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### **Clinical Study Data Indicates that Celliant™ Reduces Pain**

Revolutionary Fiber Incorporated into Apparel and Sleeping Products Provides Non-Invasive Pain Relief

**SANTA MONICA, CA** (June 24, 2009) – Already proven to increase oxygen levels in the body, data from a new clinical study published in online journal BioMed Central ([www.BioMedCentral.com](http://www.BioMedCentral.com)) supports claims that Celliant reduces pain.

[Celliant™](#) is a specially formulated technical performance fiber designed to enhance oxygen levels in the body, aiding in comfort, healing, performance and overall wellness. Data analysis from a clinical study conducted by Robyn MB York and Ian L. Gordon, research scientists affiliated with Long Beach VA Healthcare System and UCI Medical Center, shows that the material also has potent pain relief capabilities. In a double blind study using measurement techniques successfully employed in FDA-supervised clinical trials of pain relief medications, the magnitude of pain relief reported by participants using products enhanced with Celliant was significantly greater than that reported by participants using placebo products. Hologenix, LLC, the company behind Celliant™, sponsored the trials.

“We have completed a properly designed clinical trial which shows strong results in favor of Celliant™,” explains Seth Casden, CEO of Hologenix, LLC. “The results are statistically significant, providing clinical proof that products enhanced with Celliant™ actually reduce pain.”

These results have obvious implications for the health and medical markets. However, Hologenix believes a broader market for their technical performance fiber exists.

“To date, much of the research conducted on Celliant™ has been on patients with diabetes, or some form of vascular impairment,” explains Casden. “However, many individuals have trouble staying active because of chronic pain—virtually everyone suffers from some sort of ache or pain during their life.”

In fact, this most recent study included subjects who suffered from diabetic neuropathic pain as well as a second group of non-diabetic subjects. Both groups experienced significant pain relief. The data showing a greater reduction in pain with Celliant was sufficiently strong that the research team is conducting a second, follow-up study to further measure the pain reduction and healing characteristics of Celliant™.

“Personally, I was very surprised by the results. In doing these studies, you often hope for a positive result but, in this case, the data points overwhelmingly to Celliant™ reducing pain,” stated Dr. Ian L. Gordon, PhD and head of Vascular Surgery at Long Beach VA Medical Center. “What we have here is a fiber that can be incorporated into any number of products—garments, bedding, socks, bandages, athletic wear—to non-invasively reduce pain. It’s a very exciting moment for us as research scientists and for the medical and health community at large.”



The technology behind Celliant™ is based on years of research regarding the effect of certain wavelengths of light on the body and wound healing. Past studies have shown that light can be used to reduce pain, speed healing, increase energy and improve overall wellness. Celliant™ is a polymer fiber containing optically active micro-particles – a proprietary mixture of natural materials – which scatter and reflect visible and near infrared light. Products constructed with such optically modified fibers are designed to scatter and reflect light and energy onto the underlying tissue and skin. Numerous anecdotal reports from patients with a variety of chronic pain syndromes indicate that wearing garments or sleeping on bedding containing Celliant™ led to dramatic improvement or complete resolution of pain. The goal of this study was to scientifically confirm and measure these results. The full study can be found here: <http://www.biomedcentral.com/1472-6882/9/10>.

Hologenix, LLC, is currently conducting three additional clinical studies to further measure the effects of Celliant on sleep, athletic performance and health.

#### **About Celliant™**

Celliant™ is a specially formulated technical performance fiber that is knit or woven into fabrics used in garments and bedding materials. Products containing Celliant™ have been clinically proven to enhance oxygen levels in the body and reduce pain. Increased oxygen levels have been clinically proven to relieve pain, promote quicker healing, improve sleep quality, heighten athletic performance and improve overall wellness. For more information about products that include Celliant™, how Celliant™ works, or studies that have been conducted on Celliant™, please visit [www.celliant.com](http://www.celliant.com).

Products enhanced with Celliant™ have been clinically proven to relieve pain, increase comfort and aid in healing by increasing oxygen levels and helping to regulate body temperature. Celliant™ is now available in a variety of products for the sleep, sport, health and life markets.

#### **About Hologenix**

Hologenix, LLC, maker of Celliant™, is committed to creating, discovering and marketing products that enhance people's lives through pain relief, increased comfort and improved overall well-being. The research that led to the creation of Celliant™ began in the 1990s when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health. After seven years of research and study, the team was able to integrate some of these materials into fabrics that could be made into apparel, bedding and medical products. Hologenix was founded in order to commercialize and bring this material, known as Celliant™, to market. The Celliant™ formulation is patent protected.

#### **For more information regarding Celliant or Hologenix, please contact:**

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See the full study at: <http://www.biomedcentral.com/1472-6882/9/10>.

Research article


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## Effect of optically modified polyethylene terephthalate fiber socks on chronic foot pain

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### Abstract

#### Background

Increasing experimental and clinical evidence suggests that illumination of the skin with relatively low intensity light may lead to therapeutic results such as reduced pain or improved wound healing. The goal of this study was to evaluate prospectively whether socks made from polyethylene terephthalate (PET) incorporating optically active particles (Celliant™) ameliorates chronic foot pain resulting from diabetic neuropathy or other disorders. Such optically modified fiber is thought to modify the illumination of the skin in the visible and infrared portions of the spectrum, and consequently reduce pain.

#### Methods

A double-blind, randomized trial with 55 subjects (38 men, 17 women) enrolled (average age  $59.7 \pm 11.9$  years), 26 with diabetic neuropathy and 29 with other pain etiologies. Subjects twice completed the Visual Analogue Scale (VAS), Brief Pain Inventory (BPI), McGill Pain Questionnaire (MPQ), and SF-36 a week apart ( $W_{1+2}$ ) before receiving either control or Celliant™ socks. The same questionnaires were answered again one and two weeks ( $W_{3+4}$ ) later. The questionnaires provided nine scores for analyzing pain reduction: one VAS score, two BPI scores, five MPQ scores, and the bodily pain score on the SF-36. Mean  $W_{1+2}$  and  $W_{3+4}$  scores were compared to measure pain reduction.

#### Results

More pain reduction was reported by Celliant™ subjects for 8 of the 9 pain questions employed, with a significant ( $p = 0.043$ ) difference between controls and Celliant™ for McGill question III. In neuropathic subjects, Celliant™ caused more pain reduction in 6 of the 9 questions, but not significantly. In non-neuropathic subjects 8 of 9 questions showed more pain reduction with the Celliant™ socks.

#### Conclusion

Socks with optically modified PET (Celliant™) appear to have a beneficial impact on chronic foot pain. The mechanism could be related to the effects seen with illumination of tissues with visible and infrared light.

#### Trial Registration

ClinicalTrials.gov NCT00458497

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**Hologenix Introduces World's First Clinically Proven Therapeutic Textile**

Revolutionary Celliant™ Material Incorporated into Health, Medical and Sports Apparel Products

**SANTA MONICA, CA** (January 1, 2008) – Hologenix today announced the introduction of a new formulation of Celliant™, the world's first clinically proven therapeutic textile.

Celliant is a specially formulated technical performance fiber designed to enhance oxygen levels in the body, aiding in comfort, healing and overall wellness. Celliant represents a breakthrough in fiber technology – *a patented textile with clinically proven efficacy*. In several U.S.-based clinical studies, products enhanced with Celliant have been proven to help balance body temperature and increase oxygen levels in the skin and tissues. These effects are known to have significant benefits including pain relief and quicker healing, better-quality sleep, heightened athletic performance and improved overall wellness.

"Imagine wearing a garment that actually helps you to heal or recover faster, reduces aches and pains, and increases your performance and stamina," said Hologenix CEO, Dean Jensen. "Because Celliant can be added to almost any fabric or design, the applications are virtually limitless."

The research that led to the creation of Celliant began in the 1990s, when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health, healing and physical comfort. After seven years of development, the team was able to integrate these materials into Celliant, a textile fiber that can be woven or added to other fibers and yarns. Today, Celliant is used in several product categories including bedding, athletic apparel, hosiery and medical bandages. Celliant's product applications span five primary channels including sleep, medical, sport, wellness, and veterinary.

Celliant has been tested in two previous clinical studies at both the Loyola University Medical Center in Chicago and at the Hyperbaric Treatment & Training Services Center in Houston. Both of these studies showed significant results.

"Our study provides objective evidence to support what many of us have observed or heard from people that have worn products enhanced with Celliant," said Dr. Lawrence A. Lavery, DPM, MPH. "It shows a significant increase in blood flow in the skin when study subjects wore the garments."



Dr. Lavery is an associate professor in the department of orthopedic surgery and rehabilitation at Loyola University Medical Center and Hines Veterans Administration Hospital in Chicago.

“Building on the results of the Loyola study, we wanted to further test the effects of Celliant,” said Dr. Graham M. McClue, Ph. D. “Our study proved that patients wearing products with Celliant showed a statistically significant increase in transcutaneous oxygen. The increase was significant, showing that Celliant does, in fact, increase oxygen perfusion levels by 10% to 24% in a healthy non-compromised population.”

The Company is currently sponsoring its third clinical study of the effects of Celliant on the body and health.

“We’ve conducted a properly designed double-blind clinical trial to measure the pain reduction effects of Celliant. The study is now complete except for the final statistical analysis,” explains Dr. Ian Gordon, M.D., Ph.D. “The preliminary data analysis shows a strong trend in favor of Celliant compared to placebo products.”

Dr. Gordon is Director of the University of California Wound Clinic, Associate Clinical Professor of Surgery at the University of California, Irvine and Chief of the Vascular Surgery Section at the VA Long Beach Healthcare System as well as a member of the attending staff at the University of California, Irvine, Medical Center.

Unlike other holistic products that make health and wellness claims, Celliant has been tested in several U.S.-based clinical studies conducted by independent third parties and leading universities. These studies consistently and undeniably show Celliant’s effects to be compelling, reliable and real.

These results have obvious implications for the health and medical markets. However, Hologenix believes a broader market for their therapeutic textile exists. Because Celliant can be woven into almost any material, including wool, cotton and other polyesters, the Company believes it has applications across a wide array of markets and products. Currently, Celliant is featured in several products including bedding, pillows, socks and medical wraps and the Company sees a future where Celliant becomes the ingredient of choice in apparel for athletes, active adults and medical patients.

#### **About Celliant**

Celliant is a specially formulated technical performance fiber that is knit or woven into fabrics to enhance oxygen levels in the body. Products enhanced with Celliant have been clinically proven to increase comfort and aid in healing by increasing oxygen levels and helping to balance body temperature. Increased oxygen levels have been clinically proven to relieve pain, promote quicker healing, improve sleep quality, heighten athletic performance and improve overall wellness. Celliant is now available in a variety of products for the sleep, sport, health and life markets. For more information about products that include Celliant, how Celliant works, or studies that have been conducted on Celliant, please visit [www.Celliant.com](http://www.Celliant.com).

**About Hologenix**

Hologenix, LLC, maker of Celliant, is headquartered in Santa Monica, California, with sales and distribution partners in the United States and worldwide in China, Japan, and the European Union. Founded in 2003, the Company is committed to creating, discovering and marketing products that enhance people's lives through non-invasive pain relief, increased comfort and improved overall well-being. For more information about Hologenix and Celliant, please visit [www.Celliant.com](http://www.Celliant.com).

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### **Backgrounder**

Hologenix, LLC, is the maker and worldwide distributor of Celliant™, the world's first technical performance fiber with therapeutic efficacy. Founded in 2003, the company is committed to creating, discovering and marketing products that enhance people's lives through non-invasive pain relief, increased comfort and improved overall well-being.

While competitive offerings claim to protect the body against outside elements, Celliant represents a breakthrough in material technology – *a patented textile with clinically proven efficacy*. In three U.S.-based clinical studies, products enhanced with Celliant have been proven to reduce pain, help balance body temperature, and increase oxygen levels in the skin and tissues.

The research that led to the creation of Celliant began in the 1990s, when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health, healing and physical comfort. After seven years of development, the team was able to integrate these materials into Celliant, a technical performance fiber that can be knit or woven into other fibers and yarns. Today, Celliant is used in several product categories including bedding, athletic apparel, hosiery and medical bandages. Celliant's product applications span five primary channels including sleep, medical, sport, wellness, and veterinary.

Celliant is backed by multiple clinical studies that consistently show the material's effects to be compelling, reliable and real. In fact, clinical testing has shown Celliant to reduce pain, increase oxygen levels and balance body temperature. These effects are known to have significant benefits including pain relief and quicker healing, better-quality sleep, heightened athletic performance and improved overall wellness.

Hologenix, LLC, maker of Celliant, is headquartered in Santa Monica, California, with sales and distribution partners in North Carolina and South Carolina, and abroad in China, Japan, and the European Union. By remaining competitively priced and constantly improving the product formulation, the Company continues to experience rapid growth through the expansion of its manufacturing, sales and distribution partners.

For more information, visit [www.celliant.com](http://www.celliant.com).

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### **Fact Sheet**

- Hologenix, LLC, is a worldwide distributor of Celliant™, the world's first technical performance fiber with clinical proven efficacy.
- Celliant's efficacy has been proven in three U.S.-based clinical studies.
- Celliant has been clinically proven to reduce pain.
- Celliant has been clinically proven to increase the oxygen levels in tissues and skin.
- Celliant has been clinically proven to help balance body temperature while active or asleep.
- Celliant is non-invasive.
- Celliant is a breakthrough in technical performance fiber technology – a patented textile with therapeutic qualities.
- Celliant is an ingredient found in existing products, not a standalone product itself. It not only enhances products, but also enhances the lives of consumers by helping them sleep more soundly, perform better or heal more comfortably.
- Celliant is backed by multiple clinical studies that consistently show the material's effects to be compelling, reliable and real.
- Depending on the product and application, Celliant's clinically proven effects (reduced pain, increased oxygen, temperature regulation) have many benefits including quicker healing, reduced soreness and muscle ache, better-quality sleep, heightened athletic performance and improved overall wellness.
- There are five primary product groups for Celliant – Sleep, Medical, Sport, Health & Wellness, and Veterinary.
- The Company continues to research new formulations of Celliant in order to meet the needs of customers and develop new applications. An earlier formulation was marketed under the Holofiber brand name.

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## **Frequently Asked Questions about Celliant™**

### **Q: What is Celliant?**

A: Celliant is a specially formulated technical performance fiber that can be knit or woven into fabrics to enhance products. It is the world's first technical performance fiber with clinically proven efficacy.

### **Q: What is a therapeutic textile?**

A: A technical performance fiber with clinically proven efficacy is a material that has a positive effect while being worn or used in close proximity to the body.

### **Q: How was Celliant developed and why?**

A: The research that led to the creation of Celliant began in the 1990s, when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health, healing and physical comfort. After seven years of development, the team was able to integrate these materials into Celliant, a textile fiber that can be woven or added to other fibers and yarns.

### **Q: How does it work?**

A: Celliant works by enhancing oxygen levels in the body and helping to balance body temperature during sleep or physical activity.

### **Q: What ingredients are producing the effects that I notice when I wear or sleep on Celliant products?**

A: Celliant is specially formulated with proprietary ingredients that are blended with polyester fiber. This fiber, in turn, can be woven or knit into almost any material including wools, cottons and other polyesters. The exact formula and manufacturing process is considered a trade secret and is protected by several patents.

### **Q: Will Celliant products help treat or reduce pain caused by arthritis or diabetes?**

A: While Celliant is not intended to diagnose, treat, cure or prevent any disease, it has been proven in clinical tests to reduce pain, increase oxygen levels, and help balance body temperature. Each of these results can have added benefits including quicker healing, increase performance, better-quality sleep, and improved overall wellness.



**Q: What type of products contain Celliant?**

A: Celliant can enhance almost any type of product that is worn or used in contact with the body. Currently, Celliant is featured in bedding, pillows, mattresses, athletic apparel, socks and hosiery, medical bandages, wraps and braces. New products are being developed and introduced regularly.

**Q: Will my Celliant product still work through my pillowcase, sheets, extra layers of clothing, etc.?**

A: Yes. Products enhanced with Celliant do not have to be next to the skin in order to work, and covering the material with additional layers will not decrease their effectiveness. Celliant works equally well through any type of covering including multiple layers of sheeting or clothing, laminated or waterproof fabrics, or plastic pillowcases.

**Q: Do Celliant products need special laundering?**

A: No. Because Celliant is in the material, it cannot wash out or wear out, and the benefits of Celliant won't decrease after laundering. Generally, Celliant products can be machine-washed and -dried, but please follow any specific instructions from the manufacturer of your Celliant enhanced product.

**Q: Where can I find products enhanced with Celliant?**

A: Celliant is an ingredient found in existing products, not a standalone product itself. Products that contain Celliant are available in fine retail and online stores throughout the United States and Europe.

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### **The Science Behind Celliant™**

Founded in 2003, Hologenix, LLC is committed to creating, discovering and marketing products that enhance people's lives through non-invasive pain relief, increased comfort and improved overall well-being. The Company's primary product, Celliant, is a specially formulated technical performance fiber that is knit or woven into fabrics to enhance oxygen levels in the body. Products enhanced with Celliant have been clinically proven to increase comfort and aid in healing by increasing oxygen levels and helping to balance body temperature. Increased oxygen levels have been clinically proven to relieve pain, promote quicker healing, improve sleep quality, heighten athletic performance and improve overall wellness. Celliant is now available in a variety of products for the sleep, sport, health and life markets.

While competitive offerings claim to protect the body against outside elements, Celliant represents a breakthrough in material technology – a patented textile with clinically proven efficacy. In three U.S.-based clinical studies, products enhanced with Celliant have been proven to reduce pain, help balance body temperature, and increase oxygen levels in the skin and tissues.

The research that led to the creation of Celliant began in the 1990s, when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health, healing and physical comfort. After seven years of development, the team was able to integrate these materials into Celliant, a technical performance fiber that can be knit or woven into other fibers and yarns. Today, Celliant is used in several product categories including bedding, athletic apparel, hosiery and medical bandages. Celliant's product applications span five primary channels including sleep, medical, sport, wellness, and veterinary.

Celliant is backed by multiple clinical studies that consistently show the material's effects to be compelling, reliable and real. In fact, clinical testing has shown Celliant to reduce pain, increase oxygen levels and balance body temperature. These effects are known to have significant benefits including pain relief and quicker healing, better-quality sleep, heightened athletic performance and improved overall wellness.

For information on these clinical studies conducted on Celliant, please see the following pages:

*Study, 2009 – Effects of Celliant on sleep and pain management.*

*Study, 2009 – Effects of Celliant on peripheral blood flow.*

*Study, 2009 – Effects of Celliant on strength.*

*Study, 2008 – Effects of Celliant on pain and pain reduction.*

*Study, 2005 – Effects of Celliant on oxygen levels in the skin.*

*Study, 2003 – Effects of Celliant on oxygen levels in the skin.*



## **Current Studies Being Conducted on Celliant**

### **Study, 2009**

#### **Effects of Celliant on sleep and pain management.**

Study being conducted at University of California, Irvine, by Marcel Hungs, M.D., Ph.D. Dr. Hungs is director of the Center for Sleep Medicine, a board-certified neurologist and sleep medicine specialist.

Double blind, placebo controlled crossover trial on the effect of Celliant mattress covers on sleep disturbances in patients with chronic back pain. Study will employ several sleep disorder and sleep quality measurement techniques to determine if sleeping on a mattress pad containing Celliant will improve the quality of sleep experienced by subjects. The study is being conducted on XX subjects over 42 days.

### **Study, 2009**

#### **Effects of Celliant on peripheral blood flow.**

The study was conducted at the Veterans Administration Long Beach Healthcare Center by Dr. Ian Gordon, M.D., Ph.D. Dr. Gordon is Director of the University of California Wound Clinic, Associate Clinical Professor of Surgery at the University of California, Irvine and Chief of the Vascular Surgery Section at the VA Long Beach Healthcare System as well as a member of the attending staff at the University of California Irvine Medical Center.

Double blind, placebo controlled clinical study conducted on 24 healthy subjects, 18 to 60 years old. Levels of blood flow were measured by transcutaneous oxygen tension measurement (TCPO2) for baseline, placebo and Celliant protocols. Preliminary results strongly indicate that wearing Celliant® garments has a positive effect on blood flow, unlikely related to skin temperature effects.

### **Study, 2009**

#### **Effects of Celliant on strength.**

The study was conducted at the Veterans Administration Long Beach Healthcare Center by Dr. Ian Gordon, M.D., Ph.D. Dr. Gordon is Director of the University of California Wound Clinic, Associate Clinical Professor of Surgery at the University of California, Irvine and Chief of the Vascular Surgery Section at the VA Long Beach Healthcare System as well as a member of the attending staff at the University of California Irvine Medical Center.

Double blind, placebo controlled clinical study conducted on 24 healthy subjects, 18 to 60 years old. Grip strength was measured by use of a Hydraulic Hand Dynamometer for baseline, placebo and Celliant protocols. Preliminary results strongly indicate that wearing Celliant® garments has a positive effect on grip strength.



## Celliant™ Study Results

### *Study, 2008 – Effects of Celliant on pain and pain reduction.*

#### Overview

Celliant™ is a specially formulated material that is knit, woven or added to products to enhance oxygen levels in the body. Products enhanced with Celliant have been clinically proven to relieve pain, increase comfort and aid in healing by increasing oxygen levels and helping to regulate body temperature. Below is a summary of the results of a recently completed double-blind study designed to measure the ability of Celliant to reduce pain and increase comfort.

#### Study Background

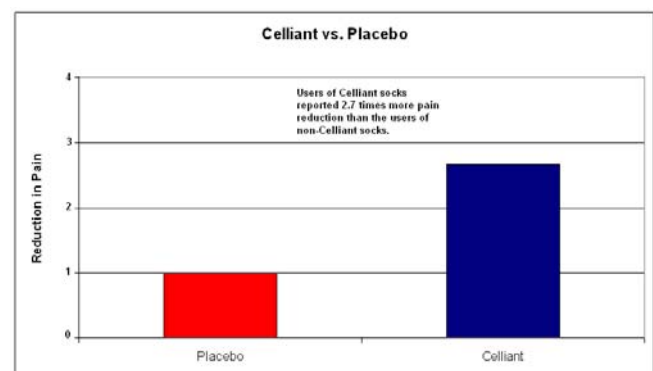
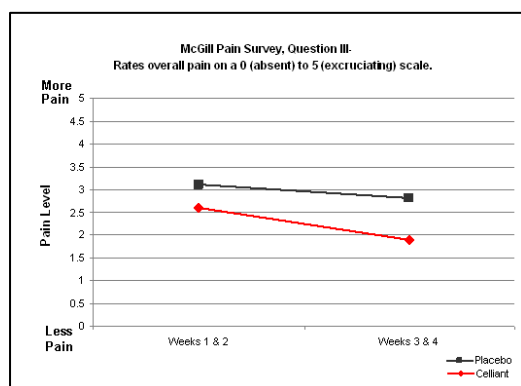
The study was conducted by Dr. Ian Gordon, M.D., Ph.D. at University of California Medical Center. Dr. Gordon is Director of the University of California Wound Clinic, Associate Clinical Professor of Surgery at the University of California, Irvine and Chief of the Vascular Surgery Section at the VA Long Beach Healthcare System as well as a member of the attending staff at the University of California Irvine Medical Center. The study was a single-center, prospective, double-blind, randomized trial approved by the institutional review board. Fifty-five (55) subjects in total were enrolled, 26 with diabetic neuropathy and 29 with other causes of foot pain; 38 men and 17 women were enrolled, with an average age of 59.7 years. To be included in the study participants had to be older than 21 and have persistent foot pain for at least six months prior to the study. The study has been submitted for publication to the Journal of Alternative & Complimentary Medicine.

Participants in the study were asked to fill out McGill Short Form Pain Surveys—an industry accepted scale for measuring pain relief that is used in FDA trials for pain relief medications—for two consecutive weeks to measure pain and quality of life. In questions assessing pain, subjects were instructed to answer questions based solely on subjective foot pain. After completing the Week 2 questions, subjects were given three pairs of socks in a closed container and asked to wear them exclusively for the next two weeks. One week (Week 3) and two weeks (Week 4) later they returned to again fill out the same panel of questionnaires. The control group received socks made from standard Comfortrel XP® polyester fiber, while the Celliant group received socks in which the bottom of the sock was modified by having Celliant incorporated into the yarn. Subjects and study personnel were blinded to the randomization, and study personnel never saw the socks given to the subjects.

***SIGNIFICANT REDUCTION IN PAIN  
WAS OBSERVED IN THOSE WEARING  
CELLIANT ENHANCED PRODUCTS.***

#### Results

All participants exhibited similar pain scores upon entry into the study. The changes between scores recorded before and after wearing socks showed improvements in both the control and Celliant groups. The fact that the control group demonstrated reduction in pain is consistent with the placebo effect often seen in studies like this one. However, significantly more reduction in pain was observed in the responses from the Celliant group than controls, based on comparisons of the median reduction in pain before and after starting treatment. Figures 1 and 2 below show **2.7x greater reduction in pain for participants wearing products enhanced with Celliant** than those wearing placebo products.





## Celliant™ Study Results

### *Study, 2005 – Effects of Celliant on oxygen levels in the skin.*

#### Overview

Celliant™ is a specially formulated material that is designed to enhance oxygen levels in the body. Products enhanced with Celliant have been clinically proven to relieve pain, increase comfort and aid in healing by increasing oxygen levels and helping to regulate body temperature. Below is a summary of the results of a double-blind study completed in 2005 and designed to measure the ability of Celliant to increase oxygen levels in the skin.

#### Study Background

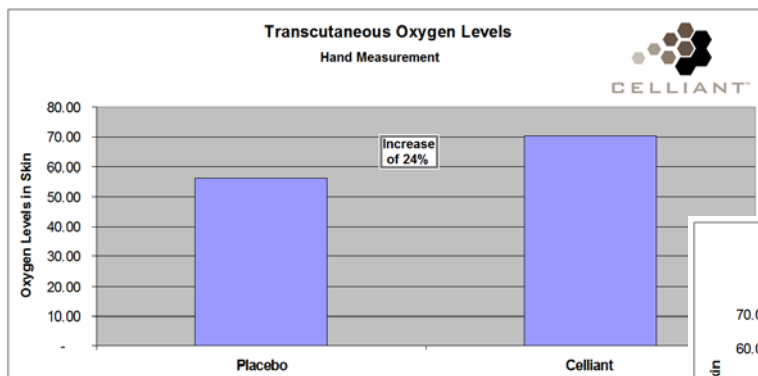
The study was conducted by Graham M. McClue, Ph. D., a researcher with Hyperbaric Treatment & Training Services Ltd., an independent research facility in Houston, Texas. Dr. McClue compared products with Celliant to placebo products on the hands and feet of 13 healthy subjects. He measured changes in transcutaneous oxygen, a measure of oxygen in the body, over a period of one hour. The study was double blind, meaning that neither the participants nor Dr. McClue knew which products contained Celliant until after measurements were taken.

#### Results

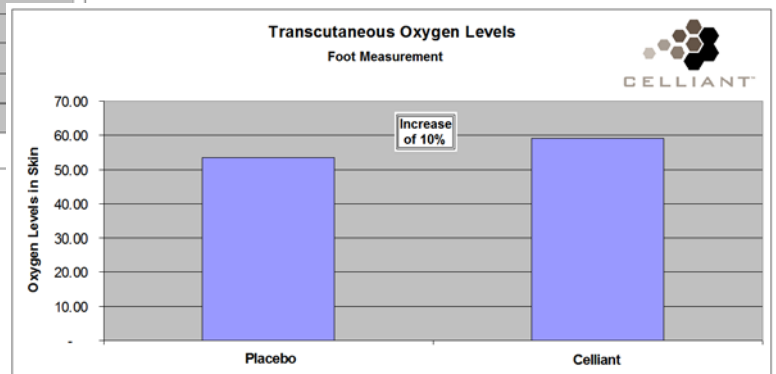
The study successfully showed that patients wearing products with Celliant showed a statistically significant increase in transcutaneous oxygen. As shown in figures below, this increase was significant (10% to 24%). According to Dr. McClue, “Celliant does, in fact, increase oxygen perfusion levels by 10% to 24% in a healthy non-compromised population.”

With regard to the benefits of the product, Dr. McClue goes on to state that “Increased oxygen perfusion has been shown to aid in the increase of energy. Energy produced at the cellular level will accelerate muscle tissue recovery from exercise, which is known to induce lactic acid increases, rebuild strength in muscles damaged by exercise, and also reduce the incidence of cramping, edema, and muscle fatigue post strenuous exercise in athletic conditioning.”

***SIGNIFICANT INCREASE IN OXYGEN LEVELS WERE OBSERVED IN THOSE USING CELLIANT ENHANCED PRODUCTS.***



***10% INCREASE IN OXYGEN LEVELS MEASURED IN FEET***







## Celliant™ Study Results

### *Study, 2003 – Effects of Celliant on oxygen level in the skin.*

#### Overview

Celliant™ is a specially formulated material that is designed to enhance oxygen levels in the body. Products enhanced with Celliant have been clinically proven to relieve pain, increase comfort and aid in healing by increasing oxygen levels and helping to regulate body temperature. Below is a summary of the results of a double-blind study completed in 2003 and designed to measure the ability of Celliant to increase oxygen levels in the skin.

#### Study Background

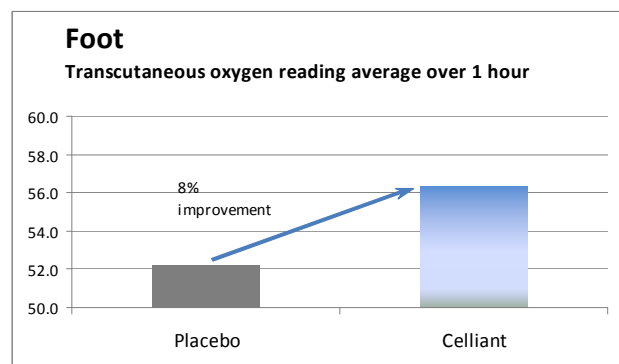
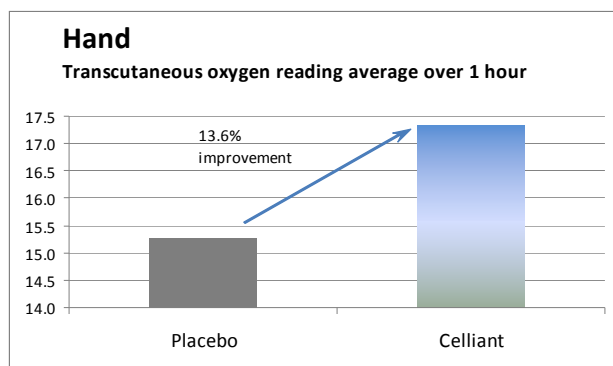
The study was conducted by Lawrence A. Lavery, DPM, MPH, an associate professor in the department of orthopedic surgery and rehabilitation at Loyola University Medical Center and Hines Veterans Administration Hospital in Chicago. Dr. Lavery compared products with Celliant to placebo products on the hands and feet of 20 diabetics. He measured changes in transcutaneous oxygen, a measure of oxygen in the body. The study was double blind, meaning that neither the participants nor Dr. Lavery knew which products contained Celliant until after measurements were taken.

#### Results

After less than an hour, patients wearing products with Celliant showed a statistically significant increase in transcutaneous oxygen. As shown in figures below, this increase was observed at every ten-minute testing interval. According to Dr. Lavery, “this study provides objective evidence to support what many of us have observed or heard from people that have worn products enhanced with Celliant. It shows a significant increase in blood flow in the skin when study subjects wore the garments.”

With regard to the benefits of the product, Dr. Lavery goes on to state that “an 8 to 14% improvement in oxygenation could increase circulation enough to improve wound-healing or eliminate leg pain caused by atherosclerosis or other blood flow obstructions. The significant changes observed are very compelling.”

***SIGNIFICANT INCREASE IN OXYGEN LEVELS WERE OBSERVED IN THOSE USING CELLIANT ENHANCED PRODUCTS.***





# Bio-Medicine

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celliant pain study

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M celliant pain study

### Clinical Study Data Indicates that Celliant Reduces Pain

Date:6/25/2009[Outline] [RSS & Subscription]



A just completed clinical study proves that revolutionary technical performance fiber actually reduces pain when worn in garments or slept on in bedding. Already proven to increase oxygen levels in the body, data from a new clinical study published in online journal BioMed Central ([www.BioMedCentral.com](http://www.BioMedCentral.com)) supports claims that celliant reduces pain.

Santa Monica, CA (PRWEB) June 25, 2009 -- Already proven to increase oxygen levels in the body, data from a new clinical study published in online

journal BioMedCentral.com supports claims that celliant.com" onclick="linkClick(this.href);" href="http://www.celliant.com" target="\_blank">Celliant reduces pain.

Celliant is a specially formulated technical performance fiber designed to enhance oxygen levels in the body, aiding in comfort, healing, performance and overall wellness. Data analysis from a clinical study conducted by Robyn MB York and Ian L. Gordon, research scientists affiliated with [www.BioMedCentral.com](http://www.BioMedCentral.com) and UCL Medical Center, shows that the material also has potent pain relief capabilities. In a double blind study using measurement techniques successfully employed in FDA-supervised clinical trials of pain relief medications, the magnitude of pain relief reported by participants using products enhanced with celliant was significantly greater than that reported by participants using placebo products. Hologenix, LLC, the company behind celliant,

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Clinical study data indicates that Celliant reduces pain

3 July 2009, Santa Monica, CA - Already proven to increase oxygen levels in the body, data from a new clinical study published in online journal BioMedCentral.com supports claims that Celliant reduces pain. Celliant is a specially formulated technical performance fibre designed to enhance oxygen levels in the body, aiding in comfort, healing, performance and overall wellness.



Data analysis from a clinical study conducted by Robyn MB York and Ian L. Gordon, research scientists affiliated with Long Beach VA Healthcare System and UCI Medical Center, shows that the material also has potent pain relief capabilities. In a double blind study using measurement techniques successfully employed in FDA-supervised clinical trials of pain relief medications, the magnitude of pain relief reported by participants using products enhanced with Celliant was significantly greater than that reported by participants using placebo products. Hologenix, LLC, the company behind Celliant, sponsored the trials.

"We have completed a properly designed clinical trial which shows strong results in favour of Celliant," explains Seth Casden, CEO of Hologenix, LLC. "The results are statistically significant, providing clinical proof that products enhanced with Celliant actually reduce pain."

The results are statistically significant, providing clinical proof that products enhanced with Celliant actually reduce pain. To date, much of the research conducted on Celliant has been limited to patients with diabetes, or some form of vascular impairment. However, many individuals have trouble staying active because of chronic pain - virtually everyone suffers from some sort of ache or pain during their life.

These results have obvious implications for the health and medical markets. However, Hologenix believes a broader market for their pain relieving textile exists.

"To date, much of the research conducted on Celliant has been limited to patients with diabetes, or some form of vascular impairment," explains Casden. "However, many individuals have trouble staying active because of chronic pain - virtually everyone suffers from some sort of ache or pain during their life."

In fact, this most recent study included subjects who suffered from diabetic neuropathic pain as well as a second group of non-diabetic subjects. Both groups experienced significant pain relief. The data showing a greater reduction in pain with Celliant was sufficiently strong that the research team is conducting a second, follow-up study to further measure the pain reduction and healing characteristics of Celliant.

"Personally, I was very surprised by the results. In doing these studies, you often hope for a positive result but, in this case, the data points overwhelmingly to Celliant reducing pain," stated Dr. Ian L. Gordon, PhD and head of Vascular Surgery at Long Beach VA Medical Center. "What we have here is a material that can be incorporated into any number of products, including garments, bedding, socks, bandages and athletic wear to non-invasively reduce pain. It's a very exciting moment for us as research scientists and for the medical and health community at large."

The technology behind Celliant is based on years of research regarding the effect of certain wavelengths of light on the body and wound healing. Past studies have shown that light can be used to reduce pain, speed healing, increase energy and improve overall wellness. Celliant is a polymer fibre containing optically active micro-particles, a proprietary mixture of natural materials, which scatter and reflect visible and near infrared light. Products constructed with such optically modified fibres are designed to scatter and reflect light and energy onto the underlying tissue and skin. Numerous anecdotal reports from patients with a variety of chronic pain syndromes indicate that wearing garments or sleeping on bedding containing Celliant led to dramatic improvement or complete resolution of pain. The goal of this study was to scientifically confirm and measure these results.

Hologenix, LLC, is currently conducting three additional clinical studies to further measure the effects of Celliant on sleep, athletic performance and health.

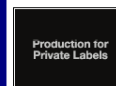
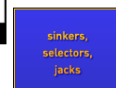
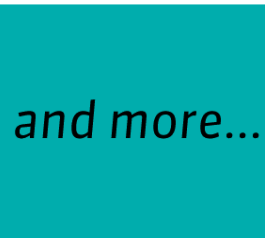
About Celliant

Celliant is a specially formulated fibre that is knit or woven into fabrics used in garments and bedding materials. Products containing Celliant have been clinically proven to enhance oxygen levels in the body and reduce pain. Increased oxygen levels have been clinically proven to relieve pain, promote quicker healing, improve sleep quality, heighten athletic performance and improve overall wellness.

Products enhanced with Celliant have been clinically proven to relieve pain, increase comfort and aid in healing by increasing oxygen levels and helping to regulate body temperature. Celliant is now available in a variety of products for the sleep, sport, health and life markets.

About Hologenix

Hologenix, LLC, maker of Celliant, is committed to creating, discovering and marketing products that enhance people's lives through pain relief, increased comfort and improved overall well-being. The research that led to the creation of Celliant began in the 1990s when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health. After seven years of research and study, the team was able to integrate some of these materials into fabrics that could be made into apparel, bedding and medical products. Hologenix was founded in order to commercialize and bring this material, known as Celliant, to market. The Celliant formulation is patent protected.



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## Quality Fabric Of The Month

### DRYENERGY™: A Refreshing Blend Of Fibers

Achieve o2's newest offering combines Celliant™ oxygenating, energy-transmitting technology with Dri-release® fiber-based moisture management technology enhanced with FreshGuard® bacteriostatic odor-eliminating treatment.

Janet Bealer Rodie, Associate Editor

**A**chieve o2 LLC, a Beverly, Mass.-based manufacturer of wellness and performance-promoting yarns, socks, accessories and footwear products - including therapeutic and performance hosiery, braces, footwear linings and accessories containing Celliant™ oxygenating, energy-transmitting technology - has introduced DRYENERGY™ yarn and a line of socks that offer the combined performance of Celliant technology and Dri-release® moisture-management fiber technology enhanced with FreshGuard® odor-eliminating treatment. Achieve o2 is the exclusive worldwide distributor of the new yarns, which it is offering to performance, sports and medical markets.

"This is going to be a superior technology for 2009 and beyond. It's taking two great technologies - Dri-release moisture management from a blend of fibers rather than a topical treatment, and Celliant technology clinically proven to reduce pain and also increase oxygen in the body," said Adam Scire, business manager, Achieve o2. "Putting those two together makes a great product. The socks are so soft, and the technology is applicable in apparel in many, many markets."



**Socks made with Achieve o2's DRYENERGY™ yarn provide refreshing therapeutic and performance benefits thanks to the combination of Celliant™ and Dri-release® technologies.**

Celliant technology, offered by Newport, Calif.-based Hologenix LLC, is the latest-generation version of Holofiber®, whose development was spurred in the 1990s by research in the field of alternative medicine into the health-promoting benefits of certain natural substances used in Asian holistic medical therapies. By the early years of this decade, the team had developed the technology to the point that the materials could be incorporated into apparel, bedding and medical textile products that have proved in clinical tests to increase oxygenation levels in the skin by 8 to 24 percent, significantly reduce pain and equalize body temperature including the temperature of the hands and feet. There also is a study currently underway to validate the technology's role in increasing blood circulation. Test subjects have included both diabetics and people without such health issues, and products in the marketplace - including those offered by Achieve o2 - are geared to diabetic and orthopedic markets as well as athletic and general consumer markets.

According to Jim Ciccone, operations manager at Hologenix, there is a certain mystique to the way the technology actually works. The company states that the material interacts with certain wavelengths of visible and invisible light and changes them into energy, which is transmitted from the fabric to the body either immediately or over a period of time.

"There are a lot of concepts as to how it actually works," Ciccone said. "What we do understand is that it has the ability to help relax the capillaries, allowing blood and oxygen to move through more freely."

Ciccone said the substances that provide the function are all natural and finely granulated. "The formula is patented, and there's a very precise amount of each item that's combined," he added. The micron-sized materials are imbedded in a polyester polymer during extrusion, providing permanent function.

The Dri-release technology, developed by Wilmington, Del.-based Optimizer Performance Fibers (OPF), a division of research-based polymer developer Optimizer Inc., intimately blends hydrophobic man-made and hydrophilic natural fibers in one yarn to wick moisture from the skin and quickly release it on the outer side of a fabric. The function derives solely from the fiber properties rather than from topical treatments, and the presence of the natural fiber adds an aesthetic quality that may be lacking in many 100-percent man-made fiber materials. The moisture-management function is accompanied by Optimizer's FreshGuard treatment that is imbedded in the Dri-release yarn and eliminates odors by preventing odor-carrying oils from the skin from attaching to the fabric.

The Dri-release yarn used in Achieve o2's Dry energy products is a blend of 85-percent Celliant and 15-percent cotton. "Celliant, as a polyester fiber, fits very well on that side of Dri-release," said Lee Thompson, East Coast business development manager, OPF.

Thompson said the partnership between Achieve o2 and OPF yields benefits for both companies. "Achieve o2 was offering Celliant socks and other products mainly to medical or therapeutic end uses. Their socks were mainly marketed to diabetics, a market that Dri-release has not really had an opportunity to participate in," he explained. "Combining the two technologies was a way to introduce the Celliant technology in a bigger way to the outdoor, athletic and sports markets. It was also way for Dri-release to enter some of those therapeutic markets that Optimizer has not been a part of."

Thompson said a lot of excitement has been generated over Dry energy, especially in the sock market.

Scire concurred, saying response to its new offering has been "fabulous. Major brands are coming on board to offer socks with Dry energy."

For more information about DRYENERGY™, contact Adam Scire (704) 799-2035; [adam@achieve-o2.com](mailto:adam@achieve-o2.com); [www.achieve-o2.com](http://www.achieve-o2.com).

December 9, 2008

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## Preliminary Clinical Study Data Suggests that Celliant Reduces Pain

Tue Feb 19, 2008 12:31pm EST

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Revolutionary Material Incorporated into Apparel Products May Provide Non-Invasive Pain Relief  
NEWPORT BEACH, Calif.--(Business Wire)--  
Already proven to increase oxygen levels in the body, preliminary data from a new clinical study supports claims that Celliant reduces pain.

Celliant is a specially formulated material designed to enhance oxygen levels in the body, aiding in comfort, healing and overall wellness. Early data analysis from a recent clinical study conducted by research scientists affiliated with Long Beach VA Healthcare System and UCI Medical Center suggests that the material also has potent pain relief capabilities. In a double blind study using measurement techniques successfully employed in FDA-supervised clinical trials of pain relief medications, the magnitude of pain relief reported by participants using products enhanced with Celliant was much greater than that reported by participants using placebo products. Hologenix LLC, the company behind Celliant, sponsored the trials.

"We have sponsored a properly designed clinical trial, now complete except for the final statistical analysis. The preliminary data analysis shows a strong trend in favor of Celliant compared to placebo products," explains Dean Jensen, CEO of Hologenix LLC.

These results have obvious implications for the health and medical markets. However, Hologenix believes a broader market for their pain relieving textile exists.

"To date, much of the research conducted on Celliant has been limited to patients with diabetes, or some form of vascular impairment," explains Jensen. "However, many individuals have trouble staying active because of chronic pain--virtually everyone suffers from some sort of ache or pain during their life."

In fact, this most recent study included subjects who suffered from diabetic neuropathic pain as well as a second group of non-diabetic subjects. Both groups experienced significant pain relief. The data showing a greater reduction in pain with Celliant is sufficiently strong that the research team is preparing a manuscript describing the study results for submission to a peer reviewed medical journal, and are not disclosing any further details in order to avoid compromising evaluation of the study by the scientific community.

### About Celliant

Celliant is a specially formulated material that is knit, woven or added to fabrics to enhance oxygen levels in the body. Increased oxygen levels have been clinically proven to relieve pain, promote quicker healing, improve sleep quality, heighten athletic performance and improve overall wellness. For more information about products that include Celliant, how Celliant works, or studies that have been conducted on Celliant, please visit [www.celliant.com](http://www.celliant.com).

Products enhanced with Celliant have been clinically proven to relieve pain, increase comfort and aid in healing by increasing oxygen levels and helping to regulate body temperature. Celliant is now available in a variety of products for the sleep, sport, health and life markets.

### About Hologenix

Hologenix, LLC, maker of Celliant, is committed to creating, discovering and marketing products that enhance people's lives through pain relief, increased comfort and improved overall well-being. The research that led to the creation of Celliant began in the 1990s when a team of pioneers in the field of alternative medicine visited Asia and observed the use of several natural substances that were thought to have a positive effect on health. After seven years of research and study, the team was able to integrate some of these materials into fabrics that could be made into apparel, bedding and medical products. Hologenix was founded in order to commercialize and bring this material, known as Celliant, to market.

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