Human Growth and Development

1. From Fertilization to Embryo
2. One sperm fertilizes an egg, usually in the fallopian tube
3. When he sperm’s nucleus joins with the nucleus of he the egg, the egg becomes fertilized
4. A membrane forms around the fertilized egg so that no other sperm may enter
5. Fertilized egg, called a zygote, travels down the fallopian tube toward the uterus
6. Journey takes 5 to 6 days
7. During the trip, the zygote undergoes cell division many times.
8. 11 to 12 days after fertilization, the zygote has become a tiny ball of cells called an embryo
9. Implantation occurs. Implantation is the embedding of the embryo in the thick, nutrient-rich lining of the uterus.
10. From Embryo to Fetus
11. After implantation, the placenta begins to grow. The placenta is a special two-way exchange organ.
12. Has network of blood vessels that provides the embryo with oxygen and nutrients from the mother’s blood
13. Wastes produced by the embryo are removed in the placenta and are carried away by the mother’s blood
14. Embryo’s blood and mother’s blood flow very near each other in the placenta, but they normally do not mix
15. Weeks 1 and 2
16. Pregnancy weeks are counted from the first day of the woman’s last menstrual period
17. A normal pregnancy lasts about 280 days, or 40 weeks, from that point
18. Weeks 3 and 4
19. Fertilization takes place at about the end of week 2
20. In week 3, the zygote moves to the uterus
21. At the end of week 4, implantation is complete and woman is pregnant
22. Embryo’s blood cells begin to form
23. Embryo about 0.2 mm long
24. Weeks 5 to 8
25. Weeks 3 to 6 of embryonic development
26. Embryo becomes surrounded by a thin membrane called the amnion, which fills with amniotic fluid and protects the growing embryo from bumps and injury
27. Week 5 – umbilical cord forms. It connects the embryo to the placenta
28. Heart, brain, other organs, and blood vessels start to form
29. Weeks 5 to 6 – eyes and ears take shape and spinal cord begins to develop
30. Week 6 – tiny limb buds appear. They will become arms and legs
31. Week 8 – muscles start developing. Nerves grow into the shoulders and upper arms. Fingers and toes start to form
32. About 16 mm long, can swallow and blink
33. Weeks 9 to 16
34. Week 9 – may begin to make tiny movements
35. After week 10, the embryo is called a fetus
36. Week 10 – about 36 mm long
37. Week 13 – fetus’s face begins to look more human
38. Fetal muscles grown stronger and fetus can make a fist and begins to move
39. Fetus grows rapidly, it triples its size within a month
40. Week 16, the fetus is about 108 mm to 116 mm long
41. Weeks 17 to 24
42. By week 17, fetus can make faces
43. Week 18 – fetus can hear sounds through the mother’s uterus and may jump at loud noises
44. Week 23 – fetus’s movements may be quite vigorous
45. In weeks 17 to 24, fetus grows to between 25 cm to 30 cm in length
46. Weeks 25 to 36
47. Fetus’s lungs are well-developed by not fully mature. Fetus still gets oxygen from tis mother through the placenta
48. By week 32, fetus’s eyes can open and close. Studies show that fetuses respond to light.
49. After 36 weeks, fetus is almost ready to be born.
50. Birth
51. 37 to 38 weeks,, fetus is fully developed
52. Full term pregnancy usually lasts about 40 weeks
53. As birth begins, mother’s uterus begins a series of muscular contractions called labor.
54. Usually these contractions push the fetus through the mother’s vagina and a baby is born
55. Newborn is still connected to placenta by its umbilical cord, which is tied and cut
56. Soon, mother expels the placenta and labor is complete
57. From Birth to Death
58. Infancy and Childhood
59. Generally, infancy is form birth to age 2
60. During infancy, there is quick growth. Baby teeth appear.
61. As nervous system develops, the infant develops more coordination and begins to walk
62. Childhood generally lasts from age 2 to puberty
63. Childhood is another period of fast growth
64. Baby teeth replaced by permanent teeth
65. Muscles become more coordinated
66. Adolescence
67. Form puberty to adulthood
68. During puberty, a person’s reproductive system becomes mature
69. Adulthood
70. From about age 20 to age 40 is considered young adulthood
71. People are at the peak of their physical development
72. Around age 30, changes associated with aging begin, such as loss of flexibility in muscles, deterioration of eyesight, increase in body fat, and some loss of hair
73. Aging process continue in middle age, between 40 and 65 years old
74. Hair may turn gray, athletic abilities will decline, skin may wrinkle
75. A person who is more than 65 years old is considered an older adult
76. The aging process continues, but many older adults lead very active lives.