

## HOW TO ASSESS WELFARE IN GENETICALLY ALTERED ANIMALS?

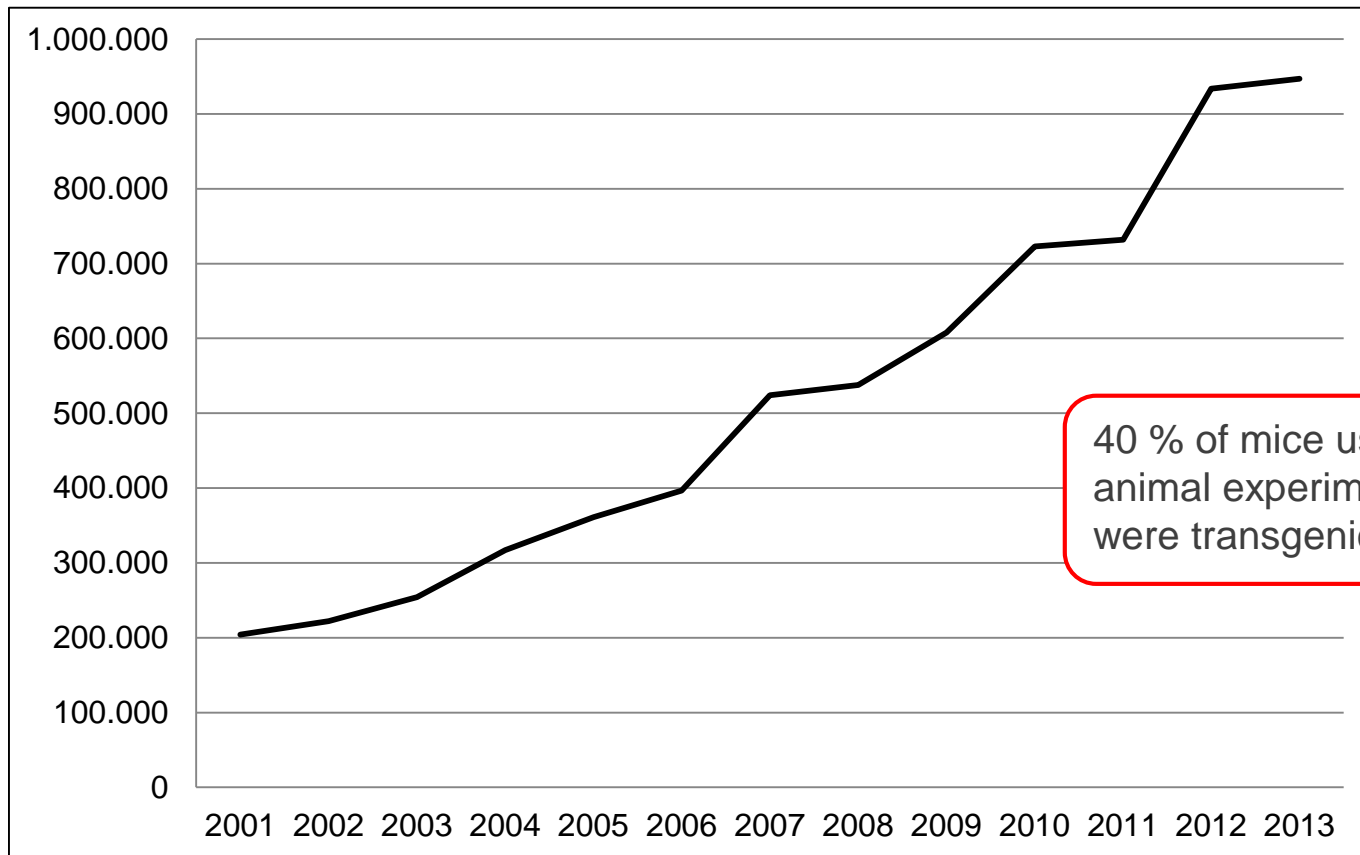


Anne Zintzsch  
Animal Welfare Officer



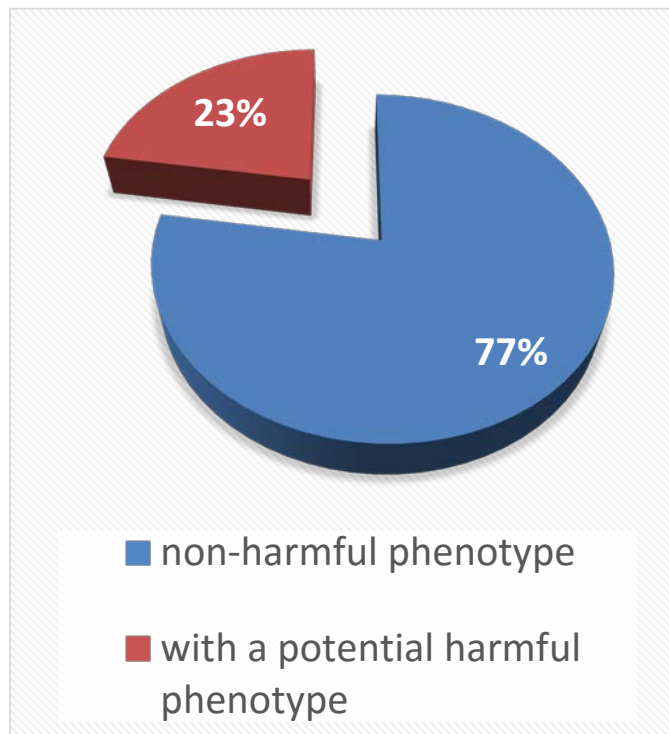
**... IN ANIMAL WELFARE LEGISLATION**

## USE OF GENETICALLY ALTERED LAB ANIMALS IN GERMANY

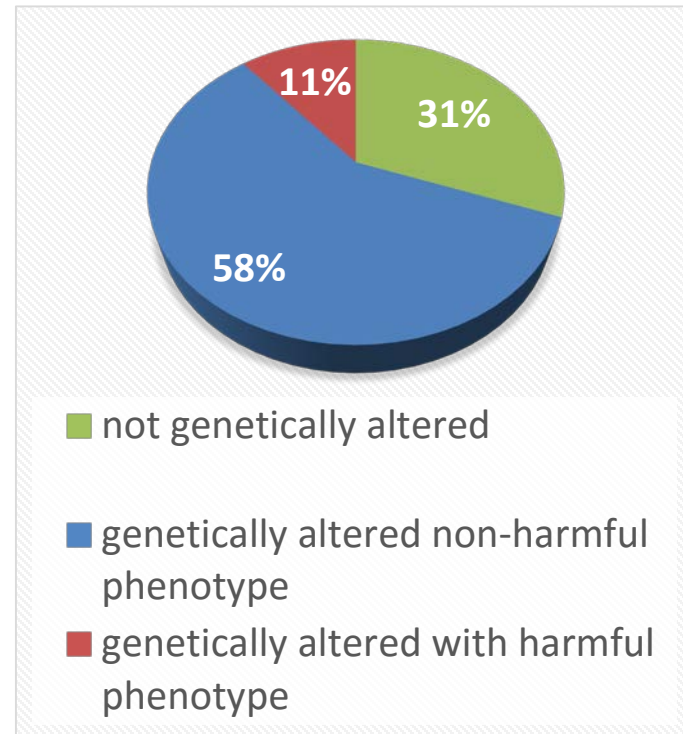


## STATUS QUO AT THE MDC

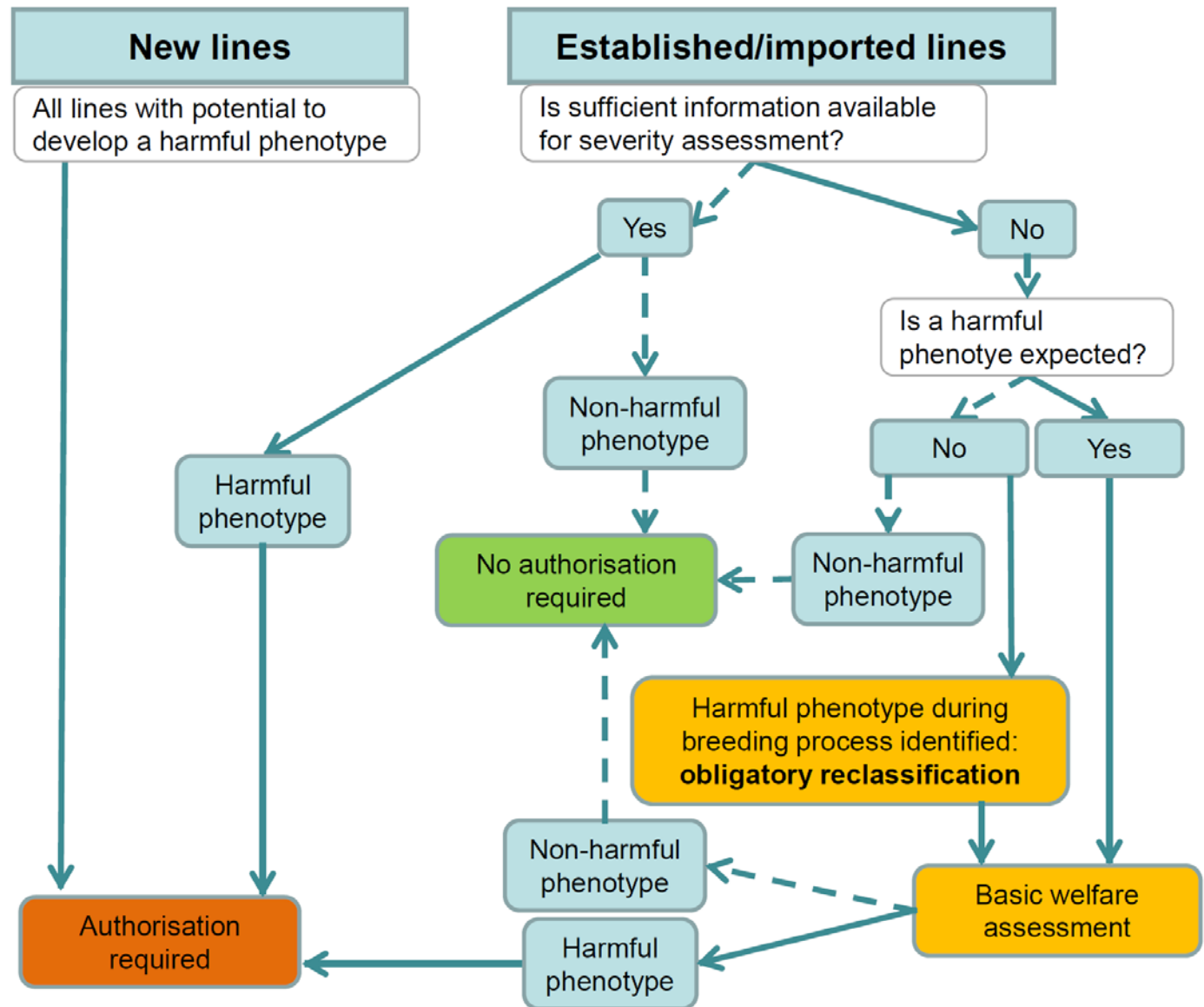
### Mouse strains



### Animal reporting



# LEGAL REQUIREMENTS FOR SEVERITY ASSESSMENT



## RECOMMENDATIONS FOR A BASIC WELFARE ASSESSMENT

- 7 m, 7f
- Neonates, at weaning, adult every two month → line-specific



Form  
Version 2 of 21 July 2015

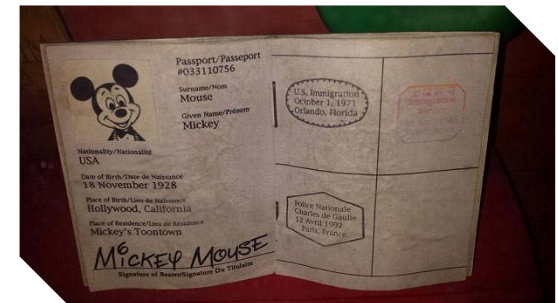
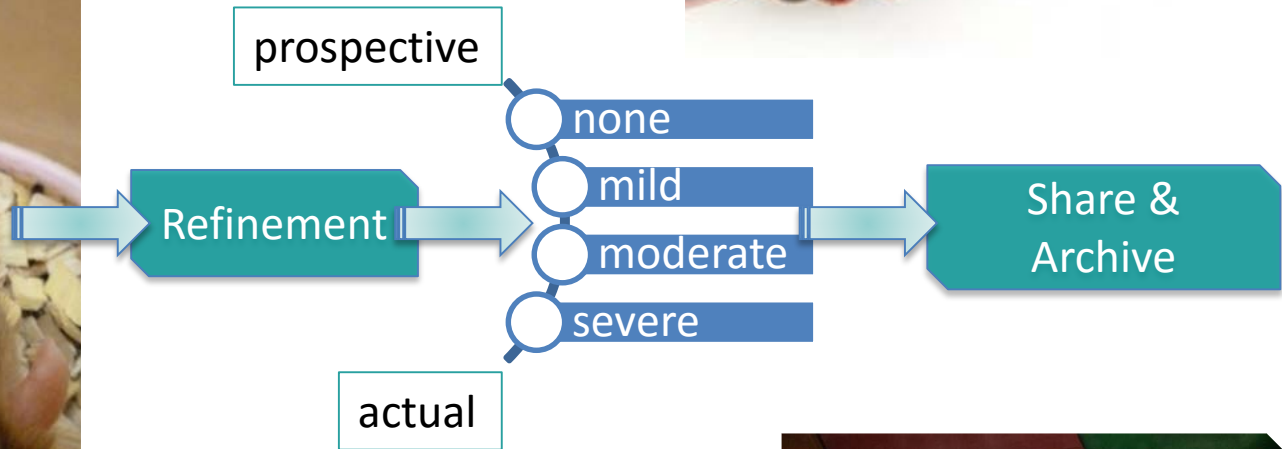
### **„Assessment of newborn litter“\***

\*at the latest during the first cage change

Location (Institute and room): \_\_\_\_\_  
\_\_\_\_\_

Husbandry system (e.g. IVC, conventional cage, filter top,  
isolator etc.; hygiene status where applicable):

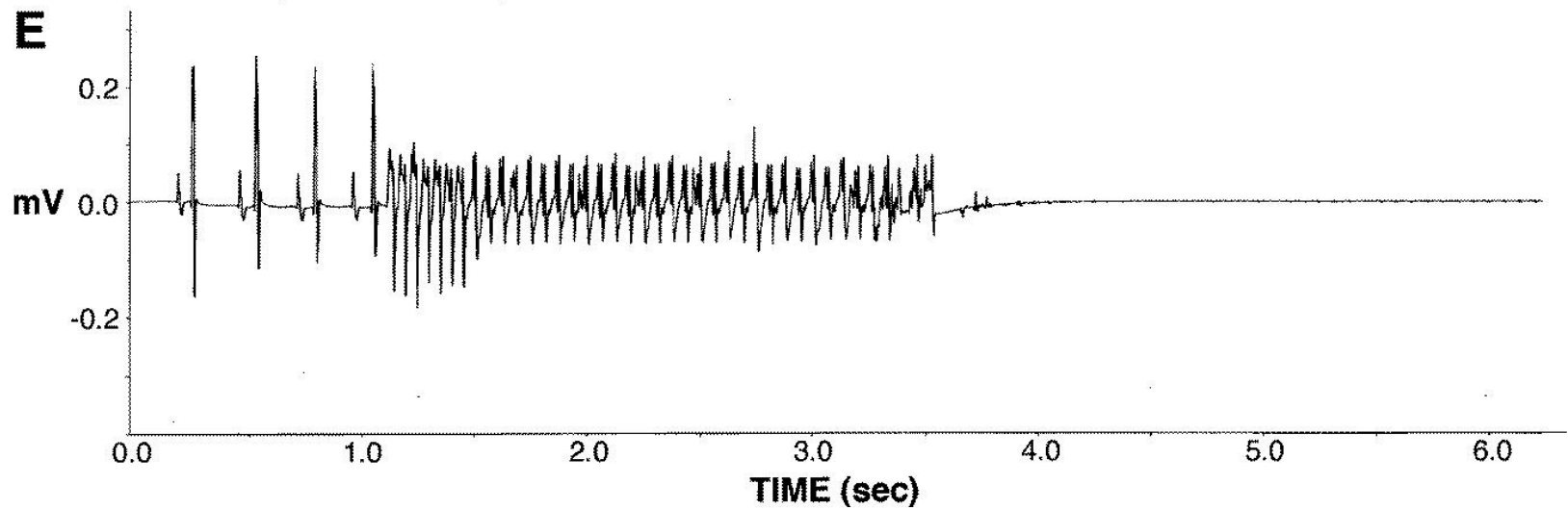
# BASIC WELFARE ASSESSMENT - OBJECTIVES



## EXAMPLES ON SEVERITY ASSESSMENT AND CLASSIFICATION

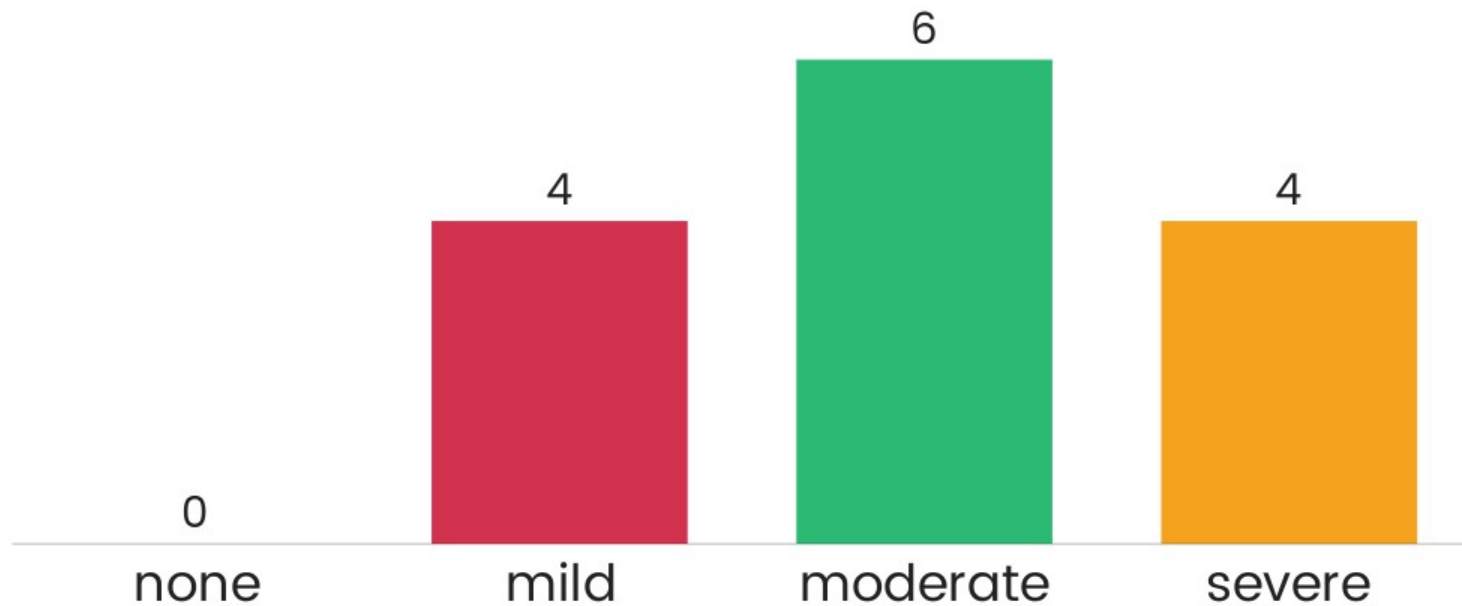


## EXAMPLE I: SUDDEN CARDIAC DEATH



## Sudden cardiac death – Which severity degree would you assign?

Mentimeter



## GUIDELINES ON SEVERITY ASSESSMENT AND CLASSIFICATION

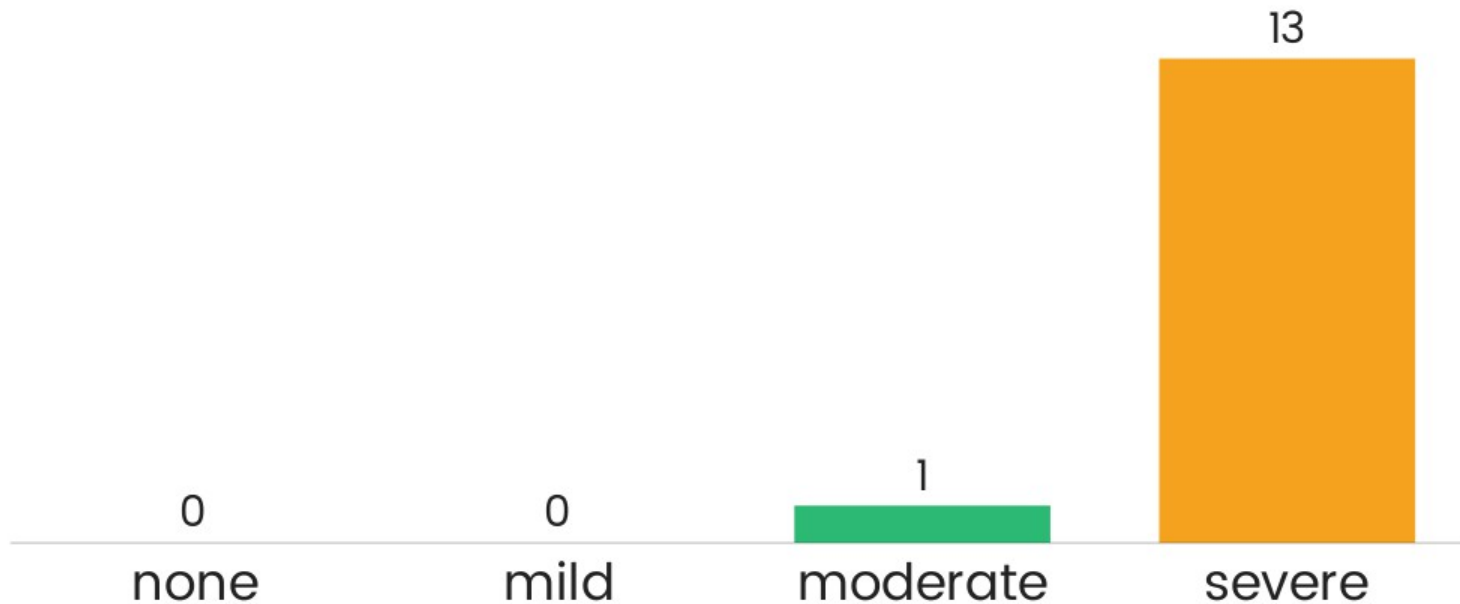
No.	Symptom/disease	Non-harmful phenotype	Mild severity	Moderate severity	Severe severity	Monitoring, Refinement, special housing requirements
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### 7 Cardiovascular and haematological diseases

7.1	Cardiac arrhythmia, e.g. asymptomatic cardiac channelopathies with structurally normal heart <sup>52</sup>		Short-term arrhythmia with sudden cardiac death			
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# DECOMPENSATED HEART INSUFFICIENCY

## Decompensated heart insufficiency - Which severity degree would you assign?



## GUIDELINES ON SEVERITY ASSESSMENT AND CLASSIFICATION

No.	Symptom/disease	Non-harmful phenotype	Mild severity	Moderate severity	Severe severity	Monitoring, Refinement, special housing requirements
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### 7 Cardiovascular and haematological diseases

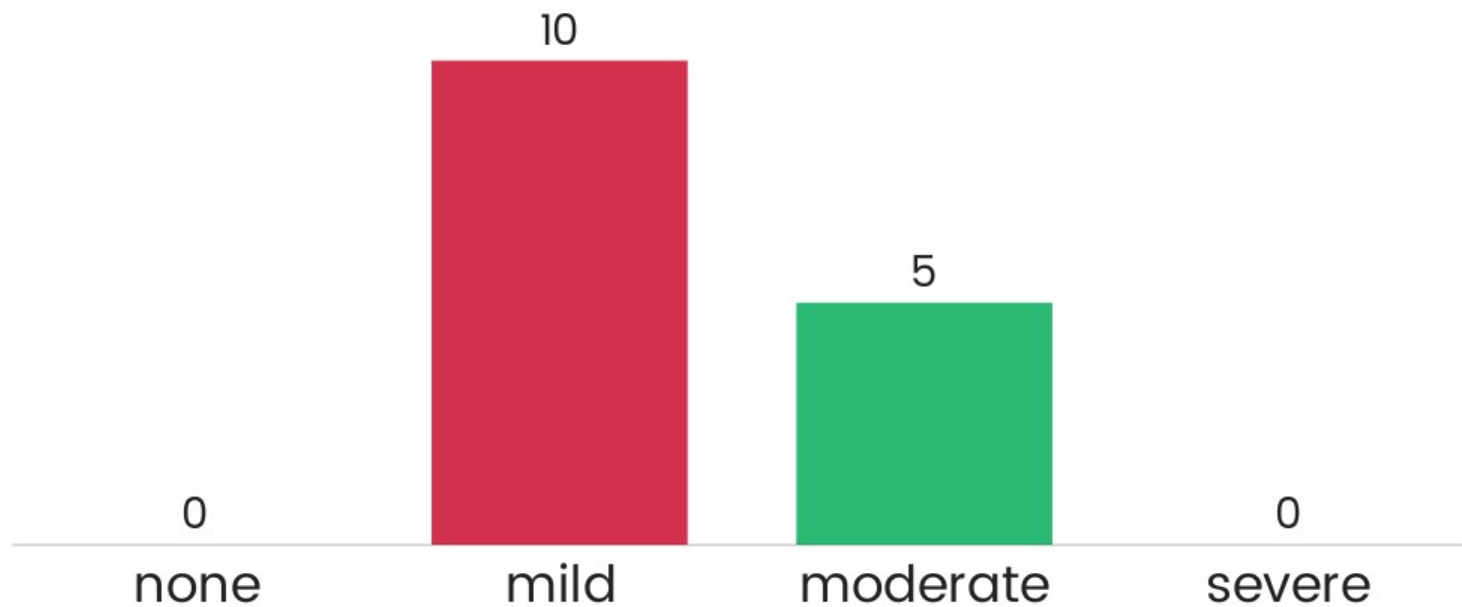
7.4	Dilated or hypertrophic cardiomyopathy		Transient and short-term intensified breathing after normal activity in the home cage; no permanent impairment of general condition	Global heart failure with permanent respiratory distress and impairment of the general condition, classification depends on expression of symptoms	
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## EXAMPLE III: MICROPHTHALMIA, ANOPHTHALMIA



## Blindness – Which severity degree would you assign?

Mentimeter





## GUIDELINES ON SEVERITY ASSESSMENT AND CLASSIFICATION

No.	Symptom/disease	Non-harmful phenotype	Mild severity	Moderate severity	Severe severity	Monitoring, Refinement, special housing requirements
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### 4 Diseases of the sensory organs<sup>IV</sup>

4.1	Eyes					
4.1.3	Microphthalmia, anophthalmia	Blindness <sup>V</sup> (e.g., small or no eyes) without impairment of normal behaviour				House animals in constant environment

<sup>IV</sup> The lack of more than one sense is considered to cause an impairment that should be classified as harmful phenotype

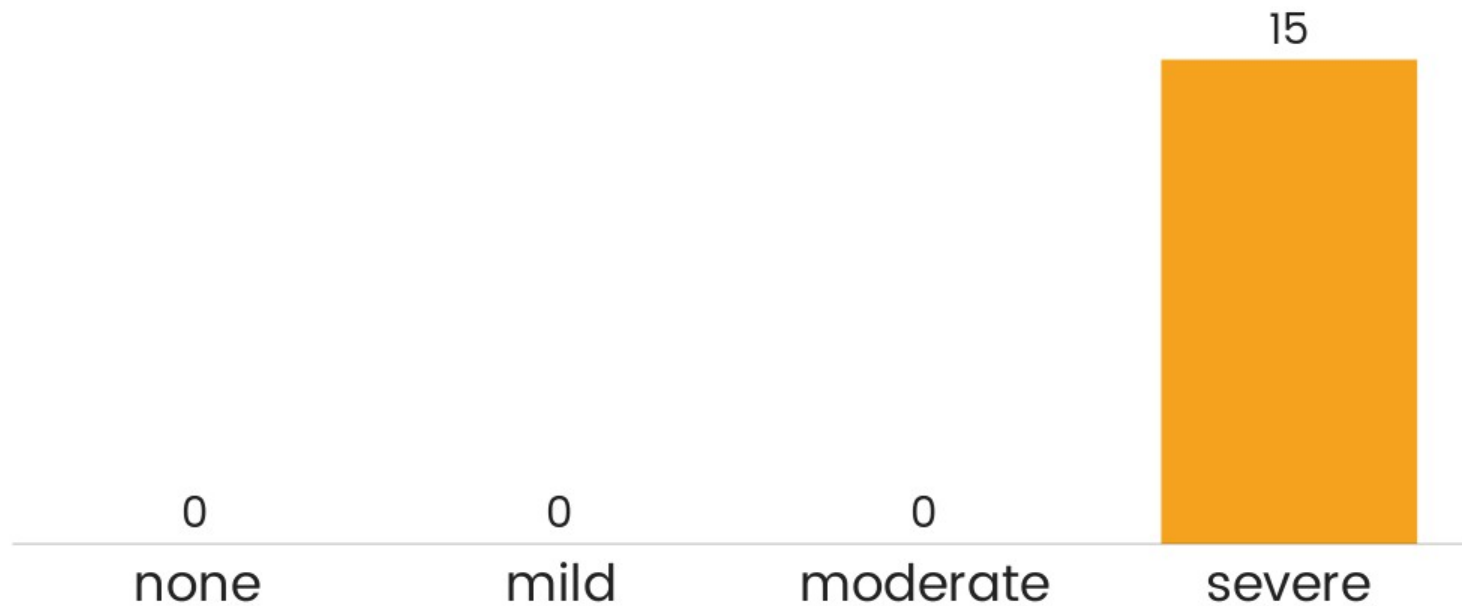
<sup>V</sup> If the animals are kept in a constant environment.

## EXAMPLE IV: DYSTROPHIC EPIDERMOLYSIS BULLOSA



**Dystrophic epidermolysis bullosa - Which severity degree would you assign?**

 Mentimeter



## GUIDELINES ON SEVERITY ASSESSMENT AND CLASSIFICATION

No.	Symptom/disease	Non-harmful phenotype	Mild severity	Moderate severity	Severe severity	Monitoring, Refinement, special housing requirements
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### 3 Alterations of the skin and the coat

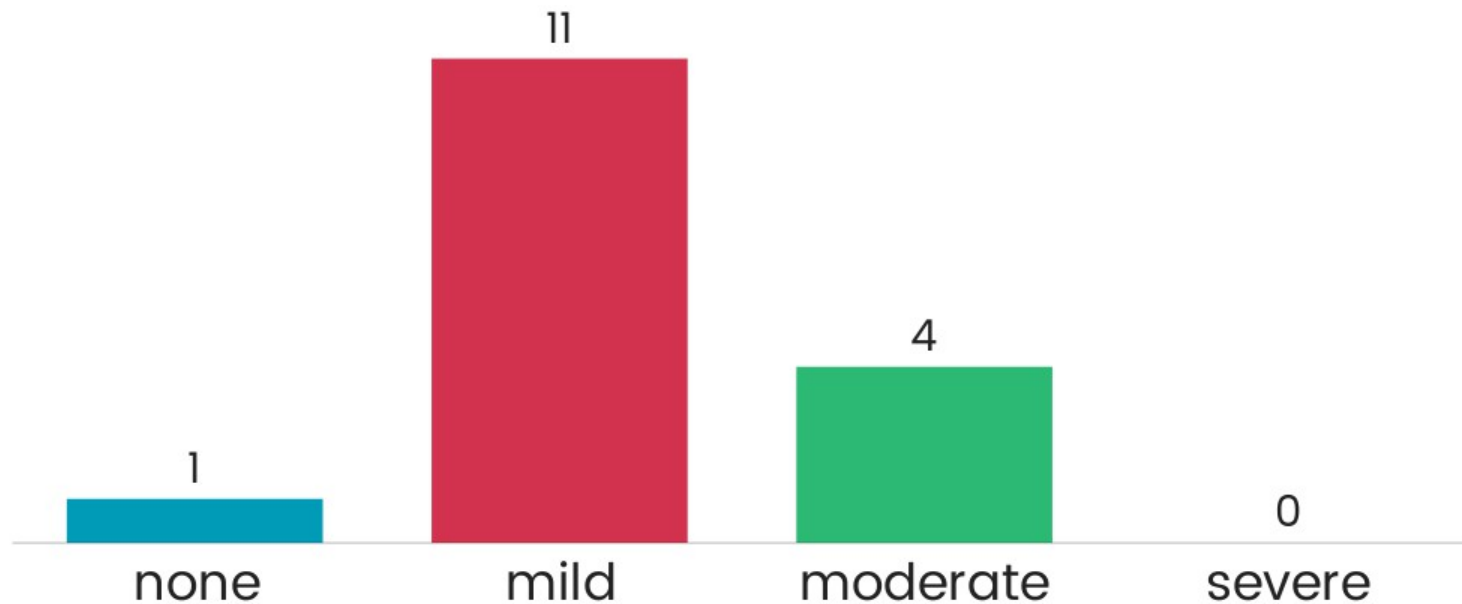
3.3	<b>Inflammatory skin diseases</b>					
3.4	Dystrophic epidermolysis bullosa				Severe, extensive alterations of the skin (blisters), even limbs may be lost, changes of mucous membranes with compromised food uptake, hyperalgesia <sup>33</sup>	

## EXAMPLE V: OBESITY



## Obesity – Which severity degree would you assign?

Mentimeter



## GUIDELINES ON SEVERITY ASSESSMENT AND CLASSIFICATION

No.	Symptom/disease	Non-harmful phenotype	Mild severity	Moderate severity	Severe severity	Monitoring, Refinement, special housing requirements
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### 10 Metabolic diseases

10.3	Obesity <sup>57</sup>	Bred for obesity without impairment of normal behaviour or general condition	Evidence of components of the metabolic syndrome (obesity, lipid metabolism disorder, elevated levels of blood glucose, hypertension), Classification depends on the level of impairment of the general condition			Dietetic food on cage floor, soft bedding when movement is impaired, monitoring the genital health, rat: normal-weight "grooming mate", more frequent change of cages
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## TAKE HOME MESSAGE

- Welfare assessment is **line-specific** according to prospective severity assessment and should be adapted to observations
- **Team approach** – scientist, animal caretaker, AWO/AWB
- **Guidelines** on severity assessment and classification as starting point and will be reviewed regularly according to **your feedback**
- **Transfer and archive severity assessments** to support animal welfare and science!



AKBT

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Empfehlungen

Stellungnahmen

Links

Impressum

# Arbeitskreis BERLINER TIERSCHUTZBEAUFTRAGTE



Empfehlungen und



Stellungnahmen



Links



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## ANY QUESTIONS?



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