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Can peripheral nerve damage caused by tail docking lead to tail pain later in the life of pigs?

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Tail docking in the first days of life is a common practice in the production of pigs. Tail docking is done to prevent tail biting and leads to behavioural changes indicative of pain and to later development of neuromas in the docked tail tips (Herskin et al., submitted). However, it is not known whether the early peripheral nerve damage can lead to pain later in the life of pigs. Data from adult rodents and humans suggest that neuromas may lead to spontaneous nerve activity and decreased nociceptive thresholds. Such abnormal nervous activity may play a significant role in the development and persistence of chronic pain conditions in humans. One important aspect for the possible development of pain in docked pig tails is the piglet age at the time docking. Increasing evidence suggest that experience of pain in juvenile mammals may affect their later pain processing. So far, the majority of reports have focused on short term effects of early pain experiences and suggested that, in newborns, such experience have only limited or no effect on the occurrence of later neuropathic pain. Recently, investigations in rodents have used models of neuropathic pain (e.g. spared nerve injury (SNI)), and shown that early peripheral nerve damage may lead to lower nociceptive thresholds later in life. In case of pigs, this might be seen as modified social behaviour due to the pain sensations, and might induce a general fear of humans due to the handling during docking. However, in rodents these changes have not been shown until adolescence. Due to the considerable difference in maturity at birth between rat pups, human babies (both altricial) and piglets (precocial), it is not possible to perform a direct age comparison across these species. In conclusion, tail docked pigs might experience nociceptive changes in the weeks or months after the nerve damage induced by tail docking, but more research is needed in order to clarify this. Current work within a joint European ANIWhA research project (<http://farewelldock.eu/>) aims to address this issue.