

Chorionic Villus Sampling- Transcervical Model

Client: Dr. Jesus Iruretagoyena

Advisor: Professor Kreeger

Team Members: Derek Klavas (Leader)
Mason Jellings (Communications)
Jon Mantes (BSAC)
Andy LaCroix (BWIG)

Week of May 1- May 7, 2009

Problem Statement:

Chorionic villus sampling is a prenatal diagnosis procedure that involves extracting placental tissue from the uterus of a pregnant woman in her first trimester of pregnancy. This tissue contains the same genetic information as the unborn fetus. Testing thus allows chromosomal abnormalities and genetic defects to be diagnosed early on in the gestation period. The current, and most difficult, method for chorionic villus sampling requires a catheter to be inserted through the woman's vagina and into the cervix (also known as the transcervical approach). However, doctors and residents currently do not have a model to simulate female anatomical structures and practice the transcervical method. The goal of this project is to develop a realistic and affordable model that precisely replicates the anatomy of a pregnant woman, is constructed out of ultrasound permeable materials, and can be repeatedly used to practice the transcervical approach.

Last week's goals:

- Compile final report
- Meet with Dr. Iruretagoyena to wrap-up the semester and discuss future work on the model

Accomplishments:

- Wrote final report
- Delivered prototype to Dr. Iruretagoyena

Project Difficulties:

There are no longer any difficulties to report at this point. Our client was very pleased with how the model turned out and is looking to put it to use as soon as possible. We discussed some future work options for following semesters. Dr. Iruretagoyena is looking for our model to incorporate more of a pelvic region to hinder the movement of doctor's hands, an amniotic sac that does not interfere with ultrasound, and perhaps adjustable components.

Activities:

Member	Description of Activity	Hours this week	Cumulative Hours
Derek	Wrote Progress report.	0.5	17.5
Mason	Delivered prototype to client	0.5	16.5
Jon	Attended BSAC meeting.	0.5	17.5
Andy	Updated website	0.5	18.5
Entire team	Compiled final report. Conducted peer and client evaluations.	2.5	49.0

Project Timeline:

Tasks	February				March				April				May	
	6	13	20	27	6	13	20	27	3	10	17	24	1	8
Meetings														
Advisor														
Client														
Product Development														
Research														
Brainstorming														
Design Prototype														
Order Materials														
Manufacture Prototype														
Testing														
Deliverables														
Progress Reports														
PDS														
Midsemester Powerpoint														
Final Poster Presentation														

Expenses:

- 1 sheet of ABS plastic 24" x 24" x 3/8" thick = \$74.91
- 4 EcoFlex silicone 00-30 trial kits = \$114.68
- Acetone, foam sealant, rubber gloves (for vagina rubber) = \$17.00
- Total cost = \$206.59