Managing out-of-box elimination:
In shelter and post adoption

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Out-of-box elimination

• The scope
  – 8.8 million pet cats in Canada
  – 10% of pet cats at some point in their lifetime
  – 880,000 cats at risk!

• The reality
  – Frustrating and can damage bond
  – #1 behavioural reason cats are surrendered to shelters
  – In shelter, “behavioral abnormalities” can lead to euthanasia
Out-of-box elimination

- **Spraying**
  - Backs up to a vertical surface with their tail erect and squirts urine
  - Deliberate communication of message
  - Response to the signal = benefit to both the sender and receiver
  - More common when:
    - Individual intact
    - Inter-cat aggression
    - See cats out window

- **Inappropriate toileting (urine and/or feces)**
  - Squat to pee on any horizontal surface
  - Incidental conveying of information (e.g., who/when)
  - Common sign of:
    - Medical issues
    - Inadequate litter box environment
    - Stress
What is known about cat elimination behaviour?

• Many resources for reducing inappropriate elimination
  – Prescriptive in nature
  – Based on conventional wisdom

• Little scientific examination of inappropriate elimination
  – Spraying = bulk of the research
  – Some on cat litter preferences

• Even less on elimination behaviour
Findings

• Identified, measured, and compared 39 behaviours
  – “Enriched” environment
  – “Clinic-like” environment

• Key learnings
  – Cats will go to great lengths to use box
    • OOBE rare → not a sensitive measure of satisfaction?
  – Key behaviours reveal a lot
    • Duration/frequency
    • Balancing, pivoting, pawing
  – Holding it... health issues?
Factors contributing to inappropriate toileting

- Medical conditions
- Litter box preferences
  - General recommendations
  - Research
- Stress
Medical conditions

General recommendations

• Have cat examined for underlying medical cause
• Medical cause more likely for defecation than urination

List of symptoms/diagnoses linked to out-of-box elimination

• UTI
• FIC
• Blockages
• Stones
• Arthritis
• Fractures/other skeletal issues
• Impacted anal sacs
• Parasites
• Intestinal cancer
• Gas
• Inflammatory bowel disease
• Kidney, liver or thyroid conditions
• Diabetes
• Diarrhea or constipation
• Cognitive decline
• Other pain
Litter box preferences - Cleanliness

General recommendations

- Cleaner is better
- Scoop daily
- Cats dislike odour

Preference study:
- Identity of previous user
- Smell only
- Obstruction only

Results:
- Cats prefer a clean box. It is the obstruction rather than the odour that drives this preference.
Litter box preferences - Number

• **General recommendations**
  – $N + 1$ litter boxes, where $N =$ the number of cats
    • Particularly in multi-cat homes
      – Increased amount of eliminated materials?
      – Cats do not like to share litter boxes?
  
• Anecdotal reports of differing use
  – Urine and feces in different boxes
  – Cats have own box
  – No difference

• No research to support, but seems reasonable!
Litter box preferences - Size

**General recommendations**

- Bigger = better!
  - Length = 1.5 x nose to tail base
  - Width = nose to tail base

- Wyatt = 50 cm
  - 75 x 50 cm

- Petmate Jumbo = 56 x 42 cm

- Sterilite 62L = 100 x 52 cm

**Preference study: 2 box sizes**

- Small box = 56 x 38 cm
- Large box = 86 x 39 cm
- 74 cats

**Results:**

- Cats preferred larger for both urine and feces
- Small box similar to Petmate Jumbo
Litter box preferences - Fragrances

General recommendations

• Cat’s sense of smell 14x human’s
• Unscented is best

• Scented litter could be a risk factor

Elimination behavior patterns of domestic cats (Felis catus) with and without elimination behavior problems

Wailani Sung, PhD, DVM, and Sharon L. Crowell-Davis, DVM, PhD

• No difference in rates of scented litter provision between groups

Proceedings of the ACVB/AVSAB Scientific Sessions, St Louis, MO Pages 8-10

Litter preference in cats: scented vs. unscented

Neilson, J.C.

• No significant preference
Litter box preferences - Substrate

General recommendations

• Clumping clay litter

Thinking outside the box: feline elimination
Jacqui Neilson

• Prefer clumping clay to silica pellets

Field assessment of cats' litter box substrate preferences
Virigne Villeneuve-Beugnet, Frederic Beugnet

• Preferences: Clay>silica>wood pellets

Prefer clumping clay (15 offered)
Litter box preferences - Depth

- **General recommendations**
  - Conflicting
    - Prefer deep vs prefer shallow
    - Recommendations range from 1.5 – 3 inches

- **Research**
  - Mills and Munster (2003) litter depth preferences
    - Defecating = deeper
    - Urinating = no preference

- **Instructions on litter products**
  - 3-4 inches
    - Preferences of the cat?
    - Sell more litter?
    - Performance of product ✓

- **Experiment to determine your cat’s own preference**
Litter box preferences - Accessories

General recommendations

- No accessories!
  - Hoods
  - Liners
  - Self-cleaning
  - Tracking mats

Preference study: covered vs uncovered litter boxes

- 28 cats

Results

- Overall: no preference
- 4 cats: preferred covered
- 4 cats: preferred uncovered

*Note: most preference tests use cats without elimination problems
Litter box preferences - Location

- **General recommendations**
  - Litter boxes not next to each other
    - especially multi-cat households
  - One on every floor
  - Away from food/water
  - Quiet, low traffic spot
  - Avoid “cornering”
  - Raised surfaces, if necessary
Stress

- Anxious temperament
  - Self-soothe
- Inter-cat aggression
  - Fear of agonistic interaction
  - Resource guarding litter box
- Changes to home
  - New person/pet
  - Moving
  - Renovations
  - Vacation
  - Change/lack of routine
- Frustration
  - Insufficient stimulation
  - Cats outside the window
Managing out-of-box elimination in shelters

• Pro:
  – Information on history (if truthful)
  – Daily data collection
  – Medical capabilities (depending on shelter)

• Cons
  – Stressful
  – Environment not representative of home
  – Litter box environment not ideal
  – Litter resources not always consistent/multiple options not always available
  – History not always available
Managing out-of-box elimination in shelters

1. Thorough history
2. Advice for intake diversion
3. Medical exam
4. Set up environment
5. Data collection
6. Review and try something new
Managing out-of-box elimination in shelters

1. Thorough history

- **Signalment**
  - Age/sex/intact/declawed

- **The problem**
  - IU/ID/Spraying
  - Location of problem
  - Frequency of problem
  - Duration of problem/age of onset
  - Anything happen before onset?
  - Anything happen before each instance?

- **The home**
  - Size
  - # people
  - Other pets
  - # hours without people
  - # min/week spent petting/playing

- **LB environment**
  - Size
  - #
  - Type of substrate
  - Location
  - Accessories
  - Frequency of scooping/cleaning

- **What have they done?**
  - Medical assessment
  - Other substrates
  - Moving LB
  - Increasing # of LB
  - How cleaning spot?
  - Punishment
Managing out-of-box elimination in shelters

2. Intake diversion

- Surrendering cat is often painful
- Many owners have “tried it all”
- Some have yet to try simple strategies
  - History may reveal solution
  - Owner may be happy to try

#LOVE
Managing out-of-box elimination in shelters

1. Medical exam
   - Depending on resources of shelter
   - Depending if IU or ID (or both!)
     - ID more likely to have medical cause
   - Depending on description of problem in history

*Note: I always recommend medical assessment*
Managing out-of-box elimination in shelters

3. Set up environment
   - Large LB
   - N+1
   - Unscented, clumping, clay
   - Separate food and litter
   - Provide enrichment
Managing out-of-box elimination in shelters

4. Collect data

- Special data collection sheet
  - In box IU/ID?
  - Location?
  - Type of box?
  - Substrate?
  - Level of fear/anxiety/stress?
- Data collected daily
Managing out-of-box elimination in shelters

5. Review and try something new

- Review at regular intervals
- If working, stick with it
- If not, try something new!
  - Don’t change too frequently
  - Consider location of IU/ID
  - Consider preference tests
  - Consider cat’s behaviour/stress
    - Quieter environment
    - Feliway
    - Out-of-cage space
    - Behaviour modification
    - Behaviour medication/nutraceuticals
  - Additional medical tests
Initial steps
- When a cat has been flagged for IU/ID based on the intake profile or LB use in shelter, these initial steps should be taken in all cases.

Assessment
- After 1 week, check the litter box monitoring sheet.
  - If no IU/ID, continue monitoring until there has been no IU/ID for > 30 days, then update the disclosure.
  - If IU/ID has been recorded, consider the details, the information on the profiles, and stress behaviour in shelter.

Intervention
- Based on the results, use the interventions indicated.
  - Where numbers are indicated, follow the order.
  - Where numbers are not indicated, the order is at your discretion.

Set up
- One sm LB, clay litter
- Separate food and litter
- Provide enrichment
- Litter box monitoring sheet
- Disclosure/condition

Review profile/behaviour in shelter

LB use from profile:
- Scooped daily
- IU/ID away from the box
- Clay substrate
- IU/ID away from LB, but not in hiding box

LB use in shelter
- IU/ID over flow
- IU/ID right next to box

Stress from intake profile
- Fearful
- Shy with new people
- Free text sections

Stress in shelter
- FAS > 3
- RTP > 2

Reduce stress
- Upper cage/quieter spot
- Feliway
- Out-of-cage space
- Nutraceuticals

No IU/ID for > 30 days
- Update disclosure

Continued IU/ID → Discuss with JE
- Prioritize spay/neuter
- More medical testing
- Flooding bottom of cage with LBs
- Behaviour modification
- Behaviour medication

Litter box
1. Two sm LB, litter preference test
2. One lg plastic LB, preferred litter
3. Out-of-cage space, underbed storage tote, preferred litter

Litter box
1. Two cardboard LB, clay litter
2. One large plastic LB, clay litter
3. One underbed storage tote, clay litter

Set up
- One sm LB, clay litter
- Separate food and litter
- Provide enrichment
- Litter box monitoring sheet
- Disclosure/condition
Post-adoption

• Disclose problem/management in shelter
• Info on LB best practices
  – Best environment
  – Low stress
  – Enzymatic cleansers
  – No punishment
• Follow-up/contact info for support
  – Bar access to area
  – Deter from area
    • Lemon scent, tinfoil, upside-down plastic runners
  – Re-training in a smaller environment
  – Conduct preference tests