

STUDY OF OSTEOPOROTIC FRACTURES (V4)

Calcium 45 Data Protocol

1. Introduction

For administration of the calcium 45 test, follow the protocol instructions as outlined in the blue manual from Creighton.

2. General remarks and in-house protocol issues.

- a. Contraindications: The only contraindication for taking the Ca45 test is presence of gastrointestinal problems, such as nausea, vomiting, or diarrhea, in the past 48 hours. We define diarrhea as 3 or watery stools in the past 48 hours. Additionally, if the participant is likely to experience diarrhea while in the clinic, do not perform the Ca45 test on her at this time. If the participant is willing to come back when she is feeling better, then reschedule her for another day. There are no other reasons not to perform this test.
- b. Alcohol/medications, etc.: Because we are interested in calcium absorption under the participant's normal everyday conditions, we are not restricting alcohol intake or medication schedule. However, please ask each participant and code on her form, whether or not she's had any alcohol in the past 24 hours, whether or not she's taken any type of calcium supplement in the past 12 hours, or whether or not she's had anything to eat within the past 5 hours. The participant should have been fasting for at least 5 hours prior to her Ca45 test, however, if she has eaten something, record that on the form (please write what it was in the margin and on the three part Ca45 form). See part c for more information on fasting.

FIT participants should not take any of their study medications until after their visit is complete. Alendronate binds calcium very avidly which will leave little to no Ca45 available for absorption, hence FIT study meds should not be taken until after blood is drawn for visit 4.

- c. Fasting (meals): Ideally, all participants will have appropriately fasted prior to their visit. If however, some women fail to do so, here are some guidelines as to whether or not to go ahead and perform the Ca45 test on her:

<u>She's eaten</u>	<u>Verdict</u>
Full meal (toast, eggs, juice, cream in coffee or cereal, pancakes, etc., sandwich and/or soup, etc - anything substantial)	Do not test
Snack (toast only, crackers, piece of fruit, donut)	Test

There are two key issues regarding the fasting. 1) The main concern here is the amount of calcium in the meal and 2) the possibility that if the woman ate recently, her absorptive process will already be active when she comes into the clinic. Although we anticipate that most participants will come in appropriately fasted, as always there will be situations where you may have to use some judgement. If, for example, a woman comes in for her appointment and has eaten a bowl of ice cream or any other high

calcium load in the past 5 hours, you wouldn't need to test her because the test would be meaningless. If, however, a woman ate a lower calcium snack, such as some crackers or a piece of fruit, she should be tested because it may be possible to adjust her results appropriately. And if these low calcium snacks were eaten 3-5 hours before the visit instead of in the hour before, then the absorptive process may have had time to complete itself and no adjustment would even be necessary. If you are truly unclear as to whether or not to test, then go ahead and test.

- d. Water: Distilled water should be used during the dosing procedure. Although participants are not supposed to ingest anything for the 3 hours after the dosing, if they insist on having some water, please give them distilled water - just a little.
- e. Graham crackers/margarine: The brands that everyone should be using are Nabisco Honey-Maid graham crackers and Parkay margarine. One teaspoon of margarine is the standard amount to be served with the graham crackers. Deviations from 1 teaspoon should be recorded on the log form.

Also, if a participant can not eat graham crackers for some reason, another option for substitution are rice cakes. Please use PLAIN rice cakes and have the participant eat 2 with margarine. Record the use of rice cakes - be as specific as possible as to the type - on the log form.

- f. Liquid with the meal: Each participant may have up to 12 ounces of liquid with her meal, in addition to the apple juice. This would be approximately two cups of coffee or tea - WITHOUT CREAMER, or a glass of distilled water. Distilled water should be used when making the coffee or tea.
- g. Serum calcium. As stated at the training session, along with the absorption of the calcium 45, levels of serum calcium will be determined for each participant. Critical values have been set at ≤ 7.00 (low) and ≥ 12.00 (high). If any participant has a serum calcium level above or below these values, June will contact the principal investigator from the respective clinic as soon as possible during normal business hours. The PI from each clinic will then be responsible for following up appropriately.
- h. Stirring the apple juice: It is not necessary to stir the apple juice with the Ca45 in it before the participant drinks it. A gentle swirl (or nothing at all) can serve the purpose of mixing up the juice a bit after being frozen. The purpose for stirring was merely to remix the juice in case the freezing caused it to separate or become discolored. It appears that separation and appearance are more greatly affected with orange juice rather than apple juice.

3. Data management

The calcium absorption values will be determined by Dr. Heaney's lab at Creighton and then a copy of the Ca45 three part form will be sent back to each clinic with the final values coded. Two values from this 3 part form will be entered on the Ca45 history sheet which will be part of the participant's examination booklet.

The two values to record are the fractional absorption and the serum calcium. Please enter these values for each participant on the exam form and in to the data system.

Random samples of entered data will be checked against computerized data from Creighton.

The fractional calcium value is referred to as a percent and any communication with the participant should be stated this way. However, for data purposes, we are entering the number as it comes from Creighton which will always be a four decimal point number: some form of 0.____.

