

NURSING & MANAGEMENT OF THE DOWN COW

There are many different causes for a 'down' cow (including milk fever) as listed in the table below, but 'downer cow syndrome' is the pathology or problems that develop due to being down.

Strictly, the downer cow is defined as one that has been down for longer than 24 hours, is not suffering from milk fever, is in sternal recumbency, there is no obvious cause and is usually related to calving.

No matter what the initial cause of recumbency was, after as little as six hours down on a hard surface, muscle and nerve damage in the leg on which the cow is laying on will become the main reason why the cow cannot get up, despite diagnosis and treatment of the primary cause by your vet.

Some Common Causes For The 'Down' Cow

<p>TRAUMATIC</p> <ul style="list-style-type: none"> • Pelvic fractures • Sacroiliac luxation • Gastrocnemius tendon luxation • Dystocia <ul style="list-style-type: none"> - Ruptured uterus, haemorrhage, exhaustion 	<p>METABOLIC</p> <ul style="list-style-type: none"> • Hypocalcaemia • Hypomagnesaemia • Hypophosphataemia • Fat cow syndrome (Fatty Liver) • Rumens acidosis
<p>NEUROLOGICAL</p> <ul style="list-style-type: none"> • Obturator nerve paralysis <ul style="list-style-type: none"> - Usually follows dystocia • Sciatic nerve paralysis <ul style="list-style-type: none"> - Following dystocia, prolonged recumbency, struggling to rise • Peripheral nerve paralysis <ul style="list-style-type: none"> - Peroneal/tibial paralysis due to trauma/recumbency • General <ul style="list-style-type: none"> - BSE, botulism, tetanus 	<p>TOXAEMIA</p> <ul style="list-style-type: none"> • Acute E. coli mastitis • Acute metritis • Other conditions <ul style="list-style-type: none"> - RDA/volvulus, peritonitis, wire etc

Whilst a cow remains unable to rise, it is essential that everything is done to prevent development of downer cow syndrome which, if develops, will only perpetuate the problem and worsen prognosis. Careful dedicated nursing by the stockman is the only way to prevent this.

It is vital to understand if the cow cannot be provided with a clean, dry and comfortable environment with adequate nursing, the animal should be euthanased before they are allowed to suffer.

THE VET VISIT

The aim is to identify the cause of recumbency and judge the degree of downer cow syndrome. In order to make a diagnosis as well as an accurate prognosis, it is essential the stockman relays as much information to the vet as possible...

Calving

1. When did the cow calve?
2. Was there any assistance with calving? If yes how much traction was used?
3. Was the calf dead or alive?

Recumbency

1. How long has she been recumbent?
2. Did the cow rise after calving?
3. Is she trying to get up? Can she move around?
4. How long has she been in her current position?
5. Where did she initially go down? Has she been moved and how?
6. Is the initial cause for recumbency known

Treatment

1. Has the cow been treated already? If yes what, by what route and when?
2. Who treated the animal?

General

1. Has the cow shown any specific abnormalities?
2. Has there been other recent down cows? If yes was the underlying aetiology identified
3. Is she keen to eat/drink?

PROGNOSIS

Those clinical signs and history associated with poor prognosis are listed below:

1. Hip lock at calving-especially if prolonged or unknown duration
2. Pronounced abduction of one or both ('splits') legs
3. Unable to maintain sternal recumbency (i.e. it is placed in sternal recumbency but each time ends up falling to one side)
4. Attempting to rise using forelimbs only
5. Recumbent on bare concrete for more than a few hours
6. The animal makes no attempts to rise and does not make any attempt to rise whatsoever despite repeated encouragement
7. Hindlimbs rigidly fully extended forwards (hind feet touching elbows)

TREATMENT & MANAGEMENT

Even if *treatment of the initial cause* of the down cow is successful, if that cow does not rise straight away, then good *nursing and management* by the stockperson becomes essential for that cow's chances of ever getting up.

1. Treat the initial cause

Promptly call in the vet to identify the initial cause. Your vet should identify this on the initial visit supported if required by necessary laboratory tests (i.e. Ca, Mg, Ph, liver profiles, muscle profiles) and treat immediately. Identification of initial cause should

also allow for prevention strategies to be put into place (see examples below) and built in to your HHP.

- milk fever → DCAB
- toxic mastitis → dry cow therapy
- dystocia → appropriate bull selection
- slips/falls → appropriate flooring

2. Nursing and management

The table below lists the essential pointers of nursing the down cow until she rises. All these pointers aim to alleviate the symptoms of downer cow syndrome.

MANAGEMENT	COMMENTS
Move the cow to clean dry comfortable lying area	<ul style="list-style-type: none"> ⇒ This must be done IMMEDIATELY ⇒ Out to grass is the best option when the weather is suitable ⇒ Bedding material must provide good purchase for when the animal attempts to stand ⇒ Deep straw bed which must be kept clean (reduce mastitis risk) and replenished regularly ⇒ Sand is a good option (20cm depth) if you can get hold of it as provides excellent purchase and is inert so less of mastitis risk
Provision of adlib good quality feed and fresh water	<ul style="list-style-type: none"> ⇒ Must be adlib ⇒ Provide good quality forage with limited concentrate ⇒ If the cow is 'crawling' around the pen, make sure she is checked regularly and water and food moved to her ⇒ Are other cows eating her feed & spilling her water?!
Turn at least every 3 hours	<ul style="list-style-type: none"> ⇒ One of most important factors of nursing the down cow to prevent development of downer cow syndrome ⇒ This alternates the hindlimb bearing the weight ⇒ If cow intermittently rising ('crawler') turning is not so important unless that cow is collapsing onto the same leg each time
Milking	<ul style="list-style-type: none"> ⇒ Lactating cows must be milked twice daily if down for over 12 hours for comfort and to reduce mastitis risk ⇒ Put cow into lateral or lift and milk if appropriate sling available
Hobbling hindlimbs	<ul style="list-style-type: none"> ⇒ Animals with bilateral obturator nerve paralysis/paresis may be hobbled - this may help prevent the splits (abduction) while the animal attempts to rise ⇒ Hindlimbs should be hobbled approximately

	50cm apart using purpose designed hobbles or thick soft rope
Physiotherapy	⇒ To help venous return and muscle perfusion ⇒ Each time the animal is turned, the limb that has been laid on should be vigorously massaged and manipulated (i.e. flexed and extended repeatedly)
Anti-inflammatory drugs (NSAIDS)	⇒ Anti-inflammatory action reduces the effects of downer cow syndrome, analgesic action reduces pain ⇒ i.e. carprofen, flunixin, ketoprofen, meloxicam
Encouragement to rise	⇒ If she does not attempt to stand on her own, from time to time should be encouraged to rise by slapping and gently kneeling in the ribs

3. Assist the animal back onto feet (if necessary)

The animal may be lifted to aid diagnosis and prognosis and also to assist in nursing the down cow (i.e. massage of limbs, rebedding, milking). Methods of lifting include:

- ⇒ Tail lift
- ⇒ Nets/slings/cradles/harnesses
- ⇒ Bagshaw hoists
- ⇒ Inflatable bags
- ⇒ Flotation tanks

Initial lifting should be done under supervision of the vet and the vet must ensure those involved in lifting the animal are fully competent in using the equipment available and considerate to the welfare of the cow. If used incorrectly all the above can do more harm than good to the cow. The animal should be lifted allowing her to find her feet then gently lowered to the point she either starts to bear weight or begins to collapse.

WELFARE

- Hopeless or poor prognosis → Euthanase humanely
- For those with a better prognosis - TLC, nursing & managed in a clean, dry comfortable environment and given analgesia (NSAIDS).
- If the cow cannot be adequately cared for due to lack of labour or money then she should be euthanased whatever the prognosis - she should never be left to deteriorate and suffer on bare concrete with no nursing.
- If the cow is making no improvement or deteriorating the decision to euthanase becomes equally as important for the welfare of that cow as careful nursing. Your vet should re-assess all recumbent cows after a maximum of 4 days so the vet and farmer may devise a clear plan of action whether or not that includes euthanasia. Any cow that has been recumbent for longer than 10 days has a very poor prognosis of ever getting up.

REFERENCES

1. ANDREWS, A. (1986). The Downer Cow. *In Practice* 187-189
2. HUXLEY, J. (2006). Assessment and management of the recumbent cow. *In Practice* 28, 176-184
3. Ruth Buxton, XLVets