

Experiences with bringing animals in the lab: the pig as an example

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Research on pigs 25 - 30 years ago used animals that were often similar to farmyard animals from the local market. Researchers had little control over a range of disease organisms including *Mycoplasma hyopneumoniae*, *Actinobacillus pleuropneumoniae* and *Brachyspira hyodysenteriae*. Research facilities rarely had rooms and pens that were designed specifically for pigs, and little experience in handling pigs of different sizes. Studies were often performed using human medical equipment in hospitals after ordinary working hours. Medical doctors and researchers often extrapolated from rodents or human medicine when calculating the amount of anaesthetic to be used. This could lead to serious problems, as pigs generally need much higher doses of anaesthetics than humans. For example, ketamine was used at the same dose as in human medicine in very painful experiments (such as sternum splits), and when this was combined with neuromuscular blockers the researchers were in reality unable to judge the depth of anaesthesia. Many researchers were also unaware of the pig's special physiology regarding regulation of body temperature and heat loss under anaesthesia, and of the need for extra iron when fast-growing piglets are fed purely on milk or milk replacer. As a result I have seen experiments carried out on anaemic piglets, pigs with chronic pneumonia and pigs with a body temperature close to 35°C. The validity of the results from such experiments can be questioned, and the need for implementation of the 3Rs is clear.