

## **Statement regarding the implantation of microchips in chameleons for scientific purposes**

by the scientific board (Biron, Blahak, Mutschmann, Rüschoff) of the Arbeitsgemeinschaft Amphibien- und Reptilienkrankheiten (AG ARK) der Deutschen Gesellschaft für Herpetologie und Terrarienkunde e.V. (DGHT), August 2009.

Implantation of microchip transponders is a common procedure for marking mammals for future identification. In reptiles this method is not recommended, because in most species it causes pain, destruction of organ tissues and may lead to death of the implanted animals.

Reptilian skin has a unique structure. The dermis is much thinner than in mammals and not so dense in structure; it lacks fat cells in contrast to mammals, but is well provided with nerves and blood vessels. Implanted microchips are therefore much more prone to migration. This has been shown in many cases. The injection hole needs more time to close because of the rigid structure of the epidermis, therefore a suture would be necessary, preferably under general anesthesia. In chameleons the dermis contains special cells like chromatophores which are responsible for the color changes in this group of lizards. Implantation of a microchip will destroy this ability in the skin at the implantation site.

Intracoelomic implantations can cause adhesions of intestines, peritonitis and subsequently death of the animals and therefore have to be avoided.

Intramuscular implantation would be an alternative, provided that the muscular tissue is large enough. The smaller an animal, the more likely severe complications will be caused by the implanted microchip (local inflammatory reactions, bleeding, neural damage causing pain and paralysis).

Therefore intramuscular implantation is not recommendable either and should be strongly discouraged in animals with a body mass less than 200g in lizards and snakes and 500g in tortoises and turtles.

Consequently, microchip implantation in chameleons is generally disapproved, as only few species will reach the required size, while their femoral muscles will still be of inadequate size for the implantation of a microchip. The loss of locomotory abilities must not be risked.

A noninvasive method of identification (photography) is more suitable. With both methods an approach to the animal to less than one meter distance is necessary, either to take a picture or to read the microchip. The former method though does not peril the survival of individuals.

Concluding the use of microchips does not appear to be a reasonable alternative for identifying chameleons in the field.

Literature:

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