Rabbit Grimace Scale (RbtGS) Manual

This manual describes the five action units that comprise Rabbit Grimace Scale (RbtGS) and how these action units should be scored. These action units have been shown to increase in intensity in response to post-procedural pain (Keating et al. 2012).

The five action units in the Rabbit Grimace Scale are:

- Orbital tightening
- Cheek flattening
- Nostril shape
- Whisker change & position
- Ear shape & position

Please note:
These action units should only be used in awake animals. Each animal should be observed for a short period of time to avoid scoring brief changes in facial expression that are unrelated to the animal’s welfare.

If these action units are going to be used as part of a clinical assessment, then they should always be used alongside other validated indices of pain.

Scoring:
Each of the facial action units comprising the Rabbit Grimace Scale (RbtGS) should be scored on a 3-point scale of intensity (see key below).

<table>
<thead>
<tr>
<th>Facial Action Coding Key</th>
<th>Scale</th>
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<tbody>
<tr>
<td>No present</td>
<td>0</td>
</tr>
<tr>
<td>Moderately present</td>
<td>1</td>
</tr>
<tr>
<td>Obviously present</td>
<td>2</td>
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To assist with scoring, visual and text descriptions of each action unit are provide on the following pages of this manual. Please ensure that you are familiar with these action units prior to scoring individual animals.

For further information about the Rabbit Grimace Scale (RbtGS) and its’ application, then please contact Dr Matt Leach (Matthew.Leach@newcastle.ac.uk).
### Orbital Tightening

- Closing of the eyelid (narrowing of orbital area)
- A wrinkle may be visible around the eye

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<tbody>
<tr>
<td></td>
<td>Not Present</td>
<td>Moderately Present</td>
<td>Obviously Present</td>
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### Cheek Flattening

- Flattening of the cheeks. When ‘obviously present’, cheeks have a sunken look.
- The face becomes more angular and less rounded

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Nostril shape

- Nostrils (nares) are drawn vertically forming a ‘V’ rather than ‘U’ shape
- Nose tip is moved down towards the chin

Whisker Change & Position

- Whiskers are pushed away from the face to ‘stand on end’
- Whiskers stiffen and lose their natural, downward curve
- Whiskers increasingly point in the same direction. When ‘obviously present’, whiskers move downwards
Ear Shape & Position

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- Ears become more tightly folded / curled (more cylindrical) in shape
- Ears rotate from facing towards the source of sound to facing towards the hindquarters
- Ears may be held closer to the back or sides of the body

Acknowledgements:
Images kindly provided by Dr Matthew Leach, Newcastle University, and Dr Patricia Hedenqvist, Swedish University of Agricultural Sciences.

The Rabbit Grimace Scale forms part of the continuing work of the Pain and Animal Welfare Sciences Group (PAWS) at Newcastle University into developing more effective means of assessing pain and welfare in a range of animal species.

Reference:

Further information:
If you would like any further information about the Rabbit Grimace Scale (RbtGS), then please contact: Dr Matt Leach either by email (Matthew.Leach@newcastle.ac.uk) or at:

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