Informed Consent Form

Pilot Investigation to Evaluate Effectiveness of Shockwave Therapy, a combination on Shockwave Therapy and Photobiomodulation and Physical Therapy in the Management of Non-insertional Achilles Tendinopathy: A Randomized Control Trial with Elective Cross-Over Design

Principal Investigator: Adam Tenforde, MD, Spaulding Rehabilitation Hospital

ClinicalTrials.gov ID: NCT04725513

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Protocol Title: Pilot Investigation to Evaluate Effectiveness of Shockwave Therapy, a combination on Shockwave Therapy and Photobiomodulation and Physical Therapy in the Management of Non-insertional Achilles Tendinopathy: A Randomized Control Trial with Elective Cross-Over Design

Principal Investigator: Adam Tenforde, M.D.

Site Principal Investigator:

Description of Subject Population: Adults aged 18-65 years old with a diagnosis of Achilles Tendinopathy

About this consent form

Please read this form carefully. It tells you important information about a research study. A member of our research team will also talk to you about taking part in this research study. People who agree to take part in research studies are called "subjects." This term will be used throughout this consent form.

Partners HealthCare System is made up of Partners hospitals, health care providers, and researchers. In the rest of this consent form, we refer to the Partners system simply as "Partners."

If you decide to take part in this research study, you must sign this form to show that you want to take part. We will give you a signed copy of this form to keep.

Key Information

Taking part in this research study is up to you. You can decide not to take part. If you decide to take part now, you can change your mind and drop out later. Your decision won't change the medical care you get within Partners now or in the future.

The following key information is to help you decide whether or not to take part in this research study. We have included more details about the research in the Detailed Information section that follows the key information.

Why is this research study being done?

In this research study we want to learn more about the most effective treatment to help heal Achilles Tendinopathy. The current standard of care is physical therapy; however, many people still feel pain. Therefore, we are conducting this study that will compare physical therapy to two other treatments – shockwave therapy and a combination of shockwave therapy and photobiomodulation therapy – to see which is most effective.

How long will you take part in this research study?

If you decide to join this research study, it will take you 6 months to complete the study. During this time, we will ask you will need to make study visits to **Spaulding Rehabilitation Hospital, Cambridge.** The number of in-person versus virtual visits that are required will depend on which treatment arm you have been allocated, and which treatment you chose at the cross-over.

What will happen if you take part in this research study?

There are 2 parts to this study. First, you will be randomly assigned to one of three treatment groups. Regardless of your treatment group, we ask you to enroll in physical therapy at a location that is convenient to you (and accepts your insurance if applicable) and complete an exercise protocol, that we will provide, at home daily for the first 3 months, then 2-3 times a week for the next 3 months. If, at the 3-month follow-up, you want to remain in the study but switch groups, you can chose which treatment you want for the next 3 months – this is part 2.

Why might you choose to take part in this study?

We cannot promise any benefits to you from taking part in this research study. However, possible benefits may include recovery from your Achilles Tendinopathy injury. Patients with Achilles Tendinopathy may benefit in the future from what we learn in this study.

Why might you choose NOT to take part in this study?

Taking part in this research study has some risks and requirements that you should consider carefully. Possible discomforts depend on which treatment arm you are randomized into; however all devices are approved by the U.S. Food and Drug Administration (FDA) and are low risk. A detailed description of side effects, risks, and possible discomforts can be found later in this consent form in the section called “What are the risks and possible discomforts from being in this research study?”

Other things to consider are the study visits that you are asked to attend and being able to get to Spaulding Rehabilitation Hospital for the study visits.

What other treatments or procedures are available for your condition?

Other treatments or procedures that are available to treat Achilles Tendinopathy are physical therapy, injection treatments, medications and surgery. If you choose to pursue other treatment, you must inform study staff immediately.

If you have questions or concerns about this research study, whom can you call?

You can call us with your questions or concerns. Our telephone numbers are listed below. Ask questions as often as you want.

Dr. Adam Tenforde M.D. is the person in charge of this research study. You can call him at **(617) 952-6804 M-F 9-5**. You can also call **Linh Pham at 617-724-6083 or Logan Gaudette at 617-234-7724** 24/7 with questions about this research study.

If you have questions about the scheduling of appointments or study visits, call **Linh Pham** at **617-724-6083 or Logan Gaudette at 617-234-7724.**

If you want to speak with someone **not** directly involved in this research study, please contact the Partners Human Research Committee office. You can call them at 857-282-1900.

You can talk to them about:

- Your rights as a research subject
- Your concerns about the research
- A complaint about the research
- Any pressure to take part in, or to continue in the research study

Detailed Information

A description of this clinical trial will be available on *http://www.ClinicalTrials.gov,* as required by U.S. Law. This Web site will not include information that can identify you. At most, the Web site will include a summary of the results. You can search this Web site at any time.

Why is this research study being done?

Non-insertional Achilles Tendinopathy (AT) is a common overuse injury in adults. It can result in pain and limited movement due to the injury. In the last few decades there has been an increased prevalence of people running to maintain a healthier lifestyle. With this, there is an increase in running-related injuries. It's been estimated in some studies that AT may affect about 52% of runners at some point in their lifetime. The most common treatment of choice for AT now is exercise loading programs, however these may only improve symptoms in about 60% of patients.

Photobiomodulation therapy (PBMT) refers to light therapy using a laser light source in the infrared range. When light from the laser is applied to damaged tissue, the process of photobiomodulation speeds up the healing process by stimulating the damaged cells.

Shockwave therapy (SWT) is a non-invasive method to help with tendon injury through energy that is transmitted to injured tissue to promote healing and reducing pain.

Studies are promising that SWT and PBMT will be effective in treating other tendon injuries such as AT. This promising result combined with uncertainty regarding the best treatment for AT justifies the need for more research. Therefore, our study will compare three different treatment arms utilizing SWT, PBMT and traditional physical therapy, and will use questionnaires and measured outcomes to assess the most effective treatment for AT.

This is a pilot study. Pilot studies are done on a small group of subjects to learn if a larger study would be useful.

Who will take part in this research?

We are looking for 60 runners aged between 18 and 65 years old who have a diagnosis of Achilles Tendinopathy (in one or both legs). We are looking for runners who, prior to their injury, ran at least 10 miles per week. Women who are pregnant are excluded from the study for

safety reasons, we will ask you this before you enroll in the study, a pregnancy test is not required.

This study is taking place at Spaulding Rehabilitation Hospital, and it is funded by The Geneva Foundation.

What will happen in this research study?

T0: Baseline
At this visit we will introduce the study to you and walk you through this informed consent document. Please ask any questions about this study at any time. During this visit we will also determine if you meet the eligibility criteria. If you wish to participate in the study, we will schedule the first visit and use a computer to randomly assign you to one of three different treatment arms. Regardless of which treatment you get assigned to, you will be required to enroll in physical therapy at a location that is convenient to you and complete an at-home physical therapy program that we will provide. For the first 3 months you are asked to do these exercises every day, then for the final 3 months only 2-3 times per week. The exercises take approximately 15-20 minutes to complete. We will also provide you with a training log to track your return to activity, this can either be a hard copy or an online version.

<u>Physical Therapy Only</u>
T1/T2: Week 1

- T1: Visit 1 – 40 minutes (In-Person)
    - You will be provided with a physical therapy program to do at home and we will explain the exercises to you
    - We will ask you to complete some questionnaires/surveys
    - We will take some measurements using an ultrasound and record your ability to do a hopping test and calf raise
        - We do the ultrasound using a handheld device that we move over your calf to take images of the tendon. We will apply a gel to your skin to help with the imaging process.
- T2: Visit 2 - 5 minutes (Virtual)
    - You will receive a phone call at the end of the week to check-in with physical therapy compliance, answer any questions you have, ask for any adverse events and collect any data from your training log

T3/T4: Week 2

- T3: Visit 1 – 5 minutes (Virtual)
    - Same as T2
- T4: Visit 2 - 5 minutes (Virtual)
    - Same as T2

T5/T6: Week 3

- T5: Visit 1 – 5 minutes (Virtual)
  - Same as T2
- T6: Visit 2 - 20 minutes (Virtual)
  - Same as T2, and in addition we will ask you to complete three questionnaires

Shockwave and Physical Therapy

When you receive shockwave therapy a gel will be applied to your skin. The study staff will then use a handheld device that will be placed in contact with your skin. The device will generate a pressure wave that results in a strike to the injured area from the device.

T1/T2: Week 1

- T1: Visit 1 – 40 minutes (In-Person)
  - You will be provided with a physical therapy program to do at home and we will explain the exercises to you
  - We will ask you to complete some questionnaires/surveys
  - We will take some measurements using an ultrasound and record your ability to do a hopping test and calf raise
    - We do the ultrasound using a handheld device that we move over your calf to take images of the tendon. We will apply a gel to your skin to help with the imaging process.
  - You will have your first shockwave treatment
- T2: Visit 2 - 5 minutes (Virtual)
  - You will receive a phone call at the end of the week to check-in with physical therapy compliance, answer any questions you have, ask for any adverse events and collect any data from your training log: 5 minutes

T3/T4: Week 2

- T3: Visit 1 – 10 minutes (In-Person)
  - You will have your second shockwave treatment
- T4: Visit 2 - 5 minutes (Virtual)
  - Same as T2

T5/T6: Week 3

- T5: Visit 1 – 10 minutes (In-Person)
  - Same as T3
- T6: Visit 2 - 20 minutes (Virtual)
  - Same as T2 and in addition we will ask you to complete three questionnaires

PBMT, Shockwave and Physical Therapy

The shockwave therapy is the same process as described above, but in addition you will also receive PBMT from a trained member of the study team. The PBMT device is a plastic handle with a glass massage ball at the end where light comes out. The trained study team member will roll the massage ball on the bottom of your foot and back of your calf. If you feel uncomfortable at any time, the treatment can be stopped. Both you and the trained study team member will wear special eye protection (goggles) during the entire treatment.

T1/T2: Week 1

- T1: Visit 1 – 50 minutes (In-Person)
  - You will be provided with a physical therapy program to do at home and we will explain the exercises to you
  - We will ask you to complete some questionnaires/surveys
  - We will take some measurements using an ultrasound and record your ability to do a hopping test and calf raise
    - We do the ultrasound using a handheld device that we move over your calf to take images of the tendon. We will apply a gel to your skin to help with the imaging process.
  - You will have your first photobiomodulation and shockwave treatment
- T2: Visit 2 - 10 minutes (In-Person)
  - You will have your second PBMT
  - We will ask if you have any adverse events, ask about your physical therapy compliance and collect any data from your training log.

T3/T4: Week 2

- T3: Visit 1 – 20 minutes (In-Person)
  - You will have your third photobiomodulation and second shockwave treatment
- T4: Visit 2 - 10 minutes (In-Person)
    - Same as T2

T5/T6: Week 3

- T5: Visit 1 – 20 minutes (In-Person)
  - Same as T3
- Visit 2: 15 minutes (In-Person)
  - Same at T2 and in addition we will ask you to complete 3 questionnaires

<u>All Treatment Arms</u>

T7: Week 6 (Virtual) - 20 minutes

- You will receive a phone call to check in, record any adverse events, ask for your compliance with the physical therapy program, collect data from your return to exercise log and complete three questionnaires

T8: Month 3 (In-Person) – 35 minutes

- You will be asked to complete some questionnaires and surveys

- We will take some measurements using an ultrasound and ask you to perform heel raises and a hopping test
- Collect data from your return to exercise log
- You will be asked to select a new treatment, if desired. Everyone is required to continue the physical therapy program, but exercises are only required 2-3 times a week (20-30 minutes each). The other treatments to select from are:
    - Shockwave: this will require one visit a week for three weeks, each visit last approximately 10 – 15 minutes
    - Shockwave and photobiomodulation: this requires two visits a week for three weeks, each visit will last between 15-20 minutes

T9: Month 6 (In-Person) – 20 minutes

- You will be asked to complete some questionnaires and surveys
- We will take some measurements using an ultrasound and ask you to perform heel raises and a hopping test.

How may we use and share your samples and health information for other research?

The information we collect in this study may help advance other research. If you join this study, we may remove all information that identifies you (for example, your name, medical record number, and date of birth) and use these de-identified samples and data in other research. It won't be possible to link the information or samples back to you. Information and/or samples may be shared with investigators at our hospitals, at other academic institutions or at for-profit, commercial entities. You will not be asked to provide additional informed consent for these uses.

Will you get the results of this research study?

You and your doctor should not expect to get information about the results of the research study or the results of your individual participation in the research study. We will study data from many people. It could take many years before anyone knows whether the results have any meaning. There is a small chance that we could find out something from the study that might be important to your health. If this happens, we may contact you to find out if you would like to learn more. However, even if we find something important to your health, we cannot guarantee that you will be contacted.

What are the risks and possible discomforts from being in this research study?

The risks and discomforts of this study depend on which treatment you are receiving. Both the shockwave therapy and the photobiomodulation devices are FDA approved and low risk.

Discomforts associated with shockwave therapy include bruising, swelling and rarely, tissue damage. Pain is expected when the device treats injury site. We will monitor each patient and adjust treatment settings to ensure pain is tolerable.

The risks associated with PBMT are minimal. Mild discomfort may be experienced during the treatment, the treatment should not be "hot", but participants should notify the study team member if they feel any uncomfortable warming. Individuals with neuropathies or difficulty distinguishing changes in skin temperature are at higher risk. Protective eyewear will be provided and must be worn by the participant and study team member during operation of the laser to protect your eyes from accidental laser exposure. No serious adverse events have been reported using this treatment.

Physical therapy involves exercises designed to address causes of movement impairment, similar response to exercising muscles such as soreness and pain may be experienced. This is minimized by supervision by trained physical therapy using best practices to guide treatment.

There are no risks associated with ultrasound. The ultrasound handpiece may be uncomfortable when applied to the injured area, but this can be reduced by asking the study staff to reduce the pressure on the area.

What are the possible benefits from being in this research study?

The benefit from being in this research study is that we may help in your recovery of Achilles Tendinopathy. We cannot guarantee results, but we hope that, depending on which treatment you get, your recovery may be quicker.
You will also be contributing to the knowledge on Achilles Tendinopathy and the information we gain from this study may be used to help people with AT in the future.

What other treatments or procedures are available for your condition?

The basic standard of care for Achilles Tendinopathy is physical therapy. Therefore, we have included physical therapy in each treatment group and it will be included for the group who will act as a control. There are other treatments available for Achilles Tendinopathy including injections, medications and surgical treatment, but each has potential risks and it is not clear which are the most effective.

Can you still get medical care within Partners if you don't take part in this research study, or if you stop taking part?

Yes. Your decision won't change the medical care you get within Partners now or in the future. There will be no penalty, and you won't lose any benefits you receive now or have a right to receive.

We will tell you if we learn new information that could make you change your mind about taking part in this research study.

What should you do if you want to stop taking part in the study?

If you take part in this research study, and want to drop out, you should tell us. We will make sure that you stop the study safely. We will also talk to you about follow-up care, if needed.

Also, it is possible that we will have to ask you to drop out of the study before you finish it. If this happens, we will tell you why. We will also help arrange other care for you, if needed.

Will you be paid to take part in this research study?

You will be compensated for your time for participating in this study. You may receive up to $150 for participating in the whole study. If you withdraw early, you will receive compensation for what you participated in as broken down below:

- Enrollment in the study and participation to 6 week follow-up visit: $50
- 3-Month Follow Up: $50
- 6-Month Follow Up: $50

What will you have to pay for if you take part in this research study?

In order for you to take part in this study you do not have to pay for the shockwave or photobiomodulation treatments. We ask you to get physical therapy in the normal way through your insurance at a location that is convenient to you. We also require that you come to Spaulding Rehabilitation Hospital for the study visits.

Study funds will pay for certain study-related items and services. We may bill your health insurer for, among other things, routine items and services you would have received even if you did not take part in the research. You will be responsible for payment of any deductibles and co-payments required by your insurer for this routine care or other billed care. If you have any questions about costs to you that may result from taking part in the research, please speak with the study doctors and study staff. If necessary, we will arrange for you to speak with someone in Patient Financial Services about these costs.

What happens if you are injured as a result of taking part in this research study?

Injuries sometimes happen in research even when no one is at fault. There are no plans to pay you or give you other compensation for an injury, should one occur. However, you are not giving up any of your legal rights by signing this form.

If you think you have been injured or have experienced a medical problem as a result of taking part in this research study, tell the person in charge of this study as soon as possible. The researcher's name and phone number are listed in the beginning of this consent form.

If you take part in this research study, how will we protect your privacy?

Federal law requires Partners to protect the privacy of health information and related information that identifies you. We refer to this information as "identifiable information."

In this study, we may collect identifiable information about you from:

- Past, present, and future medical records
- Research procedures, including research office visits, tests, interviews, and questionnaires

Who may see, use, and share your identifiable information and why they may need to do so:

- Partners researchers and staff involved in this study
- The sponsor(s) of the study, and people or groups it hires to help perform this research or to audit the research

- Other researchers and medical centers that are part of this study
- The Partners ethics board or an ethics board outside Partners that oversees the research
- A group that oversees the data (study information) and safety of this study
- Non-research staff within Partners who need identifiable information to do their jobs, such as for treatment, payment (billing), or hospital operations (such as assessing the quality of care or research)
- People or groups that we hire to do certain work for us, such as data storage companies, accreditors, insurers, and lawyers
- Federal agencies (such as the U.S. Department of Health and Human Services (DHHS) and agencies within DHHS like the Food and Drug Administration, the National Institutes of Health, and the Office for Human Research Protections), state agencies, and foreign government bodies that oversee, evaluate, and audit research, which may include inspection of your records
- Public health and safety authorities, if we learn information that could mean harm to you or others (such as to make required reports about communicable diseases or about child or elder abuse)
- Other:

Some people or groups who get your identifiable information might not have to follow the same privacy rules that we follow and might use or share your identifiable information without your permission in ways that are not described in this form. For example, we understand that the sponsor of this study may use your identifiable information to perform additional research on various products or conditions, to obtain regulatory approval of its products, to propose new products, and to oversee and improve its products' performance. We share your identifiable information only when we must, and we ask anyone who receives it from us to take measures to protect your privacy. The sponsor has agreed that it will not contact you without your permission and will not use or share your identifiable information for any mailing or marketing list. However, once your identifiable information is shared outside Partners, we cannot control all the ways that others use or share it and cannot promise that it will remain private.

Because research is an ongoing process, we cannot give you an exact date when we will either destroy or stop using or sharing your identifiable information. Your permission to use and share your identifiable information does not expire.

The results of this research study may be published in a medical book or journal, or used to teach others. However, your name or other identifiable information **will not** be used for these purposes without your specific permission.

Your Privacy Rights

You have the right **not** to sign this form that allows us to use and share your identifiable information for research; however, if you don't sign it, you can't take part in this research study.

You have the right to withdraw your permission for us to use or share your identifiable information for this research study. If you want to withdraw your permission, you must notify the person in charge of this research study in writing. Once permission is withdrawn, you cannot continue to take part in the study.

If you withdraw your permission, we will not be able to take back information that has already been used or shared with others, and such information may continue to be used for certain purposes, such as to comply with the law or maintain the reliability of the study.

You have the right to see and get a copy of your identifiable information that is used or shared for treatment or for payment. To ask for this information, please contact the person in charge of this research study. You may only get such information after the research is finished.

Informed Consent and Authorization

Statement of Person Giving Informed Consent and Authorization

- I have read this consent form.
- This research study has been explained to me, including risks and possible benefits (if any), other possible treatments or procedures, and other important things about the study.
- I have had the opportunity to ask questions.
- I understand the information given to me.

Signature of Subject:

I give my consent to take part in this research study and agree to allow my health information to be used and shared as described above.

_____ _____ _____

Subject Date Time (optional)

Signature of Study Doctor or Person Obtaining Consent:

Statement of Study Doctor or Person Obtaining Consent

- I have explained the research to the study subject.
- I have answered all questions about this research study to the best of my ability.

Study Doctor or Person Obtaining Consent Date Time (optional)

Consent of Non-English Speaking Subjects Using the "Short Form" in the Subject's Spoken Language

Statement of Hospital Medical Interpreter

As someone who understands both English and the language spoken by the subject, I interpreted, in the subject's language, the researcher's presentation of the English consent form. The subject was given the opportunity to ask questions.

Hospital Medical Interpreter Date Time (optional)

OR

Statement of Other Individual (Non-Interpreter)

As someone who understands both English and the language spoken by the subject, I represent that the English version of the consent form was presented orally to the subject in the subject's own language, and that the subject was given the opportunity to ask questions.

Name	Date	Time (optional)

Consent Form Version: January 17, 2024