Inappetent cats: don’t hope they will eat tomorrow, act today!

Contents of the talk

- Background on cats and eating
- Consequences of poor nutrition
- Nutritional assessment
- Hospitalised patients
- Appetite stimulants and when to use them
- Feeding tubes and when to use them

Introduction

- Inappetence (also called hyporexia, anorexia) is a common presenting sign in cats
- For cats periods of inappetence can lead to deleterious consequences
- Often multiple causes (not just the underlying illness)
- Manage with combination of approaches
- Satisfying to manage effectively
- Should never be ignored

2022 ISFM Guidelines on the management of inappetent hospitalised cats

- Open access guidelines
- Information on appetite stimulants, feeding tubes, reducing stress
- Accompanied by feeding tube recording sheet, nutritional questionnaire
- Owner guides x 2
- Videos x 3

Your inappetent cat ‘toolkit’: bit.ly/inappetentcattoolkit

When the cat refuses food...

- It causes the owner worry
- It could be inadvertently re-inforced
- It may prompt the owner to seek veterinary attention
- If not managed promptly owners may lose faith
  - On the clinic
  - On the cat’s ability to recover
  - On spending more money
- It worsens dehydration
- It may make it very difficult to medicate the cat
- Affecting recovery
- Increasing client anxiety that they are not helping their cat
Consequences of inadequate nutrition for cats

- Fasting
- Depletion of glycogen stores
- Gluconeogenesis
- Use of fat as energy source
- Weakness
- Poor wound healing
- Immune dysfunction
- Poor gut wall health
- Poorer prognosis
- Illness/inflammation

- Glucose ↑
- Insulin ↓
- Cortisol ↑
- Norepinephrine ↑

- Weakness
- Poor wound healing
- Immune dysfunction
- Poor gut wall health

Consequences of inappetence

- Poor owner compliance to medications
- Reduced immune function (increased risk of sepsis)
- Accelerated euthanasia decisions
- Muscle loss and weakness
- Hepatic lipidosis
- Poor gut health (increased intestinal permeability)

- Owner anxiety
- Muscle loss and weakness
- Hepatic lipidosis
- Poor gut health (increased intestinal permeability)

- Owner dissatisfaction
- Electrolyte abnormalities
- Malnutrition

Importance of body condition

- Reduced body condition associated with negative outcomes in many conditions
  - CKD
  - Hyperthyroidism
  - Lymphoma

Nutritional assessment

- Nutritional status is fifth vital sign
  - Temperature
  - Pulse
  - Respiration
  - Pain assessment
  - Nutritional assessment
- Particularly important in hospitalised and critically ill patients
- Should be part of admission of hospitalised cats

WSAVA Nutritional Assessment Guidelines

Good habits: nutritional assessment

- Evaluated in every patient
- Short dietary history
- Type of diet
- Brand
- Treats
- Questionnaires can be useful
- Weight AND BCS recording
- Risk factors
  - GI signs
  - Hypoalbuminemia
- Expected illness course

- Muscle condition score
- Some cats may be overweight but have poor muscle condition score
- Muscles with chronic health issues
  - OA
  - CKD
  - GI disease
- 0-3 score
  - 0: severe muscle wasting
  - 1: moderate muscle wasting
  - 2: mild muscle wasting
  - 3: normal
Nutritional assessment

- Use as a guide to prompt timely intervention
- Useful for hospitalised cases
- > 2 or more high risk factors: support as soon as stabilised
- < 2 or less high risk factors: plan reassessment and prepare to support

Use as a guide to prompt timely intervention

Taking a nutritional history

- Other clinical signs
- Lethargy hard to notice in cats
- Withdrawal from family
- Spending more time indoors for indoor/outdoor cats
- Stress at home?
- Changes in environment
- FL/PD
- GI signs – owners may not see diarrhoea
- Abdominal pain

Other clinical signs

Are you monitoring nutrition in your hospitalised patients?

- Every hospitalised cat should have:
  - Body weight and body condition score recorded
  - Calculation of energy requirements
  - Calculations of grams of food this means
  - Consideration of underlying disease
  - Consideration of body condition score

Are you doing this in your clinic?

<table>
<thead>
<tr>
<th>Body weight (kg)</th>
<th>RER (kJ/kg)</th>
<th>g/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body weight</td>
<td>RER (kJ/kg)</td>
<td>g/day</td>
</tr>
<tr>
<td>2 kg</td>
<td>70 x BW</td>
<td>70</td>
</tr>
<tr>
<td>&gt; 2 kg</td>
<td>(30 x BW) + 70</td>
<td></td>
</tr>
</tbody>
</table>

Resting energy requirements (RER):

- > 2 kg: (30 x BW) + 70

Are you monitoring nutrition in your hospitalised patients?

- Body weight:
- RER (kJ/kg): 70 x BW
- g/day: (30 x BW) + 70
- kg or ml food per day = RER / metabolisable energy in the food

Hospital sheets: room to record

- Resting energy requirements (RER):
  - > 2 kg: 70 x BW + 70
  - g or ml food per day = RER / metabolisable energy in the food

We are pretty good at recording weight, less so at recording BCS

- 95.2% consults recording weight
- Only 22.5% recorded body condition score
- More likely to record BCS in conjunction with a weight loss/overweight term
- More likely to be recorded in the morning than afternoon or OOH
- Other studies show poor uptake of nutritional assessment

We are pretty good at recording weight, less so at recording BCS

But not so good at nutritional assessment....

- Infrequent and non-systematic nutritional assessments
- Time limitations
- Lack of knowledge of assessment

But not so good at nutritional assessment....

Taylor and German 2022 under review

Taylor and German 2022 under review
Why cats might not eat in hospital

Non-specific factors associated with inappetence

- Pain
- Stress
- Fatigue
- Depression and anxiety
- Constipation
- Diarrhoea or vomiting
- Direct effect of medication
- Nausea (with or without vomiting)
- Adverse effects of medication (direct or via bitter taste)

Management of inappetence – first things first

- Treat underlying disease
- Stress management
  - In the hospital
  - In the home
- Pain recognition and management
- Management of ileus
- Management of nausea
- Correct electrolyte abnormalities
- Treat constipation
- Management of fluid deficits
- Review medications
  - Direct effect
  - Interactions
  - Bitter taste

The effect of anxiety

- Many cats will not eat in hospital due simply to anxiety and fear
- Therefore, anxiety can actually impact recovery from illness
- Cat Friendly Clinic scheme (from ISFM) designed to help clinics reduce stress for their feline patients
- See www.catfriendlyclinic.org
- Minimise/avoid exposure to dogs
- Quiet and calm surroundings
- Gentle handling

Simple changes to the hospital cage: a place to hide

- Hospitalised cats MUST have somewhere to hide
- Clear evidence of reduction in stress
- In shelter studies provision of hiding place reduced incidence of disease
- Anxiety will be reduced by giving back some control
- Some cats like to ‘perch’
- Simple solutions
  - Cardboard box
  - Basket in cage

Are you managing nausea?

- Nausea may not be obvious
- Assume its presence with consistent diseases
- GI tract pathology
- Liver disease
- Pancreatic disease
- Also consider as an adverse effect of anaesthesia and opioids
- Several options available

Pain scoring in clinic and at home

- All clinics should be pain scoring post-op and hospitalised patients
- Feline grimace scale is simple and easy to use
- Other pain scoring systems are available
- Written into hospital monitoring sheets
- Is the fourth ‘vital sign’
- See https://www.felinegrimacescale.com
Drug adverse effects

- Avoid ‘polypharmacy’
- Drug interactions underdiagnosed
- Many drugs may cause nausea
- Opioids cause ileus and nausea, constipation plus over-sedation
- Consider indication for the drug eg omeprazole
- Bitter tastes: metronidazole, ranitidine, gabapentin

When to intervene?

- When do we worry about hyporexia?
  - After 2 weeks of inappetence?
  - After 5 days of inappetence?
  - After 3 days?
- Immunity impaired (decreased CD4+ and CD8+ at 4 days)
- Consider support for any cat eating:
  - RER for 3 days
  - Predicted >3 days

Don’t wait until tomorrow

- Postponing interventions just leaves more time for negative effects of inappetence
- Hard to regain lost condition
- Don’t rely on hope (or tuna!)
- Don’t wait for results
- Consider how to improve appetite while waiting for test results
- Soft adaptations
  - Tempering
  - Warming food
  - Small meals
- Appetite stimulants

Appetite stimulants

- Can be very useful in the management of hyporexia
- Inappropriate use will lead to treatment failure
- Appetite stimulation in the presence of nausea and pain will fail
- Consider compliance to medications (are you just adding another tablet?)
- Consider each case individually
- Unlikely to ‘mask’ illness

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Appetite stimulants

- Prednisolone
- Unless treating the underlying disease
- Diazepam
- Anabolic steroids
- Propofol (although proven affect)
- Megestrol acetate
- B12? – unless deficient

Appetite stimulants: use them at the right time

- Consider when to use the drug
  - Pain controlled
  - Nausea controlled
  - Anxiety reduced
  - Offering appropriate foods
  - Underlying disease improving/managed
  - Soft with some food aversion
  - Interest in food but inadequate intake
  - Outpatients
- Tucker in course of disease
  - While waiting for results
  - Recovering from illness
- According to local licensing rules
**Appetite stimulants**

- As part of management of chronic illness
- To support nutritional intake
- To facilitate compliance to medications
- To help with hydration
- To assist transition to novel foods that are clinically indicated
  - Renal diets
  - Hydrolysed diets
- To manage food aversion
  - Once illness resolved
  - Neophobic patients

**Appetite stimulants: mirtazapine**

- 5-HT2 and H1 antagonist
- Anti-emetic
- Prokinetic
- Antiemetic effect via antagonism of 5-HT3
- Adverse effects
  - Nociception, agitation, restlessness
  - Occurred at higher doses more often
  - Resolve with time
  - Transdermal – site reactions such as erythema, scabbing etc reported in 10% cases

**Appetite stimulants: mirtazapine**

- Initial studies on oral mirtazapine
  - CKD cats showed less vomiting, increased appetite, increased activity
- Transdermal mirtazapine
  - Various diagnoses (CKD, dental disease, OA, vomiting)
  - Mirtazapine vs placebo 14 days
  - Mean weight gain +1.9% mirtazapine vs 0.4% placebo
- Other studies (Quimby et al 2020) similar findings in CKD cats

**Let’s start with a question**

- How often do you place feeding tubes (any type) in cats in your clinic?
  - Never
  - Occasionally
  - Frequently
- If never – why not?

**Types of feeding tube**

- Most commonly placed are NO and O tubes
- G tubes have specific indications
- J tubes very rarely used

**Naso-oesophageal feeding tubes**

- Easy to place
- Short term nutrition (3-5 days)
- Conscious or sedated (consider gabapentin for example)
- Use lots of local anaesthesia in the nose and wait long enough
- Secure: tape and glue, staples, sutures
- Irritates some cats and will deter voluntary food intake
- Try to use soft collars with them
- Complications are unusual
  - Easily obstructed
  - Can’t give crushed meds
  - Narrow bore precludes many diets
Naso-oesophageal feeding tubes

- Short term nutrition only
- 5 days then should consider O tube
- Contraindicated in nasal disease
- Easily obstructed
- Cannot give medications
- Poorly tolerated by some cats
- Types of food limited
- Tended to be high in protein and fat

NO tube or NG tube?

- USA/Canada routinely place NG tubes in cats
- Complication rate in one (dog) study no different
- Probably with narrow gauge tubes is fine (no reflux)
- Easier to place under sedation (NG)
- Can suction fluid from stomach

Oesophagostomy tubes

- Place under short GA
- Easy once familiar with technique
- Larger bore tube
- Allows medication to be given
- Better choice of diets
- Can be managed at home
- Can leave for months if needed
- Check placement with
  - Radiography
  - Fluoroscopy
  - Endoscopy
  - Aspiration (negative pressure)
  - Capnograph
  - Sterile flush

How to place an O tube

- Sterile technique
- Carmalt forceps
- You can use kits and introducers
- Secure with finger trap suture
- Can feed with it immediately
- Avoid excessive dressings
- Kitty Kollars

Watch our videos:
- bit.ly/InappetentCatToolKit

O tubes: complications

- Tube dislodgement
- Stoma site infection 12-18%
- Possibly more likely in cats on corticosteroids or chemo
- Can cause local infection/Cellulitis
- Haemorrhage
- Nerve damage
- Horner’s syndrome (rare)

Dealing with stoma site infections

- If severe can necessitate tube removal
- Swab for culture if possible in severe cases
- Mild cases:
  - Increase cleaning/re-dressing of area with chlorhexidine or iodine
  - Check sutures not too tight in skin
- Consider using antibiotic impregnated discs
**Stoma site infections**
- Severe cases need tube removal
- Culture and sensitivity
- Surgical debridement
- Abscess rare

Prevention:
- Change instruments and gloves when suture in place
- Clean and change dressing daily
- Avoid over-tight sutures at tube site
- Hygiene when cleaning/caring for the tube

Photo courtesy of Carolyn O’Brien

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**Feeding tube obstruction**
- Common with narrow bore tubes
- Flush well with body temperature water before and after feeding to prevent
- Leave a column of water in tube
- To manage:
  - Warm water
  - Pancreatic enzymes in bicarbonate
  - Carbonated drinks?

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**When should you consider placing a feeding tube?**
- Cat consuming less than 80% RER for 3 days or more
- Cats physically unable to eat (jaw fracture etc)
- When undernutrition is predicted (after surgery, chemotherapy)
- When patient is at risk of malnutrition
- Medication compliance

When you have the opportunity!
- GA for other things eg biopsies
- Prolonged medication courses

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**What diet to feed**
- With NO and NG tubes likely limited to liquid foods
- Recovery diet
- Oral diets
- G tubes and G tubes can usually use any diet
- Liquidise well
- Can be difficult to use hydrolysed diets for GI cases

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**Feeding via tube: how much**
- Adjust according to period of inappetence, tolerance, go slow
- Usually
  - 1/3 RER day one
  - 2/3 RER day two
  - Full RER day three
- Start lower if risk of refeeding syndrome
- Monitor weight/hydration
- Adjust according to body condition and growth for eg
- Do not try to correct deficits in body condition in sick cats
- Aim for maintenance
- Do not overcome
- Monitor and adjust
- Illness factors not recommended
**Feeding via tube**

- Consider meal volume and any delays in gastric emptying (usually 5-10ml/kg max)
- Some cats need small frequent meals (pancreatitis, liver disease)
- Others will cope with larger volumes (jaw fracture)
- CRI feeding possible 3-8ml/hr
- Adjust parenteral fluids (most liquid diets are 75% water)

**Tips for cat friendly tube feeding**

- Allow cat to relax before starting, give hiding place/bed
- Gentle support, cat carrier if needed
- No forced restraint
- Feed slowly monitoring for physical or emotional discomfort
- Positive reinforcement
- Warm food to body temperature
- Cat Friendly Clinic principles

**Why you should NEVER EVER syringe feed**

- Rarely meet nutritional requirements
- Risk of aspiration
- Causes stress and fear
- Cause of food aversion that can be longstanding
- Some cats will tolerate this BUT still be finding the experience stressful

**Inappetent cats: summary**

- Multifactorial causes
- Deleterious to recovery
- Nutritional assessment important
- Confidence to intervene rather than leave another day
- Appetite stimulants can be useful – but manage other factors too
- Remember the role of stress for hospitalised patients

**Thank you for listening!**