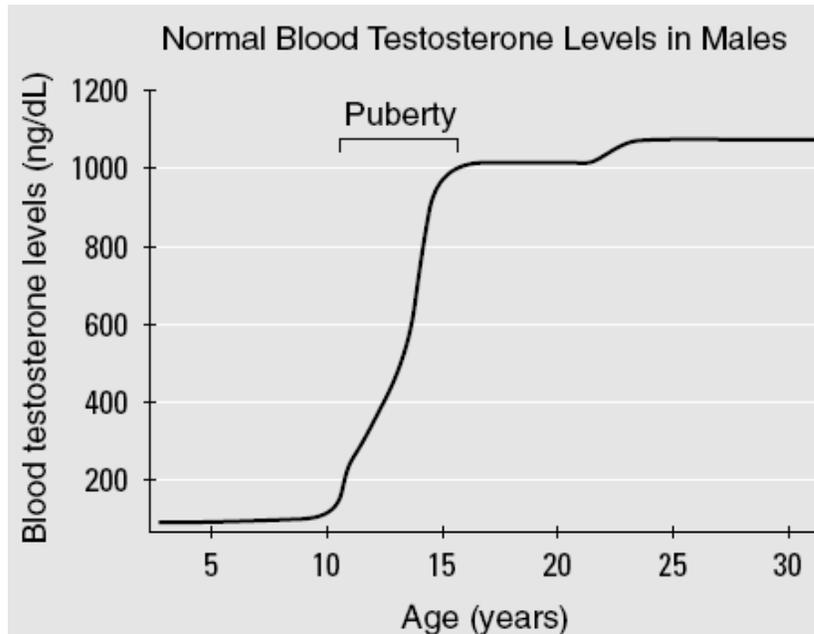


Thought Lab 14.2: Testosterone and Male Development Answer Key

Answers to Procedure Questions

1. & 2.



- It can be seen from the graph (by looking at the jump in testosterone levels), that puberty begins at age 11 in average males.
- The development of secondary sex characteristics in males is dependent upon changing levels of testosterone. These changes include: muscle development, formation of facial and body hair, deepened voice, broadened shoulders, and more aggressive behaviour. Testosterone is responsible for the development and normal functioning of the male reproductive organs. Testosterone is also required for spermatogenesis in the mature male.

Answers to Analysis Questions

- Yes. Puberty ends when testosterone levels become stabilized. In this particular data set, it appears to be around 18 years, where testosterone levels remain constant in the blood.
- It can be argued that a certain level of testosterone (androgens) is required for the growth of facial hair, since facial hair does not begin to grow until testosterone levels in the blood rise. It is not accurate to say that the presence of testosterone alone causes facial hair to grow, as testosterone is present in low levels in the blood in males from 1-8 years, and there is minimal production of facial hair during these years.
 - An experiment to test the hypothesis that testosterone causes facial hair growth in males is to compare blood testosterone levels with the amount of facial hair (number of hairs per given area) in a large sample of males of a variety of ages. An alternate method would be to monitor the development of certain males through puberty and measure testosterone levels, and correlate it with their corresponding facial hair growth.