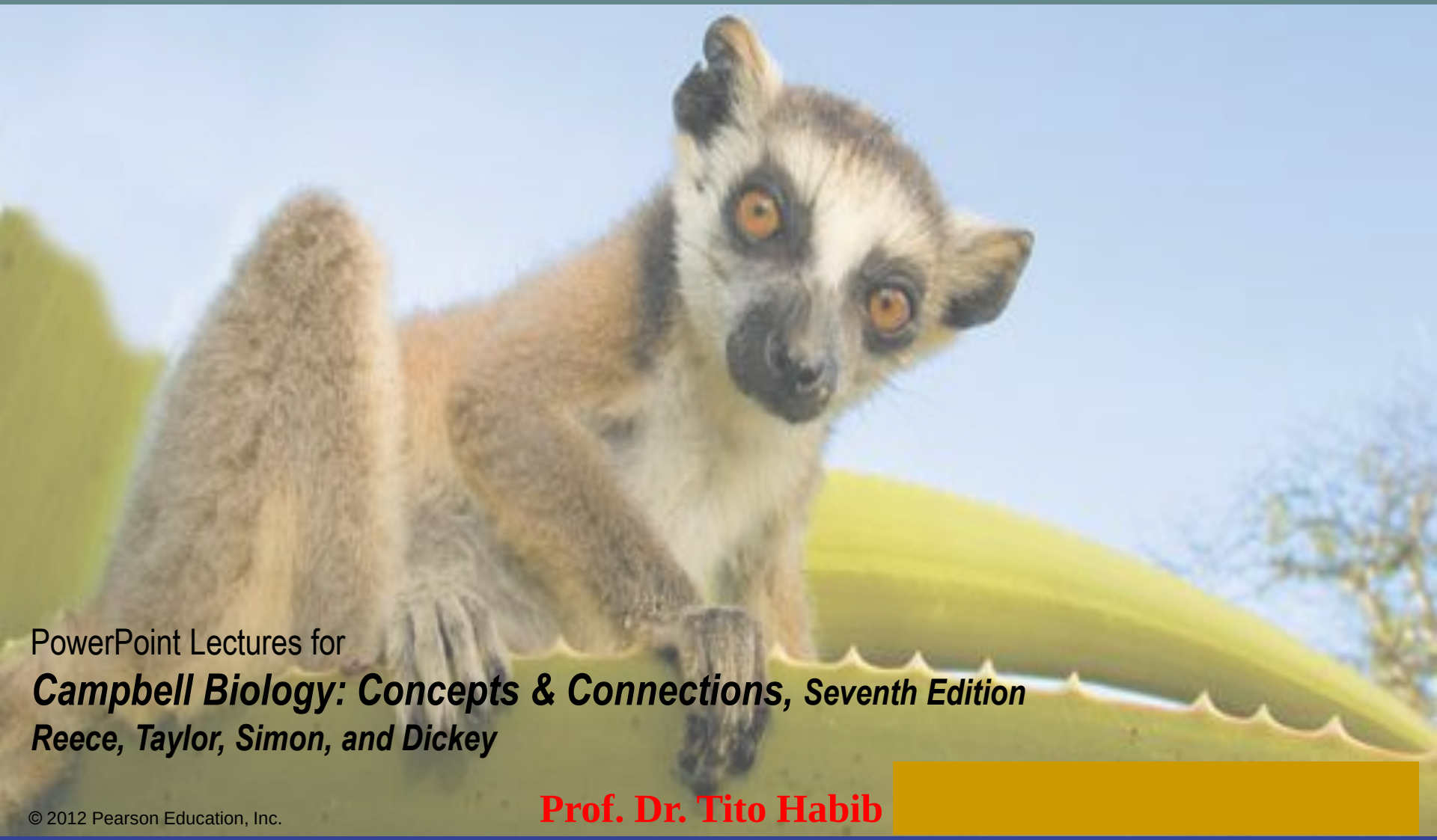
Genetic Testing

Chapter 2



PowerPoint Lectures for

***Campbell Biology: Concepts & Connections*, Seventh Edition**

Reece, Taylor, Simon, and Dickey

Prof. Dr. Tito Habib

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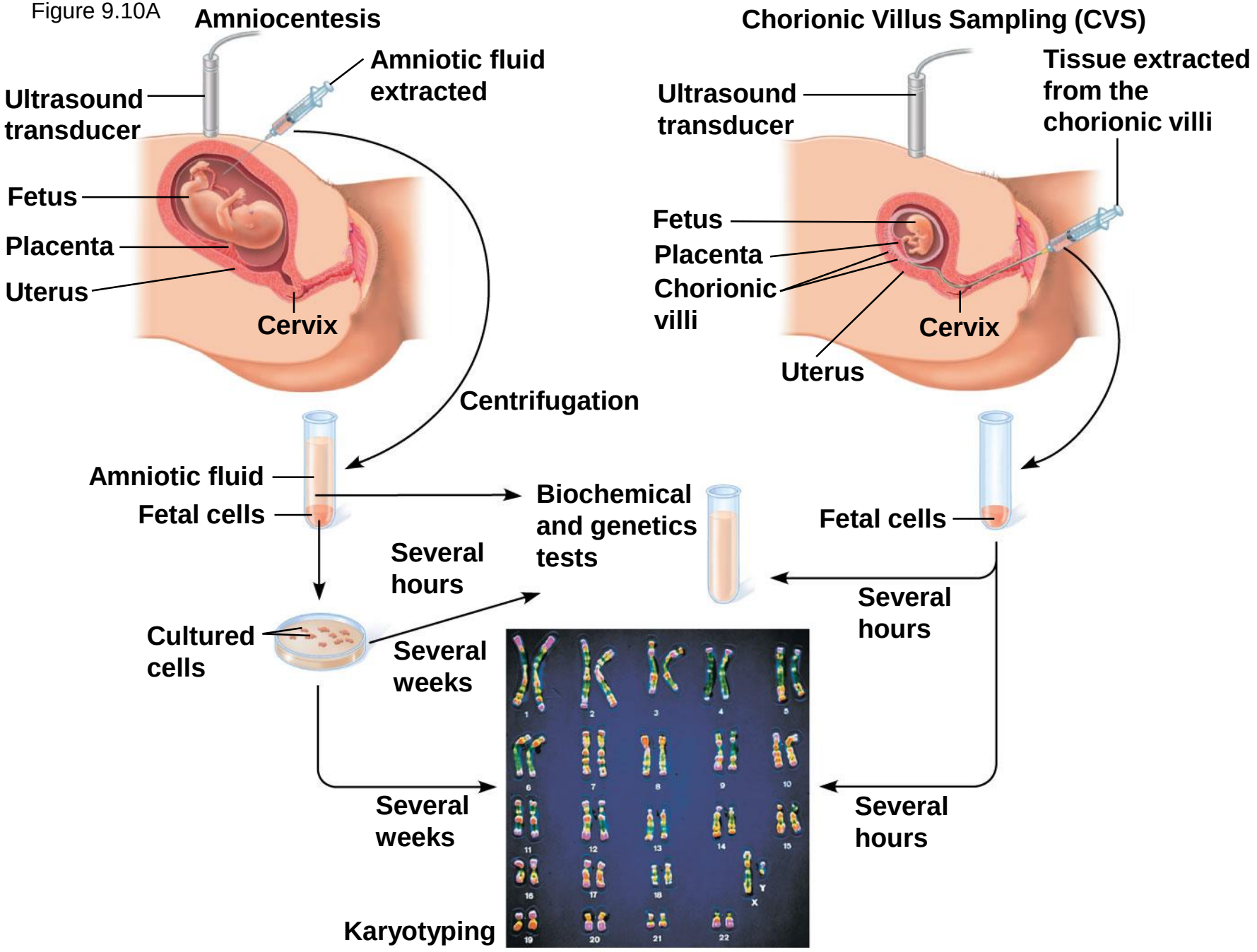
9.10 CONNECTION: New technologies can provide insight into one's genetic legacy

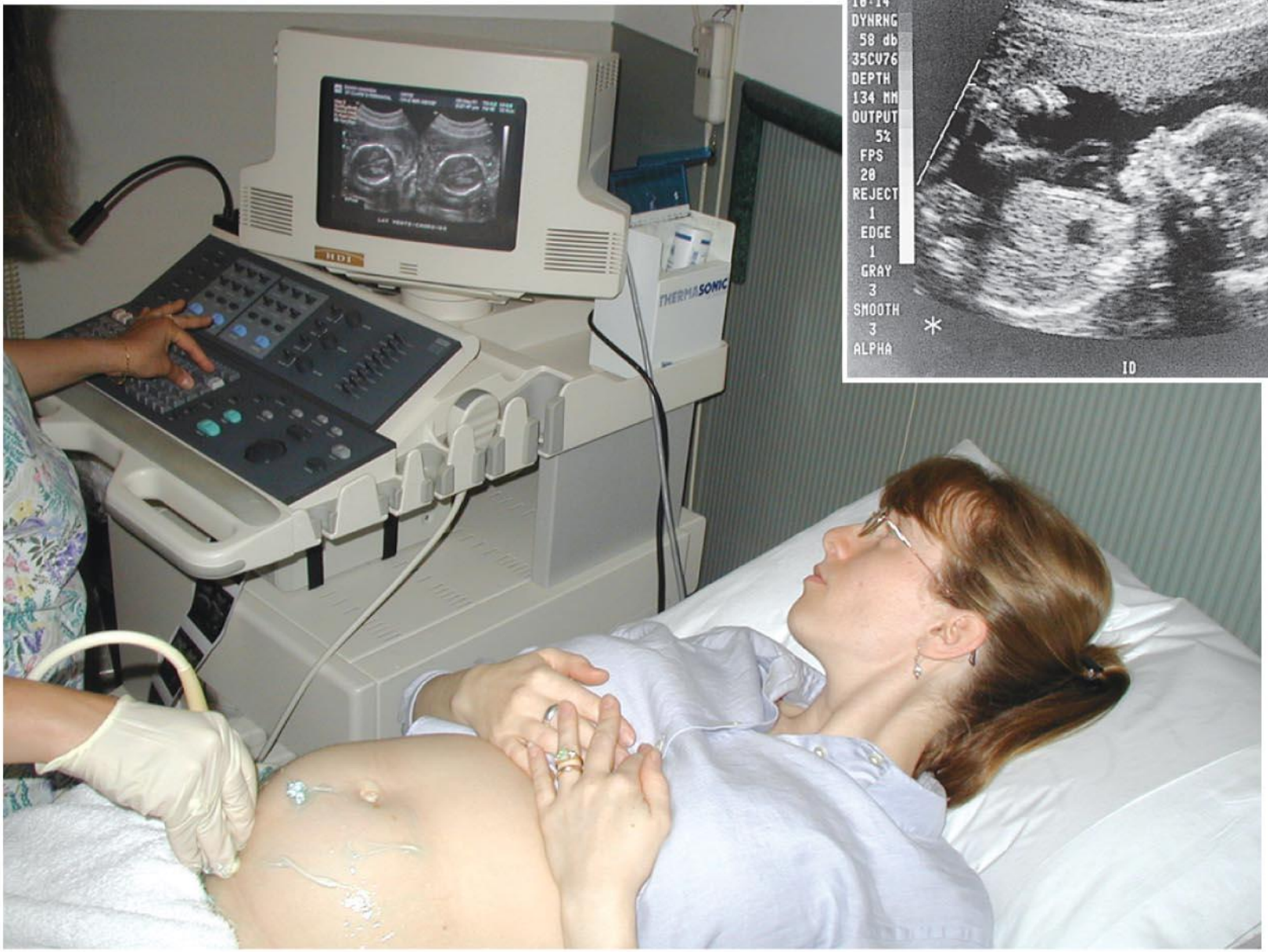
- New technologies offer ways to obtain genetic information
  - before conception,
  - during pregnancy, and
  - after birth.
- Genetic testing can identify potential parents who are heterozygous carriers for certain diseases.

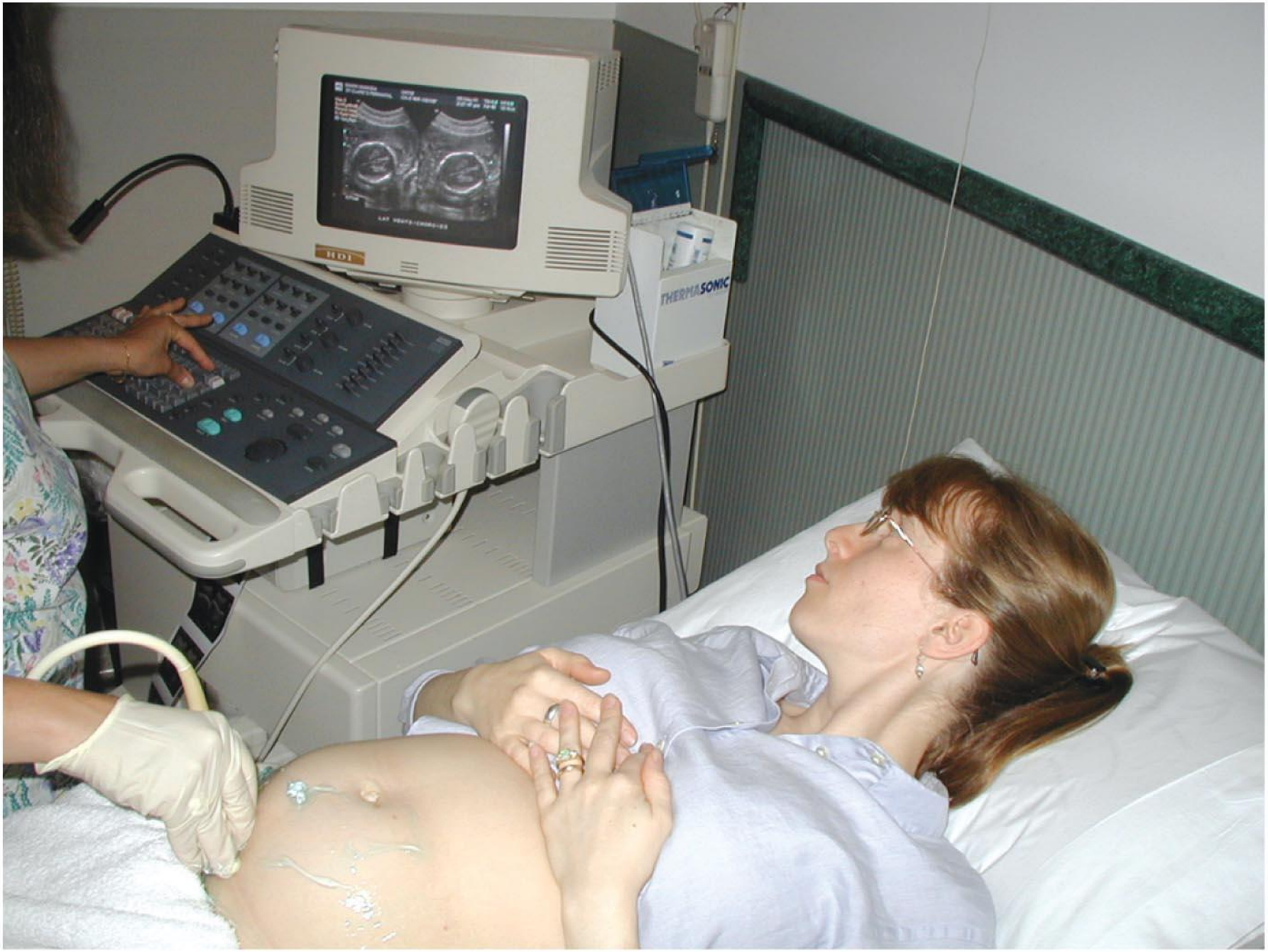
9.10 CONNECTION: New technologies can provide insight into one's genetic legacy

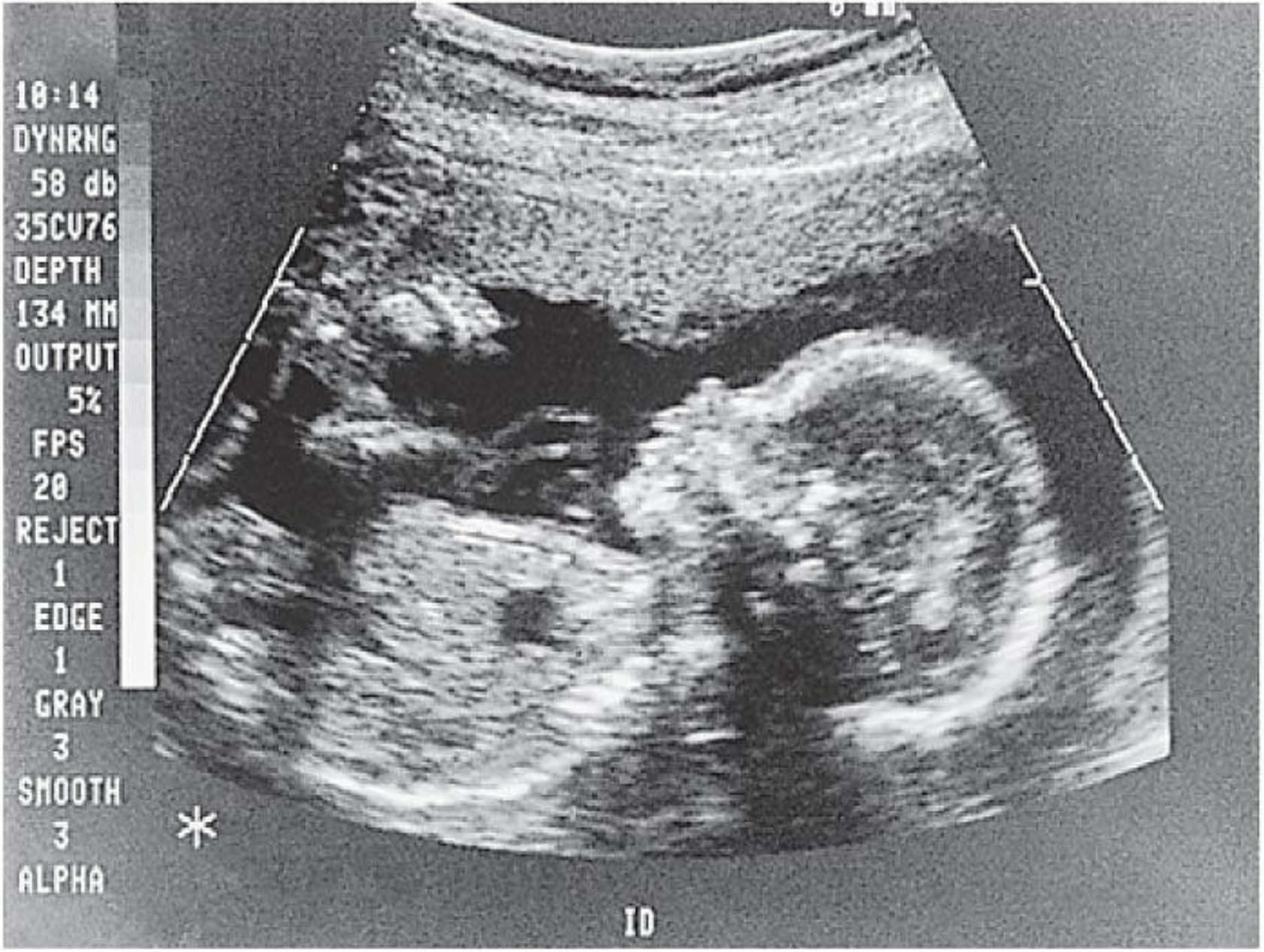
- Several technologies can be used for detecting genetic conditions in a fetus.
  - **Amniocentesis** extracts samples of amniotic fluid containing fetal cells and permits
    - karyotyping and
    - biochemical tests on cultured fetal cells to detect other conditions, such as Tay-Sachs disease.
  - **Chorionic villus sampling** removes a sample of chorionic villus tissue from the placenta and permits similar karyotyping and biochemical tests.

Figure 9.10A









9.10 CONNECTION: New technologies can provide insight into one's genetic legacy

- Blood tests on the mother at **14–20 weeks** of pregnancy can help identify fetuses at risk for certain birth defects.
- Fetal imaging enables a physician to examine a fetus directly for anatomical deformities. The most common procedure is **ultrasound imaging**, using sound waves to produce a picture of the fetus.
- Newborn screening can detect diseases that can be prevented by special care and precautions.