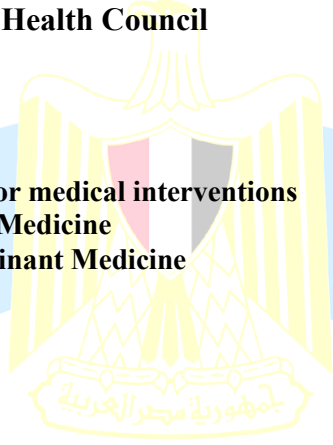




Guideline for medical interventions
Veterinary Medicine
Large Ruminant Medicine



Downer Cow Syndrome (Recumbent cow syndrome)

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Definition

Downer Cow Syndrome (DCS), also known as *non-ambulatory cow* or *recumbent cow syndrome*, describes cattle—usually adult dairy cows—that remain in **sternal recumbency for more than 12–24 hours and are unable to rise** despite being alert and able to eat and drink. It is most commonly seen in **periparturient and early-lactation cows**.

DCS is a major welfare and economic issue, with recovery rates generally **below 50%** due to progressive muscle and nerve damage.

Economic Impact

Downer cows result in losses from:

- Reduced milk yield
- Veterinary treatment

- Long-term welfare decline
- Cow mortality & culling

Categories

- **Alert Downer**
 - Conscious, normal appetite
 - Can maintain sternal recumbency
 - No major systemic illness
- **Non-Alert Downer**
 - Depressed, lethargic, abnormal mentation
 - Often indicates systemic infection or neurological disease

3. Etiology (Primary Causes)

DCS is the result of a primary issue leading to prolonged recumbency, followed by secondary muscle/nerve damage.

1- Metabolic Causes

- Hypocalcemia (Milk Fever) – Most common cause, especially periparturient cows.
- Hypomagnesemia
- Hypophosphatemia
- Ketosis (primary & secondary)
- Fatty liver disease

2- Traumatic / Mechanical Causes

- Calving trauma
- Nerve injuries (sciatic, peroneal, tibial)
- Musculoskeletal injuries
- Falls or slipping

3-. Systemic Illness

- Severe mastitis
- Sepsis
- Toxic

Pathogenesis

Prolonged recumbency leads to:

4.1. Secondary Injuries

- **Ischemic necrosis** of large hindquarter muscles
- **Peripheral nerve damage** due to compression
- **Compartment-like syndromes** from intramuscular pressure

The extent of secondary damage strongly predicts survival. Up to **70%** can recover if secondary lesions are minimized.

Clinical Signs

1- General Observations

- Bright, alert demeanor (in "alert downers")
- Normal appetite and rumination
- Persistent sternal recumbency (may attempt to rise)
- Mild to severe reduction in milk yield

2- Neuromuscular Signs

- Inability to bear weight on hindquarters
- Pain responses altered (nerve damage)
- Muscle swelling, stiffness

3- Non-Alert Signs

- Depression, lethargy
- Systemic illness: fever, tachycardia

Diagnosis of Downer cow

1- Clinical Examination

- Assess mentation (alert vs non-alert)
- Evaluate limbs for pain, nerve paralysis
- Palpate muscles for swelling or heat

2- Laboratory Diagnostics

- **Low calcium, phosphorus, magnesium**
- **Elevated AST** → indicates muscle damage
- **Decreased Hb, PCV, RBC**
- **Elevated WBC** → inflammation/infection

These lab findings help diagnose underlying metabolic causes and assess severity.

Treatment and Management

1- Treatment of Underlying Cause

- **Calcium therapy** for hypocalcemia
- **Magnesium/phosphorus supplementation**
- **Dextrose/ketosis management**
- **Antibiotics** for infectious causes

2-Supportive Care

Supportive care is *critical* and often determines outcome:

- Deep, dry bedding to prevent pressure sores
- Frequent repositioning (every 2–3 hours)
- Hip lifters, slings, flotation tanks where available
- Access to water & feed within reach
- Protection from cold/heat stress

3-Physiotherapy

- Passive limb movement
- Massage to increase circulation
- Encouraging attempts to rise (assisted lifting)

Prognosis

- Recovery rate generally < **50%** due to secondary muscle/nerve injury.
- Alert downers have a significantly better prognosis than non-alert downers.
- Prognosis worsens after >**48 hours** recumbency.

Prevention Strategies

1- Nutritional Management

- Balanced calcium–phosphorus ratio
- Prevent negative energy balance
- Avoid over-conditioning (fat cow syndrome) at periparturient period

2-Calving Management

- Proper assistance
- Avoiding prolonged dystocia
- Post-partum mineral supplementation

3-Environmental Safety

- Non-slip floors
- Adequate space
- Clean bedding

4-Early Detection & Intervention

- Prompt treatment of milk fever
- Monitor high-risk animals (older cows, high producers)

References



Constable, P. D., Hinchcliff, K. W., Done, S. H., & Grünberg, W. (2017). *Veterinary medicine: A textbook of the diseases of cattle, horses, sheep, pigs and goats* (11th ed.). Elsevier.

Kumari , A. , Kumar Jain , V. , Kumar Nehra , A. et al. (2022). Assessment of haematological and biochemical alterations in recumbent buffaloes . Biological Rhythm Research 53 (11): 1670 – 1691 .

Felix, S.U., Pauline, C.N., Afolabi, M.S., Darma, B.M., Lushaikyaa, A. and Njideka, A. (2024). Downer-cow Syndrome. In *Periparturient Diseases of Cattle*, T. Rana (Ed.). <https://doi.org/10.1002/9781394204007.ch12>

Simões, J., Lei, M.C., Stilwell, G. (2025). Downer Cow Syndrome. In: Simões, J. (eds) *Encyclopedia of Livestock Medicine for Large Animal and Poultry Production*. Springer, Cham. https://doi.org/10.1007/978-3-031-52133-1_317-1