

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).

Facial Action Coding Key	Scale
No present	0
Moderately present	1
Obviously present	2


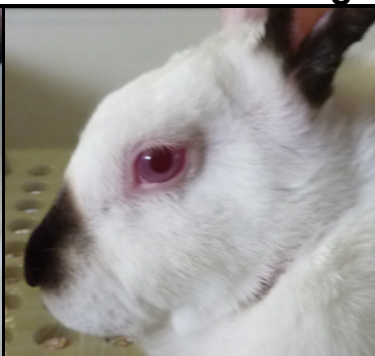

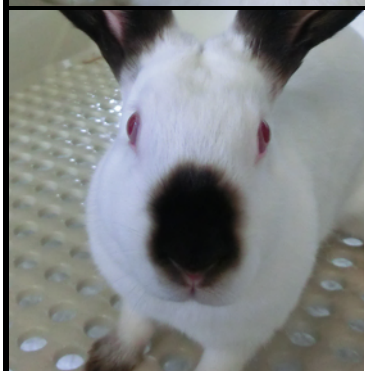


To assist with scoring, visual and text descriptions of each action unit are provide on the following pages of this manual. Please ensure that you are **familiar** with these action units prior to scoring individual animals.

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







		
		
0	1	2
Not Present	Moderately Present	Obviously Present
<ul style="list-style-type: none"> • Closing of the eyelid (narrowing of orbital area) • A wrinkle may be visible around the eye 		

Cheek Flattening

		
		
0	1	2
Not Present	Moderately Present	Obviously Present
<ul style="list-style-type: none"> • Flattening of the cheeks. When 'obviously present', cheeks have a sunken look. • The face becomes more angular and less rounded 		

Nostril shape		
0	1	2
Not Present	Moderately Present	Obviously Present
<ul style="list-style-type: none"> Nostrils (nares) are drawn vertically forming a 'V' rather than 'U' shape Nose tip is moved down towards the chin 		

Whisker Change & Position		
0	1	2
Not Present	Moderately Present	Obviously Present
<ul style="list-style-type: none"> 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		
		
		
0	1	2
Not Present	Moderately Present	Obviously Present
<ul style="list-style-type: none"> • 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:

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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:

Keating SCJ, Thomas AA, Flecknell PA, Leach MC (2012) Evaluation of EMLA cream for preventing pain during tattooing of rabbits: Changes in physiological, behavioural and facial expression responses. PLOS ONE 7(9): e44437. doi:10.1371/journal.pone.0044437

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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