

## **Radiographic Evaluation of Limb Bone Development in Premature Minipigs**

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This study was performed to know the age determination, process of normal bone growth and the growth plate closure in PWG<sup>®</sup> miniature pigs (minipigs) before sexual maturity. Limb bones such as humerus, radius, ulna, femur, tibia, fibula, and pelvic bones, of twelve minipigs were evaluated radiographically at 4, 8, 12, 20 weeks of age. Body weight, bone length, and physal development and closure were studied based on the radiographic analysis.

Most of major ossification centers of forelimb and hindlimb were found at the period of 4 weeks of age. At 8 weeks of age, ossification centers of major trochanter of the femur, patella and tibia tubercle were seen, which is more clearly seen at 12 weeks of age. Most epiphyseal lines at 12 weeks of ages were becoming narrower and evident. Most radiographic characteristics of at 20 weeks of age are same as those of 12 weeks of age, but fusion appears in some parts of proximal epiphyseal lines of radius and ulna.

This is the first work to describe the long bone development and establish radiographic standards for assessing skeletal maturity in these species. These data will be useful for age determination for evaluation of normal bone growth of the minipigs for organ transplantation for human.

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