

Article

# Supplementary Materials: Living the ‘Best Life’ or ‘One Size Fits All’ – Stakeholder Perceptions of Racehorse Welfare

Deborah Butler \*, Mathilde Valenchon, Rachel Annan, Helen R. Whay and Siobhan Mullan

School of Veterinary Sciences, University of Bristol, Langford, Somerset BS40 5DU, UK; mathilde.valenchon@bristol.ac.uk (M.V.); rachel.annan@bristol.ac.uk (R.A.); Bec.Whay@bristol.ac.uk (H.R.W.); Siobhan.Mullan@bristol.ac.uk (S.M.)

\* Correspondence: deborah.butler@bristol.ac.uk

Received: 6 March 2019; Accepted: 28 March 2019; Published: date

**Table S1.** Stakeholders perceptions of minimum welfare standards and the best ‘life’ a horse in training can live for health (58 statements, ranked 1<sup>st</sup>).

Minimum welfare standards (24 statements in total)	‘Best life’ (34 statements in total)
<b>Veterinary care (9 statements)</b>	<b>Veterinary care (12 statements)</b>
Appropriate vet support Welfare of horses’ paramount, vet, essential for injury, disease	Immediate vet support
Lameness investigated and treated if lame	Constant veterinary care
Vaccination as required- reasonable	Welfare improved through an improvement in vet care/diagnostics
Ulcers under grade3/4 for ‘acceptable’ welfare	Vaccination, reasonable, risk based
Stomach, yearly gastroscopy.	No ulcers
Treatment. Always following an attempt at a diagnosis. Evidence based treatment	Stomach, twice yearly gastroscopy
Vet care basic and only when needed	Treatment. Always following an attempt at diagnosis.
Vet in emergency, vet care when needed	Vet in the yard
	Vet immediately available
	Evidence based treatment not anecdotal
	Vets on hand
	Wind only treated in response to a problem
<b>Health care (4 statements)</b>	<b>Health care (9 statements)</b>
(Basic) free from pain	Team work (farrier, vet, physio, dentist etc)
General health check	Collaborative preventative health care for individual horses
Dentistry once yearly by a qualified equine dentistry technician or a vet	Dentistry twice yearly by a qualified equine dentistry technician or a vet
Disease control, keep alive!	Sound in all gaits (happy athlete)
	Individuals in terms of health care
	Massage, teeth, worming
	Little and often work rather than concentrated pressure to keep healthy
	Disease control, quarantine sick horse but ideally in view of other horses
	Bred to sound and healthy

<b>Veterinary interventions (3 statements)</b>	<b>Veterinary interventions (4 statements)</b>
Breathing in general, treatment if needed Overuse of medication to keep a horse racing Unnecessary use of wind operations	Breathing, no respiratory system disease Wind only treated in response to a problem Excellent veterinary treatment when needed at races Use of treatment /paste for gastric ulcers
<b>Farriery (8 statements)</b>	<b>Farriery (5 statements)</b>
Good shoeing Basic farriery Gd farrier but comes every 6 wks but only does what he is told Farrier 6 wks or when lost a shoe Shoes left in too long to cut costs Poorly shod for conformation and stage of training, lazy farriers Shoeing to soundness Shoeing before a race and when needed	Farrier- basic and regular plus specialist if required Regular shoeing from farrier who knows the horses Farrier (foot balanced) Shod appropriately to its discipline and stage of training Farrier who knows the horse's feet
<b>Para-professionals (0)</b>	<b>Para-professionals (3 statements)</b>
	Chiropracter Regular physio and chiro (massage etc) Industry experts with no incentive to present to the vet
	<b>Additional therapies (1 statement)</b>
	Ice boots, salt box, hydro chamber, osteopath, sea walker, spa, solarium, swimming pool

**Table S2.** Stakeholders perceptions regarding minimum and best 'life' with regard to training, exercise and recovery (43 statements, ranked 2nd).

<b>Minimum welfare standards (21 statements in total)</b>	<b>'Best life' (22 statements in total)</b>
<b>Exercise (9 statements)</b>	<b>Exercise (11 statements)</b>
Fit horses leave their box every day Only worked when sound Ridden 6 days a week Exercised 6 days/week Exercised 6 days/week Horse is fit enough to participate Comfortable in canter Walker every day and alternate direction every other day Exercised daily	Qualified flatwork training (a well-balanced horse will suffer less injuries) Cross training and varying working routine for horses mental and physical well being More time riding out Plenty of time to cool down after exercise Exercise regime to suit individual horse Ridden and warmed up, cooled down Exercised daily Exercise, how much, how often Maintain condition, fitness Daily exercise Exercise about an hour, safe surfaces
<b>Training (1 statement)</b>	<b>Training (7 statements)</b>
At a min, horses should be used to different surfaces so don't struggle on grass after all-weather surface	Appropriate training and exercise to [be able] to ride safely Race day experience is as stress free as possible

	<p>after a considered preparation</p> <p>Best surfaces</p> <p>High quality gallop surfaces to reduce injuries</p> <p>No queuing for gallops</p> <p>Yards own gallops well maintained</p> <p>Short breaks to recuperate where fitness is not lost</p>
<b>Horse-human education (6 statements)</b>	<b>Horse-human education (1 statement)</b>
<p>Education of horses re stalls, education at home</p> <p>Preparation safe, schooled properly for horse and rider</p> <p>Staff/riders do no harm</p> <p>Minimum care after exercise as 'rider outers' used rather than 'paid' lads</p> <p>Riders not regular</p> <p>When rider outers don't know the horse and put back in the box without basic husbandry attended to like sponging off</p>	<p>Riders to be assigned to ride horses where they suited the horses individually, in terms of rider temperament</p>
<b>Transport (1 statement)</b>	<b>Transport (2 statements)</b>
<p>Even 6+ trip to races done in a day</p>	<p>Transport enough room, not too long a journey, educated to load properly, safe</p> <p>Travelling, quiet, temp controlled, water/hay, adequate travelling staff. One person familiar with the horse</p>
<b>Recovery (4 statements)</b>	<b>Recovery (1 statements)</b>
<p>Too much racing</p> <p>Just doing as little as possible after a run to let the horse recover after a run</p> <p>Loaded up too quickly after a run</p> <p>Lack of time to have a pick of grass after exercise</p>	<p>Travelling for horses (rested between meetings)</p>

**Table S3.** Perceptions of participants' opinions regarding minimum and best 'life' with regard to physical comfort/living environment (40 statements, ranked 3rd).

<b>Minimum welfare standards (16 statements in total)</b>	<b>'Best life' (24 statements in total)</b>
<b>Bedding (5 statements)</b>	<b>Bedding (5 statements)</b>
<p>Suitable stabling-clean bedding, maintenance routine</p> <p>Dust free, adequate bedding</p> <p>Minimal basic bedding</p> <p>Bedding, not just mats</p> <p>Limited shavings, safe, clean, dry, gd light, size enough to roll</p>	<p>Housing suited to individual's character and some in barns, some set apart, some closed in, some opened up</p> <p>Deep straw bed and mucked out twice a day</p> <p>Deep bed, rubber mats</p> <p>Plenty of bedding</p> <p>Padded walls, mats, plenty of bedding, shavings?</p>
<b>Stabling (5 statements)</b>	<b>Stabling (5 statements)</b>
<p>Relaxation time in the box limited</p> <p>Wooden boxes</p> <p>Min shelter from elements</p> <p>Safe stable, enough bed so can't make contact with the floor</p>	<p>Large, light stable</p> <p>Clean stabling, mucked out every day, clean bedding</p> <p>Grills between stables, sight and smell</p> <p>Environment to minimise stress</p> <p>View- to prevent boredom, crib biting</p>

Size of stable/stalls. Should be able to get up and down	
<b>Tack (2 statements)</b>	<b>Tack (6 statements)</b>
Correctly fitted tack	Tack supplemented with sheepskin pads and girth covers
Adequate fitted tack	Tack fitted and tailored to each horse
	Own bridle with well fitting saddle
	Dedicated tack with regular saddle checks
	Well fitted tack with full tree saddle
	Comfortable safe tack
<b>Ventilation (2 statements)</b>	<b>Ventilation (5 statements)</b>
Adequate daylight and ventilation	Temp. Optimum controlled environment
Airflow	Well ventilated stables
	Ventilation. No outside access, never too hot/cold?
	Good ventilation
	Stable gd air flow, not damp, light
<b>Rugs (2 statements)</b>	<b>Rugs (3 statements)</b>
Rug for each weather condition	Warmth/cold, varying by season
Rugged in winter	Clipped in winter, rugged according to weather conditions
	Used appropriately depending on the weather conditions

**Table S4.** Stakeholder perceptions regarding minimum and best 'life' with regard to feeding (30 statements, ranked 4th).

<b>Minimum welfare standards (16 statements in total)</b>	<b>'Best life' (15 statements in total)</b>
<b>Forage and hard food (6 statements)</b>	<b>Forage and hard food (10 statements)</b>
Good feed & man doing the feeding all the time, knows horses inside out	Top quality feedstuffs and supplements
Safe food, not out of date	Feed, fresh, balanced, spread out over the day
Concentrates and roughage.	<i>Ad-lib</i> forage (tailored to individual)
Sufficient feed and haylage	Top quality forage sourced from anywhere in the world and feed
Feed, liberal roughage, <i>ad-lib</i> hay, hard feed based on current exercise	Gd quality feed to individual's needs and gd dust free forage
Good quality clean forage and feed (not harmful)	'Hay gain' to steam hay to minimise dust
	High standard of forage
	Unlimited high quality haylage/hay
	Feed, liberal roughage, <i>ad-lib</i> hay, hard feed based on current exercise
	Specialist feed (tailored to each horse)
<b>Number of times fed (5 statements)</b>	<b>Number of times fed (3 statements)</b>
No variety in [rigid] routine of feeding	Feed 4/3 x day. Gd quality food, optimum amounts to maintain weight. Balance for exercise
One feed 05.00	Minimum 3xdaily regular balanced diet and appropriate formula for work done
One feed 12.00	<i>Ad-lib</i> forage monitored by staff
One feed 18.00	
Hard feed am and pm. Hay/haylage twice a day	
Forage twice a day, concentrates 2/3 times	
Hard feed 10%, forage at night	
Severely restricted forage and too much concs proportionately	

<b>Water (4 statements)</b>	<b>Water (2 statements)</b>
<i>Ad-lib</i> clean water (4 x)	<i>Ad-lib</i> clean water Automatic water

**Table S5.** Stakeholder perceptions of minimum and best 'life' with regard to daily routine and monitoring (26 statements, ranked 5<sup>th</sup>).

<b>Minimum standards (13 statements in total)</b>	<b>'Best life' (13 statements in total)</b>
<b>Routine (7 statements)</b>	<b>Routine (5 statements)</b>
Routine	Established routine
Daily check	Change routine if it's not working
Routine	Routine/variety, feed/exercise/staff
Routine	Individual work routine and care
Changing routines affect welfare	Great ridden routine, turn out, swimming
No change of scenery the same route to the gallops and back day in, day out	(tailored to each horse)
Limited routine, up one gallop every day	
<b>Care (3 statements)</b>	<b>Care (4 statements)</b>
Don't get routine care at morning and night, everyone too busy	Attention to detail when looking after the horse daily
Visual contact of horse	Limiting [dangerous] factors in day to day life
Relaxation time in box limited	Pick of grass if no turnout
	Getting comfortable with new/unusual experiences (e.g. racing) tailored to suit the horse
<b>Horse-human relationship (2 statements)</b>	<b>Horse-human relationship (3 statements)</b>
Treating all horses in the same way so one size fits all	Grooming daily
Minimal staff and time spent with horse	Consistency of routine and carer
	Same person looking after and riding the same horse every day if they get on
<b>Staff ratio 6 horses:1 lad (1 statement)</b>	<b>Good horse: staff ratio 3 horses:1 lad (1 statement)</b>

**Table S6.** Perceptions of participants' opinions regarding minimum and best 'life' with regard to policy and procedures (16 statements, ranked 6<sup>th</sup>). There were no minimum welfare standards statements.

<b>Standard procedures (8 statements in total)</b>	<b>Policy 'Best life' (8 statements in total)</b>
--	---

<p>Assessment of welfare using behavioural and physiological methods indicates an animal can perform at the top level with good welfare</p> <p>Trainers monitors health of horses in a systematic way</p> <p>On-going individual assessment and programme of work and care for horses</p> <p>Daily vet care, monitoring system/historical data collected</p> <p>Where trainers have undergone competence based training rather than tick box, attend all modules</p> <p>Checking yards where staff are always leaving</p> <p>Rider coaching and development, make them better</p>	<p>An agreed set of interventions for racing clearance post stand downs (where there is a set protocol to follow)</p> <p>Some assessment of horses at the races that covered pre and post-race management, which included warming up and cooling down.</p> <p>Lameness routine, assessment at racecourse prior to racing</p> <p>Lameness, gold standard investigation and treatment if needed</p> <p>Standard set of criteria for wind ops and surgery with a set stand down [period] before running again</p> <p>CPD for trainers, would have a measurable impact on welfare</p> <p>Regulatory framework for manage welfare issues</p> <p>Post race life is accounted for</p>
<b>Drug and veterinary intervention (1 statement)</b>	<b>Drug and veterinary intervention (No statements)</b>
<p>Therapeutic use exemptions (TUE's)</p> <p>omezaprazole, regumate, [the restrictions placed on the administration of some drugs before racing needs addressing</p>	

**Table S7.** Stakeholder's perceptions of minimal welfare standards and 'best life' with regard to turnout/social contact (16 statements, ranked 7th).

<b>Minimum welfare standards (4 statements in total)</b>	<b>'Best life' (12 statements in total)</b>
<b>Turnout (2 statements)</b>	<b>Turnout (8 statements)</b>
<p>Degree of turnout for same period each day, with/without grazing</p> <p>Turnout whatever the weather conditions, even when it's too hot and no care</p>	<p>Turn out every every day, elements, space/grass/outdoors/being able to buck and kick</p> <p>Paddock living with access to shelter by choice</p> <p>Access to grass-may be controlled</p> <p>Choice of access to outside space</p> <p>Keeping horses' lives as natural as possible</p> <p>Daily access (weather permitting) to turnout</p> <p>Paddock turnout every day dependant on weather</p> <p>Availability of turn out paddocks</p>
<b>Social contact (1 statement)</b>	<b>Social contact (4 statements)</b>
<p>Visual access to other horses</p>	<p>Wider access to social companions, group turnout (appropriately managed)</p> <p>Adjoining paddocks (non-damaging biosecurity)</p> <p>Adjoining paddocks, groom but not kick</p> <p>Adequate mental stimulation</p>
<b>Human-horse relationship (1 statement)</b>	<b>Horse-human relationship (0)</b>
<p>Same lad/lass looking after horse with</p>	

---

regard to turnout

---

**Table S8.** Perceptions of participants' opinions regarding minimum and best 'life' with regard to staff management and education (15 statements, ranked 8<sup>th</sup>).

<b>Minimum welfare standards (6 statements in total)</b>	<b>'Best life' (9 statements in total)</b>
<b>Care (5 statements)</b>	<b>Care (8 statements)</b>
Staff not consistent and don't notice if the horse is unwell or off colour	Good staff, kind, care and awareness and
Caring and capable staff	experienced rider ability
Competent knowledgeable staff/trainer	Experienced knowledgeable staff who will listen
More education of those involved in racing	Knowledgeable empathetic staff
Care, no abuse from staff	Skilled staff in handling and riding
	Experienced staff who know if a horse is lame
	Well trained staff
	Caring well trained staff
	Knowledgeable experienced staff
<b>Management (1)</b>	<b>Management (1)</b>
Understanding of racing/training education rather than licence through 'who you know, how much money you have'	Strong leadership and management in the yard

**Table S9.** Perceived challenges to racehorse welfare

Participants were asked to record, on sticky notes, the perceived challenges the racing industry needed to address in terms of racehorse welfare. In total participants provided 68 statements which after analysis were placed in one of the eight themes, as illustrated below.

### **1. Health/veterinary care (14 statements, ranked 1st)**

Soundness

On-going health issues-repetitive injuries

Medication of joints.

Chronic disease monitoring including dentistry, veterinary aspects, pain management more important than management issues.

Pain (injury/ulcers)

Revisit the use of medicines not allowed to give after racing, e.g., omeprazole

[The need for] greater robustness of substance analysis

Overuse of veterinary interventions

Surgery for no suitable reason

Monitor welfare at sales/horses too buzzed up/too many scopes

Speed kills/injury

Travel without hay (some no hay 24 hrs before racing)

Breathlessness

Wind ops

### **2. Staff education and education (12 statements, ranked 2nd)**

[Lack of] quality staff and trainers

[Lack of] good quality staff

Lack of experienced staff

[Lack of] sufficient well trained staff  
[Not] enough staff with experience and knowledge  
[Lack of] basic knowledgeable staff  
Bad trainers  
Bad riders/staff  
Competent proprietors  
Trainers education – need a trainer’s exam  
Trainers not listening to lads (re lameness)  
BHA should monitor trainers who are always sending back stable passes and the BHA should investigate them

### **3. Daily routine and monitoring (8 statements, ranked 3rd)**

Having time to spend exercising and on routine exercising  
Little relaxation time for horses in yards  
Daily routine of food and work of horses  
Current routine in flat yards (*starting so early all the year round*)  
Staff/horse ratio  
Staff and trainers to know their horses  
The standard of care in terms of horse husbandry, stable routine, ‘looking round.’  
Too much poor racing and a lack of staff to look after the horses back at the yard as people are off racing

### **4. Training/exercise and recovery (8 statements, ranked 4th)**

Rushed recovery after racing  
Horses labelled as ungenune when their race day experience all rushed, still blowing when on the lorry  
No recovery time after race  
Overtraining, no time to adapt  
Starting horses too young  
Travelling horses in hot weather  
Time- horses rushed when broken in  
Sales- breeze ups

(Some of the suggestions that were put forward in the final task, 'New practices they have seen' could be interpreted as challenges for the industry to deal with. These include: - Breeze ups putting too much pressure on young mentally and physically immature horses. Horses broken in properly, so they have another career as well as making them easier to deal with).

### **5. Physical comfort/living (6 statements, ranked 5th)**

Cleanliness of establishment  
Standard of stables, ambience  
Level of health in yard (in terms of yard hygiene, flu, herpes, low grade bacterial infection)  
‘Stable’ environment for horses  
Good up to standard facilities, paddocks, boxes, gallops  
Variety of saddle options

### **6. Turnout/social contact (6 statements, ranked 6th)**

Meeting of mental needs, social behaviour  
Mental attitude and happiness  
Being able to express normal behaviour/ socialise  
Ability to build personal relationship with lad  
Lack of turnout and social companionship with other horses  
Mental health

### **7. Policy and procedures (4 statements, ranked 7th)**

Owners grabbing horses after winning (Health and Safety)  
BHA should be split- governance and regulation  
Owners driving handicapping system  
Running over unsuitable trips

**8. Other areas (3 statements, ranked 8th)**

Being owned by an owner who doesn't understand racing  
Breeding for performance rather than breeding from 'tough' horses that had proved themselves without lots of veterinary intervention  
That public perception does not match with actual welfare issues  
Value of horses after their racing career has finished

**9. Feeding (2 statements, ranked 9th)**

Enough relevant feeding  
Basic feeding to prevent ulcers and digestive issues