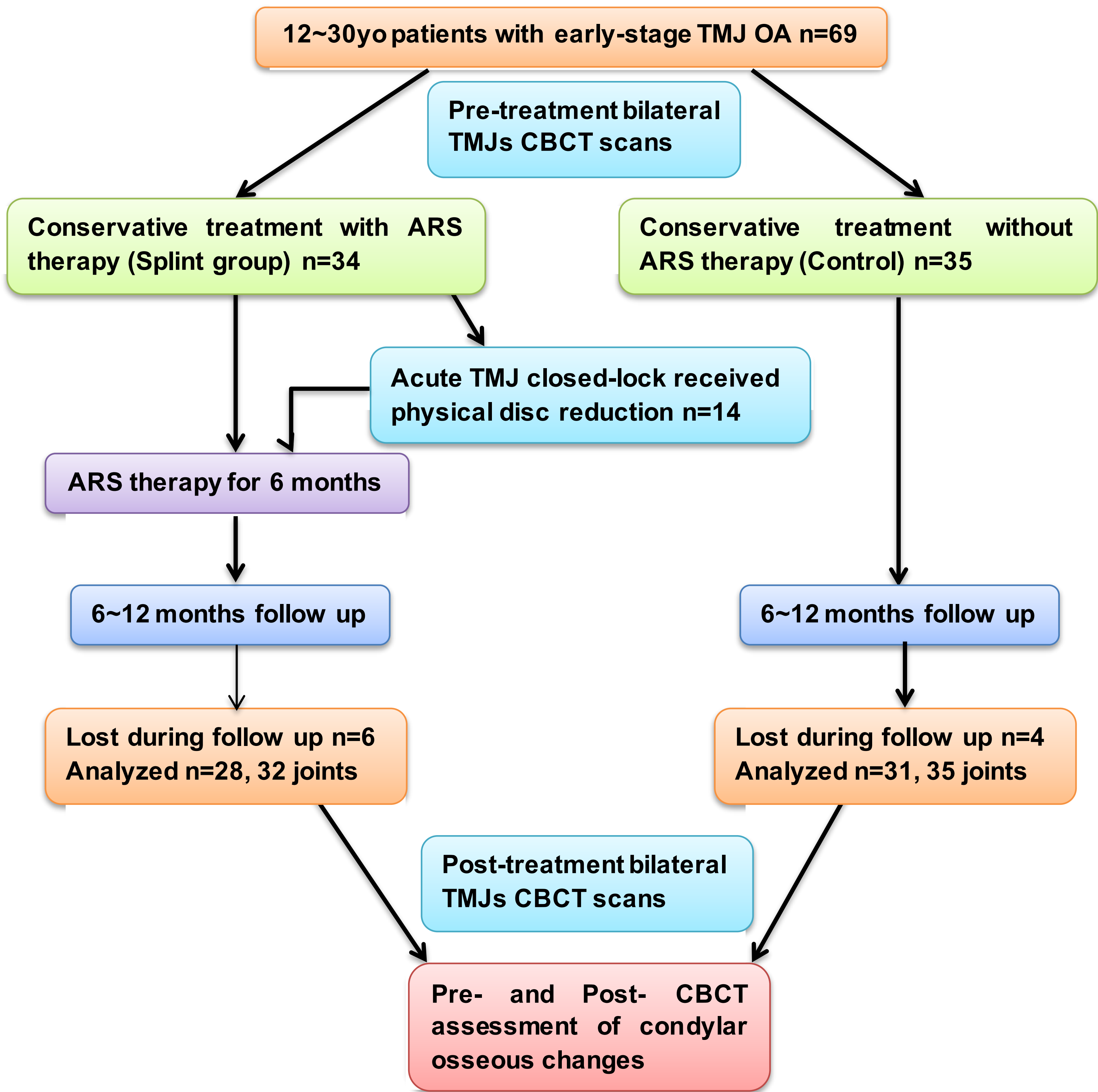




Objective

To determine the effect of anterior repositioning splint (ARS) on osseous condylar changes in adolescents/young adults with early-stage degenerative joint disease (DJD).

Methods



Results

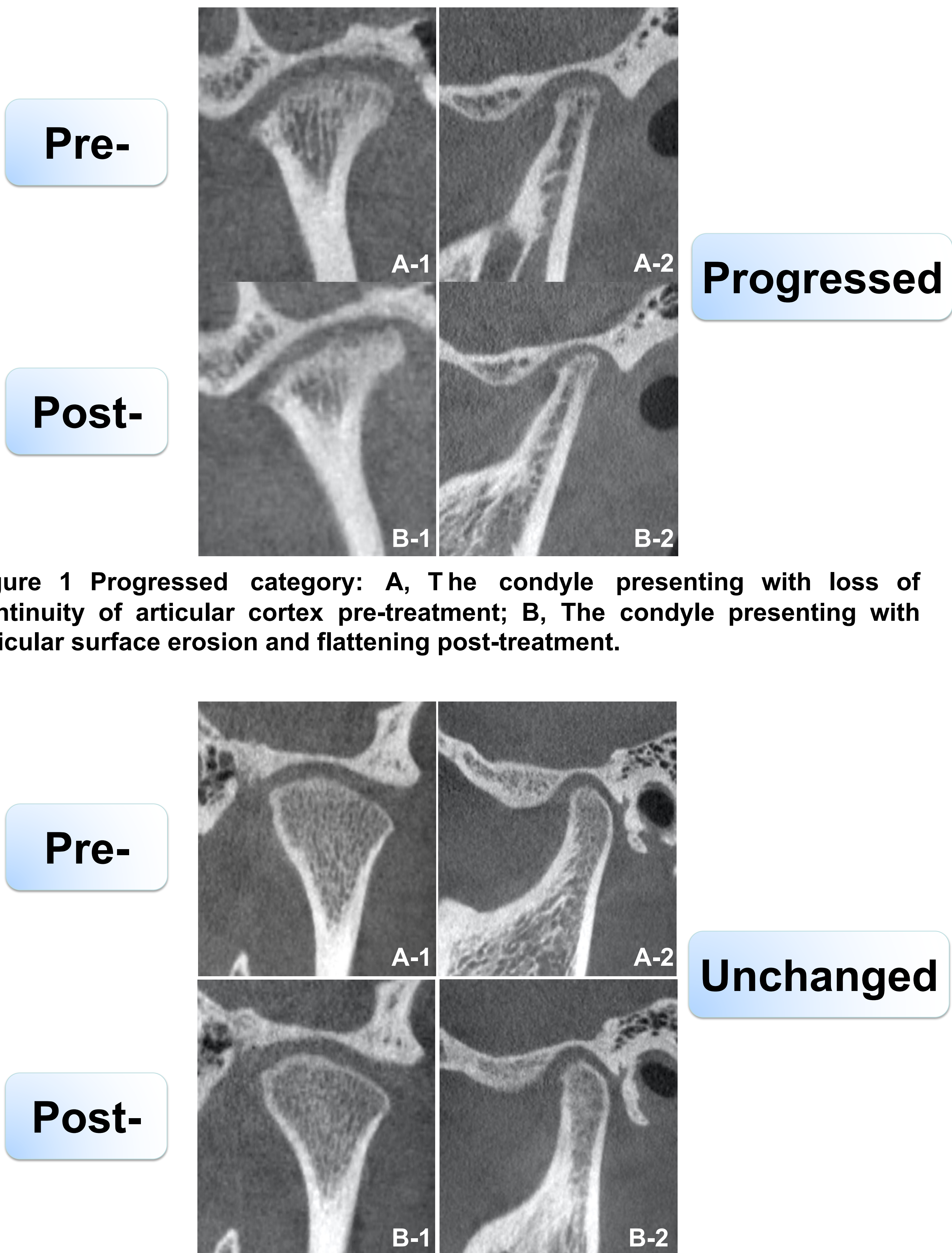


Figure 1 Progressed category: A, The condyle presenting with loss of continuity of articular cortex pre-treatment; B, The condyle presenting with articular surface erosion and flattening post-treatment.

Figure 2 Unchanged category: A, The condyle presenting with loss of continuity of the articular cortex pre-treatment; B, The condyle presenting with no bony changes post-treatment.

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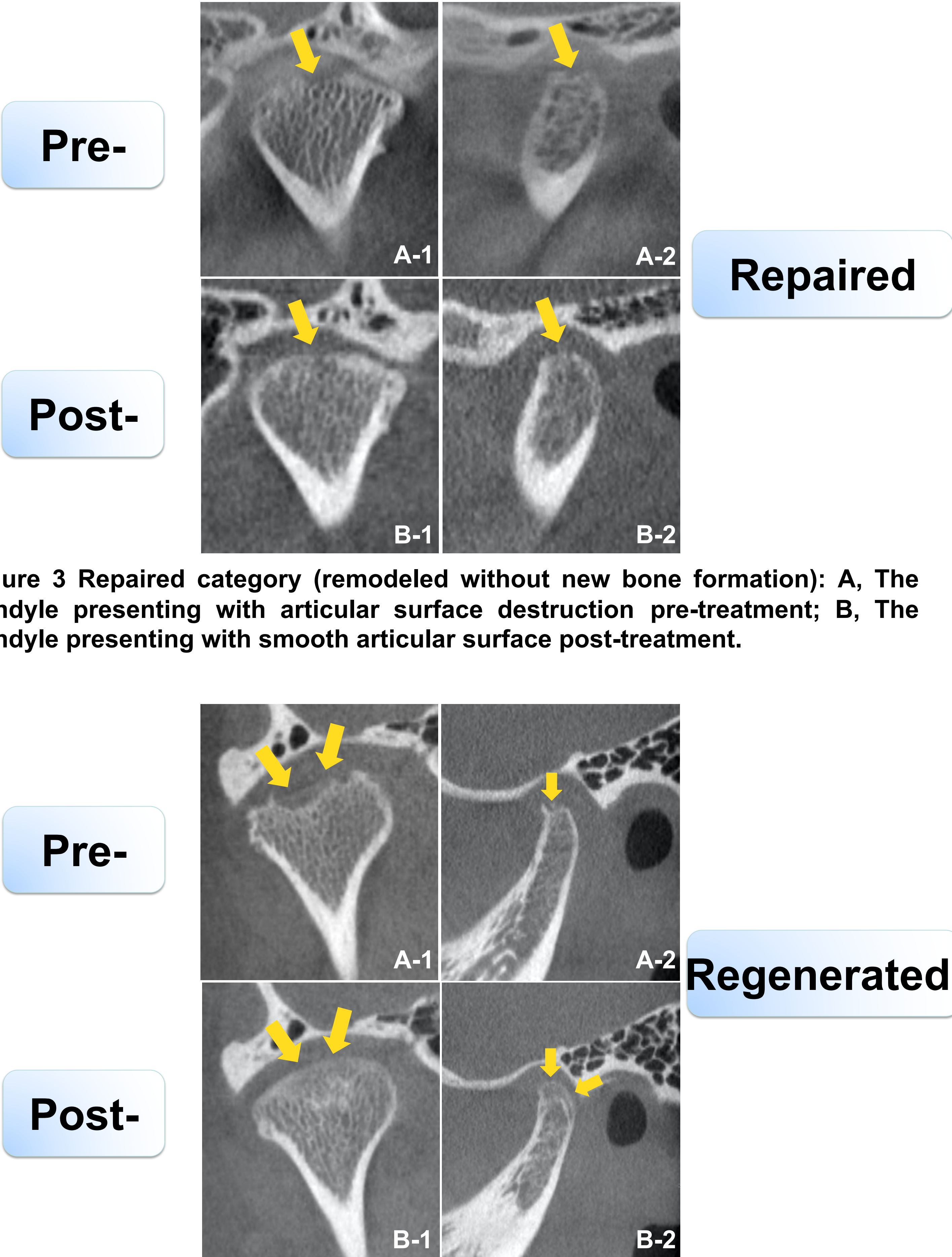


Figure 3 Repaired category (remodeled without new bone formation): A, The condyle presenting with articular surface destruction pre-treatment; B, The condyle presenting with smooth articular surface post-treatment.

Figure 4 Regenerated category (remodeled with new bone formation): A, The condyle presenting with articular surface destruction pre-treatment; B, The condyle presenting with “double contour” images over the previous bony defect post-treatment.

“double contour” images: Liu MQ, Chen HM, Yap AUJ, Fu KY. Oral Surg Oral Med Oral Pathol Oral Radiol 2012

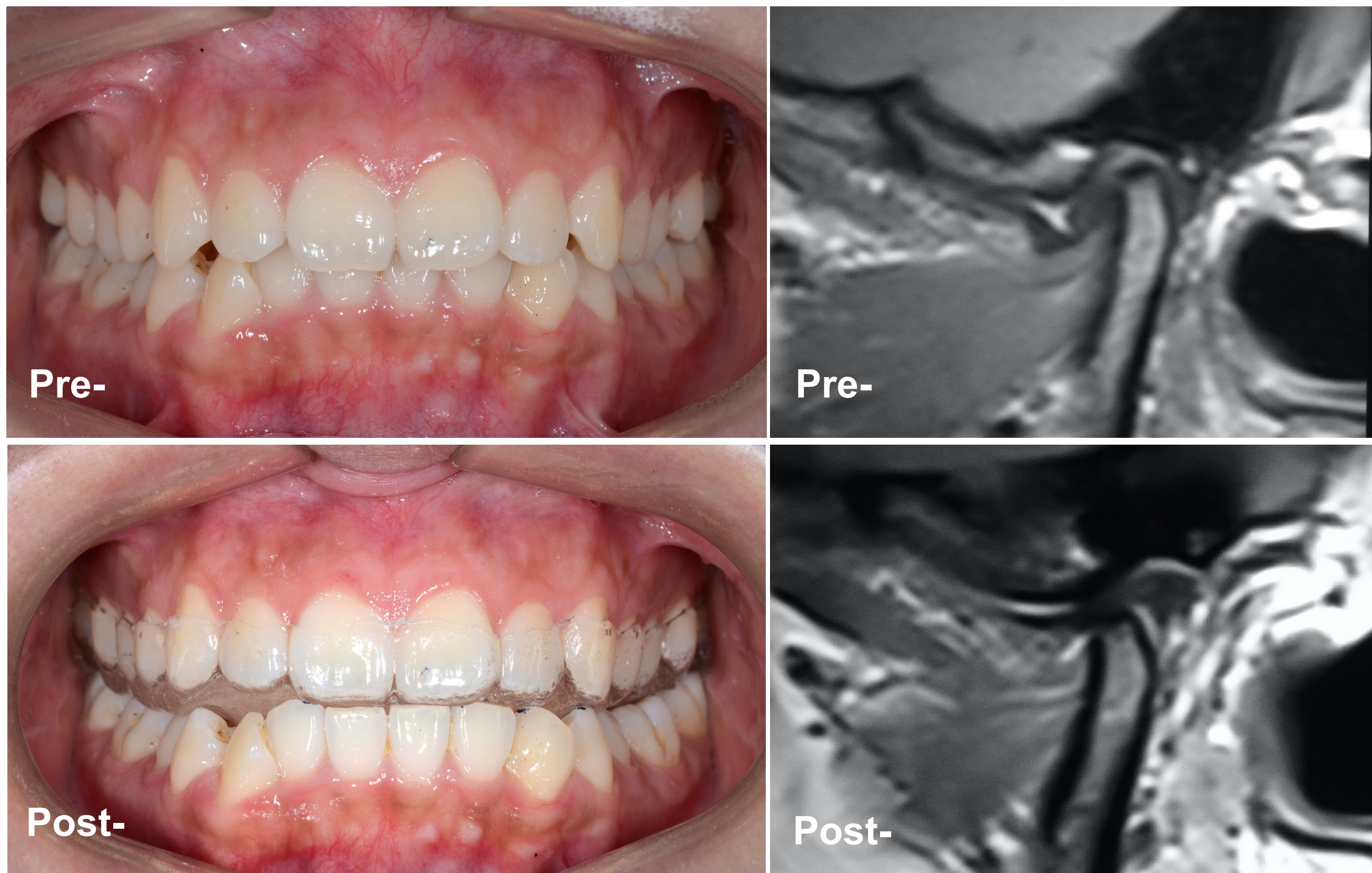


Figure 5 Mandibular and disc positions pre- and post-ARS therapy.

Table 1 Comparison of condylar osseous changes between treatment groups.

	Progressed(%)	Unchanged(%)	Repaired(%)	Regenerated(%)	P
Splint group	3.1(1/32)	18.8(6/32)	28.1(9/32)	50.0(16/32)	<0.001
Control group	37.1(13/35)	14.3(5/35)	48.6(17/35)	0(0/35)	

For the 14 joints in the splint group that required physical TMJ closed-lock reduction, 85.7%, (12/14) exhibited new bone formation.

Conclusions

- Condylar repair and regeneration are possible with ARS therapy in adolescents/young adults with early-stage TMJ DJD.
- Ideal spatial disc-condyle relationships appear important in condylar repair and regeneration.
- The possibility of restoring TMJ form/structure by ARS therapy presents an attractive area of new basic science and clinical research.