



THE EFFECT OF VIBRATION ON THE RATE OF LEVELING AND ALIGNMENT

Bowman SJ. J Clin Orthod. 48:11 (2014): 678-688.

PURPOSE

- To evaluate the effects of vibration with AcceleDent® on the speed of orthodontic leveling and alignment.

METHODS

- Retrospective evaluation of the effects of vibration on the time required for mandibular leveling and alignment.
- Enrolled 117 consecutively treated Class II non-extraction patients (40% male) who underwent maxillary molar distalization and concurrent mandibular leveling and alignment.
 - AcceleDent vibration (AD) group (N=30, 13.1 ± 1.3 yrs).
 - Study control (SC) group (N=37, 12.8 ± 1.0 yrs).
 - Pre-AD (PAD) control group of Class II patients (N=50, 14.3 ± 4.2 yrs).
- Patients presented a half-to-full-step Class II molar relationship and mild-to-moderate crowding.
- Alignment defined as the sufficient resolution of dental irregularities to permit complete seating of a rectangular archwire with a minimum dimension of .017" × .025" stainless steel or superelastic alloy into .022" × .028" brackets.
- Leveling defined as the sufficient resolution of vertical dental discrepancies to allow complete seating of a rectangular archwire with a minimum dimension of .019" × .025" stainless steel into the bracket slots.

RESULTS

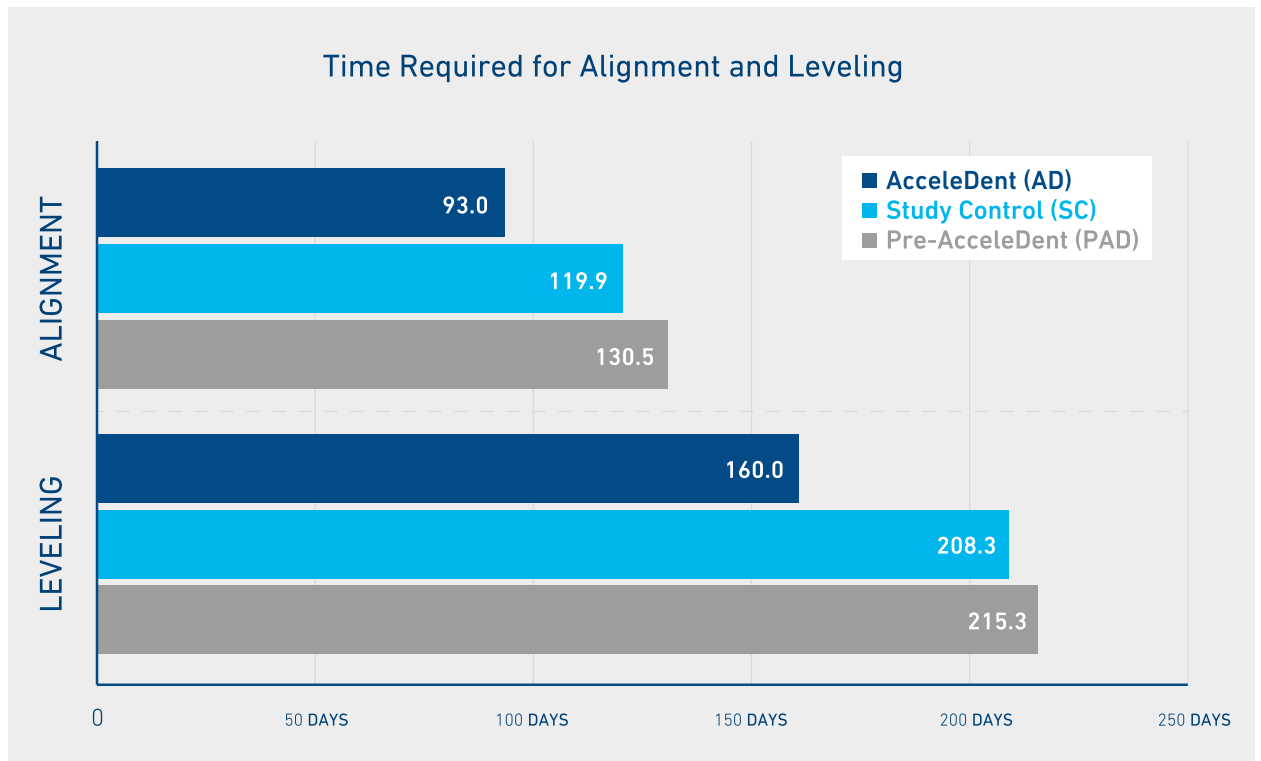
- No statistically significant differences in age or gender amongst the three groups.
- Average time to alignment was shorter in the AD group than either the SC group or the PAD control group (*Figure 1*).
- .017" × .025" archwire was placed in AD patients 27 days earlier (29% faster) on average than the SC patients and 38 days earlier (40% faster) than in the PAD subjects.
- Average time to leveling in the AD group was 48 days less than the SC patients (30% faster, $p < 0.05$) and 55 days less than the PAD patients (35% faster, $p < 0.05$).

AUTHOR CONCLUSIONS

- Amount of time required to achieve both dental alignment and leveling in Class II non-extraction treatment was reduced by using an AcceleDent device to apply vibration.
- Investigator found a clinically beneficial and statistically significant 30% increase in the rate of tooth movement during orthodontic leveling of the mandibular dentition.

ACCELERATED TOOTH MOVEMENT

THE EFFECT OF VIBRATION ON THE RATE OF LEVELING AND ALIGNMENT *(Continued)*



✓ KEY POINT

This peer-reviewed clinical study provides initial data on how AcceleDent may accelerate time to alignment and leveling in Class II non-extraction patients.

acceledent.com

OrthoAccel Technologies, Inc.
1.866.866.4919
sales@orthoaccel.com

Results from case studies are not predictive of results in other cases. Results in other cases may vary.
OA-A24028, March 2015.