

Dental Scaling

(using a tile model)



Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK.

Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
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Year Group: BVSc4 +



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Equipment list: Dental Scaling

Equipment for this station:

- Relevant PPE (personal protective equipment):
 - Goggles
 - Gloves
 - Face mask
- Dental scaling machine
- Distilled water
- Canine dental model
- Scaling practice model (tile)
- Incontinence sheet
- Paper towel



Considerations for this station:

- Correct personal protective equipment (PPE) must be worn
- Use a prepared model
- Make a replacement model using a new tile

Anyone working in the Clinical Skills Lab must read the 'CSL_I01 Induction' and agree to abide by the 'CSL_I00 House Rules' & 'CSL_I02 Lab Area Rules'

Please inform a member of staff if equipment is damaged or about to run out.



Dental scaling is a common procedure in first opinion small animal practice and therefore learning to handle and operate the equipment correctly is important.

Performing dental scaling incorrectly or with too much force can damage the teeth e.g. creating grooves in the enamel, which can lead to increased build up of plaque and calculus. It can also cause damage to the soft tissues, leaving the animal with discomfort and at risk of infection. Additionally, running the scaler without water will overheat the tooth and can cause damage.

When scaling teeth, a dental chart should be kept to record any missing or damaged teeth, the level of gingivitis and tartar for each tooth, etc.

Dental scaling is used in combination with home dental care to provide the optimum oral hygiene for pets.

N.B. There are 2 stages to this station:

1. Scaling practice, using the model
2. Making a new model

Please do not leave the station without resetting and making a new tile dental model (instructions on how to do this are towards the end of this booklet).



Ultrasonic dental scaler equipment



Main unit



Mains power supply



Handpiece



Scaler tip



Torque wrench



Endowrench



Foot pedal

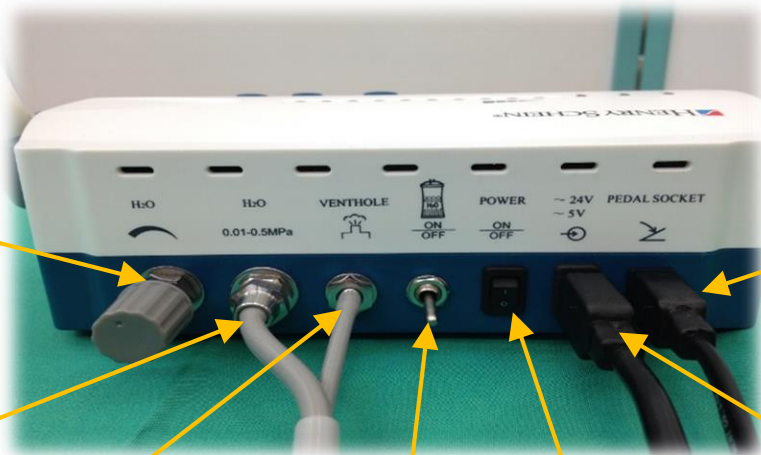


Distilled water reservoir

Either can be used to attach the scaling tip to the handpiece

Ultrasonic dental scaler main unit

(an example of a typical unit – based on the machine in the CSL)



Water control dial

Water entrance

Air exit

Automatic water supply switch

Power supply switch

Foot pedal socket and cable

Mains power supply socket and cable



Clinical Skills: Preparing for the Procedure

1



Dental procedures disseminate bacteria into the environment. ALL individuals involved in the procedure (veterinary surgeon, veterinary nurse, students, etc.) must wear appropriate personal protective equipment (PPE) i.e. a face mask, goggles and gloves.

2



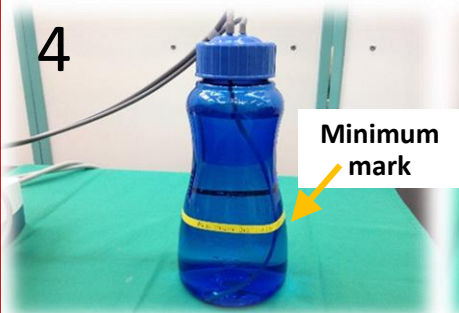
Prior to starting the procedure check that the equipment is working correctly. Start by ensuring the scaling tip is screwed firmly to the handpiece using the torque wrench. If the tip is not securely in place, there may be insufficient water spray pressure or no water at all. Over-tightening can strip the thread.

3



The dental scaler is controlled by the foot pedal which should be placed on the floor, below the dental table for the procedure. Ensure the foot pedal is securely connected to the main unit before starting the procedure.

4

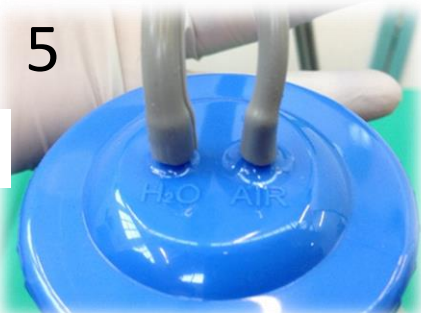


Distilled water is used in dental scaling machines and helps prevent build up of bacteria in the handpiece and water lines.

The water delivery lines should be flushed through for at least 30 seconds before the machine is used.

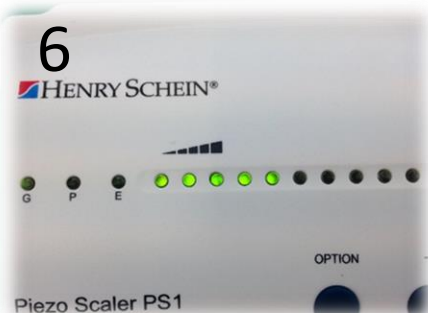
The water level in the reservoir bottle should always be above the minimum marker (see yellow arrow in photo).

5



Check that the water supply is connected to the dental scaling machine. There is a twin tube connection on the top of the reservoir bottle. The large grey tube (water pipe) connects the water reservoir to the water entrance on the main unit. The smaller tube (air pipe) connects the water reservoir to the air exit on the main unit.

6



Once all these checks have been completed, connect the main unit to the power supply.

Switch on the main unit and flick the water switch to on (up).

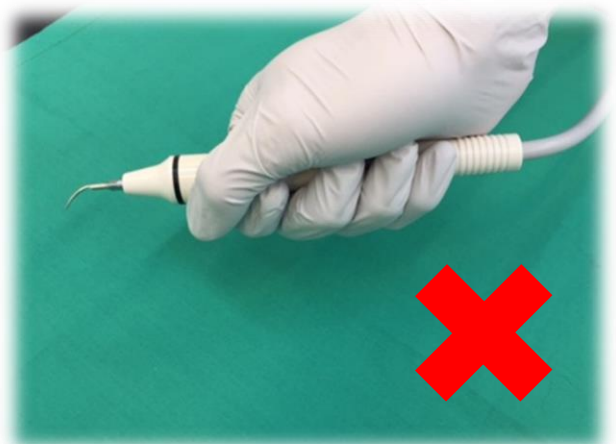
The first five LED lights on the machine should now be illuminated (see photo above).



Clinical Skills: Handling Instruments



Handling the instruments correctly allows you to apply the correct amount of pressure to the tooth.
The handpiece should be held in the same way as a pen.
Grip the handpiece with your thumb, forefinger and middle finger and use your other two fingers as resting support.



Holding the dental scaler incorrectly (e.g. as above) provides poor control of the tip with the risk of applying too much pressure to the tooth, which can cause damage.



When scaling teeth, use the side of the dental scaler.
It is good practice to spend a short amount of time on each tooth - you can always come back to a particular tooth later!



Never use the end (tip) of the dental scaler on the tooth as this can cause damage. For example: creating grooves and overheating the tooth.



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Clinical Skills: Performing a Dental Scale (using a tile model)



1
Start by practising the technique using the pressure test square on the model. There is a layer of calculus or 'tartar' (made from tile grout) covering the square and below it is a layer of red nail varnish. If the correct pressure is applied using the scaler tip, the calculus should be removed leaving the nail varnish below undamaged.



2
In a live patient large pieces of calculus are removed with forceps prior to scaling the teeth. Care should be taken when doing this as over-zealous cracking could damage the teeth. The vibrating scaler tip is then used to break ('shatter') and remove the remaining calculus. N.B. Calculus is usually brown/beige in colour.



3
To start scaling, hold the handpiece in a pen like grip, in your dominant hand. If possible, rest your hand on a surface. Use your ring and little finger to support the handpiece.

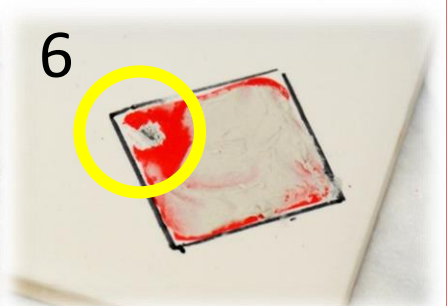


4
Apply the scaler tip to the test square side-on (don't use the tip of the scaler).

N.B. Using the tip of the scaler will etch into (scratch) the enamel and damage the surface of the tooth.



5
Apply light pressure to the foot pedal pad and the scaling tip will start vibrating and will produce fine water spray. The water spray keeps the scaling tip cool during the procedure and clears away the calculus debris once it has been removed from the tooth. If the water stops or is insufficient, stop as continuing could damage the tooth.

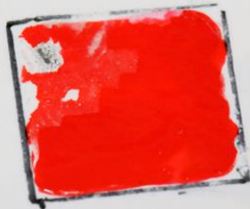


6
Move the scaler tip over a small area of the test square. Check if you can see any scratches or indents to the nail varnish? In the yellow circle in the photo above some of the red nail varnish has been removed exposing the tile below because e.g. too much pressure was applied or the scaler was in the same position for too long.



Clinical Skills: Performing a Dental Scale (using a tile model)

7



If there is damage to the layer of nail varnish, try another area. Before continuing, check your grip on the handle/handpiece, use the correct part of the scaler tip (the side not the end/tip) and try again (see: 'Handling Instruments' section above). Having successfully scaled the test square, move on to the teeth area of the tile.

8

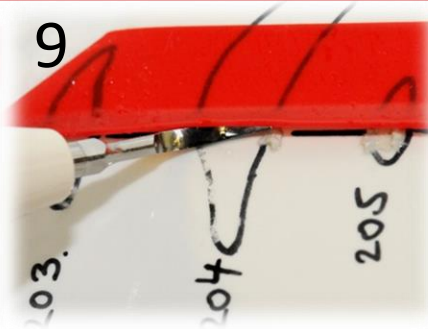


It is important to adopt a methodical approach to scaling the teeth to ensure none are missed.

Remember: Don't spend too much time on one tooth.

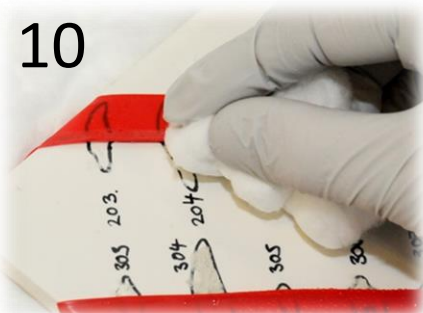
After approximately 10 seconds move on to an adjacent tooth and then return to the previous tooth to complete the scaling.

9



Don't forget to check for subgingival calculus. This is calculus that has formed within the sulcus between the teeth and the gingiva, part way down the root. On the model the area is represented by the fold in the red tape (the gum). The scaler can be manoeuvred into this area and then gently use the side of the scaler tip to remove the calculus.

10



It may be helpful to use a cotton wool ball or paper towel to dab the area being scaled to absorb some of the excess water and clear the debris.

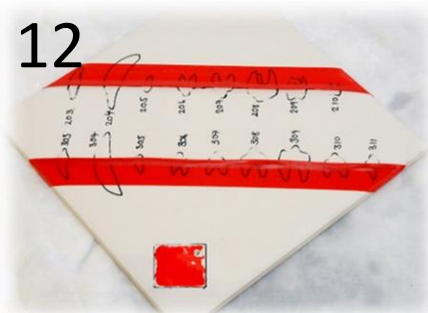
11



Continue scaling the remaining teeth on both quadrants.

N.B. In practice, on a real patient, a probe is used to explore below the gum to check that all the calculus has been removed – it should feel smooth.

12



When all the teeth on the model have been scaled, please place the model in the used tile box below the dental scale station.

Then collect a new tile ready to make a new dental tile model for the next student. N.B. Part of this station is to make a new model, which is also useful for revision e.g. of dental charts.

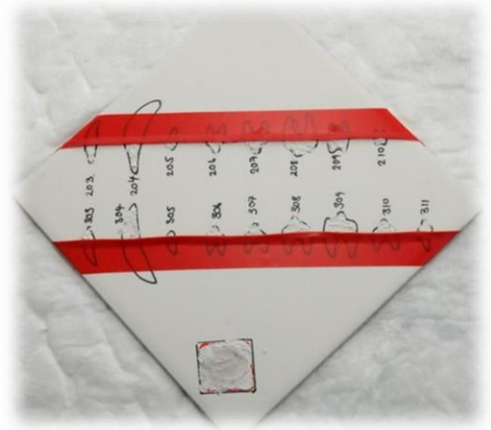


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Resetting the station: Making a New Dental Scaling Model

Equipment needed:

- A white ceramic tile
- Dentition stencil
- Fine-tipped permanent marker pen
- Dental chart (laminated sheet)
- Red insulation tape
- Polyfilla
- Spreader (wooden stirrer)
- Nail polish
- Scissors
- Incontinence sheet (to work on)



N.B. After practising the dental scale technique, please always make a new model ready for the next student.

Station ready for the next person:

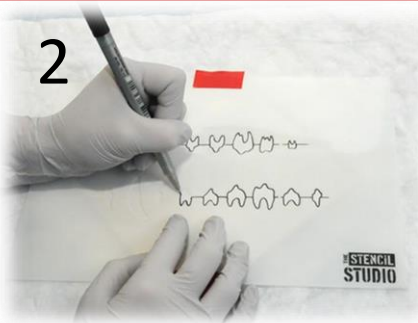


Please inform a member of staff if equipment is damaged or about to run out.

Clinical Skills: Making a New Dental Scaling Model

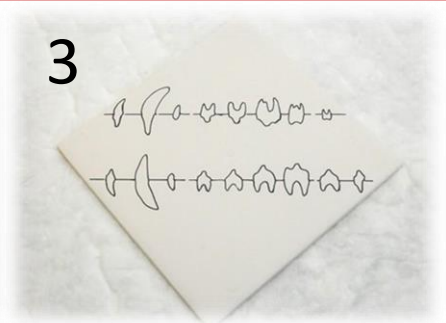


1 The model represents two quadrants of a dog's mouth. Turn the ceramic tile so it makes a diamond shape on the sheet (pad) on the table and place the stencil over it. Use a small piece of insulating tape to secure the stencil in place.



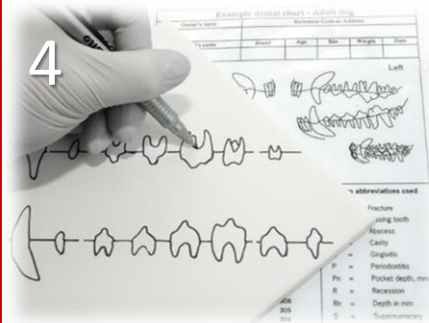
2 Using the black fine-tipped permanent marker pen, draw the outline of the teeth onto the tile using the stencil to produce a lateral (buccal) view.

N.B. There is a line connecting the teeth which represents the root/crown junction. This normally lies below the gum line.



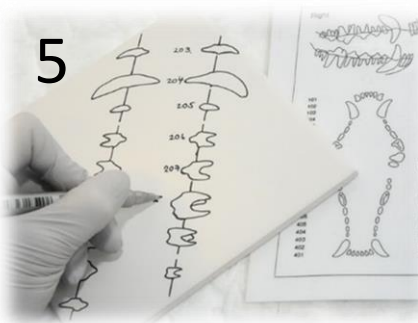
3 Once the marker has dried (approximately 1-2 minutes), remove the tape and the stencil.

Can you identify which quadrants of a dog's mouth the stencil represents? If unsure, check the canine dental chart (laminated sheet) provided.



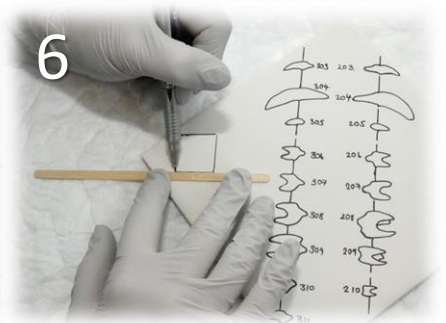
4 When extracting teeth it is important to know the number of roots for each tooth.

N.B. Some of the roots are not clearly outlined on the stencil. Therefore, refer to the dental chart to check the number of roots for each individual tooth and then, for the relevant teeth, draw these roots on the tile using the fine-tipped marker pen.



5 Number the teeth according to the modified Triadan system (which is used across species, not just for dogs).

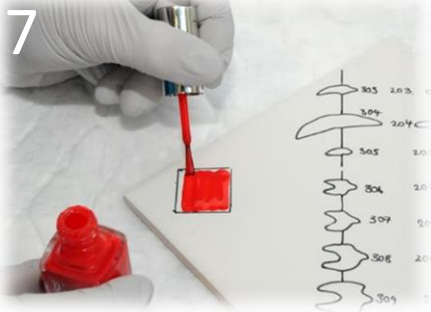
If necessary, use the dental chart as a reference.



6 Next, create the pressure test square using the fine-tipped marker pen to draw a square (approximately 2cm²) in a free corner of the tile.



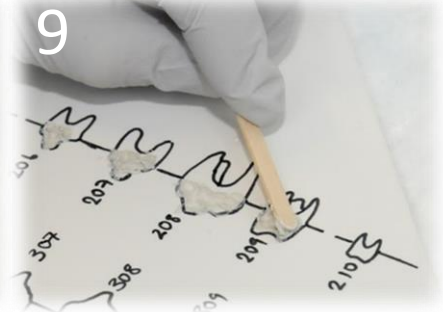
Clinical Skills: Making a New Dental Scaling Model



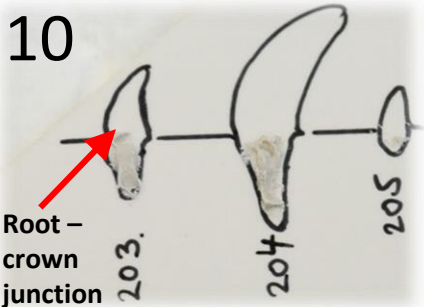
7
Fill in the square with a thin layer of nail varnish.



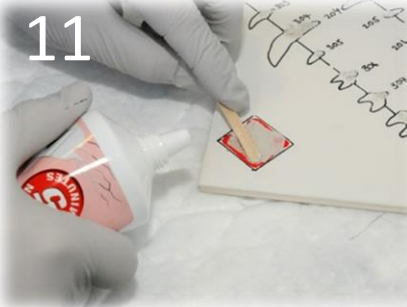
8
Apply a pea-sized amount of Polyfilla to the wooden spreader.



9
Use the spreader to apply a layer of Polyfilla over the surface of each tooth. Try to stay within the tooth outline. The Polyfilla represents the calculus.

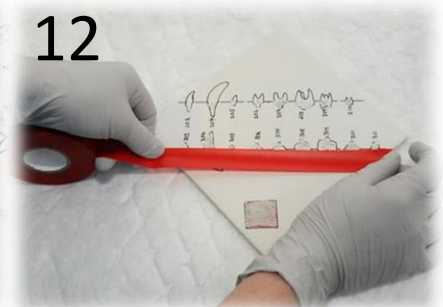


10
Root – crown junction 203. 204. 205.
Try to apply the Polyfilla near the root/crown junction as this will mimic subgingival calculus once the gum line is in place.



11
Once the nail varnish is dry, apply a thin layer of Polyfilla over the pressure test square.

Allow the Polyfilla on the teeth to dry (approximately 5-10 minutes) and then move on to the next step.



12
When performing a dental scale, quite often calculus is found in the gingival sulcus (below the gum line). Measure and cut a length of the red tape that will run diagonally from one edge of the tile to the other (along the line of the root-crown junction).



Clinical Skills: Making a New Dental Scaling Model

13



Create a small fold in the tape. This will form a 'lip' when the tape is placed against the line of the teeth. This 'lip' will represent the gingival sulcus (small gap between the tooth and the gingival tissue).

14



The tape should be placed such that it covers the roots of the teeth and some of the calculus near the root-crown junction i.e. at a level that ensures some calculus (Polyfilla) is in the gingival sulcus.

15



Lay the tape along the line of the teeth.

16



Repeat the process to apply a piece of tape to the maxilla/mandible.

17



The model should now be placed to one side to allow the Polyfilla to completely dry.



I wish I'd known: Dental Scaling

- Using PPE (personal protective equipment) is important. Goggles and a face mask provide protection as, for example, dental polish can spray into your eye if the polishing cup is not in contact with the tooth or a piece of tartar could lodge in your cornea.
- The use of a dental chart is important so you can identify if/which teeth are missing and also you have a record in case the client asks (or doesn't agree!)
- Common ways the equipment doesn't work:
 - The scaler tip can fall off if not attached correctly
 - The water doesn't spray if the scaler tip is not securely attach or the water pressure switch is turned off
- Swabs are often used to pack a patient's mouth during a dental procedure. There should be a string attached to the swab which is also preferably attached elsewhere e.g. to the endotracheal tube, to avoid leaving a swab in the patient's mouth.
- String from a swab can get caught up in the polisher, as can patient's hair!
- Dropping the dental equipment often results in (expensive) breakages.
- What am I looking for during a dental procedure? Photos of some examples of common dental abnormalities:



Fractured
upper right 4th premolar
(carnassial) tooth
(Triadan number 108)



Fractured lower left
canine tooth
(Triadan number 304)



Missing lower left incisor
tooth
(Triadan number 302)



Gum recession around the
upper left canine tooth
(Triadan number 204)