

A red mushroom with white spots, resembling a fly agaric, is centered in the image. It has a thick, pale stem and is surrounded by dry, brown grass. The text "Behaviour Altering Drugs" is overlaid in a bold, yellow font across the middle of the mushroom's cap.

# **Behaviour Altering Drugs**

**Psychopharmacology**



# unwanted behaviour

A large, red mushroom with white spots, resembling a fly agaric, is the central focus of the image. It is growing in a field of dry, yellowish-brown grass. The mushroom has a thick, white stem and a slightly flattened, convex cap. The background is a dense field of similar grass, creating a textured, natural setting.

- **cats**
  - spraying
  - scratching furniture
- **dogs**
  - aggression
  - barking
  - chewing / digging
  - fear



A close-up photograph of a red mushroom with white spots, likely a fly agaric, growing in a field of dry grass. The mushroom's cap is bright red with numerous white, irregular spots. The stem is thick and white. The background consists of a dense field of dry, yellowish-brown grass.

**Why do animals behave in  
the way that they do?**




# unwanted behaviour

- boredom
- anxiety / fear
- depression
- (senility)





A red mushroom with white spots growing in dry grass. The text is overlaid on the mushroom.

**drugs or training?  
ie  
pharmacotherapy or  
psychotherapy**



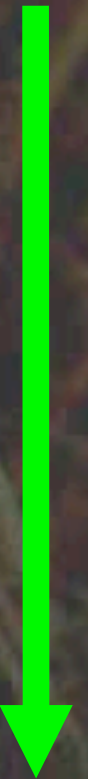
# unwanted behaviour

- boredom - distraction
- anxiety / fear - anxiolytics  $\pm$  TCAs
- (depression - antidepressants)
- (senility - stimulants)



# **anxiety**

- **normal / useful**
- **attention seeking**
- **interference with normal activities**
- **phobic anxiety**
- **panic attacks**





A red mushroom with white spots, resembling a fly agaric, is growing in a field of dry grass. The mushroom has a bright red cap with irregular white patches and a thick, white stem. The background is a dense field of dry, yellowish-brown grass.

# anxiety

- subjective in people
- interpretation of animal behaviour??
- effects of drugs?



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# **conflict situations**

- **mixing groups of animals**
- **new / potential danger**
- **objectivel danger**
- **animal / owner interaction**



# measuring anxiety

A red mushroom with white spots, resembling a fly agaric, is growing in a field of dry, yellowish-brown grass. The mushroom has a bright red cap with numerous white, irregular spots and a thick, white, slightly wrinkled stem. The background is a dense field of dry grass, creating a textured, natural setting.

- **animals**
  - behaviour
  - response to drugs
- **people**
  - anxiety scales
  - autonomic responses
  - response to drugs



# anxiety related behaviour

- cats
  - spraying
- dogs
  - aggression
  - barking
  - chewing / digging
  - fear





# anxiolytic drugs

- benzodiazepines
  - diazepam
- 5HT<sub>1A</sub> agonists
  - buspirone
- (barbiturates)
- ( $\beta$  blockers)
- (chloral hydrate, etc)
- antidepressants



# benzodiazepines

- safe
- reduce effects of training
- interfere with learning?
- withdrawal syndrome / dependence?
- effects increase with age - senility?
- tolerance?



# buspirone

- 5HT<sub>1A</sub> agonist
- mechanism unknown
- effects take weeks
- side effects restlessness





# antidepressants

- depression induces anxiety
- depression induced by stress?
  - 75% of cases in people



# depression in people

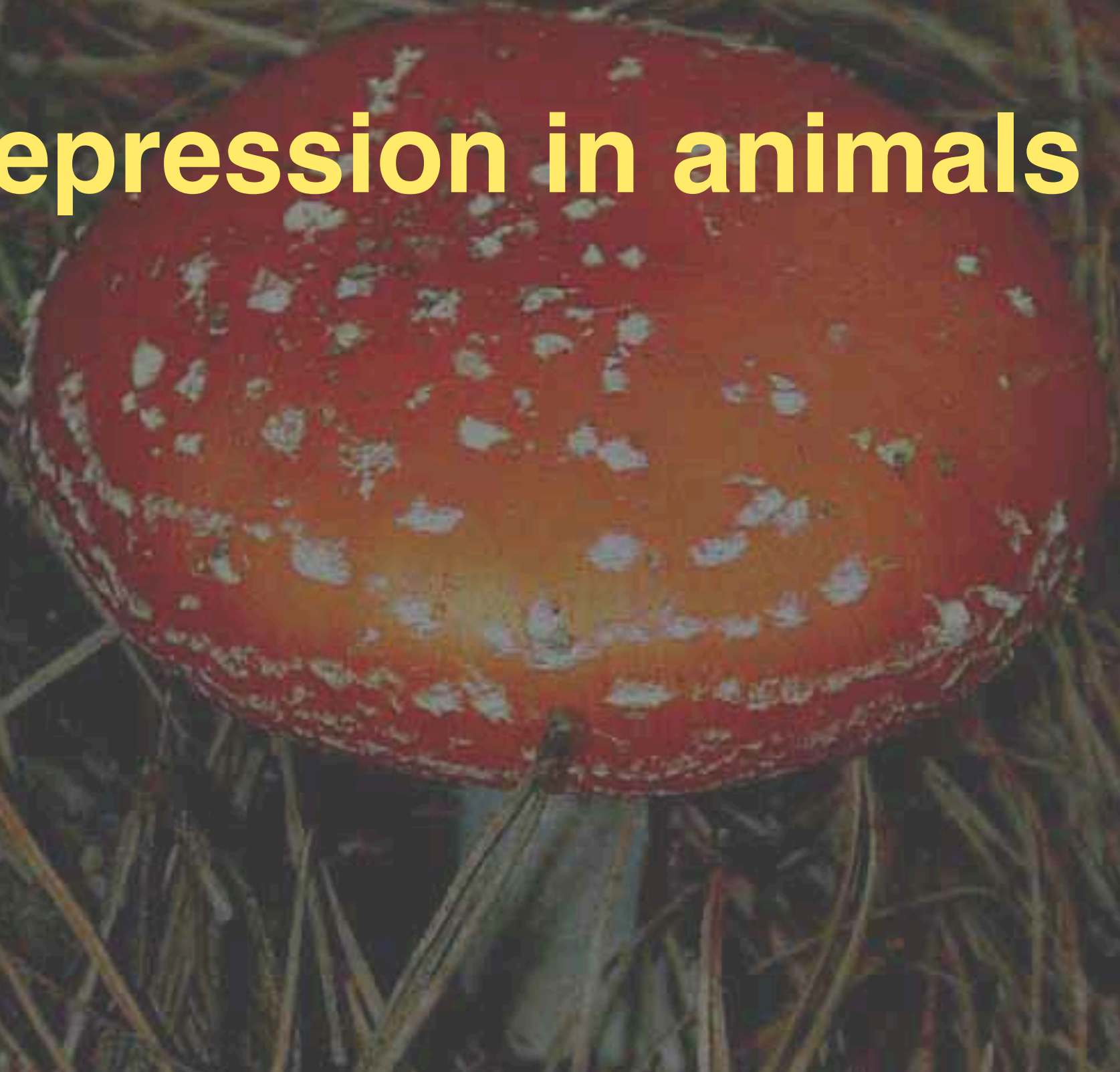
- unipolar
  - reactive
  - endogenous
- bipolar





# depression in animals

- ???

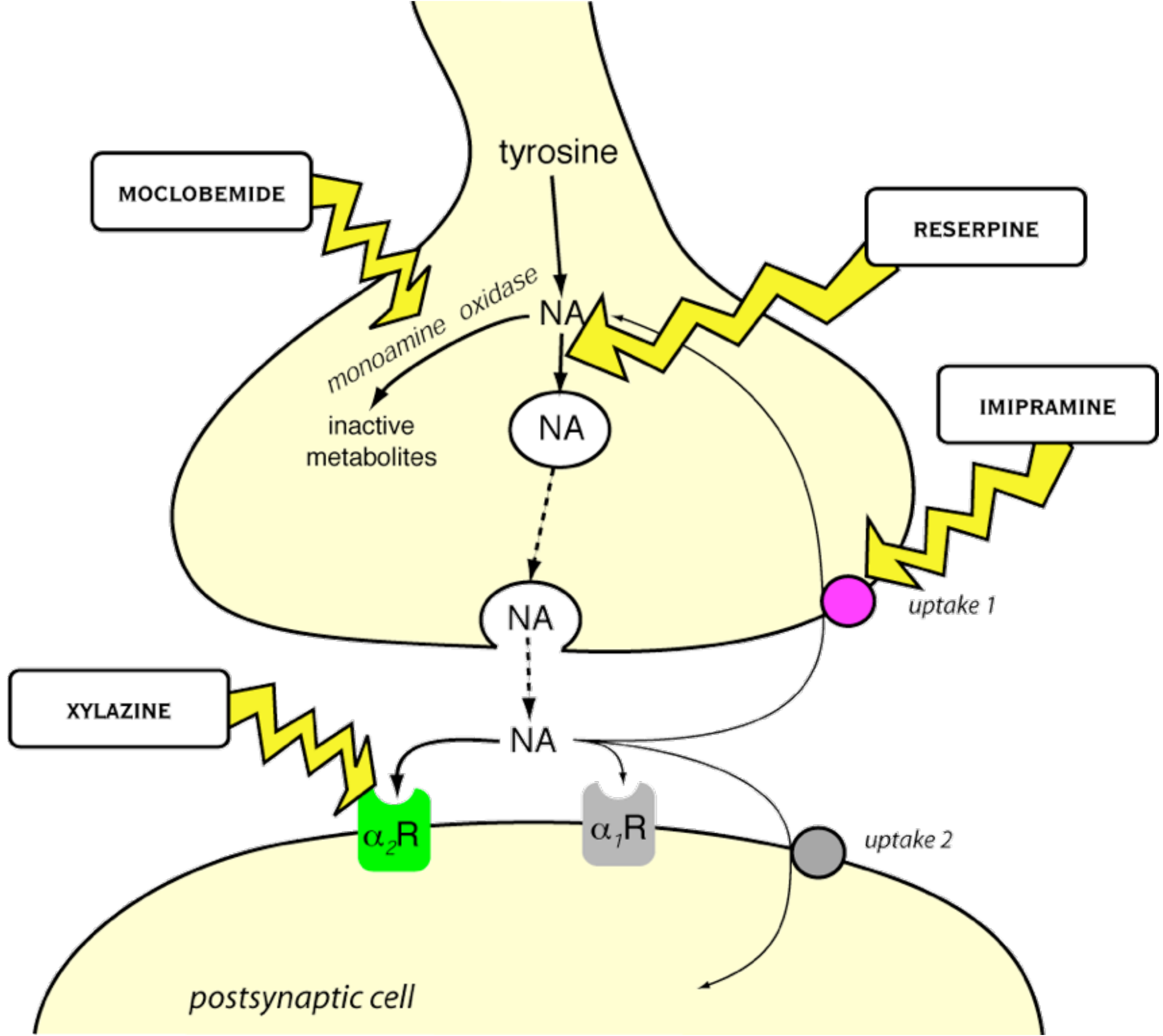




# depression

- **monoamine theory**
  - depression is caused by a functional deficit of monoamines
  - supported by known effects of some drugs
  - much contradictory evidence
  - manipulation of monoamines works in people







# antidepressant drugs

- **tricyclic antidepressants**
  - amitriptyline, imipramine, clomipramine
- **selective serotonin reuptake inhibitors**
  - fluoxetine, paroxetine, sertraline
- **monoamine oxidase inhibitors**
  - phenelzine, tranylcypromine, moclobemide (A), selegiline (B)
- **atypical antidepressants**
  - maprotiline, mianserin



# side effects

- **tricyclic antidepressants**
  - sedation, anticholinergic effects, arrhythmias, seizures, memory?
- **selective serotonin reuptake inhibitors**
  - nausea, diarrhoea, insomnia
- **monoamine oxidase inhibitors**
  - sedation, insomnia, weight gain, cheese reactions, pethidine reactions?
- **atypical antidepressants**
  - sedation, hypotension, seizures



# antidepressants

- take 2 - 4 weeks to work in people
  - spontaneous recovery
  - lack of efficacy
  - huge placebo effect
- dogs?
- cats???
- many active metabolites in people



# depression related behaviour?

- cats
  - spraying
  - scratching furniture
- dogs
  - aggression
  - barking
  - chewing / digging
  - fear



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# sex

- **progestagens**
  - antiandrogen effect
  - anxiolytic effect?
  - delmadinone
  - megoestrol
  - medroxyprogesterone



# sex related behaviour?

- cats
  - spraying
- dogs
  - aggression
  - barking
  - chewing / digging
  - fear





# stimulants

- indications?
  - senility
- problems
  - drugs of abuse in people





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# stimulants

- amphetamines
- amphetamine like drugs
  - methylphenidate
- methylxanthines
  - caffeine etc
  - oxpentifylline



# behaviour altering drugs

- the cause of altered behaviour should be addressed - the problem may be the owner!
- psychotherapy is usually better than drugs
- drugs seem to work best in combination with psychotherapy
- benzodiazepines and antidepressants are used for anxiety related problems
- beware side effects!!!