Fertilization

• Males
  – sperm produced every 24-48 hours
  – begins at puberty

• Females
  – ovum produced prenatally
  – 400 available for potential fertilization
Fertilization

Stages of Prenatal Development

- Zygotic (germinal) stage
- Embryonic stage
- Fetal stage
- Critical period

PRENATAL DEVELOPMENT: Critical Periods

<table>
<thead>
<tr>
<th>Week 3</th>
<th>Brain and spinal cord begin to form from neural tube</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks 3-4</td>
<td>Placenta and umbilical cord, eyes and primitive heartbeat</td>
</tr>
<tr>
<td>Week 5</td>
<td>Arms and leg buds</td>
</tr>
<tr>
<td>Week 8</td>
<td>Organogenesis complete; now one inch long, weight 1/30th oz.</td>
</tr>
</tbody>
</table>
Zygotic Stage

- Conception to 14 days
- Rapid Cell Division
- Process of Implantation

Day One

Implantation
Embryonic Stage

- 2 weeks to 8 weeks
- Cell division
- Cell differentiation: Embryogenesis
- Three layers of cell division
  - endoderm
  - mesoderm
  - ectoderm

One Month
Fetal Stage

• 8 weeks to birth
• 3rd month: period of sexual emergence
• 5th month: reflexes are present
• Zone of viability: 24 weeks
Themes in Prenatal Development

• Continuity vs. Discontinuity
• Early Experiences vs. Later Experiences
• Passive vs. Active