

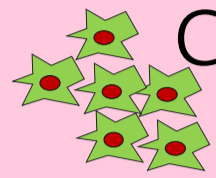


Effect of Low-Intensity Pulsed Ultrasound after Mesenchymal Stromal Cell Injection to Treat Osteochondral Defects: an in vivo study

Shoki Yamaguchi et al. *Ultrasound Med Biol.* 2016 Dec;42(12):2903-2913.
doi: 10.1016/j.ultrasmedbio.2016.07.021. Epub 2016 Sep 3

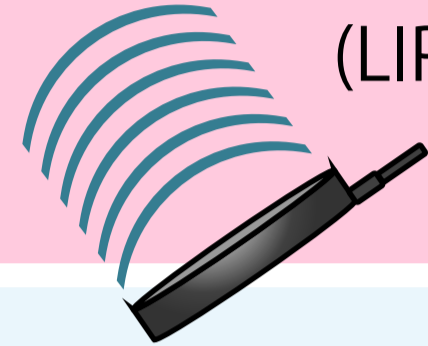
Research question

Osteochondral defect

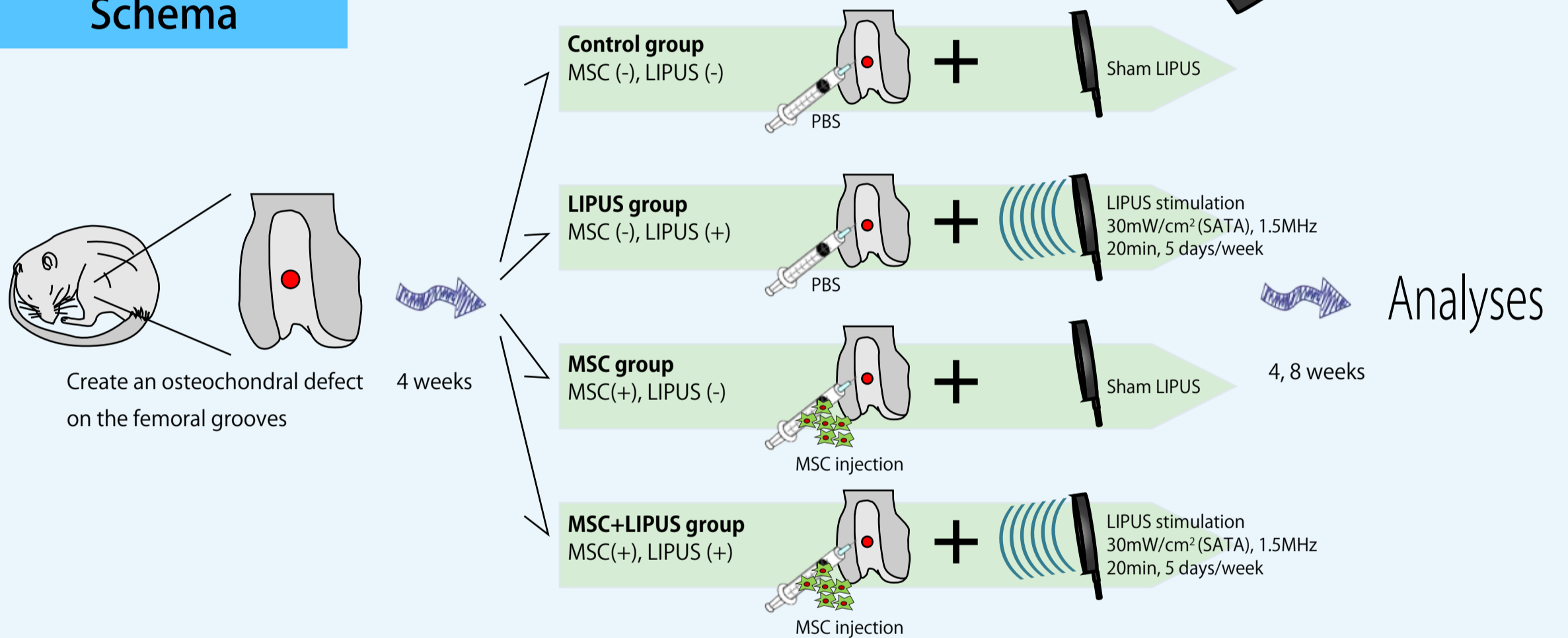


Cell Supplementation + Low-Intensity Pulsed Ultrasound (LIPUS)

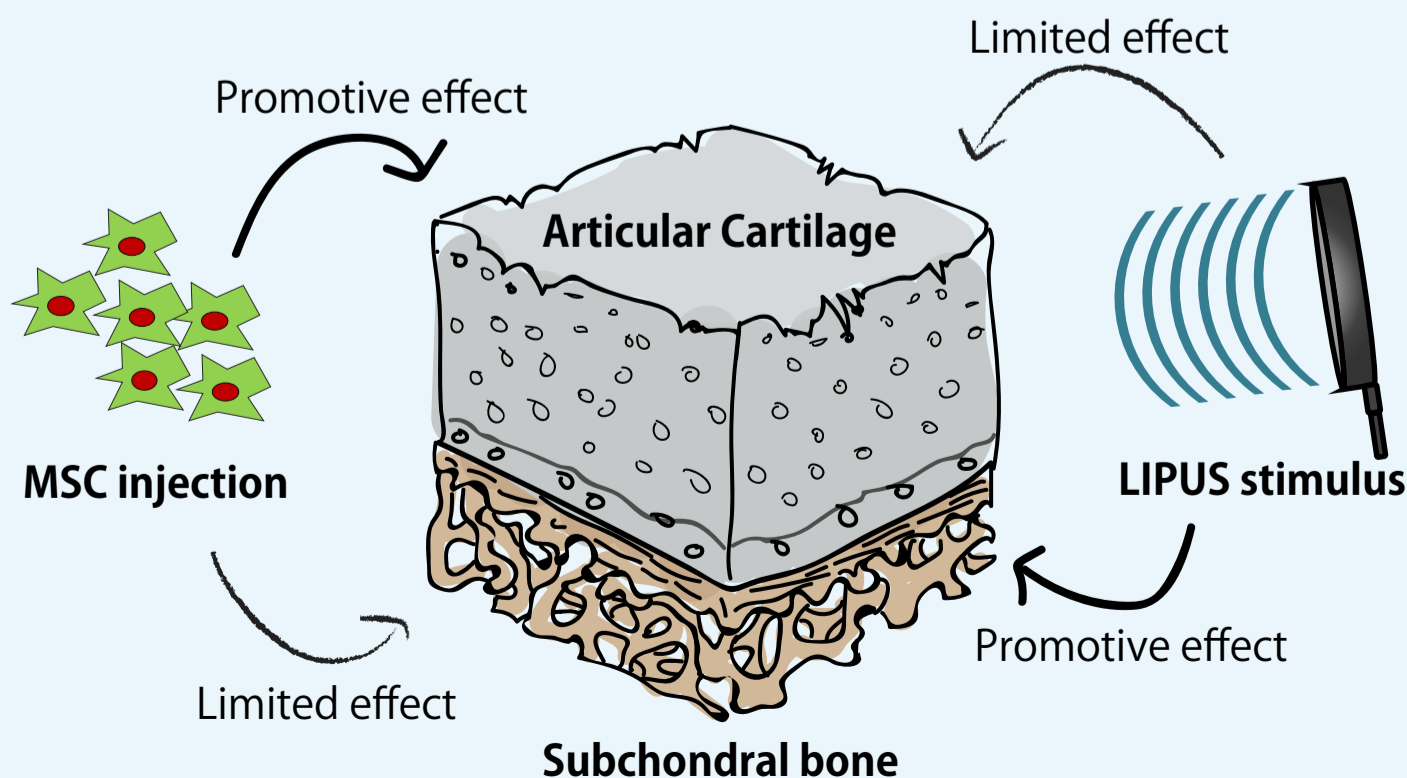
Useful?



Schema



Result



Suggestions

- ✓ MSC injection improved the cartilage repair.
- ✓ LIPUS improved the subchondral bone density.
- ✓ Combinational use of MSC & LIPUS promoted both of the cartilage repair and subchondral bone density.
- ✓ **LIPUS would be a promising candidate as physical therapy modalities for the cell therapy against the osteochondral defect in regenerative medicine.**