

## Using positive reinforcement in Göttingen minipigs

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At LAB Research (Scantox), we have a long history of using the Göttingen Minipig in preclinical research. Various experimental procedures, such as dosing, weighing, physical examinations etc., are the parameters usually included in preclinical studies, and the majority of these procedures require minipigs to be restrained to complete the procedures successfully. However, this stresses the animals, which has the potential to impact the study results. In addition, it does not provide optimal working conditions for technical staff.

To eliminate the stress experienced by the animals, to increase the animals' well-being and to optimise working conditions for our staff, we sought to find a method that would facilitate various study-related procedures. Positive Reinforcement Training (PRT), which uses a marker for behaviour that earns positive reinforcement, soon caught our interest. PRT has been used for many years in training pet and zoo animals, but has been used to only a limited extent in training laboratory animals.

We decided to implement this method in a repeat dose toxicity study with intranasal dosing several times daily. The first step was to educate a dedicated team of trainers to undertake all minipig training. The minipig training was performed using clickers as a marker for the desired

behaviour and GLP-certified dietary pellets as rewards. The principle of "shaping" was used in the training sessions, gradually transforming specific behaviour into desired behaviour. First, the sound of the clicker was associated with the reward, followed by the acceptance of approximation of the trainer to the animal. This was followed by further successive training steps until the complete desired behaviour was achieved. The fully trained animal voluntarily came forward, stepped onto a box (to elevate the animal) and accepted approximation of the intranasal device and the subsequent dosing in one nostril in a "freeze" position.

All animals learned the complete behaviour sequence prior to the start of the study, although differences in ease of learning were noticed among the animals. The study was successfully completed using PRT throughout the study, increasing animal welfare and working conditions significantly. Subsequent to this first study, we have successfully implemented PRT in connection with other study-related procedures, such as weighing procedures and dermal and subcutaneous dosing procedures. Our staff has adopted PRT with significant enthusiasm and they are continuously creative in finding new areas where it can be used. We therefore consider PRT to have great potential in relation to other experimental procedures used with the Göttingen Minipig.

### CLICKER TRAINING

## Clicker Training at Ellegaard Göttingen Minipigs

Adrian Zeltner, Laboratory Technician

Clicker Training, Positive Reinforcement Training and Operant Conditioning are all terms which describe the same process: training an animal to intentionally perform behaviour that will bring about a desired consequence. In other words, getting a trained animal to actively participate in the daily routines for the benefit of everyone involved. Although this does not happen overnight, it is considered the fastest way to train an animal, and the method can be learned by anybody with a keen interest. All it takes – apart from a clicker, standard dietary pellets and perhaps a target stick – is commitment. Commitment not only from the staff for training but also from management for investing the time required to, firstly, educate trainers and, then, train the Minipigs.

As Peter Glerup and Melissa Cox has indicated in their articles on clicker training in this newsletter, the invest-

ment in clicker training of the minipigs will result in savings because fewer staff members and less technician hours are required. Clicker training makes the work with the minipigs easier and improves the welfare of both the minipigs and the staff.

At Ellegaard Göttingen Minipigs we have acquired expertise in training our Minipigs and are happy to share this with you. We also offer introductory courses here at our facility, perhaps in combination with one of our free handling and dosing courses. If you already possess Göttingen Minipigs, you have the option of holding a course at your facility.

Please contact us if you would like more information about how to go about training a Minipig or to make arrangements for an introductory course.