

**Cover Page to Accompany ClinicalTrials.gov Document**

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**Informed Consent: February 11, 2021**  
**For Protocol:**  
**PET Imaging of Chronic Pain Syndromes**

**Thomas Jefferson University IRB ID: 17D.163**  
**Clinical Trial Number: NCT03233594**

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1 **Thomas Jefferson University**  
2 **Informed Consent Document for Human Subjects Research – OHR-8**  
3 **Version Date – FOR OHR USE: 10/2/17**  
4

5 **Department:** Emergency Medicine and Radiology

6  
7 **Principal Investigator:** Andrew B. Newberg, MD, **Telephone:** 215-503-3422

8  
9 **Co -Investigator:** Daniel A. Monti, MD **Telephone:** 215-955-4410

10  
11 **Medical Study Title:** PET Imaging of Chronic Pain Syndromes

12  
13 **Lay Study Title:** PET-MRI in Chronic Pain

14  
15 **What Is Informed Consent?**

16  
17 You are being asked to take part in a medical research study. As required by federal regulations,  
18 this research study has been reviewed and approved by an Institutional Review Board (IRB), a  
19 University committee that reviews, approves and monitors research involving humans. Before  
20 you can make a knowledgeable decision about whether to participate, you should understand the  
21 possible risks and benefits related to this study. This process of learning and thinking about a  
22 study before you make a decision is known as *informed consent* and includes:

- 23  
24
- 25 • Receiving detailed information about this research study;
  - 26 • Being asked to read, sign and date this consent form, once you understand the study and  
27 have decided to participate. If you don't understand something about the study or if you  
28 have questions, you should ask for an explanation before signing this form;
  - 29 • Being given a copy of the signed and dated consent form to keep for your own records.

30 You should understand that your relationship with the study doctor is different than your  
31 relationship with your treating or personal doctor. The treating doctor treats a specific health  
32 problem with the goal of improving a medical condition. A study doctor treats all subjects  
33 according to a research plan to obtain information about the experimental drug, device or  
34 procedure being studied and with the understanding that you may or may not benefit from being  
35 in the study. You should ask questions of the study doctor if you want to know more about this.

36  
37 **What is the purpose of this study?**

38  
39 People have symptoms of chronic pain which means that they have experienced significant pain  
40 in one or more body areas such as the head, neck, or lower back pain. It is important to  
41 understand the brain and body mechanisms of chronic pain in order to better determine  
42 therapeutic interventions to reduce pain. Part of the difficulty in treating chronic pain is to  
43 determine how better to diagnose what specific issues are affecting the brain and body that result  
44 in chronic pain. You are asked to be in this study to take part in the healthy control group.

45 This study will be the first to utilize scans (described below) of both the brain and body in order  
46 to assess Central Nervous System (CNS) changes and peripheral body changes related to chronic  
47 pain and its potential management. This will be conducted on a scanner that can perform a positron  
48 emission tomography (PET) scan and an magnetic resonance imaging (MRI) at the same time.  
49 In order to assess the brain and body function more effectively, we would like to have you  
50 undergo a small battery of diagnostic tests that include an FDG (fluorodeoxyglucose) PET scan.  
51 The test is sometimes called an FDG-PET-MRI or PET-MR scan. Before the PET scan, a small  
52 amount of FDG is injected into the patient. The FDG is referred to as a tracer because the  
53 scanner can detect where the FDG is detected in the body and brain. Scans may be performed at  
54 the Marcus Institute of Integrative Health PET-MRI scanner (Ceresensa: London, ON) that poses no  
55 additional risk to the patient. In addition, you will receive several questionnaires and initial  
56 evaluations.

57  
58 **How many individuals will participate in the study and how long will the study last?**

59  
60 We hope to enroll up to 10 healthy **adults (≥18 years)** subjects at Jefferson. The entire study will  
61 take about 3 years to complete. Your involvement in the study will last up to the completion of  
62 the PET-MRI scan.

63  
64 **What will happen during the study?**

65  
66 The informed consent process will be completed with you. You will be asked questions about  
67 your medical history and about the medications you are taking. You will also be asked to  
68 complete several questionnaires about your mood, memory, your pain, and how you feel and will  
69 take up to 1 hour to complete. You will also undergo a clinical examination. Throughout the  
70 study, you will continue to take whatever medications your doctor has prescribed for you.  
71 However, we will ask you to try to remain at the same dosage of any medication throughout the  
72 study unless your doctor changes the dose because of worsening symptoms or because of side  
73 effects.

74  
75 You will simultaneously receive two different scans that will be performed in a special combined  
76 scanner. One scan, called positron emission tomography (PET), will evaluate your brain and  
77 body metabolism to determine which areas of your brain and which parts of your body are  
78 functioning differently. The other scan, called magnetic resonance imaging (MRI) will evaluate  
79 the structure and function of the brain, along with the connecting fibers affected by pain. On the  
80 day of both scans, you will report to the Marcus Institute of Integrative Health at 789 E.  
81 Lancaster Avenue in Villanova, PA 19085.

82  
83 Female subjects of child bearing potential will first have a pregnancy test and if negative will  
84 proceed with the remainder of the study. The PET scan measures the energy metabolism in the  
85 brain and body which is particularly affected by pain symptoms. The PET scan works by  
86 injecting into your vein a radioactive medicine called FDG. FDG is a form of the sugar, glucose,  
87 that is used by your brain for energy. By injecting the FDG, we can see where in the brain and  
88 body it goes so that we can take a picture of the activity in these areas. After injection of the

89 tracer, you will be asked to rest quietly in a dimly lit room for approximately 30 minutes. At that  
90 point, you will be brought into the scanner room and will lie down on the PET imaging table.  
91 The remainder of the procedure involves having your head held comfortably in a special head  
92 holder as a reminder not to move your head and remain still while the scanner takes pictures of  
93 your brain. Immediately after the brain scan, you will be allowed to have a brief break (no more  
94 than 5 minutes) and then we will scan the rest of the body.  
95 The MRI scan is performed simultaneously with the PET scan using a special PET-MRI scanner  
96 that can do both at the same time. Before the MRI scan, we will ask you a number of questions to  
97 make sure you do not have any metal in your body that might affect the scanner. While you are  
98 lying on the imaging table for the PET scan, the MRI scan will also be performed. The MRI  
99 scans add no radiation, but do make loud banging noises for which you will be given ear plugs to  
100 block the sound. The MRI, along with the PET scan, is done over about 60 minutes. Your head  
101 will be in a special head holder surrounded by a head coil that enables us to take pictures of your  
102 brain.

103  
104 After you receive the initial diagnostic testing above, you will not receive specific therapeutic  
105 intervention and there will be no additional testing performed.

106  
107 The control group to be compared to pain patients will receive no specific therapeutic  
108 intervention, but will still undergo the scanning, electroencephalography (EEG), and  
109 neurocognitive testing initially and then after approximately 2 months.

## 110 **What are the side effects and other risks or discomforts involved?**

### 111 PET Risks

112  
113 Use of FDG PET imaging is commercially approved, and has resulted in very rare adverse  
114 effects of skin redness, facial swelling, fever, and short lasting rise in blood pressure. This  
115 research study involves exposure to radiation from the FDG PET scan and therefore you will  
116 receive a radiation dose that you would not receive if you did not have the scans. The radiation  
117 dose obtained as the result of participating in this study is the same as standard clinical brain  
118 scans using the same tracers. Therefore, at the doses you will receive, it is very likely that you  
119 will see no effects at all. Please inform the investigator of any participation in previous studies  
120 involving radiation exposure. Some persons may experience some discomfort while lying flat on  
121 the table for the PET-MRI scan or may feel uncomfortable or anxious in the scanner. Since the  
122 injection of the FDG requires inserting a needle into your arm vein, there can be pain and  
123 discomfort at the injection site. Bleeding and infection may also occur.

### 124 MRI Risks

125  
126 You will be asked to complete a MRI Patient Information History form. The MRI scan does not  
127 involve any radiation exposure. You will have the scan performed by placing your head within a  
128 standard head coil or a 32-channel research head coil to obtain better images. There is no added  
129 risk with either of these head coils. Due to the strength of the magnetic field of the MRI, there is  
130 a risk of being injured by receiving a burn on your skin or if an unsecured metal object flies into  
131 the MRI scanner. In order to minimize this risk, you will be asked to remove all metal objects  
132

133 from your person. Also, all metal objects will be cleared from the area prior to the scan. This is  
134 the standard practice when patients undergo MRI exams. It is important when discussing the  
135 study that you inform the staff if you have any of the following:

- 136 – Surgically implanted electrical devices
- 137 – Pacemaker
- 138 – Surgically placed metallic clips (aneurysm clips)
- 139 – Ear implants
- 140 – Any history of metal fragments in the eye

141  
142 Some persons may experience some discomfort while lying flat on the table for PET MRI scans  
143 or may feel uncomfortable or anxious in the scanner.

144  
145 Survey Question and Clinical Examination Risks  
146 Some of the questions we will ask you as part of this study, as well as the neurological  
147 examination, might make you feel uncomfortable. You can refuse to answer any of the questions  
148 and you are free to take a brief break at any time when answering these questions or while  
149 undergoing the clinical exam. However, you must complete the questionnaire or clinical exam  
150 during the study period.

151  
152 Risks of Discovering an Incidental Finding  
153 The result of the scans will be reported in a clinical report by a trained specialist. If an unknown  
154 abnormality (also called an incidental finding) is discovered on the PET or MRI scan, you will be  
155 thoroughly counseled by the study doctor and will have an opportunity to ask any questions.  
156 Such a finding may make you feel anxious or depressed. However, the information and scans  
157 will be made available to your primary care doctor or referring physician in order to manage the  
158 finding as quickly and effectively as possible.

159  
160 What To Do If You Experience Any Adverse Effects  
161 You should call the study doctor as soon as possible at 215-503-3422 if, during the course of this  
162 study, you develop any side effects or symptoms. The study doctor has told you that if your  
163 condition worsens, if side effects become very severe, or if it turns out that being in this study is  
164 not in your best interest, you will be taken out of the study.

165  
166  
167 **What are the risks to fetuses, infants and pregnant women**

168  
169 Pregnant women or women who are breast-feeding should not be in this study because exposure  
170 to the radioactive materials may be hazardous to an embryo, fetus or nursing infant. Even  
171 medications that are well known and prescribed may have adverse effects on an embryo or fetus.  
172 Since this study also includes radiation related to the FDG PET scans, pregnant women or  
173 women who are breast-feeding should not be in this study. As with any medication, there are  
174 unknown risks. To be in this study you and your partner must practice adequate birth control  
175 measures. The study doctor will discuss acceptable methods of birth control with you. If you are  
176 a woman of childbearing potential, you will have a pregnancy test before making a decision

177 about being in this study. This requires either a urine test or that blood be drawn from a vein in  
178 your arm (1-2 tsp.) one or two days prior to the start of the study. The results of this pregnancy  
179 test will be made available to you prior to the start of the study.

180  
181 If you become pregnant during the course of this study, you should notify the study doctor as  
182 soon as possible.

183  
184 If you are a person in a same sex relationship, it is not necessary for you to practice birth control.  
185 However, if you are female of childbearing potential, you will still have to have pregnancy tests  
186 according to the study protocol.

187  
188 **Are there benefits from being in this study?**

189  
190 You may not benefit from being in this research, but we hope that what we learn may be helpful  
191 to future patients or society in general.

192  
193 **Are there alternatives to being in the study?**

194  
195 You do not have to participate in this study.

196  
197 **How will privacy and confidentiality (identity) be protected?**

198  
199 Federal regulations require that certain information about individuals be kept confidential. This  
200 information is called “protected health information” (PHI). PHI includes information that  
201 identifies you personally such as name, address and social security number, or any medical or  
202 mental health record, or test result, that may have this sort of information on it. The laws state  
203 that you may see and review your TJU or Thomas Jefferson University Hospital medical records  
204 at any time. However, in a research study, you may not see the study results or other data about  
205 the study until after the research is completed unless the study doctor decides otherwise.

206  
207 If you join this study, the following individuals or entities may have access to your PHI and by  
208 law must protect it. These include investigators listed on this consent form and other personnel  
209 of Thomas Jefferson University and Thomas Jefferson University Hospitals, Inc. involved in this  
210 specific study, the University’s Division of Human Subjects Protection and the Institutional  
211 Review Board (IRB), and your health insurance company (if necessary for billing for standard  
212 medical care).

213  
214 Your PHI may also be shared with the following entities that, while not obligated by law to  
215 protect PHI, will protect it to the best of their ability:

- 216 • Andrew Newberg or designated research staff who will oversee the study and review  
217 medical records to ensure study-related information is correct
  - 218 • With any person or agency required by law.
  - 219 • De-identified imaging data will be analyzed at the laboratory of Dr. Abass Alavi
- 220

221 If you develop an illness or injury during the course of your participation in this study, other PHI  
222 about treating and following the condition may be generated and disclosed as it relates to this  
223 study. Your PHI may be used/disclosed until the end of the research study.  
224

225 You may quit the study and revoke permission to use and share your PHI at any time by  
226 contacting the principal investigator, in writing, at: Andrew Newberg, 925 Chestnut Street, Suite  
227 120, Philadelphia, PA 19107. If you quit the study, further collection of PHI will be stopped, but  
228 PHI that has already been collected may still be used.  
229

230 The results of clinical tests and procedures performed as part of this research may be included in  
231 your medical records. The information from this study may be published in scientific journals or  
232 presented at scientific meetings but you will not be personally identified in these publications and  
233 presentations.  
234

235 A description of this clinical trial will be available on <http://www.ClinicalTrials.gov>, as required  
236 by U.S. Law. This Web site will not include information that can identify you. At most, this  
237 Web site will include a summary of the results. You can search this Web site at any time.  
238

#### 239 **What happens in case of injury as a result of being in this study?** 240

241 In the event that you experience a research-related injury, necessary and available medical care  
242 (including hospitalization) will be provided. A research-related injury is a physical injury or  
243 illness resulting to you that is directly caused by any procedure or treatment used in this study  
244 that is different from the treatment you would receive if you were not participating in a research  
245 study. Please note that the chiropractic care you intend to receive is not part of the research study,  
246 only the diagnostic imaging and questionnaires are. If you are physically injured due to any  
247 drug/substance or procedure properly given under the plan for this study, medical expenses for  
248 treating the injury will be billed to your insurance carrier. You should be aware that some costs  
249 may not be covered by insurance. There is no plan to provide compensation for loss of wages,  
250 lost time from work, personal discomfort, or for injuries or problems related to your underlying  
251 medical condition(s).  
252

253 If you receive a bill related to a research-related injury that seems wrong, please discuss it with  
254 the study doctor or research coordinator.  
255

#### 256 **Are there costs related to being in this study?** 257

258 There will be no charge to you or your health insurance for any of the PET or MRI, or for the  
259 upper cervical manipulation as a part of this study.  
260

261 If you receive a bill that you think is wrong, please discuss it with the study doctor or research  
262 coordinator.  
263

264 ***Standard Testing Procedures***

265  
266 Procedures, tests and doctor's charges resulting that are considered standard of care will be billed  
267 to your health insurance carrier. These are charges that you would have whether or not you were  
268 participating in a research study which include standard physical and neurological examinations,  
269 medications prescribed by your physician, and any other medical treatment you undergo. It is  
270 possible that your insurance company may deny payment. If that happens you may be  
271 responsible for some or all of these charges. The study doctor will explain to you which  
272 procedures, tests and doctor visits are considered standard of care.

273  
274 If you receive a bill that you think is wrong, please discuss it with the study doctor or research  
275 coordinator.

276  
277 **Will I be paid for being in this study?**

278  
279 You will not receive any payment for participating in the study, but you will have access to your  
280 scans.

281  
282 **Disclosure of Financial Interest**

283  
284 None of the investigators has any financial interest in the companies that provide products for  
285 this study.

286  
287 **What if the research results in new findings?**

288  
289 Anything learned during the study, beneficial or not, that may affect your health or your  
290 willingness to continue in the study, will be told to you and explained.

291  
292 **Can I be removed from the study or quit the study?**

293  
294 Your decision to participate in this research study is entirely voluntary. You have been told what  
295 being in this study will involve, including the possible risks and benefits.

296  
297 Your participation in this research project may be terminated by the study doctor without your  
298 consent/assent for any reason that he/she feels is appropriate.

299  
300 You may refuse to participate in this investigation or withdraw consent and quit this study  
301 without penalty and without affecting your ability to receive medical care at Thomas Jefferson  
302 University.

303  
304 If you withdraw from this study, you may continue treatment with your Jefferson doctor, or you  
305 may seek treatment from another doctor of your choice.

306 Should you decide to withdraw from the study, please be sure to inform the study doctor.

307 Additional tests or procedures may be needed to ensure your safety. The study doctor will  
308 explain why these tests or procedures are necessary.



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313  
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315

**CONTACT INFORMATION**

**If you are having a medical emergency, call 911 or go directly to an emergency room. You should let emergency personnel or providers know that you are participating in this study.**

|   |   |              |
|---|---|--------------|
| Telephone number for questions about your rights as a research participant                            | The Jefferson Institutional Review Board        | 215-503-8966 |
| For questions, concerns or complaints about the research, or if you suspect a research-related injury | Principal Investigator<br>Andrew B. Newberg, MD | 215-503-3422 |
|   | Co-Investigator,<br>Daniel A. Monti, MD         | 215-955-4410 |
|   | Program Manager,<br>Nancy Wintering, LCSW       | 215-503-3423 |
| If you have difficulty contacting the study staff   | Call the Jefferson Office of Human Research     | 215-503-0203 |

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If you want more information about the Jefferson Institutional Review Board or Jefferson's Human Research Protection Program, please visit our website at [http://www.jefferson.edu/university/human\\_research.html](http://www.jefferson.edu/university/human_research.html)

321 **Non-Waiver of Legal Rights Statement**

- 322
- 323 ✓ **By your agreement to participate in this study, and by signing this consent form, you**
  - 324 **are not waiving any of your legal rights.**
  - 325 ✓ **In order to be in this research study, you must sign this consent form.**
  - 326 ✓ **You affirm that you have read all pages of this consent form. You have been told**
  - 327 **that you will receive a copy.**

328

329 **SIGNATURES**

330

331

332

|                                      |   |           |
|--------------------------------------|---|-----------|
| 333 _____                            | 333 _____                                 | 333 _____ |
| 334 Your Name                        | 334 Your Signature                        | 334 Date  |
| 335                                  | 335                                       | 335       |
| 336 _____                            | 336 _____                                 | 336 _____ |
| 337 Name of <b>Person Conducting</b> | 337 Signature of <b>Person Conducting</b> | 337 Date  |
| 338 <b>Consent Interview</b>         | 338 <b>Consent Interview</b>              |           |

339

340 The investigator's signature certifies that s/he personally provided the study participant with a

341 description of the study, study procedures, risks, benefits and alternatives to participation.

342

343

344

|                                 |                                      |           |
|---------------------------------|--------------------------------------|-----------|
| 345 _____                       | 345 _____                            | 345 _____ |
| 346 Name of <b>Investigator</b> | 346 Signature of <b>Investigator</b> | 346 Date  |
| 347 or <b>Co-Investigator</b>   | 347 or <b>Co-Investigator</b>        |           |

348

349  **Copy of Signed and Dated Consent Form Given to the Subject/Parent/LAR**

350

351

352

|                            |                                 |           |
|----------------------------|---------------------------------|-----------|
| 353 _____                  | 353 _____                       | 353 _____ |
| 354 Name of <b>Witness</b> | 354 Signature of <b>Witness</b> | 354 Date  |

355

356 *(Witness required if the only language the subject speaks and understands is English, but*

357 *the subject cannot read English, or if the subject is blind or cannot physically sign the*

358 *consent form.)*



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2 **Informed Consent Document for Human Subjects Research**  
3

4 **Department:** Integrative Medicine and Nutritional Sciences Emergency Medicine and Radiology  
5

6 **Principal Investigator:** Andrew B. Newberg, MD, **Telephone:** 215-503-3422  
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10 **Medical Study Title:** PET Imaging of Chronic Pain Syndromes  
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21 before you make a decision is known as *informed consent* and includes:  
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- 23 • Receiving detailed information about this research study;
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25 have decided to participate. If you don't understand something about the study or if you  
26 have questions, you should ask for an explanation before signing this form;
- 27 • Being given a copy of the signed and dated consent form to keep for your own records.  
28

29 You should understand that your relationship with the study doctor is different than your  
30 relationship with your treating or personal doctor. The treating doctor treats a specific health  
31 problem with the goal of improving a medical condition. A study doctor treats all subjects  
32 according to a research plan to obtain information about the experimental drug, device or procedure  
33 being studied and with the understanding that you may or may not benefit from being in the study.  
34 You should ask questions of the study doctor if you want to know more about this.  
35

36 **What is the purpose of this study?**  
37

38 You have symptoms of chronic pain which means that you have experienced significant pain in  
39 one or more body areas such as your head, neck, or lower back pain. It is important to understand  
40 the brain and body mechanisms of chronic pain in order to determine better therapeutic  
41 interventions to reduce pain. Part of the difficulty in treating chronic pain is to determine how  
42 better to diagnose what specific issues are affecting the brain and body that result in chronic  
43 pain. You are also asked to be in this study since you are receiving chiropractic care techniques  
44 for your chronic pain. This study will be the first to utilize scans (described below) of both the  
PET CPAIN OHR-8 patient add NET desc rev 2019\_12\_19\_2020\_02\_11

Thomas Jefferson University IRB  
Approval Date 2/4/21  
Expiration Date 2/3/22  
Annual review due 6 weeks before expiration

45 brain and body in order to assess Central Nervous System (CNS) changes and peripheral body  
46 changes related to chronic pain and its potential management. This will be conducted on a scanner  
47 that can perform a positron emission tomography (PET) scan and an magnetic resonance  
48 imaging (MRI) at the same time. The test is called an FDG-PET-MRI or PET-MR scan.  
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50 undergo a small battery of diagnostic tests that include an FDG (fluorodeoxyglucose) PET scan  
51 Before the PET scan, a small amount of FDG is injected into the patient. The FDG is referred to  
52 as a tracer because the scanner can detect where the FDG is detected in the body and brain. ,.  
53 Scans may be performed at the Marcus Institute of Integrative Health PET-MRI scanner (Ceresensa:  
54 London, ON) that poses no additional risk to the patient. In addition, you will receive several  
55 questionnaires and a clinical evaluation to determine the nature and level of your pain. A  
56 secondary goal of this study is to determine if undergoing a chiropractic care technique called the  
57 NeuroEmotive Technique (NET) alters body or brain physiology. Prior to starting your NET  
58 appointments or being assigned to the waitlist group, and at the end of approximately 2 months  
59 you will undergo the brain and body scan evaluation and receive clinical and pain testing. If you  
60 are unable to undergo the chiropractic care technique, you may still be asked to have a second  
61 clinical and imaging evaluation.

62  
63 **How many individuals will participate in the study and how long will the study last?**

64  
65 We hope to enroll up to 34 patients and 10 persons without chronic pain at Jefferson. The entire  
66 study will take about 3 years to complete. Your involvement in the study will last about 3  
67 months.

68  
69 We are including a small cohort of healthy controls who will receive a single PET-MR using the  
70 same method as for the patients with chronic pain. This information will be necessary to better  
71 compare the results from the persons with chronic pain to data from persons without pain. .

72  
73 **What will I have to do during the study?**

74  
75 The informed consent process will be completed with you. You will be asked questions about  
76 your medical history and about the medications, you are taking. You will also be asked to  
77 complete several questionnaires about your mood, memory, your pain, and how you feel. These  
78 questions will take up to 1 hour to complete. You will also undergo a clinical examination  
79 evaluating your pain symptoms in order to determine how much the pain affects you. You will  
80 repeat this process including the questionnaires and examination again in 1-2 months days.  
81 Throughout the study, you will continue to take whatever medications your doctor has prescribed  
82 for you. However, we will ask you to try to remain at the same dosage of any medication  
83 throughout the study unless your doctor changes the dose because of worsening symptoms or  
84 because of side effects.

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86 You will initially receive two different scans that will be performed simultaneously in a special  
87 combined scanner. One scan, called positron emission tomography (PET), will evaluate your  
88 brain and body metabolism to determine which areas of your brain and which parts of your body  
89 are functioning differently. The other scan, called magnetic resonance imaging (MRI) will  
90 evaluate the structure and function of the brain, along with the connecting fibers affected by

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96 brain and body, which is particularly affected by pain symptoms. The PET scan works by  
97 injecting into your vein a radioactive medicine called FDG. FDG is a form of the sugar, glucose  
98 that is used by your brain for energy. By injecting the FDG, we can see where in the brain and  
99 body it goes so that we can take a picture of the activity in these areas. After injection of the  
100 tracer, you will be asked to rest quietly in a dimly lit room for approximately 30 minutes. At that  
101 point, you will be brought into the scanner room and will be asked to lie down on the PET  
102 imaging table. The remainder of the procedure involves having your head held comfortably in a  
103 special head holder as a reminder not to move your head and remain still while the scanner takes  
104 pictures of your brain. Immediately after the brain scan, you will be allowed to have a brief  
105 break (no more than 5 minutes) and then we will scan the rest of the body.

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107 that can do both at the same time. Before the MRI scan, we will ask you a number of questions to  
108 make sure you do not have any metal in your body that might affect the scanner. While you are  
109 lying on the imaging table for the PET scan, the MRI scan will also be performed. The MRI  
110 scans add no radiation, but do make loud banging noises for which you will be given earplugs to  
111 block the sound. The MRI, along with the PET scan, is done over about 60 minutes. Your head  
112 will be in a special head holder surrounded by a head coil that enables us to take pictures of your  
113 brain.

114  
115 After you receive the initial diagnostic testing above, you will be assigned into either a waitlist  
116 group or a group that receives the chiropractic technique. Instead of randomization, which is like  
117 flipping a coin with a 50/50 chance of being in the heads or tails group, or the treatment or  
118 waitlist group, we are using what is called a Permuted block randomization. It is a way to assign  
119 a participant to a group or a "block" randomly while maintaining a balance across the groups.  
120 That way subjects with pain will be assigned to either the treatment or waitlist group. Each  
121 "block" receives a specified treatment assignments.

122  
123 Subjects will undergo a practice that was developed out of the chiropractic approach that is  
124 called NeuroEmotional Technique (NET) that we have used in previous IRB approved protocols.  
125 The Neuro Emotional Technique (NET), a mind-body approach, is a stress-reduction  
126 intervention procedure aimed at improving health.

127 During the first NET session, you and the NET practitioner will discuss the emotions  
128 surrounding the pain you have experienced and how pain affects your behavior and  
129 accomplishing tasks. The NET practitioner will show you a feedback technique called the  
130 muscle test, which will involve applying light pressure to the right and left shoulder. By the end  
131 of the two to five NET sessions, the goal is to have an understanding of the emotions that the  
132 pain cause and how pain affects thoughts and actions.

133  
134 With direction in the chiropractic technique, while thinking about the pain and connecting to the  
135 emotions associated with them, you may be asked to do some simple breathing exercises. You  
136 may be instructed to touch points along your wrists (as Chinese doctors do when they are

137 assessing people for acupuncture) while you will continue to do the breathing exercises. At the  
138 completion of the chiropractic NET sessions, you will be asked to complete the same  
139 questionnaires as before while thinking about pain.  
140

141 The wait list control group to be compared to pain patients will receive no specific therapeutic  
142 intervention, but will still undergo the scanning, electroencephalography (EEG), and  
143 neurocognitive testing initially and then after approximately 2 months.  
144

#### 145 **What are the risks or discomforts involved?**

##### 146 PET Risks

148 Use of FDG PET imaging is commercially approved, and has resulted in very rare adverse  
149 effects of skin redness, facial swelling, fever, and short lasting rise in blood pressure. This  
150 research study involves exposure to radiation from the FDG PET scan and therefore you will  
151 receive a radiation dose that you would not receive if you did not have the scans. The radiation  
152 dose obtained as the result of participating in this study is the same as standard clinical brain  
153 scans using the same tracers. Therefore, at the doses you will receive, it is very likely that you  
154 will see no effects at all. Please inform the investigator of any participation in previous studies  
155 involving radiation exposure. Some persons may experience some discomfort while lying flat on  
156 the table for the PET-MRI scan or may feel uncomfortable or anxious in the scanner. Since the  
157 injection of the FDG requires inserting a needle into your arm vein, there can be pain and  
158 discomfort at the injection site. Bleeding and infection may also occur.  
159

##### 160 MRI Risks

161 You will be asked to complete a MRI Patient Information History form. The MRI scan does not  
162 involve any radiation exposure. You will have the scan performed by placing your head within a  
163 standard head coil, or a 32-channel research head coil, to obtain better images. There is no added  
164 risk with either of these head coils. Due to the strength of the magnetic field of the MRI, there is  
165 a risk of being injured by receiving a burn on your skin or if an unsecured metal object flies into  
166 the MRI scanner. In order to minimize this risk, you will be asked to remove all metal objects  
167 from your person. In addition, all metal objects will be cleared from the area prior to the scan.  
168 This is the standard practice when patients undergo MRI exams. It is important when discussing  
169 the study that you inform the staff if you have any of the following:

- 170 – Surgically implanted electrical devices
- 171 – Pacemaker
- 172 – Surgically placed metallic clips (aneurysm clips)
- 173 – Ear implants
- 174 – Any history of metal fragments in the eye

175  
176 Some persons may experience some discomfort while lying flat on the table for PET MRI scans  
177 or may feel uncomfortable or anxious in the scanner.  
178

##### 179 Risks from NET

180 The risks for this intervention are very low. You may feel some discomfort when talking about  
181 pain or distressing recollections or any emotional problems that you have had in the past. We will  
182 make every effort to make you feel comfortable during this interview. You can stop at any time

183 you are feeling uncomfortable. We do not anticipate any additional risks from the breathing  
184 exercises or the NET technique.

#### 185 Survey Question and Clinical Examination Risks

186 Some of the questions we will ask you as part of this study, as well as the neurological  
187 examination, might make you feel uncomfortable. You can refuse to answer any of the questions  
188 and you are free to take a brief break at any time when answering these questions or while  
189 undergoing the clinical exam. However, you must complete the questionnaire or clinical exam  
190 during the study period.

191  
192 Risks of Discovering an Incidental Finding  
193 The result of the scans will be reported in a clinical report by a trained specialist. If an unknown  
194 abnormality (also called an incidental finding) is discovered on the PET or MRI scan, you will be  
195 thoroughly counseled by the study doctor and will have an opportunity to ask any questions.  
196 Such a finding may make you feel anxious or depressed. However, the information and scans  
197 will be made available to your primary care doctor or referring physician in order to manage the  
198 finding as quickly and effectively as possible.

#### 199 200 What To Do If You Experience Any Adverse Effects

201 You should call the study doctor as soon as possible at 215-503-3422 if, during the course of this  
202 study, you develop any side effects or symptoms. The study doctor has told you that if your  
203 condition worsens, if side effects become very severe, or if it turns out that being in this study is  
204 not in your best interest, you will be taken out of the study.

#### 205 206 **What are the risks to fetuses, infants and pregnant women?**

207  
208 Pregnant women or women who are breast-feeding should not be in this study because exposure  
209 to the radioactive materials may be hazardous to an embryo, fetus or nursing infant. Even  
210 medications that are well known and prescribed may have adverse effects on an embryo or fetus.  
211 Since this study also includes radiation related to the FDG PET scans, pregnant women or  
212 women who are breast-feeding should not be in this study. As with any medication, there are  
213 unknown risks. To be in this study you and your partner must practice adequate birth control  
214 measures. The study doctor will discuss acceptable methods of birth control with you. If you are  
215 a woman of childbearing potential, you will have a pregnancy test before making a decision  
216 about being in this study. This requires either a urine test or that blood be drawn from a vein in  
217 your arm (1-2 tsp.) one or two days prior to the start of the study. The results of this pregnancy  
218 test will be made available to you prior to the start of the study.

219  
220 If you become pregnant during the course of this study, you should notify the study doctor as soon  
221 as possible.

222  
223 If you are a person in a same sex relationship, it is not necessary for you to practice birth control.  
224 However, if you are female of childbearing potential, you will still have to have pregnancy tests  
225 according to the study protocol.



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**Are there alternatives to being in the study?**

You do not have to participate in this study.

**How will privacy and confidentiality (identity) be protected?**

Federal regulations require that certain information about individuals be kept confidential. This information is called “protected health information” (PHI). PHI includes information that identifies you personally such as name, address and social security number, or any medical or mental health record, or test result, that may have this sort of information on it. The laws state that you may see and review your TJU or Thomas Jefferson University Hospital medical records at any time. However, in a research study, you may not see the study results or other data about the study until after the research is completed unless the study doctor decides otherwise.

If you join this study, the following individuals or entities may have access to your PHI and by law must protect it. These include investigators listed on this consent form and other personnel of Thomas Jefferson University and Thomas Jefferson University Hospitals, Inc. involved in this specific study, the University’s Division of Human Subjects Protection and the Institutional Review Board (IRB), and your health insurance company (if necessary for billing for standard medical care).

Your PHI may also be shared with the following entities that, while not obligated by law to protect PHI, will protect it to the best of their ability:

- Andrew Newberg or designated research staff who will oversee the study and review medical records to ensure study-related information is correct
- With any person or agency required by law.
- De-identified imaging data will be analyzed at the laboratory of Dr. Abass Alavi

If you develop an illness or injury during the course of your participation in this study, other PHI about treating and following the condition may be generated and disclosed as it relates to this study. Your PHI may be used/disclosed until the end of the research study.

You may quit the study and revoke permission to use and share your PHI at any time by contacting the principal investigator, in writing, at: Andrew Newberg, 925 Chestnut Street, Suite 120, Philadelphia, PA 19107. If you quit the study, further collection of PHI will be stopped, but PHI that has already been collected may still be used.

The results of clinical tests and procedures performed as part of this research may be included in your medical records. The information from this study may be published in scientific journals or presented at scientific meetings but you will not be personally identified in these publications and presentations.

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, this Web site will include a summary of the results. You can search this Web site at any time.

272

273 **What if I am injured as a result of being in this study?**

274

275 In the event that you experience a research-related injury, necessary and available medical care  
276 (including hospitalization) will be provided. A research-related injury is a physical injury or illness  
277 resulting to you that is directly caused by any procedure or treatment used in this study that is  
278 different from the treatment you would receive if you were not participating in a research study. If  
279 you are physically injured due to any drug/substance or procedure properly given under the plan  
280 for this study, medical expenses for treating the injury will be billed to your insurance carrier. You  
281 should be aware that some costs may not be covered by insurance. There is no plan to provide  
282 compensation for loss of wages, lost time from work, personal discomfort, or for injuries or  
283 problems related to your underlying medical condition(s).

284

285 If you receive a bill related to a research-related injury that seems wrong, please discuss it with the  
286 study doctor or research coordinator.

287

288 **Will I benefit from being in this study?**

289

290 You may not benefit from being in this research, but we hope that what we learn may be helpful  
291 to future patients or society in general.

292

293 **Will I be paid for being in this study?**

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295 You will not receive any payment for participating in the study, but you will have access to your  
296 scans.

297

298 **Will I be told about any new findings?**

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299 Anything learned during the study, beneficial or not, that may affect your health or your

300

300 willingness to continue in the study, will be told to you and explained.

301

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302 **Disclosure of Financial Interest**

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304 None of the investigators has any financial interest in the companies that provide products for  
305 this study.

306

307

307 **Are there costs related to being in this study?**

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309 There will be no charge to you or your health insurance for any of the PET or MRI or for the  
310 NET visits conducted as a part of this study. If you receive a bill that you think is wrong, please  
311 discuss it with the study doctor or research coordinator.

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313 *Standard Testing Procedures*

314

315 Procedures, tests and doctor's charges resulting that are considered standard of care will be billed  
316 to your health insurance carrier. These are charges that you would have whether or not you were  
317 participating in a research study which include standard physical and neurological examinations,  
318 medications prescribed by your physician, and any other medical treatment you undergo. It is

319 possible that your insurance company may deny payment. If that happens you may be  
 320 responsible for some or all of these charges. The study doctor will explain to you which  
 321 procedures, tests and doctor visits are considered standard of care.

322  
 323 If you receive a bill that you think is wrong, please discuss it with the study doctor or research  
 324 coordinator.

325  
 326 **Can I be removed from the study or quit the study?**  
 327

328 Your decision to participate in this research study is entirely voluntary. You have been told what  
 329 being in this study will involve, including the possible risks and benefits.

330  
 331 Your participation in this research project may be terminated by the study doctor without your  
 332 consent/assent for any reason that he/she feels is appropriate.

333  
 334 You may refuse to participate in this investigation or withdraw consent and quit this study without  
 335 penalty and without affecting your ability to receive medical care at Thomas Jefferson University.

336  
 337 If you withdraw from this study, you may continue treatment with your Jefferson doctor, or you  
 338 may seek treatment from another doctor of your choice.

339 Should you decide to withdraw from the study, please be sure to inform the study doctor.  
 340 Additional tests or procedures may be needed to ensure your safety. The study doctor will  
 341 explain why these tests or procedures are necessary.

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348 **CONTACT INFORMATION**

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|---|---|--------------|
| Telephone number for questions about your rights as a research participant                            | The Jefferson Institutional Review Board        | 215-503-8966 |
| For questions, concerns or complaints about the research, or if you suspect a research-related injury | Principal Investigator<br>Andrew B. Newberg, MD | 215-503-3422 |
|   | Co-Investigator,<br>Daniel A. Monti, MD         | 215-955-4410 |
|   | Program Manager,<br>Nancy Wintering, LCSW       | 215-503-3423 |
|   | Research Coordinator,<br>Chloe Hriso            | 215-503-4886 |
| If you have difficulty contacting the study staff   | Call the Jefferson Office of Human Research     | 215-503-0203 |

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351 If you want more information about the Jefferson Institutional Review Board or Jefferson's  
352 Human Research Protection Program, please visit our website at  
353 [http://www.jefferson.edu/human\\_research/irb/index.cfm](http://www.jefferson.edu/human_research/irb/index.cfm)  
354

355 **Non-Waiver of Legal Rights Statement**

356

357 **By your agreement to participate in this study, and by signing this consent form, you are not**  
358 **waiving any of your legal rights.**

359

360 **In order to be in this research study, you must sign this consent form.**

361

362 **You affirm that you have read this consent form. You have been told that you will receive a**  
363 **copy.**

364

**Signatures:**

365

366 \_\_\_\_\_(Date)

367 Your Name *(please print or type)*

368

369 \_\_\_\_\_(Date)

370 Your Signature

371

372 *Witness Signature*  
373 *(Only required if subject understands and speaks*  
374 *English, but cannot read English, or if subject is blind*  
375 *or cannot physically sign the consent form—delete if*  
376 *inapplicable)*

375 \_\_\_\_\_(Date)

376 Name of Person Conducting Consent Interview

377

378 \_\_\_\_\_(Date)

379 Signature of Person Conducting Consent Interview

380

381

382 **The investigator's signature certifies that s/he personally provided the study participant with**  
383 **a description of the study, study procedures, risks, benefits and alternatives to participation.**

384

385

386 \_\_\_\_\_(Date)

387 Signature of Principal Investigator or Co-Investigator