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Variability in Orthodontic Treatment Planning Using the Invisalign Appliance

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Objective: To investigate differences in the preferred solutions of experienced clinicians for the correction of anterior crowding, a common problem in the treatment of dental malocclusions. **Methods:** Other than extraction, three mmainajor strategies are available for resolving anterior crowding in orthodontic treatment. These include lateral expansion, incisor proclination, or inter-proximal reduction in tooth mass. A fourth possible strategy, distal displacement of upper posterior teeth, is advocated by some clinicians. To investigate the preferences of experienced clinicians among these three approaches when treating with the InvisAlign appliance, a panel of twelve clinical orthodontists was randomly chosen from among the 200 clinicians most experienced with InvisAlign treatment. Thirteen representative cases treated earlier using the appliance were identified and their pre-treatment records were duplicated electronically. The records for each case were re-evaluated independently by each of six blinded randomly chosen members of the panel, each of whom re-planned treatment for six cases. The matrix of cases by clinicians was designed to maximize the number of cases in which any two clinicians re-planned treatment for the same case. (All twelve clinicians evaluated the 13th case first for calibration and as a control.) **Results:** The table below summarizes the distribution of favored solutions for all cases. Two clinicians each considered the InvisAlign appliance to be inappropriate for the treatment of one case.

	Upper Arch			Lower Arch		
	Main Strategy	**Secondary Strategy**	**Not Considered**	**Main Strategy**	**Secondary Strategy**	**Not Considered**
Expansion	**50**	**10**	**22**	**41**	**15**	**26**
Proclination	**14**	**43**	**25**	**16**	**45**	**21**
Interproximal Reduction of tooth mass	**19**	**35**	**28**	**32**	**38**	**11**
"Distalization" of Upper Molars	**9**	**----**	**75**			

Conclusions: Almost all clinicians used each of the three solutions in some cases but the frequencies for different solutions differed markedly among clinicians and across cases.

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