

The heat is on: the feline TNZ

Dr Aine Seavers MVB MRCVS discusses the importance of the feline thermoneutral zone, which she describes as a game-changer enabling vets to use the feline higher preferred ambient temperature zone to benefit the cat's health and emotional welfare

The National Research Council (NRC) suggests the thermoneutral zone (TNZ) for cats is 30°-38°C; which is comparatively high. Humans like to work and live in an 18°-25°C range, dogs prefer a 20°-30°C range. That means for many cats, but especially temperature sensitive breeds like Siamese, sharing a house with humans makes the cat feel like we humans would feel indoors at 8°C, cold and miserable and if also arthritic, then often with a higher pain load.

More often than not, in homes and in vet clinics, we inadvertently provide uncomfortable, insufficient, ambient temperature areas for all cats.

Their high TNZ explains why cats risk their lives in winter in search of heat when they climb into tumble dryers and under cars in the constant search for warmth.

COLD DISTRESS

Similarly, in summer in warmer climes when air conditioning is used to keep our homes and workplaces around 24°C, similar silent cold distress occurs for cats. This cold distress explains why cats will hog the window sills to soak up the sun's heat rays through the windows.

Therefore, no matter how well-soundproofed your cat hospital cage areas are in order to block out noise-related stress triggers, if the area the cat kennels are situated in is not itself heated beyond what is comfortable for dogs and humans, then your cat patient is miserable.

We neglect the huge pain relief that heat can supply to some arthritic cats and by denying these cats the extra heat, we lose an opportunity to provide additional analgesia and leave them in preventable pain.

My elderly Siamese cat Inca outlived the rest of my pets, and provided useful lessons on elderly cats' needs. If Inca awoke in the morning and discovered we had not personally organised for the sun to be out and shining through the windows to heat up one of his many daybeds, he would throw the cat equivalent of a verbal temper tantrum.

At those times, his limbs were very much cooler than the rest of his body. As someone who suffers long bone pain in cold weather, I could sympathise at how one's bones feel like they are cracking apart with the pain. Medications helped with his traumatic arthritis but not this cold bone pain – only warmth stops that pain. So up I would get and either crank a heater on full blast, if the weather was inclement, or allow him outside to the many warm, sun-kissed paving stones and nooks where he could warm up.

I am convinced that this elderly cat lived an additional two good years once he had access to outdoor heat, which he lapped up so much on occasion as to appear 'sun-drunk' when he initially staggered out of his sunspots to come back inside for mealtime.

Taking what I knew about TNZ and what Inca taught me has



Cold distress causes cats to seek out radiators as a source of warmth.

enabled me to help other cat owners, but especially Siamese owners. The Siamese cat who won't settle in the morning is a cat in pain who needs its pain addressed with medication as well as upping the heat supplied.

As cats need rooms a lot

warmer than we humans like, owners and vets must create a heat zone for the cat to move in and out of as they require. That means in summer you need to be alert to allowing cats access to places in which to warm-up in or hide from the air-conditioning. Indoors in winter, even in a house warmed to 23°C, you still need to have superheat zones that the cat can access safely to relax in and benefit from.

I am now suspicious that all those drawings/illustrations over the centuries of cats curled up are in fact illustrations of freezing cold cats. When given the chance, cats love to stretch and lie extended out in the sunshine or on a radiator or on a hot blanket soaking in the heat. The real question is: do cats only curl up tightly because they are uncomfortably cold?

CLINIC CONSULTATIONS



Do cats only curl up tightly because they are uncomfortably cold?

As a vet, what the TNZ knowledge taught me was that I could use this absolute requirement for heat to my advantage when handling all cats at the Vet clinic. We started using heat beds on our examination tables during cat consults.

We had a variety of small reusable heat packs wrapped up in fleece material (preferred cat

substrate according to a behaviour study) that went on my consult table for any cat consult. These small beds were strictly cat-use only, to avoid any contamination from stressful dog pheromones, plus they were quick and easy to wash and rotate. The wheat germ packs are small, homemade by a client cheaply for us so it is no issue to send a patient home with one or to dispose of them appropriately, if we are concerned about the risk of contagion depending on the reason for the cat's presentation. Equally you can bulk-buy wheat germ heat packs commercially.

We also used the reusable Snuggle safe heat discs which have removable covers and are wipeable. They are great for

boarding or ambulatory cat patients that can move on and off the pack as the patient deems comfortable.

This heated table bed transforms handling a cat patient. The cats realise the heat pack is there, sit on it and don't move.

An additional tip is to spray the bed covers with Feliway and sprinkle with catnip. The heat from the germ packs seems to potentiate the aroma of both products for added relaxation benefit to the cat.

Using a heat pad on the consult table can transform how a nervous or anxious cat can be convinced to settle. The three images below show a previously terrified non-feral cat respond to the discovery of a source of heat after a very cold trip to the vet clinic. He rapidly went from panicked to settling to then smooching – something unheard of at any of his previous vets.

As a vet, you can perform a fuller physical examination on a cat who now doesn't care as much as usual because the cat is now blissfully sitting on a deliciously warm table.

One grumpy old cat – whose owner walked to the clinic with it in a hand-carried cat box on what was a very cold day – was so enamoured of our wheat germ heat pack that the cat dug his nails into it and would not be separated from it. He hugged it to his chest and would not let go. We had to send him home with it and the owners say it has transformed his behaviour at home as well.

We also ask the clients who drive their cats to the vet clinic not to sit the cat cage on the back seat directly in the flow of the air-conditioners. Instead, we ask the client to set the carrier behind a seat away from the air vent.

Thanks to the CVE and Dr Frits Lambert for the radiator cat photography and the Wilkinson, Daly and Hahn families for their cat photographs.



A heated table bed greatly eases the challenges that arise in the handling of a cat patient.

TNZ IMPACT ON ACTINIC/SOLAR INDUCED SKIN DISEASE

If skin cancer is a reflection of exposure imbalance in the environment, then not addressing all aspects of the environment leaves treatment under-provided.

As vets, we prescribe our sun cancer cats with UV shirts, Cox 2 meds, Aldara/Imiquimod topically, and surgically resect or excise etc, but then fail to get the owner to understand the why and the how of the reasons the actinic lesions occur in the first place.

How many of our cat-owning clients understand, or even know, that if a cat's preferred ambient temperature zone is 30°-38°C, then failing to provide appropriate non-solar sources of indoor heat pushes the cat to seek out and remain in solar-heated areas indoors for longer than is safe/healthy? This double-whammy with cats is that the law of unforeseen consequences comes into play if we don't factor in the needs of the cat along with the needs of the treatment programme. Cats need sun avoidance and need heat sources.

If we fail to teach these owners of the absolute need to provide indoor heat sources and only teach the need to keep the cancer cat indoors during high UV hours and away from windows to reduce the total actinic exposure load damage, we set up a cascade of stress, relapse and uncomfortable living for the cat. Owners must be educated on both the risks and unique needs of their cancer cat.

Take home message : If you contain cats inside in a home or vet clinic, you need to provide heat sources all year round for them.

Reader Questions and Answers

1 WHAT IS THE TNZ FOR CATS?

- A. 10°-20°C
- B. 20°-30°C
- C. 30°-38°C
- D. 32°-39°C

2 WHAT IS THE TNZ FOR HUMANS?

- A. 10°-18°C
- B. 18°-25°C
- C. 20°-30°C
- D. 22°-30°C

3 SELECT THE CORRECT STATEMENTS BELOW?

- A. Clinic catteries need to be at a higher ambient temperature than dog kennels
- B. Clinic catteries need to be sound-proofed to block out the major stress trigger to cats: barking dogs
- C. Cats hate fleece blankets as a substrate
- D. Cats prefer to remain indoors in air-conditioned or cold spaces on warmer days

ANSWERS: 1C; 2B; 3A and B.