## Standard Score Sheet for the assessment of wellbeing in mice

[Animal facility or facilities:]



CREATE CHANGE

Project title:		
Animal Ethics #	Name of contact person:	
Chief investigator:	Contact number:	
Research Group:	After hours number:	

Scoring of wellbeing will be performed relative to the following assessment criteria:

Cuitouio			Score				
Criteria	0	1 (mild)	2 (moderate)	3 (severe)			
Activity and responsivenes s	Normal	Mild/slight reduction in activity relative to normal or previous observations	Isolated from cage-mates or obvious reduction in activity and responsiveness relative to normal or previous observations; alternatively, there is increased response to stimulus (e.g. appears agitated, twitching, easily started, or photophobic)	Stationary while awake for prolonged periods (>15min); when nudged, does not move, or makes poor attempts to move; collapsed and unable to right itself; persistent and prolonged fitting/ trembling (>1min)			
Facial grimace (see image 1)	Not present	Facial grimace is subtle or inconsistent (i.e. only 1 to 2 of the "indicators" demonstrated in image 1 are moderately present)	Facial grimace is obvious (i.e. at least 3 of the 5 "indicators" are "obviously present") however, there must also be indication of other generalised symptoms (e.g. hunching, reduced activity)				
Coat condition (see image 2)	Normal	Coat does not appear entirely smooth, clean and silky (i.e. the coat appears slightly 'rough')	Some indication of piloerection is present (i.e. 'rough' coat), but it is not obvious over the mouse's entire surface area	Generalised piloerection, i.e. obvious, very rough coat over majority of the body's surface area (as demonstrated in image 2)			
Body position/ posture (see image 3)	Normal	Mild hunching (see image 3)	Moderate hunching	Severe hunching: or arching and writhing (despite analgesia having been provided)			
Respiratory function	Normal	-	Increased respiratory effort (mild increases in respiratory rate, increased abdominal movement)	Increased respiratory effort compromising normal behaviours (i.e. the animal is lethargic, isolated and inappropriately responsive); or has slowed respiratory rate and gasping; or is open mouth breathing; or has blue mucous membranes or extremities; or noisy breathing (e.g. respiratory "clicking")			
Body weight loss*	<5%	5-9% (relative to body weight recorded at the start of the experiment i.e. day 0)	10-14%	≥15%			

\*please note: body weight may not need to be measured at each monitoring point, particularly if monitoring is occurring frequently (as the procedure can be stressful for mice). A common-sense approach must be taken e.g. if the mouse is gradually developing symptoms and is subsequently being monitored daily or twice daily, it may be appropriate to weigh the mouse twice a week and at all other monitoring points record a body condition score instead (see image 4) – but using the most recent body weight loss score to calculate the cumulative score. In experimental mice that are asymptomatic, there is rarely reason to measure body weight more frequently than once a week.

Cumulative Score:	Action, relative to cumulative score:
0	= no action (in addition to routine care and monitoring)
1 to 4	= symptoms observed, monitor at least daily (including all animals of similar treatment groups), if symptoms are unexpected seek veterinary advice
5 to 11	= monitor at least twice daily, provide food/water supplementation (e.g. wet mash or gel pack on the cage floor), if symptoms are unexpected seek veterinary advice
> 11	= euthanasia is required (unless otherwise advised by a facility veterinarian)
*** A score of 3 in a	any one category = euthanasia is required (unless otherwise advised by a facility veterinarian) **

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Comments:

Image 1. The 5 "indicators" of facial grimace, as per Mouse Grimace Scale: <a href="https://www.nc3rs.org.uk/grimacescales">https://www.nc3rs.org.uk/grimacescales</a>
Please note: facial grimace can be subtle and requires experience to be able to assess accurately. If you are not comfortable assessing this parameter, you must seek training and support for this purpose – contact your Chief Investigator and the relevant animal facility staff.

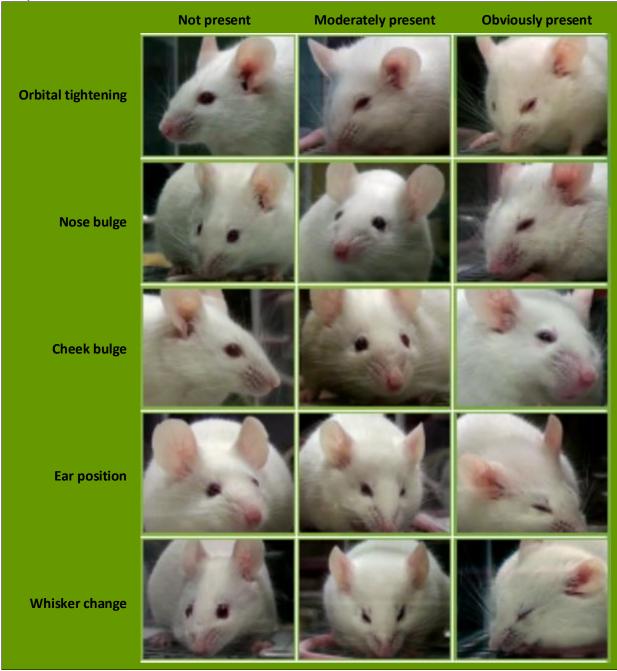


Image 2. Score 3 (severe) for the criteria: "coat condition". This mouse has diffuse piloerection, image source: https://www.humane-endpoints.info/en



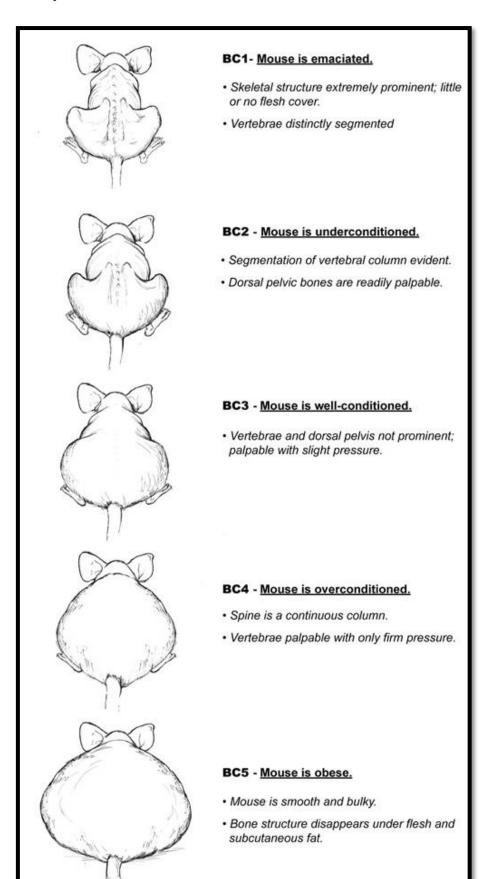
Image 3. Hunching, scored from normal (score 0) to severe (score 3), modified from: Sevcik MA, Jonas BM, Lindsay TH, et al. Endogenous opioids inhibit early-stage pancreatic pain in a mouse model of pancreatic cancer. Gastroenterology. 2006;131(3):900–910.

Please note: ear tag-identifiers (as displayed in this image) are generally not considered appropriate for use in mice, as there are other, more refined methods of individual identification.

A Degree of Hunching	B Hunching Profile	Normal (score 0)
C	D	Mild hunching (score 1)
E	F	Moderate hunching (score 2)
G	H	
		Severe hunching (score 3)

## Image 4: Mouse, Body Condition Score reference.

"Body Condition Scoring (BC) is a quick, easy and reliable method for assessing mouse health. It utilizes a scoring system of 1 to 5 with 3 being the optimal condition, 1 being emaciated and 5 being obese." Source: <a href="Burkholder T">Burkholder T</a>, Foltz C, Karlsson E, Linton CG, Smith JM. Health Evaluation of Experimental Laboratory Mice. Curr Protoc Mouse Biol. 2012;2:145–165. [Body condition scores should be used with this score sheet "Standard Score Sheet for the assessment of wellbeing in mice" to avoid excessive handling (through repeated weighing) when performing frequent monitoring. Body condition scores complement body weight measurements; however, their use does not contribute to the score sheet's "cumulative score"]



Monitoring (see "Standard Sco								scores relati	ve to the c	riteria belo	w)					
Project title: Chief Investigator: Experimental/ Treatment Group:				e of cont	act pers	son:			Conta	approva act numl se ID:		After hours:				
Date																
Day (of study)																
Criteria (score	es 0 to 3	3):				1										
Activity & responsiveness																
Facial grimace																
Coat condition																
Body position/ postui	re															
Respiratory function																
Body weight loss*																
Body weight change (%)	е															
Body weight (g)																
Cumulative score (i.e total)	<del>2</del> .															
Comments: (please use a key)																
*Please note: body	weight may	not need	to be mea	sured at ea	ch monitor	ing point.	Refer to "S	Standard Sc	ore Sheet	for the ass	essment of	wellbeing i	n mice" for	details.		
Cumulative score:	A	ction, rela	tive to cur	nulative so	core:											
0	=	no action (	in addition	to routine	care and m	nonitoring	)									
1 to 4	=	symptoms	observed,	monitor at	least daily	(includin	g all anima	ls of similar	treatment	groups), co	nsider see	king veterin	ary advice			
5 to 11	=	monitor at	least twice	daily, prov	ride food/w	ater supp	lementatio	n (e.g. wet i	mash or ge	I pack on t	he cage flo	or), conside	er seeking v	eterinary a	dvice	
> 11	=	euthanasia	a is require	d (unless o	therwise a	dvised by	a facility v	eterinarian)								
*** A score of	3 in any o	ne catego	ry = eutha	nasia is re	quired (u	nless oth	erwise ad	vised by a f	acility vet	erinarian)	***					
Original mouse we	eight (g)	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	5%	15.2	16.2	17.1	18.1	19.0	20.0	20.9	21.9	22.8	23.8	24.7	25.7	26.6	27.6	28.5
Weight loss (%)	10%	14.4	15.3	16.2	17.1	18.0	18.9	19.8	20.7	21.6	22.5	23.4	24.3	25.2	26.1	27.0
	15%	13.6	14.5	15.3	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.1	23.0	23.8	24.7	25.5

Name of contact person:

After hours:

Contact number:

## Monitoring record for the assessment of wellbeing in mice (see "Standard Score Sheet for the assessment of wellbeing in mice" for a description of the scores relative to the criteria below)

AEC approval #:

Day of study: \_\_\_\_\_

Project title:

**Chief Investigator:** 

Date: \_\_\_\_\_

		Crite	ria (sc	ores 0	to 3):						
Mouse ID#	Treatment group	Activity & responsiveness	Facial grimace	Coat condition	Body position / posture	Respiratory function	Body weight loss*	Body weight change (%)	Body weight (g)	Cumulative score (i.e. total)	Comments:
*Note: body we for details.	eight may not need to be	e measui	ed at ea	ch moni	toring po	int. Refe	er to "Sta	ındard S	core She	eet for th	e assessment of wellbeing in mice"
Cumulative	score: Act	tion, re	lative	to cun	nulativ	e scor	e:				
0	= n	o actio	n (in ad	ddition	to rout	ine car	e and	monito	ring)		
1 to									ıding a	ll anim	als of similar treatment
5 to	= m	nonitor	at leas	t twice		provide	food/	water s			on (e.g. wet mash or gel
> 11					r), con d (unle:						veterinarian)
				•	`				•	•	cility veterinarian)***

Original mo weight (		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Weight loss (%)	5%	15.2	16.2	17.1	18.1	19.0	20.0	20.9	21.9	22.8	23.8	24.7	25.7	26.6	27.6	28.5
	10%	14.4	15.3	16.2	17.1	18.0	18.9	19.8	20.7	21.6	22.5	23.4	24.3	25.2	26.1	27.0
	15%	13.6	14.5	15.3	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.1	23.0	23.8	24.7	25.5