

## Abstracts and Links to Music studies with animals

Dogs detect sounds as low as the 16 to 20 Hz frequency range (compared to 20 to 70 Hz for humans) and as high as 70,000 to 100,000 Hz (compared to 20,000 Hz for humans), and in addition have a degree of ear mobility that helps them to rapidly pinpoint the exact location of a sound. Eighteen or more muscles can tilt, rotate and raise or lower a dog's ear. Additionally, a dog can identify a sound's location much faster than a human can, as well as hear sounds up to four times the distance that humans are able to.

### **1. The influence of auditory stimulation on the behaviour of dogs housed in a rescue shelter**

**Authors: Wells, D.L.; Graham, L.; Hepper, P.G.**

Source: *Animal Welfare*, Volume 11, Number 4, November 2002, pp. 385-393(9) This study explored the influence of five types of auditory stimulation (human conversation, classical music, heavy metal music, pop music, and a control) on the behavior of 50 dogs housed in a rescue shelter. The dogs were exposed to each type of auditory stimulation for 4 h, with an intervening period of one day between conditions. The dogs' position in their kennels (front, back), their activity (moving, standing, sitting, resting, sleeping), and their vocalization (barking, quiet, other) were recorded over 4 h at 10 min intervals during each condition of auditory stimulation. The dogs' activity and vocalization were significantly related to auditory stimulation. Dogs spent more time resting and less time standing when classical music was played than when any of the other stimuli were played. Exposure to heavy metal music encouraged dogs to spend significantly more of their time barking than did other types of auditory stimulation. Classical music resulted in dogs spending significantly more of their time quiet than did other types of auditory stimulation. It is suggested that the welfare of sheltered dogs may be enhanced through exposure to appropriate forms of auditory stimulation. Classical music appears particularly beneficial, resulting in activities suggestive of relaxation and behaviors that are considered desirable by potential buyers. This form of music may also appeal to visitors, resulting in enhanced perceptions of the rescue shelter's environment and an increased desire to adopt a dog from such a source.

### **2. Effects of harp music therapy on canine patients in the veterinary hospital setting. *The Harp Therapy Journal*, 8(2), 1, 4-5, 15. Boone, A., & Quelch, V. (2003)**

[Three groups of 32 canine patients received 60 minute sessions of harp therapy (Group 1: hospitalized less than 8 hrs.; Group 2: hospitalized longer than 8 hrs.; and Group 3: post-surgical patients). Visual measures of discomfort: restlessness, anxiety and respiration rate; all decreased during the harp therapy session. The control group displayed no such decrease and, in fact, continued to increase in all three measures. The harp therapy group demonstrated a gradual decline in respiration rates over the one-hour in contrast to the control group – which remained unchanged during the same period. Both groups demonstrated a shallow trend in reduction of heart rate.]

### **3. The effects of sound and music on our patients and workplace (Proceedings)**

**<http://veterinarycalendar.dvm360.com>, April 1, 2010 By: Susan O. Wagner, DVM, MS, DACVIM**

Sound is an important part of an animal's surroundings, and should be considered when taking a history on an anxious or reactive pet. Many owners don't realize the significance of sound in their homes, and most veterinarians are not cognizant of the sonic environment their hospitalized patients are exposed to.

### **4. Psychologists' trials find music tempo affects productivity <http://www.le.ac.uk/press/press/moosicstudy.html>** June 2001 No. 67

Dairy cows produce more milk when listening to REM's 'Everybody Hurts' or Beethoven's 'Pastoral Symphony' than when subjected to Wonderstuff's 'Size of a Cow' or the Beatles' 'Back In The USSR' a new study by music research specialists at the University of Leicester has found.

Their milk yield rose by 0.73 litres per cow per day when they were exposed to slow music rather than fast music.

The results revealed a three per cent increase in output when slow rather than fast music was played.

Scientists Adrian North and Liam MacKenzie from the Music Research Group at the University of Leicester School of Psychology exposed cattle to fast, slow and no music at all over a nine-week period.

The trials, at LCAH Dairies in Lincolnshire and Bishop Burton Agricultural College in Humberside, involved playing music to the cows for 12 hours a day, from 5am to 5pm.

Dr North said: These results are statistically significant they reveal that milk yields could be increased by 3% simply by playing certain types of music to the cows.

We have found that cows respond to a pleasant auditory environment by producing more milk. It seems that slow music had the effect of alleviating stress and relaxing the animals which resulted in greater milk yields.

Liam MacKenzie said that the research was an extension of the School's ongoing study into the effects of music on aspects of human behaviour: Most theories of music preferences are based on humans.

We were testing whether the theories, which had been proven with humans, would also hold true of other animals. We found that slow music improved milk yields perhaps because it relaxes the cows in much the same way as it relaxes humans.

##### **5. The influence of olfactory stimulation on the behaviour of dogs housed in a rescue shelter**

Lynne Graham, Deborah L. Wells, Peter G. Hepper **Applied Animal Behaviour Science**  
**Volume 91, Issue 1** , Pages 143-153, May 2005 Abstract

This study explored the influence of five types of olfactory stimulation (control, lavender, chamomile, rosemary and peppermint) on the behaviour of 55 dogs housed in a rescue shelter. The dogs were exposed to each type of olfactory stimulation, through the diffusion of essential oils, for 4 h a day for 5 days, with an intervening period of 2 days between conditions. The dogs' behaviour was recorded on days 1, 3 and 5, during each condition of olfactory stimulation. Certain aspects of the dogs' behaviour were influenced by the odours. Dogs spent more time resting and less time moving upon exposure to lavender and chamomile than any of the other olfactory stimuli. These odourants also encouraged less vocalization than other types of aroma. The diffusion of rosemary and peppermint into the dogs' environment encouraged significantly more standing, moving and vocalizing than other types of odour. It is suggested that the welfare of sheltered dogs may be enhanced through exposure to appropriate forms of olfactory stimulation. Lavender and chamomile appear particularly beneficial, resulting in activities suggestive of relaxation and behaviours that are considered desirable by potential adopters. These types of olfactory stimulation may also appeal to visitors, resulting in enhanced perceptions of the rescue shelter and an increased desire to adopt a dog from such an environment.