



## **PSN027: Animal Discomfort - Are You Comfortable with This Term?**

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### **Aim of Investigations:**

Freedom from discomfort is one of the five prerequisites for animal welfare underlying the Five Freedoms, which have been highly influential in animal welfare legislation and policy making (Mellor, 2016). In addition, the term discomfort is often used in animal studies investigating conditions or procedures provoking negative affective state(s), such as pain. However, despite the frequent use, no valid definition of this term has been put forward (as reviewed by Guesgen and Bench, 2017) and no clear separation between the terms pain and discomfort currently exists. With this literature-based review, we aim to raise attention to the apparent lack of scientific definition of the term discomfort and call for studies to focus on the term and how it is used in animals in science, legislation and policy making.

### **Methods:**

Literature-based review.

### **Results:**

The term discomfort is used in many ways: a) as figurative adjunct to describe painful states (Leidig et al., 2009); b) to describe aversive experience, where pain is not justified, i.e. used to cover mild pain (Leitner et al., 2007); c) when animals lack comfort, e.g. lying on hard surface (Krawczel et al., 2008); or d) to describe aversive condition, where pain is not involved, e.g. itch (Thomsen et al., 2001), nausea (Kenward et al., 2015), metabolic disorders during negative energy balance (Kok et al., 2017) or dizziness (Mellor, 2016). Based on on-going work on discomfort in farm animals (Franchi et al., 2018; Herskin and Nielsen, 2018), we suggest that:

- 1) Discomfort covers affective state with negative valence, i.e. aversive or unpleasant.
- 2) Discomfort can be induced by external or internal stimuli, e.g. nausea, itch, being cold or feed deprived.
- 3) Discomfort has a physical and an affective component.
- 4) Both components can be rated from mild to severe, and accordingly have similar consequences for animal welfare.
- 5) Discomfort can be experienced without pain, but pain cannot be experienced without discomfort. The terms are phenomenologically distinct.



## **Conclusions:**

Condensed into one sentence animal discomfort is suggested to be a negative affective state induced by internal or external stimuli, rated from mild to severe and featured by a physical sensation, which may result in behavioural changes and consequences for animal welfare ranging from mild to severe.

However, further studies are needed – across animal species and scientific areas focusing on animals – to further approach, characterize and validate a common definition of discomfort in animals. Such knowledge may form the basis of a more uniform use and understanding of the concept, and potentially allow better inference of the negative affective states experienced by animals and thereby strengthen the research integrity – in model studies, veterinary clinical studies and studies of animal welfare.

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**Conflicts of Interest:**

MSH is member of The Dry-off and Cabergoline Advisory Network (DCAN) giving scientific advise to CEVA Santé Animale.