



Dr . Skander Ellouze

Tunis

Anterior Torque with Aligners: From Force System to Root Expression

Anterior torque expression remains one of the least predictable outcomes of aligner therapy. The gap reported between planned and achieved incisor inclination is well documented, and it originates less in the appliance itself than in the way the force system is generated by a thermoplastic shell and transferred to the root. How that system arises, a couple delivered by an envelope of limited stiffness acting at a distance from the centre of resistance, will be set out first, since it explains where the moment-to-force ratio is lost.

During this presentation, published torque expression data will be discussed alongside treated cases, together with the design variables available to the clinician: staging and velocity, attachment geometry and position, pressure areas and power ridges, and the use of auxiliaries or skeletal anchorage when the required root movement exceeds what the aligner alone can express.

The objective is a working framework for anticipating torque loss, for assessing whether a given case falls within the mechanical envelope of aligners, and for identifying when adjunctive mechanics are indicated. Current evidence remains largely retrospective, and its limitations will be stated as such.