

TTTS and Technology: Breaking Down Educational Barriers

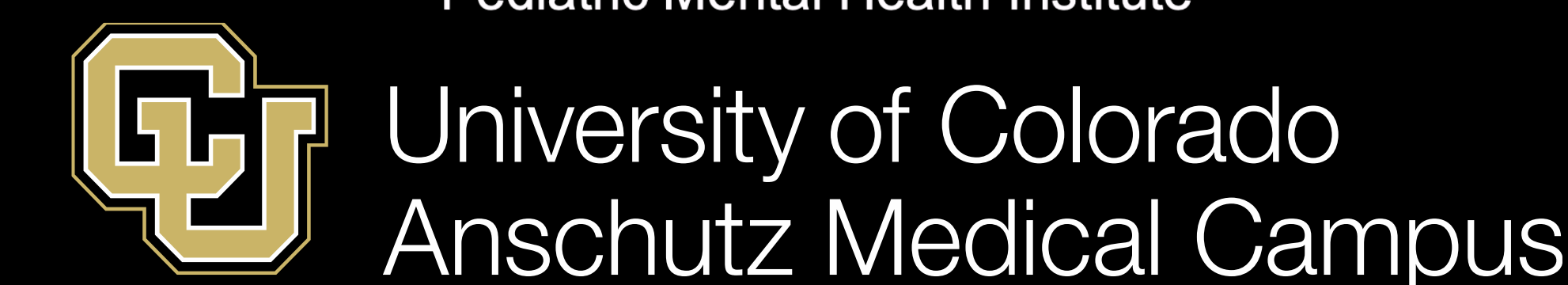


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BACKGROUND

Twin-to-Twin Transfusion Syndrome (TTTS):

- Occurs in 15% of **monochorionic, diamniotic** twin pregnancies (shared placenta, separate amniotic sacs) ¹
- Causes **uneven blood flow between babies** due to their blood vessels fusing together (anastomosis)

TTTS Diagnoses are Stressful:

- Without treatment, risk of dual fetal demise is > 80% ²
- Both parents and physicians perceive a fetal anomaly as very stressful, and **are usually not prepared for it**
- Women with fetal anomalies tend to report **higher psychological distress, depression, and anxiety** ³

Selective Fetoscopic Laser Photocoagulation:

- Considered the preferred treatment for TTTS (fetal survival: 76-87%) ²
- Laser energy is used to seal the anastomoses

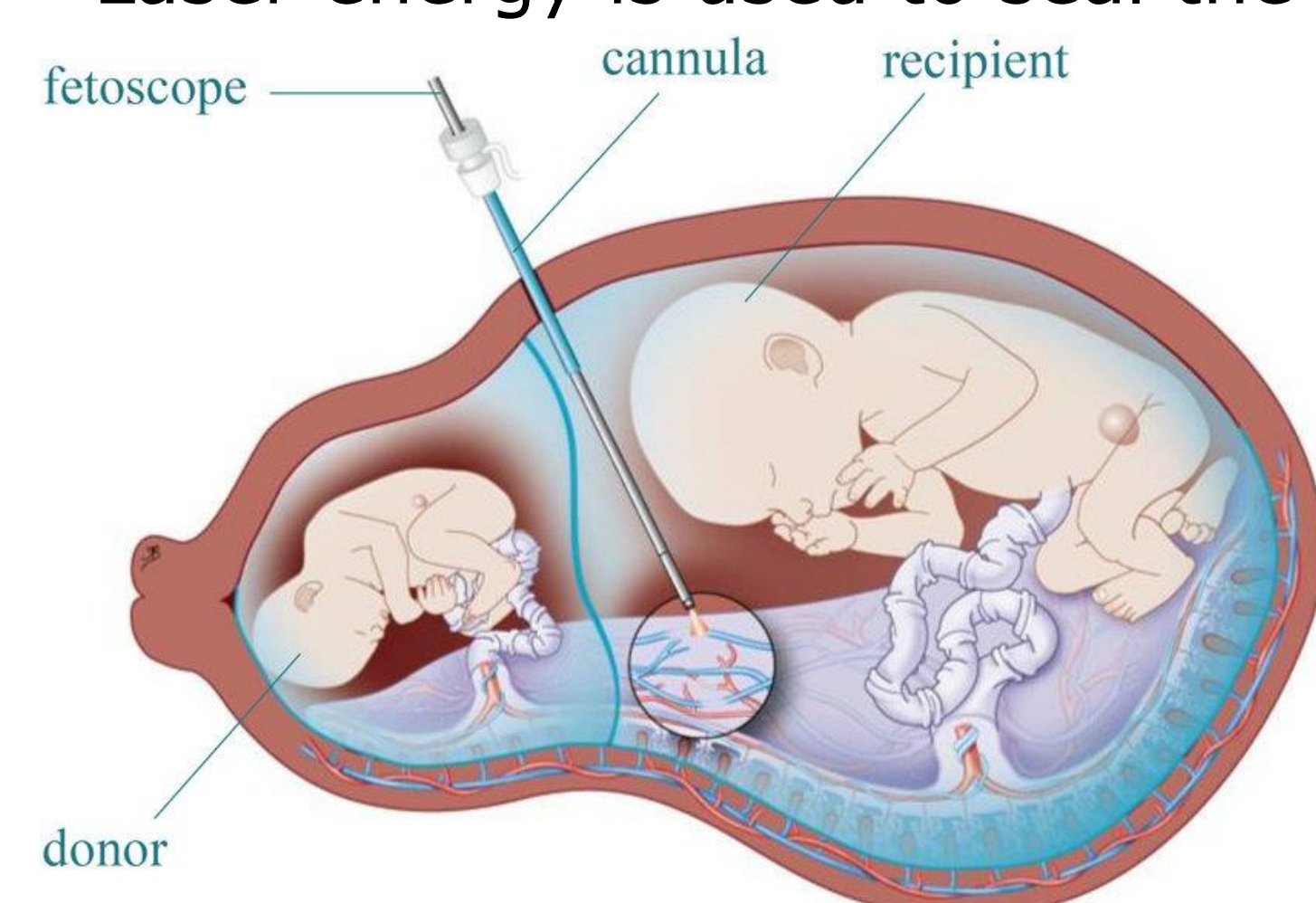


Figure 1. Characteristic SFLP procedure on a set of TTTS-affected twins

RATIONALE

Research Question:

Does educating parents about TTTS with a physician-approved 3-D model increase their retention of information?

The information presented to families during consultations is complex and often hard to understand.

Physicians commonly struggle communicating scientific information to patients in a way that makes sense.

Understanding medical information and terminology is very important for making decisions regarding pregnancy and overall health.

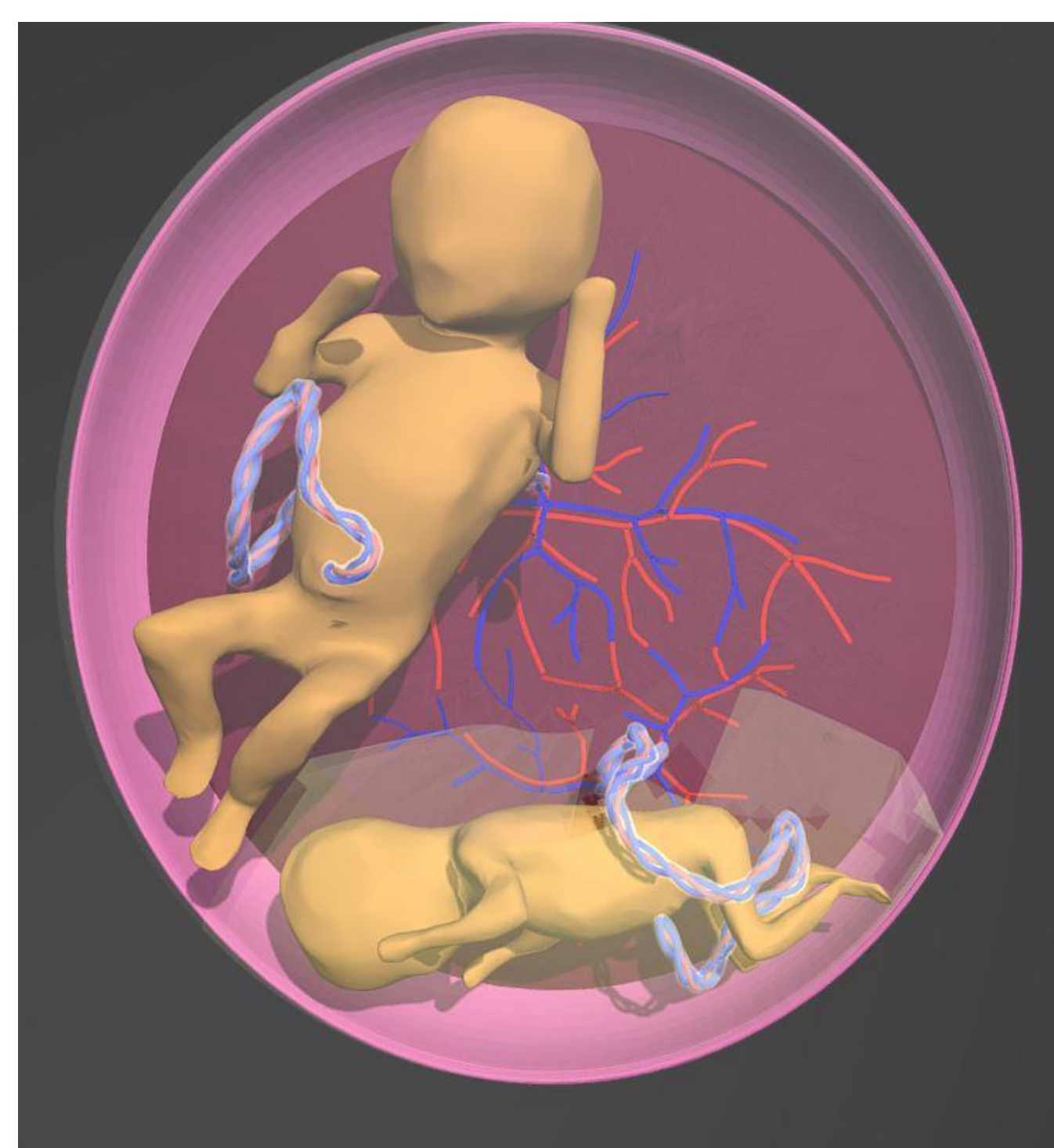


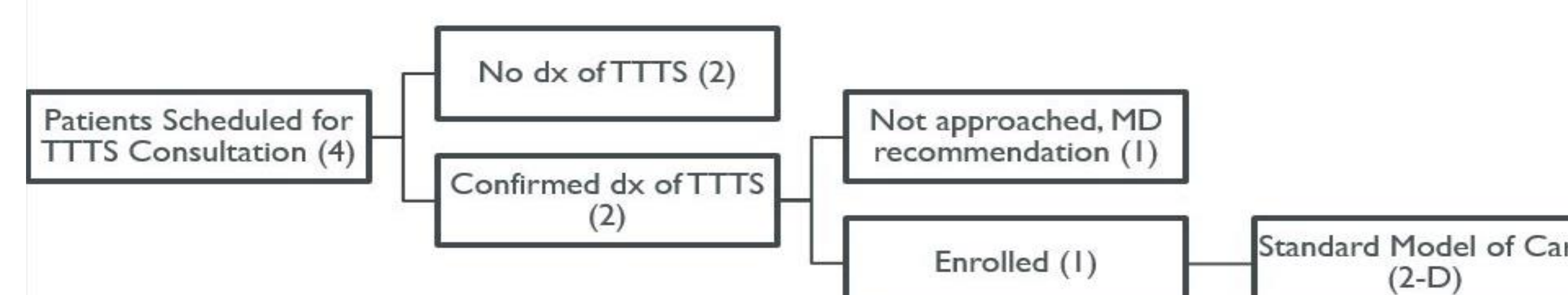
Figure 2. Screenshot of the 3-D model used in this study

METHODS

Table 1. Study Demographics

Eligibility Criteria	English-speaking pregnant women (18+ y/o) and parenting partner (if present)
	Multi-fetal pregnancy
	Confirmed Diagnosis of TTTS
	Referral and treatment at Colorado Fetal Care Center

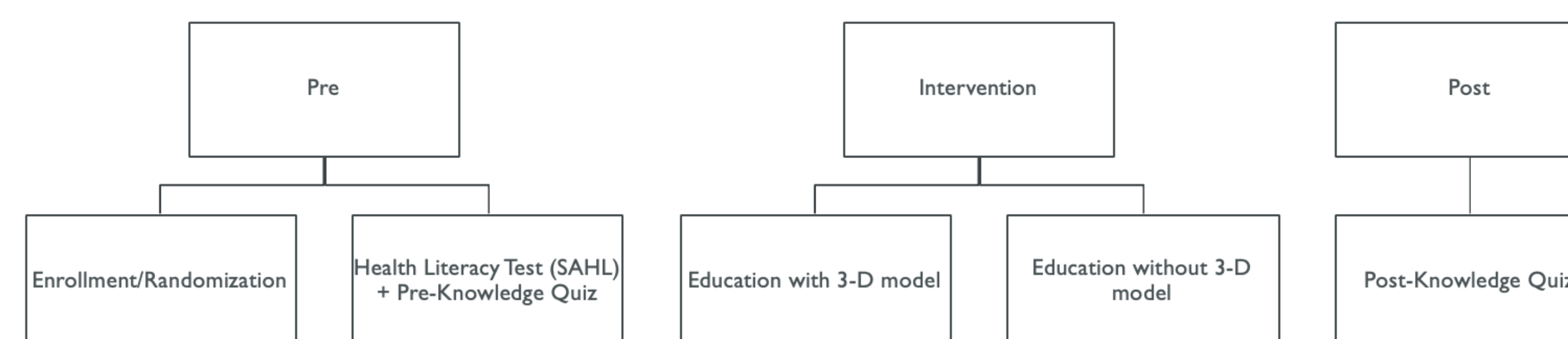
Randomization and Enrollment of Participants



MATERIALS

- The "Short Assessment of Health Literacy" (SAHL) test
 - Contains 18 questions that test the ability to understand common medical terms
- A "knowledge quiz" with 3 questions aimed at testing parents' knowledge of TTTS:
 - What is TTTS?
 - Why is TTTS bad for both twins?
 - What does laser treatment do?
 - The quiz was given before AND after the parents' consultation with their doctor to test their retention of information.

PROCEDURE



ANALYSES

- Pre and post quizzes will be graded against an answer key by two independent scorers.
- Inter-rater reliability of the quiz will be assessed using Cohen's kappa
- Unfortunately, there is insufficient data at this point to analyze the pre-post differences and the inter-rater reliability

DISCUSSION

Because this is a pilot study in its early stages, not enough data has been collected to determine pre-post differences, nor inter-rater reliability

STUDY IMPORTANCE

Previous studies have examined the efficacy and quality of 3-D models in medical settings, BUT these studies have either:

- used physical 3-D printed models, or
- used 3-D virtual models to visualize the cardiovascular system

This study is the first of its kind to apply virtual models to the fields of OG/GYN and perinatology

LIMITATIONS

Due to the relative rarity of TTTS in the general population, the number of women who are referred to the CFCC for treatment is low

REFERENCES

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