

Chapter 27
Study Guide for Male Reproduction

1. What are the human primary sex organs and where are they located?
2. What are the secondary sex organs?
3. What is the advantage of sexual reproduction?
4. What are the sex cells called?
5. What is a zygote?
6. How many chromosomes are in the human nucleus?
7. How many autosomes are in the human nucleus?
8. What symbols are used to describe the sex chromosomes?
9. Which parent determines the sex of the embryo?
10. During meiosis, what happens during a process known as crossing-over?
11. How is meiosis different than mitosis?
12. During a male orgasm, 2 to 5 mL of fluid is expelled. Define this volume in terms of a percentage of its content:
13. Which two structures are connected by the spermatic cord? What is located in the spermatic cord?
14. What are the two main structures found within a testis' lobule? What is the significance of each structure?
15. Outline all the tubular structures through which sperm will travel:
16. How many days does it take before a spermatogonium becomes a mature sperm? How long is a sperm viable? How many sperm are formed in a day?
17. What cells form the blood-testis barrier and why is it needed?
18. What are the three cylindrical bodies of erectile tissue in the penis and what structure is located in the center of each body?
19. Study the brain-testicular axis and know how it regulates spermatogenesis:

20. Spermatogonia produce two type of daughter cells. What are they called and how are they different from each other? Which daughter cell becomes the primary spermatocyte? Are they $2n$ or n ?
21. What is the chromosome number ($2n$ or n) of secondary spermatocytes and spermatids? What is their cell count and how are they connected?
22. What is the transformation between a spermatid and a mature sperm?

Note: Extra credit bonus points on Unit Exam/ The Male Response (Figure 27.18)