Foetal period
(Ninth Week to Birth)

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Foetal Period

- Period from the beginning of ninth week to birth.
- Embryo develops into a recognizable human being.
- Primordial of all the major systems is formed.
- Rate of growth of the body is very rapid.
- Rate of growth of head is slow as compared to rest of the body.
- Maturation of tissues and organs.
- Foetus gains weight.
- Complete development of placenta, umbilical cord & foetal membranes.
How to measure the length of the foetus?

- CRL (crown-rump length): sitting height
- CHL (crown-heel length): standing height
Approximate length & weight during foetal period

<table>
<thead>
<tr>
<th>Age (weeks)</th>
<th>CRL (cm)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>8.7</td>
<td>45</td>
</tr>
<tr>
<td>13–16</td>
<td>9–14</td>
<td>60–200</td>
</tr>
<tr>
<td>17–20</td>
<td>15–19</td>
<td>250–450</td>
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<tr>
<td>21–24</td>
<td>20–23</td>
<td>500–800</td>
</tr>
<tr>
<td>29–32</td>
<td>28–30</td>
<td>1400–2000</td>
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<tr>
<td>33–36</td>
<td>31–34</td>
<td>2200–2900</td>
</tr>
<tr>
<td>38</td>
<td>36</td>
<td>3000–3400</td>
</tr>
</tbody>
</table>
Trimesters of pregnancy

The gestation period is divided into 3 trimesters, each trimester lasting 3 months.
Third Month of Pregnancy

- Head constitutes half of the total CHL.
- Face is broad.
- Eyes are widely separated & the eyelids are united by epithelial fusion.
- Ears are set low.
Primary ossification centre appear in the cranium and long bones towards the end of 1st trimester.

Intestinal coils withdraw from the extraembryonic coelom, in the proximal part of umbilical cord, into the abdominal cavity.
Fourth & Fifth Months of Pregnancy

- Length of the foetus increases rapidly.
- Eyebrows & head hairs are visible.
- **Quickening:** first movements of foetus felt by the mother.
Contd........

Four Months

Uterus

Vagina

Cervix

Placenta

Umbilical Cord

Fetus

Amniotic Fluid

Five Months

Uterus

Vagina

Cervix

Placenta

Umbilical Cord

Fetus

Amniotic Fluid
• Body surface is covered with fine hair, called **lanugo hair**.

• A protective whitish fatty coating called **vernix caseosa** begins to form on baby's skin.
Sixth Month of Pregnancy

- Skin of the foetus is reddish, wrinkled & translucent.
- Rapid eye movements begin.
Seventh & Eighth Months of Pregnancy

- Foetus has a well rounded contour due to deposition of fat.
- Lungs and pulmonary vasculature develop sufficiently to allow adequate gas exchange.
- CNS matures.
• Eyelids open at 26 weeks.
• Toe nails become visible.
• Bone marrow takes over the function of erythropoiesis from the spleen.
At the end of Ninth Month

- Skull & abdominal circumferences become nearly equal.
- Chest is prominent and slight protrusion of breasts in both sexes.
- Testes usually occupy scrotum in the full-term male foetuses.
Foetal Membranes

- The foetal membranes & placenta separate the developing foetus from the endometrium.

- **Consist of:**
  - Chorion
  - Amnion
  - Umbilical vesicle
  - Allantois
Placenta

- An organ that acts as a primary site of nutrient & gas exchange between the foetus and the mother.

- 2 components:
  - **Foetal**: develops from chorionic sac.
  - **Maternal**: develops from gravid endometrium (decidua).
Foetal & Maternal Components of Placenta
Maternal surface of the expelled Placenta
Foetal surface of the Placenta
REFERENCES


2. Langman’s Medical Embryology, 11\textsuperscript{th} Edition.

3. I.B. Singh. Human Embryology, 10\textsuperscript{th} Edition.
MCQs

1. Foetal period extends from:
   a) Third week to eighth week of development
   b) Fourth week to ninth week of development
   c) Ninth week to birth
   d) Twelfth week to birth
2. Foetal component of the placenta develops from:

a) Allantois
b) Connecting stalk
c) Definitive yolk sac
d) Chorionic sac
3. Quickening occurs in:

a) Third month of pregnancy
b) Fourth month of pregnancy
c) Fifth month of pregnancy
d) Sixth month of pregnancy
4. The part of decidua that covers the foetus:

a) Decidua basalis
b) Decidua capsularis
c) Decidua parietalis
d) None of the above
5. Rapid eye movements begin in:
   a) Fifth month
   b) Sixth month
   c) Seventh month
   d) Eighth month