had become the key to keeping him infection free and out of the hospital. The patient has expressed extreme excitement over his treatment and progress. He has been free of infection for more than 150 days, something previously unattainable without daily antibiotic use. He states that he is feeling better than he has in years. His C-reactive protein level is also now within normal limits.

UBI therapy is currently available to new and existing Riordan Clinic patients and treats a multitude of conditions including but not limited to: chronic fatigue, fibromyalgia, hepatitis, respiratory infections, non-healing wounds, chronic yeast and urinary tract infections, asthma and allergies, rheumatoid arthritis, staph and MRSA infections, shingles and herpes, poor circulation, lupus and heart disease. Other benefits UBI can provide include: improvement in circulation and oxygenation of tissues, balancing effect (homeostasis), reduction in tissue pain, increased tolerance of the body to radiation or chemotherapy, cardiovascular protection through increased metabolism of cholesterol, uric acid, and glucose, anti-inflammatory effects, powerful anti-infection properties, stimulation of red blood cells and improvement in the flow and properties of the blood.

This patient’s story is a great example of the exceptional care you will receive at the Riordan Clinic. To find out more or to make an appointment, call 316-682-3100 to start your journey to a healthier you.

### Benefits:
- **Kills bacteria and virus in the blood**
- **Supercharges the immune system**
  - Improves circulation
  - Reduces tissue pain
  - Increases tolerance towards radiation or chemotherapy
  - Anti-inflammatory and immune-balancing
  - Auto-immune condition controlled
  - Provides cardiovascular protection
  - Stimulates production of red blood cells
  - Has powerful anti-infection properties

### Used For:
- Shingles
- Cancer
- Severe Acne
- Arthritis
- Fibromyalgia
- Allergies
- Infections
- COPD
- Chronic Fatigue
- Dementia
- Many more...

### Success Stories:
- "In the past I have suffered from a sinus infection each fall. After 7 UBI treatments (noticing a tremendous difference after just 3 treatments), I never did get a sinus infection this fall…for the first time in 17 years!” Wichita
- "I returned to Kansas for a blood treatment. It’s called UBI [Ultraviolet Blood Irradiation]. Within a few days of finishing a 3 treatment protocol, I noticed my skin was drenched in collagen. Even my cosmetologist made comment. Within a few more days, I noticed a reduction in pain medication, [and] then I noticed a lessening of inflammation in my sinus. This morning I woke and was almost walking normal. I still feel some discomfort and pain…but there is a noticeable difference. ~recommendation~ I could have a party!!" Texas

Come learn more about how this therapy can help you!

If you are unable to attend in person check out this lecture on our live webcast.

### Lunch & Lecture Series 2012

**Using Light as a Natural Antibiotic**

**Presenter:** Dr. Ron Hunninghake  
**Date:** Thursday, July 12, 2012  
**Time:** 12:00 p.m. to 1:00 p.m.  
**Cost:** $10—Lunch is included.

**When medicines have failed, this therapy has helped thousands.**

Early this year, the Riordan Clinic introduced a safe and natural therapy called Ultraviolet Blood Irradiation (UBI). This is a closed-loop system that safely exposes a small amount of the patient’s blood to germicidal ultraviolet light rays. Blood-borne pathogens in the light-treated blood are killed or inactivated. These neutralized pathogens then act as antigens which trigger a natural vaccination-like response by the patient’s own immune system. In essence, ultraviolet light used in this way helps the body create its own antibiotic response to any chronic infection the patient may be harboring. Our patients have already reported many great successes with this therapy. The Riordan Clinic notes a number of non-infectious conditions that UBI may also be used for with significant benefits.