

## **Alternative model for teaching muscular movements of the dog limbs**

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Models are often produced to replace or enhance anatomical study of cadaveric specimens or portions thereof. Specimens are usually fixed using formalin, which makes muscles rigid and joints nearly immobile. Loss of flexibility makes understanding of movement of the locomotor apparatus difficult for students. The aim of this work was to create a model to demonstrate the most important movements of the limb joints. The scapula, humerus, radius and ulna of the dog were prepared and used to form the shoulder and elbow joints. The os coxae, femur, patella and tibia of the dog were used to make the hip and stifle joints. The bones were articulated to maintain in vivo joint mobility by using rubber bands positioned at the site of the ligament attachment. Some muscles were simulated by using strips of fabric. They were attached at their insertion with a screw and at their origin using a hook for the other end of the strip to pass through. When the strip was pulled through the hook, the distance between the origin and insertion decreased. Forty students, who attended the demonstration, evaluated the models and answered a questionnaire concerning muscular movement. Results demonstrated that the model was fundamental for 45% of the students, important for 52.5% and unnecessary for 2.5%. These students were asked to determine the flexor surface of the joints on a drawing. The correct answer was chosen by 75% for shoulder joint, 90% for elbow joint, 85% for hip joint and 82.5% for stifle joint. The use of models to aid understanding of the movements of the locomotor apparatus was very acceptable for students. Therefore, this model could be used with students together with theoretical topics about muscular and joint movements, before the laboratory sections.