

# BIONE

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### CURIOSITY(Tenth Issue)

**Question:** Gametes are formed by the process of meiosis, i.e. reductional division. But in case of honey bee, it is seen that the male gametes and the male honey bees have the same chromosome number 16 which should have been 8 after meiosis. Why?

Anisha Roshni, H.S. 2<sup>nd</sup> year, cotton College

**Answer:** The female honey bee contains diploid number of chromosome, i.e. 32 and it is developed from fertilized egg. But the male honey bee is developed from unfertilized egg by the process of parthenogenesis and becomes haploid having chromosome number 16. Here, the sperm is produced by ordinary cell division (mitosis) instead of meiotic cell division. So the male gametes and male honey bees (drone) have the same chromosome number 16.

**Question:** Why fingerprints of every individual are different from one another?

Richa Malakar, Class 12, Maharshi Vidya mandir

**Answer:** Fingerprints are formed while a growing baby is inside mother's womb and several factors are responsible for providing uniqueness to every individual such as genetic makeup, position in the womb, amniotic fluid flow and umbilical cord length. In the epidermis layer, fingerprints are formed where cell growth is very rapid, which causes the layer to fold and form various patterns.

**Question:** While exercising how does fat burn occur? What happens to adipose tissue? Do the adipose cells die after vigorous exercise?

Shabrina Yesmin, Class X, T.C. Govt girls H.S. and M.P. School

**Answer:** Our bodies have a certain number of fat cells in the adipose tissue, which may increase or decrease in size depending on our nutrition and activity. It is regulated by the calorie balance. Fat cells will remain always same in size if the calories consumed equal to the calories utilized each day. However, if we consume excess calories, the size of our fat cells will increase. If you burn extra calories through exercise, the size of the fat cells will decrease due to utilization of the deposited fat for production of energy. The cells do not die but their size is reduced.

Nearly 84% of fat molecules are exhaled as the end product their metabolism, carbon dioxide. Another 16 percent leave the body as water, including sweat, tears, urine, and other liquids.