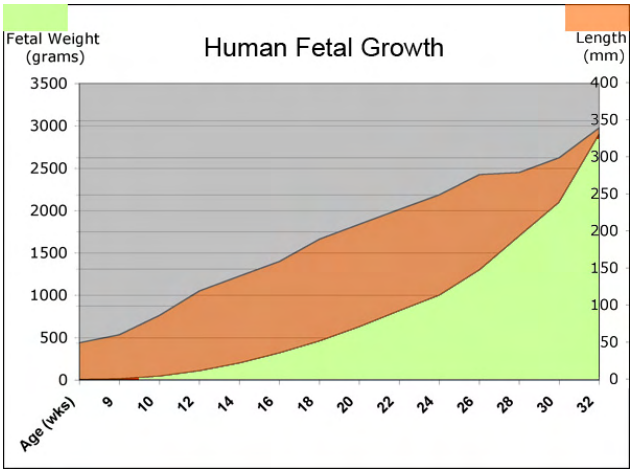
Practical 12: Embryology: Embryo to Fetus

Principal Teacher: Dr Mark Hill

Gametes	Fertilization	Blastocyst	Implantation	Embryo	Fetus
Menstrual Cycle			Placenta and Fetal Membranes		

Fetal change in Size



Fetal Growth

Aim:

Understand key events in human fetal development and abnormalities.

Key Concepts:

Fetal system development, endocrine, genital, neural, musculoskeletal, gastrointestinal tract, integumentary, respiratory, head and limb development, fetal growth (weight/length), late fetal events

Key Reading:

3. **Larsen's Human Embryology** Chapter 6.
4. **The Developing Human: Clinically Oriented Embryology** Chapter 6 and 20.

Online Resource:

Online resource for this section is **UNSW Embryology** (http://php.med.unsw.edu.au/embryology).

http://php.med.unsw.edu.au/embryology/index.php?title=BGDA_Practical_-_Fetal_Development

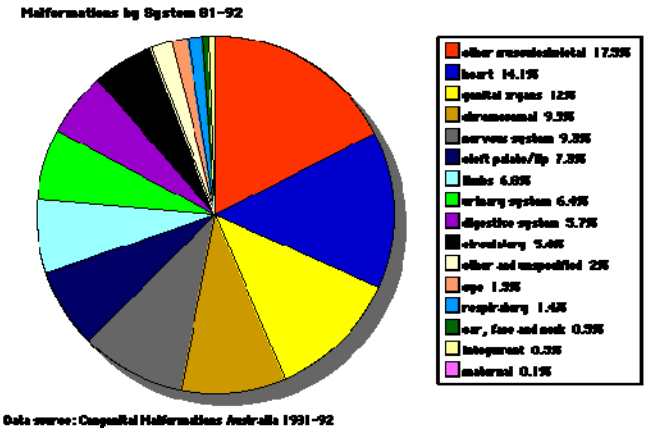
Introduction

The second and third trimesters cover the human fetal period. During this period extensive fetal growth (size and weight) occurs and organs and tissues continue to differentiate. Note that some fetal systems mature at different rates with some only maturing and functioning late in gestation or even postnatally. At the end of the fetal period with loss of placental support at birth many functional changes occur throughout the neonate. The important concept of "critical periods of development" will be introduced in this class.

There are many simultaneous events occurring throughout the embryo during this time and it is important in this class to gain only a broad overview to the key events. This will be done through the online materials you will work through in the practical.

Clinically, the second and third trimesters are times of extensive maternal change and diagnostic monitoring of the fetal developmental process. Note that abnormalities of fetal growth and development, as well as premature birth, can result in low birth weights, which have been hypothesised (fetal origins hypothesis) to correlate with future life-long health outcomes. There will not be time in this practical to discuss birth, postnatal, and abnormal development these topics will be covered elsewhere in your course. Construct your own notes and resources during the practical. It may also be useful to organise a similar timeline to that used in embryonic development.

Historic model of Human Birth (1770)



Australian Developmental Abnormalities by System

Notes

1. All events that occur in the 6 months cannot be covered in depth in today's two hour class.
2. All practical material is available online and content is permanently available through the web, as are additional resources.
3. Revise the earlier embryonic class (Practical 7) to understand preceding events.
4. There are many new terms introduced in the class. Either write down, or Cut n Paste into electronic documents, the terms and their definitions using the linked glossary (A-Z found at the bottom of each page) or the search window.
5. All timings are only approximate and refer to embryonic days from fertilization not clinical days from Last Menstrual Period (LMP).
6. Consider the maternal changes (not covered in this class) that also occur during this period.
7. Think about the fetal systemic changes that occur at birth and through the neonatal period.
8. Finally, think about the systems that continue to develop postnatally.