

# SCORING OF TEAT CONDITION

## (Level 3)

Topic	Training & information Content
7.1	Instructions hand milking techno & hygiene
7.2	Instructions machine milking good practise & ...
7.3	Problems during milking
7.4	Scoring of teat condition
7.5	Milk production recording
7.6	Calculation of costs hand vs machine milking
7.7	Which milking parlour to choose
7.8	Testing and maintenance of milking machines
7.9	Milking and cleaning routine in milking parlours
7.10	Storage and cooling of milk on farm



## 1. You will learn about (learning objectives):

- Why the udder and teats should be kept clean.
- Scoring teat condition.
- Optimal milking routine.



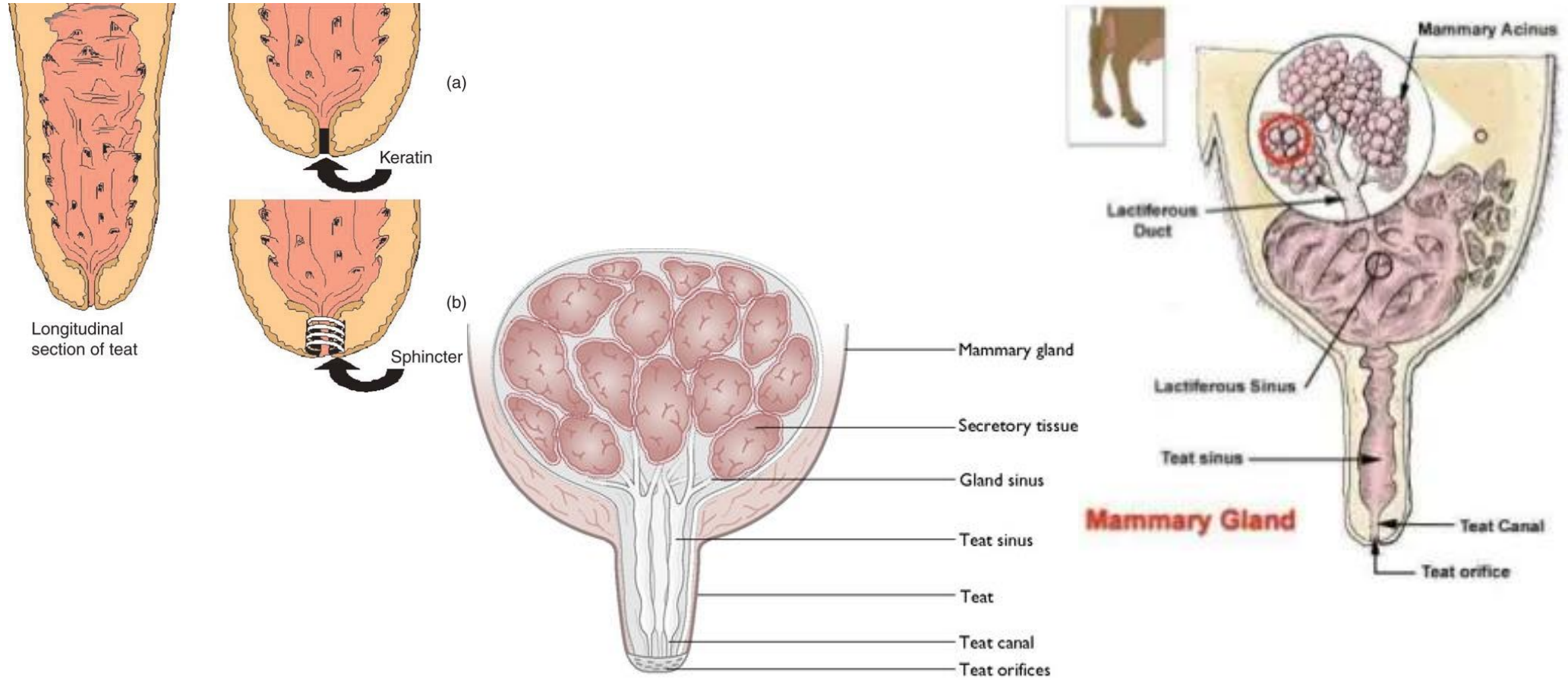
## 2. Background

Why is it important to have healthy teats?

- Unhealthy teats (wounds, dryness, scars) are:
  - Hard to keep clean
  - Uncomfortable for the cow
  - **More at risk of mastitis**

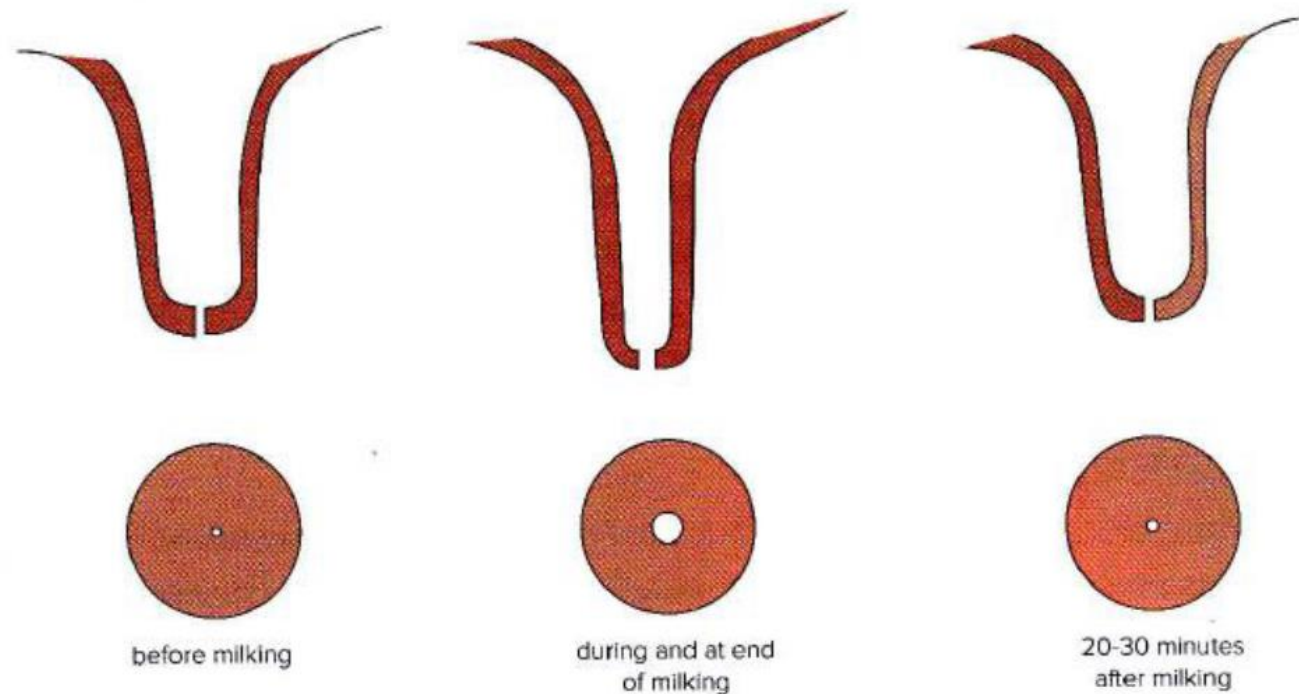


### 3. Anatomy of the udder and teat



## 4. Why the teat should stay clean

- After milking the teat hole needs another 30 minutes to heal/close, so bacteria still has the chance to enter the teat canal.
- The tip of the teat is a natural barrier against (mastitis creating) bacteria and therefore needs to be healthy and clean.



## 5. Hygiene keeps udder and teats clean

- The udder and teat condition, as well as the hygiene during the milking process need to be optimal. This will prevent bacteria from entering the teat canal and cause infection; especially during milking when the teat sphincter is open and sensitive to allow entry of bacteria.

### Process of infection

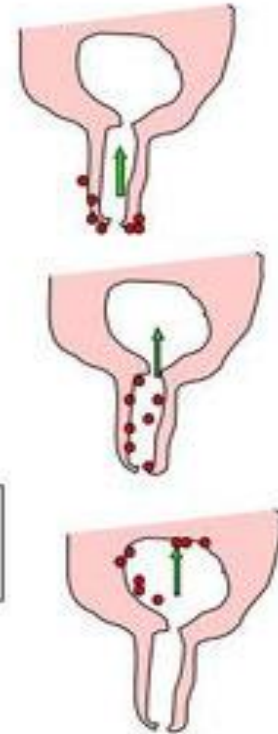
Organisms invade the udder through teat canal



Migrate up the teat canal and colonize the secretory cells



Colonized organisms produce toxic substances harmful to the milk producing cells



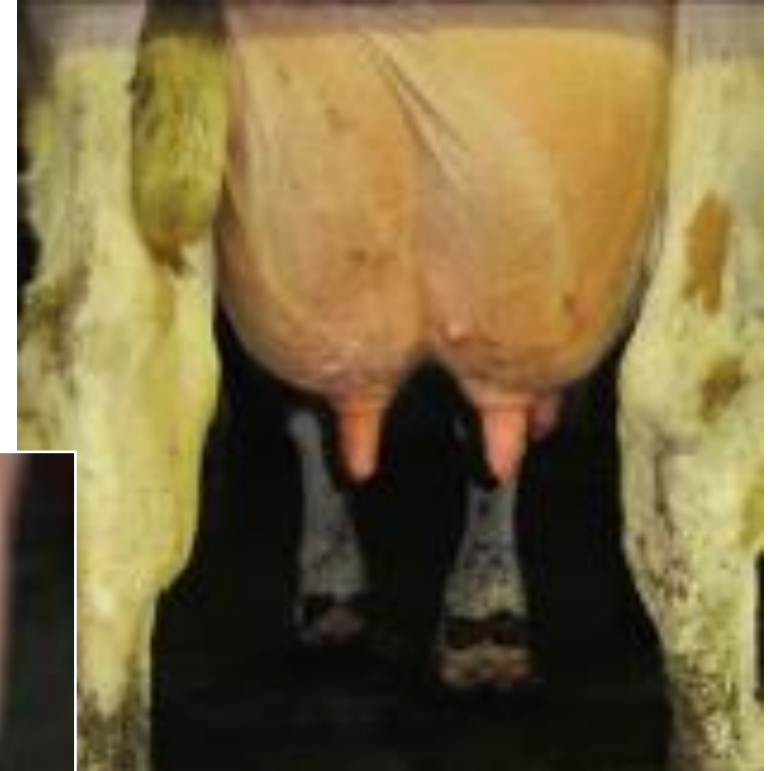
## 5.1 Hygiene keeps udder and teats clean Cont'd...

- There is a link between teat/udder condition and somatic cell count (SCC).
- The somatic cell count rises when the condition of the teats reduces.
- **When the teat condition is poor;**
  - the natural defence of the teats is low.
  - more chance for bacteria to enter the teat canal and cause infection.
  - this leads to an increase in white blood cells and therefore to a higher somatic cell count.



## 6. Scoring of teat condition

- Scoring teat condition can be divided into four (4) components:
  - i. Udder condition
  - ii. Skin condition of the teats
  - iii. Teat end → teat hole
  - iv. Teat length





## 7. Udder condition/hygiene

- Udder must be clean to prevent infections. Dirt can contain bacteria which will try to enter the teat canals during and after milking. The hygiene of the udder can be divided into 4 scores. Score 1 is desirable.



## 7.1 Causes of dirty udders and how to improve

### i. Dirty resting area

Cause(s)	How to improve
Dirty resting area	Clean the area multiple times a day.



## 7.2 Causes of dirty udders and how to improve Cont'd...

### ii. Humid weather

Cause(s)	How to improve
A humid weather	Arrange a dry and well ventilated area for the cows (which is comfortable).



## 7.3 Causes of dirty udders and how to improve Cont'd...

### iii. Dirty milking area






Cause(s)	How to improve
Dirty milking area	Clean the milking area and all the equipment right after each milking session and let it dry.



## 8. Teat skin condition

- This can be divided into 5 scores. Score 1 is desirable. A bad skin condition is painful and can attract bacteria. The natural defence of the teat gets low as a consequence.

How good is the teat skin condition of your cows?

				
<b>score 5</b>	<b>score 4</b>	<b>score 3</b>	<b>score 2</b>	<b>score 1</b>
Teat skin is severely damaged and covered with scabs or (open) wounds. Large or numerous warts, which interfere with teat end function.	Teat skin is chapped and cracked. Redness indicate inflammation is present. Warts may be present too.	Teat skin is chapped. Some small warts may be present.	Teat skin shows some rough spots.	Teat skin is smooth, free from scars, cracks or wounds.

## 8.1 Causes of bad skin condition and how to improve

### i. Wet teats exposed to cold/winds

Cause(s)	How to improve
Wet teats exposed to cold (winds)	Teats need to be in a dry environment; arrange for a well ventilated barn or surrounding weather/climate.



## 8.2 Causes of bad skin condition and how to improve Cont'd...

### ii. Rough bedding material

Cause(s)	How to improve
Rough bedding materials causes wounds.	Provide soft and dry bedding with no rough materials.



## 8.3 Causes of bad skin condition and how to improve Cont'd...

### iii. Overcrowding

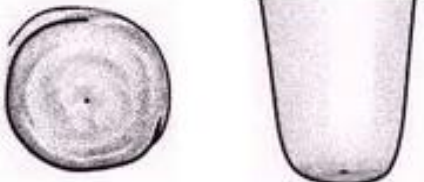

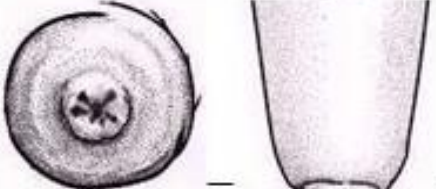

Cause(s)	How to improve
Little space for the cows to interact with other cows which causes stress (overcrowding).	Arrange a space large enough for the cows to move freely (at least 6 m <sup>2</sup> per cow).





## 9. Teat hole

- The condition of the teat hole can be divided into 4 scores. Score 1 is desirable. When the teat hole is very damaged it cannot close the way it should, so bacteria have more chances of coming into the teat canal.

	Description	Illustration
<b>Score 1</b>	<p><b>No ring</b> The teat-end is smooth with a small, even orifice.</p> <p>This is a typical status for many teats soon after the start of lactation</p>	
<b>Score 2</b>	<p><b>Smooth or Slightly rough ring</b> A raised ring encircles the orifice. The surface of the ring is smooth or it may feel slightly rough but no fronds of old keratin are evident.</p>	
<b>Score 3</b>	<p><b>Rough ring</b> A raised, roughened ring with isolated fronds or mounds of old keratin extending 1-3 mm from the orifice.</p>	
<b>Score 4</b>	<p><b>Very Rough ring</b> A raised ring with rough fronds or mounds of old keratin extending 4 mm or more from the orifice. The rim of the ring is rough and cracked, often giving the teat-end a "flowered" appearance.</p>	

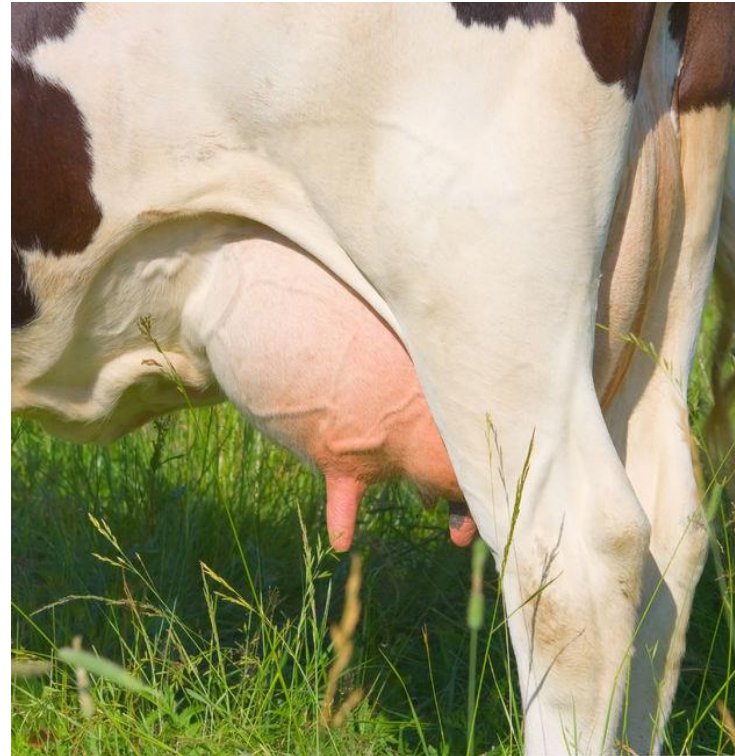
## 9.1 Causes of bad teat hole and how to improve Cont'd...

Cause(s)	How to improve
Blind milking	Stop milking when the milkstream is less than 300 - 400 g/min per minute.
Too high milking vacuum	Lower the milking vacuum (between -34 and -40 kPa under the teat).



## 10. Teat length

- The ideal length of the teat is 6-7 cm.
- Short and long teats are hard to fully milk and are therefore more at risk of mastitis. Teats which have an ideal length are easier to milk completely and are healthier because they attract less bacteria.



## 10.1 Bad teat length and how to improve/manage Cont'd...

Cause(s)	How to improve/manage
Short or long teats	Breed with bulls who will improve the teat length.
Long teats	Prevent pulling too hard, rather squeeze the teat carefully.



## 11. Teat condition scoring plan

### The plan for scoring teat condition

1. Randomly select 20% or at least 20 cows of the herd (the more cows you score the more reliable the outcome will be).
2. Score the cows for each subject/parameter (udder hygiene, teat skin and teat hole). Using a flashlight will make it easier to see.

Udder hygiene	Score 1 – 2 – 3 – 4
Teat skin condition	Score 1 – 2 – 3 – 4 – 5
Teat sphyncter condition	Score 1 – 2 – 3 – 4

3. Make sure you score the udders and teats the same way and under the same circumstances.

## 11.1 Teat condition scoring plan Cont'd...

- The goal is to have less than 10% 'divergence'. An udder or teat is divergent when it has a score 3 or higher. So score 1 and 2 are desirable. Score 1 and 2 represent healthy teats which will not lead to discomfort or health issues.

### **Example:**

**A farm manager scores 25 cows.**

**10 of the cows have divergent scores (3 or higher)**

**$10/25 = 25\%$  of the cows score divergent/abnormal.**

**The goal is < 10%. So this farm manager needs to improve the condition of the udders and teats.**



**Tip:** Make sure to score the teat condition frequent enough! This way problems can be prevented!  
(For example every 2 weeks or every month)

## 12. Post/After milking

- After milking the teat hole stays open for another 30 minutes. During this time it is easy for bacteria to enter the teat canal and cause infection.
- It is highly therefore important that the hygiene during and after milking is optimal. In order to achieve this, the following actions can be implemented:
  - Sanitizing teats before milking,
  - Using gloves during milking,
  - Spraying/dipping the teats thoroughly immediately after milking,
  - Let the cows stand for a minimum of 30 minutes after so that the teats dry and close.



## 13. Monitoring milking machine

- It is also important to monitor the milking machine/equipment. If it is not adjusted in the right way, it can cause problems with teat condition.
- Therefore, it is important to follow these guidelines:
  - i. Replace liners at the right time (for synthetic rubber 2500 milkings while silicon 5000 – 7500 milkings).





## 13.1 Monitoring milking machine Cont'd...

- ii. Prevent air slurping during milking.
- iii. Adjust the milking vacuum between -34 kpa and -40 kpa.
- iv. Adjust pulsation speed to between 50 and 60 times per minute.
- v. Prevent blind milking: take away (automatically) the cluster when the milk stream is less than 300 - 400 g/min per minute.



## 14. The Optimal milking routine

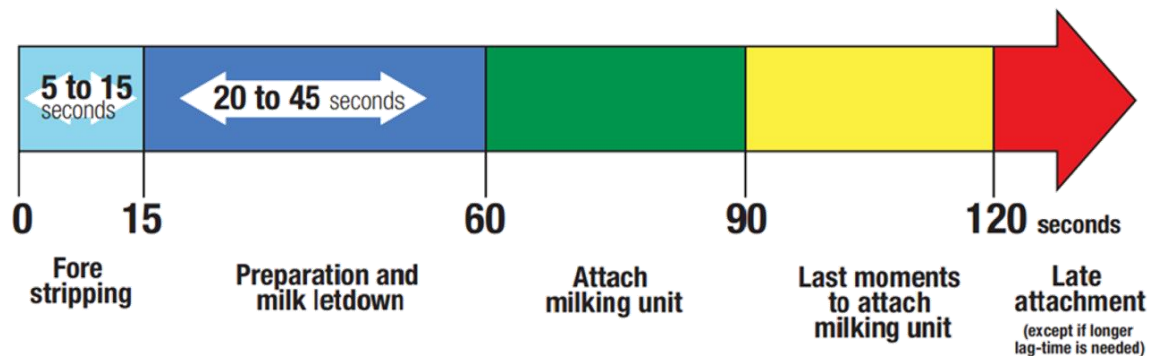
- The optimal milking routine is important in order to prevent bad teat condition and improve udder health. Poor milking procedure is the main source of mastitis infection.



## 15. Plan for milking routine/procedure

Plan for milking procedure entails;

- i. Observation → milk separation, treatment etc.
- ii. Fore stripping.
- iii. Clean the teats with a dry paper towel (1 per cow).
- iv. Wait 60-90 seconds until attaching.



**Note:** Fore stripping, cleaning and the waiting period are elements of preparation and stimulation of oxytocin hormone. The milk let down reflex occurs and maximizes the milking performances.



## 15.1 Plan for milking routine/procedure Cont'd...

- v. Attach the milking cluster.
- vi. Adjusting the milking cluster if necessary → to prevent air slurping.
- vii. Remove milking unit after shutting off the vacuum → to prevent blind milking!
- viii. Disinfect (dip or spray) the teats with a disinfectant solution.



**Tip:** Work in as clean environment as possible.



## 16. Take home messages/Summary

1. Score 1 and 2 are desirable for udder and teat condition.
2. Score 3 and higher show that there is damage. This damage can lead to infections.
3. Hygiene during and after milking is important (dipping).
4. Right adjustment of the milking equipment is also important (vacuum).
5. A clean environment results in less bacteria around the teat (and prevents infections).



## 16.1 Take home messages/Summary Cont'd...

### Conclusion:

Healthy teats are essential in order to prevent mastitis or other infections, and are comfortable for the cow.

In order to optimize the teat condition of dairy cows, it is important to have:

- A clean and comfortable environment
- A good climate
- Good working milking equipment
- Optimal milking routine
- Optimal hygiene.

