

Log entry 1/18/11

Meeting with JJ Mowder Tinney

Nazareth Physical Therapy Office

Design Concept Review

Three members of the Senior Design Team P11001 (Lawrence Grant, Kyle Benesh, Wesley Seche) met with customer representative, JJ Mowder Tinney, in her office on Tuesday, January 18, 2011. The design concepts, previously presented at the Senior Design System Design Review, were shown to the customer in order to alleviate some of the concerns over whether or not the design will meet the customer needs. The three different designs, their respective concerns brought forth from the review and her responses and concerns will be documented in a bulleted format.

Magnetic Braking System for Pedal Resistance:

Concerns:

1. Heat emanating from disc.
2. Magnetic brake has no resistance at start and increases with pedal speed.
3. Does not fully mimic a true bicycle resistance. (Inertia)
4. Magnetic fields interfering with electronic devices.

Customer Responses (Respectively) and Concerns:

1. Had no issues with minor heat radiating from disc, would be of greater concern with greater heat.
2. No issue with resistance. Customer noted this may be preferable due to weakness of patients. Required the ability to change resistance as needed. (Included in design)
3. Does not need a bike that mimics a road bike 100%. Noted that “few” patients make it onto a true bicycle.
4. Requested more information on range of magnetic interference. Noted that she is “not worried” about the effects on pacemakers as that is far from braking system. Patients that would be affected do not use the bike and those that will use the bike do not use electronic devices on legs. A shield, or warning sign if shielding not possible, to promote safety.

Tilt Mechanism:

Concerns:

1. Can a spring-dampener be bought or built that would be suitable for our needs.
2. Issue with pinch points on spring.
3. Not a “real bike” feel; the dampeners slow the fall and rise of the patient.

Customer Responses (Respectively) and Concerns:

1. Issue does not affect customer.
2. Asked about a possible guard or cover for the spring system. Possible warning attached to spring.
3. Customer wanted the bike to slow the fall.

Display Board:

Customer Concerns:

1. Wanted to ensure that the speedometer will work in the bike.
  - a. If the speedometer will work using an optical sensor, then list replacement parts (eg. white dot).
2. Larger angle display so that it is readable by patient.
3. Larger needle to be easier to see.
4. An audio response “less annoying” than beeps. May be necessary.
5. OK'd hit counter.