



Factor causing elongation or shortening of pregnancy

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Long gestation period

- ▶ Gestation length is the period from conception to parturition.
- ▶ Estimates of the GL among cattle are within the range of 270-292 days.
- ▶ The normal gestation length in sheep and goats is about 150 days.
- ▶ Normal mares have a broad range of gestation. It is very normal for mares to carry a fetus for 320 to 380 days. In general 330 days (11 months) is the most commonly cited gestation length.
- ▶ The length varies between breeds and individuals.
- ▶ Many factors may lead to elongation of gestation period in animals
- ▶ It may be a normal or abnormal factors.

A- Normal factors leading to long gestation period

- ❑ The length of gestation period differs between breeds, also age of dam, sex of calf, sire, years, and interaction of sex and breed, parity of the cow and time of birth were associated with differences in gestation length.

1- Breeds:

- ❑ Ayrshire.....278day
- ❑ Brown Swiss288day
- ❑ Guernsey282day
- ❑ Holstein-Friesian 279day
- ❑ Jersey277day

2- Sex of calves

- ✓ In cows and mares male fetuses are carried 1-2days longer than female fetuses (Bull calves tended to be carried longer than heifer calves).
- ✓ Studies have shown colts (المهور) tend to gestate 2 to 7 days longer than fillies (المهترات).

3- Weight of calves

- ✓ In heaviest calves (>40 kg), GL was 3-4 days longer in comparison with the lightest calves (≤ 34 kg).
- ✓ Male fetus in cattle also weight 2-10 lbs. more than female fetus.

4- Age of the dam

- Older cows carry fetuses 1-2days more than young cows in their 1st and 2nd gestation.
- Mean Gestation Length for heifers and cows, respectively, were
 - ❖ 277.8 and 279.4 d for Holsteins,
 - ❖ 278.4 and 280.0 d for Jerseys,
 - ❖ 279.3 and 281.1 d for Milking Shorthorns,
 - ❖ 284.8 and 285.7 d for Guernsey's.

5- Time of birth

- ❖ cows born during winter and spring have slightly longer gestation periods.
- ❖ For Holstein cows, Gestation Length was 2.0 days shorter for October conceptions than for January and February conceptions;
- ❖ mares foaling during the late spring and summer months (long days) tend to have a shorter gestation length than those foaling in January or February.
- ❖ Foals born from January – April have gestation periods about 10 days longer than foals born from May – September.
- ❖ Exposing bred mares to artificially lengthened days during the latter third of gestation has been shown to shorten gestational length by about 10 days.

6- Parity

- the 1st and 2nd pregnancy is longer than the 3rd pregnancy in the same female. The female in its 3rd pregnancy have a period of 10 days less than 1st and 2nd pregnancy.
- For Holstein cows, Gestation Length was 4- 5 days shorter for multiple births of the same sex than for single-birth.

7- The nutrition of a mare also influences gestation length.

- Thin mares (condition score of 4 or below) tend to have a slightly longer gestation length than mares in a more optimal body condition (condition score of 5 to 8).

8- The sire

- The sire have a potent influence in determining the duration of pregnancy because, irrespective of the breed of the dam, the mean gestation lengths of the cross-bred offspring were almost intermediate between those of their parents.

▪ للأب تأثير قوي في تحديد مدة الحمل لأنه ، بغض النظر عن سلالة الام ، فان متوسط أطوال الحمل للنسل الهجين يكون متوسطاً تقريباً بين تلك الخاصة بالوالدين.

B- Abnormal factors leading to long gestation period

1- Vitamin A deficiency:

- This condition leads to elongation of gestation period for 1-4 weeks than normal.

2- Anomalies in the fetus:

A- Fetal giantism


- This case will lead to gestation length elongated for 20-90 days or more.

B- Central Nervous System anomalies

- This case will lead to gestation length elongated for 20-230 days or more.

C- Cerebral Hernias

- Only four cases were recorded in Holstein cows, and the case resulted in dystocia due to the large size of the fetus after extending the pregnancy period from 20-60 days.



3- In ewes feeding on *Veratrum californicum* (نوع من النباتات) during the first 14 days of pregnancy, this will cause severe deformities in the head and face of the fetus and lead to dystocia due to prolongation of pregnancy for more than 230 days (giant fetus).

4- In sheep, cows and dogs, delayed parturition has been produced with large, continued injections of progesterone most fetuses die in the month following normal length of gestation and become macerated or mummified.

C- Abnormal causes of short gestation length

- 1) Malnutrition
- 2) Starvation
- 3) Sever stress
- 4) Deficiency diseases

These conditions may cause abortion or short gestation periods in the last period of pregnancy.