

## ESTABLISHMENT OF TIBIAL CRITICAL SIZE DEFECT IN NEW ZEALAND WHITE RABBIT

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### INTRODUCTION:

Critical Size Defect (CSD) was defined as the smallest size of intraosseous wound in a particular bone and animal that will not heal spontaneously during the lifetime of the animal. There were a lot of examples of CSD size in rabbit's tibia for biomaterial testing. However, 3.2 mm x 6.4 mm of CSD has not yet been reported. Thus, the objective of this study was to establish the surgical approach for CSD in New Zealand White Rabbit (NZWR) tibia. 8 NZWR were randomly divided into four assessment periods; 3, 6, 12 and 24 weeks. Radiographic assessment (X-Ray) and gross analysis were performed in order to achieve the objective of this study.

### MATERIALS & METHODS:

3.2 mm (width) x 6.4 mm (length) of CSD was surgically drilled at the proximal tibial metaphysis of NZWR.

### RESULTS:

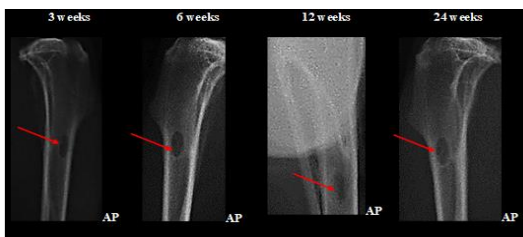


Figure 1: Radiographs of Anteroposterior (AP) view of Representative Samples. Red arrows indicate the CSD. The CSD in all samples were not close during the period of assessment.



Figure 2: Gross examination of Representative Samples. Red circles indicate the CSD area. No signs of inflammation were observed.

### DISCUSSIONS:

Radiographic assessment showed that the CSD were not closed spontaneously during the lifetime of the study confirming that the selected CSD size was a critical size bone defect. No inflammation observed show that the surgical approach resulted in a good exposure of the proximal tibia metaphysis to create this suggested size of CSD.

### CONCLUSION:

CSD at the proximal tibial metaphysis with the size of 3.2 mm (width) and 6.4 mm (length) is proven to be an alternative model to create a CSD.

### REFERENCES:

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