Recognizing and Preventing Stress in Therapy Dogs

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Stress

• stimulus (= stressor)
• dealing with challenge
• evolutionarily rooted → survival in case of a (potential) threat

**Goal:** Coping and maintaining balance

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Stressors

Physical
- e.g. noise, temperature

Chemical
- e.g. toxins, medication, pollution

Biological
- e.g. pain, thirst, estrus

Social
- e.g. separation, isolation, competition

Psychological
- e.g. fear, aggression, helplessness

Cognitive
- e.g. overstimulated, understimulated, anticipation

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Stress response

- Input (Stressor)
- Processing (Subjective Experience)
- Output (Stress response)

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Stress hormone pathways

Noradrenaline, Adrenaline, Cortisol

Metabolic, cardiovascular and immunomodulatory effects

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**Acute stress consequences**

**Central nervous system:**
↑ Attention, Alertness, Aggression, Performance
↓ Pain

**Periphery:**
↑ Heart rate, blood pressure
↑ respiratory rate
↑ Blood supply (brain, heart, skeletal muscles)
↑ Immune function
↓ Inflammation
↑ catabolic metabolism (sugar and fat)
↓ vegetative function (reproduction, digestion, growth)
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Stressed or balanced?

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→ …have limited-none involvement in daily routines, acitivites and participation of AAls

→ …rely on human empathy and expertise regarding best practice

→ Recognizing stress = Precondition for handling consequences

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Do dog owners recognize stress?

• 60%: provide a correct definition
  20%: believe it’s a short term condition without any relevance

• Owners who recognize subtle signs of stress → dog moderately-very stressed

• Owners who fail to recognize subtle signs of stress → dog minimally stressed

• Agreement between dog owners and veterinary experts:
  Pain > Stress

(Mariti et al. 2012; Lind et al. 2017)
Screening criteria for AAI volunteer teams

- **Demographics**
  - ✔ Name (both), age (both), breed
  - ✗ Dog size/weight, type of collar, trainer/facility

- **Dog skills**
  - ✔ Accepting stranger, down/sit/stay on command, reaction to other dog
  - ✗ Restraining hug, treat offered, passing between strangers, staggering/gesturing individual

- **Further criteria**
  - ✔ AAI certificate, temperament (dog), vaccines (dog)
  - ✗ Requirements for handlers

(Hartwick & Binfet, 2019)

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50% of working AAI team

100% of team responsibility for the process

(Frederickson-MacNamara & Butler, 2006)
Research on therapy dog welfare


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Research methods: Behaviour monitoring

(Glenk et al. 2014; modified)
Research methods: Biomarker in body fluid

1. Sampling
2. Preparation
3. Analysis

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Research methods: Heart rate monitoring

http://www.kleintierecho.com

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Research methods: Handler protocol, questionnaire, interview
Research results

• More stress-related behaviors in younger dogs (< 7 years) (King et al., 2011; McCullough et al., 2018; Clark et al., 2019)

• Dogs rated as minimally stressed had lower post-session cortisol levels (Koda et al., 2015)

• No differences pre- to post session in dogs rated as severely stressed (Koda et al., 2015)

• Higher cortisol levels → more stress-related behaviors, less sociopositive behavior (McCullough et al., 2018)

• Dogs who scored higher on fear of strangers → less sociopositive behavior (McCullough et al., 2018)

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• “Tail down” and “Lip licking” most frequent stress behaviors (Uccheddu et al., 2019)

• Elevated adrenaline and noradrenaline levels if dogs were restraint for longer periods (Uetake et al., 2007)
Research results

- No differences in cortisol levels and behavior on working and control days (Glenk et al., 2013; Ng et al., 2014; Pirrone et al., 2017; McCullough et al., 2018)

- Higher heart rates on working days (Pirrone et al., 2017)

- Higher stress ratings and cortisol levels in unfamiliar environment (Ng et al., 2014; Koda et al., 2015)

- Noradrenaline concentrations (pre- to post session) decreased over time in repeated AAI (Uetake et al., 2007)

- ↓ Cortisol pre- to post session correlated with „Lip Licking“ and „Body shake“ (Glenk et al., 2014)

- 2 sessions/week resulted in lower cortisol levels (pre- to post session) compared to 1 session/week, 2 sessions/month, 1 session/month (Clark et al., 2019)

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Welfare challenge: Environment

Florock

Daily Telegraph
Welfare challenge: Accepting strangers

- Inappropriate behavior toward the therapy dog initiated by recipients and staff members
  (Hatch, 2007; Ehren, 2014)

- Informed consent for staff members, behavioral instructions for recipients before rather than during or after introduction of the therapy dog

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Welfare challenge: Accepting strangers

- Stranger with friendly voice, facial expression approaching at normal pace → high contact seeking

- Stranger approaching in threatening manner (slow movements, staring eye contact, upper body slightly bent forward) → gaze avoidance, vocalizations, backing away

(Vas et al., 2005, Györi et al., 2010)
Welfare challenge: Relationship/ Bond

- Human-dog bond resembles mother-child bond (i.e. exploration, secure base, separation distress)

  (Horn et al., 2013; Prato-Previde et al., 2003; Topal et al., 1998)
Welfare challenge: Relationship/ Bond

- Behaviors between securely and insecurely attached dogs in AAAs did not differ
  - more time in proximity to and touching the recipient
  - more gazing at dog handler
  - Insecurely attached dogs gazed more often at the handler
    (Wanser & Udell, 2019)

- More joint attention and gaze synchrony between dog and handler during AAlS
- Individual preferences for close physical contact with recipients
  (Pirrone et al. 2017)

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Welfare challenge: Training methods

(Deldalle & Gaunet, 2014)
Welfare challenge: Training methods

- Reward based training → higher scores of obedience and more learning effects
- Causal relationship between punishment and problematic behavior
- Punishment raises anxiety in the dog → impaired welfare → poor relationship

(Hiby et al. 2004)
Fear/Anxiety primes us toward avoidance (instead of any desirable behavior)!

→ Limited cognition, creativity and learning
Welfare challenge: Training methods

(Deldalle & Gaunet, 2014)
Lip (Mouth) licking

- More often in response to angry expression (Human > Dog)
- No such effect for only auditory stimulation

(Albuquerque et al. 2018)
Welfare challenge: Forced positions, restraint

• Differences in behavior and cardiovascular responses while petting/holding head, muzzle or paw (-) versus petting neck, chest, or tailbase (+) (Kuhne et al., 2014)

• Less acceptance toward being touched by strangers: increased withdrawal, defensive gestures and displacement (Kuhne et al., 2012)
Therapy dog wellness strategies

• Ample opportunity to rest and sleep
• Physical exercise (mild)
• Quiet play, cognitive activity (sniffing)
• Chewing
• Positive social relationships
• Daily routines
• Gentle massage (e.g. TTouch)

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Therapy dog wellness strategies

- Hafen of safety
  → let dog explore unfamiliar environments
  → familiar cues in novel environments (transportbox, preferred blanket), camouflage

- Familiar routines
  → games, tricks, toys, treats, procedures → security, success

- Arrange activities and people
  if approached from only one direction → less feeling of being crowded

- Always mind the proximity to recipient/s
  → If needed, provide more distance

- Be gentle to your dog and yourself

(Bielenberg, 2004; modified)

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Glenk, 2017
Current Perspectives on Therapy Dog Welfare in Animal-Assisted Interventions
http://www.mdpi.com/2076-2615/7/2/7/htm
doi:10.3390/ani7020007

Glenk & Kothgassner 2017
“Life Out of Balance: Stress-Related Disorders in Animals and Humans”
http://link.springer.com/chapter/10.1007/978-3-319-47007-8_7

Glenk in press
“A dog's perspective on animal assisted interventions”
In: Pets as Sentinels, Forecasters and Promoters of Human Health
Questions?

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