

Online Resource 2. Covariate Analyses of Non-adherence in Each Year

| Covariate | n | Covariate Effect (Odds Ratio) | | | Odds Ratio* | | |
|-----------------------------|-----|-------------------------------|---------------|---------|-------------|--------------|---------|
| | | Point | | | Point | | |
| | | Estimate | (95% CI) | p-Value | Estimate | (95% CI) | p-Value |
| First Year | | | | | | | |
| Primary analysis model | 250 | | | | 0.44 | (0.22, 0.87) | 0.019 |
| Age | 250 | 0.96 | (0.92, 1.01) | 0.123 | 0.43 | (0.22, 0.86) | 0.017 |
| Age group | | | | | 0.43 | (0.22, 0.85) | 0.015 |
| < 65 years | 137 | 1 | - | - | | | |
| ≥ 65 years | 113 | 0.60 | (0.31, 1.20) | 0.149 | | | |
| Race | | | | | 0.42 | (0.21, 0.84) | 0.014 |
| Caucasian | 234 | 0.49 | (0.15, 1.67) | 0.256 | | | |
| Non-Caucasian | 16 | 1 | - | - | | | |
| Total hip BMD at baseline | 250 | 0.02 | (<0.01, 0.64) | 0.028 | 0.43 | (0.22, 0.86) | 0.017 |
| Prior bone loss therapy | | | | | 0.43 | (0.22, 0.86) | 0.017 |
| Yes | 36 | 0.67 | (0.24, 1.86) | 0.442 | | | |
| No | 214 | 1 | - | - | | | |
| Parental hip fracture | | | | | 0.40 | (0.20, 0.82) | 0.012 |
| Yes | 49 | 1.54 | (0.70, 3.41) | 0.284 | | | |
| No | 191 | 1 | - | - | | | |
| Smoking history | | | | | 0.43 | (0.22, 0.85) | 0.016 |
| Yes | 120 | 0.54 | (0.27, 1.07) | 0.078 | | | |
| No | 130 | 1 | - | - | | | |
| Alcohol intake | | | | | 0.42 | (0.21, 0.83) | 0.013 |
| Yes | 149 | 0.63 | (0.32, 1.23) | 0.174 | | | |
| No | 101 | 1 | - | - | | | |
| Time since menopause, years | 250 | 0.98 | (0.95, 1.01) | 0.218 | 0.44 | (0.22, 0.88) | 0.020 |
| BMQ score at baseline | | | | | | | |
| Necessity | 244 | 1.35 | (0.69, 2.68) | 0.382 | 0.38 | (0.18, 0.77) | 0.007 |
| Concern | 244 | 1.43 | (0.69, 3.00) | 0.339 | 0.36 | (0.17, 0.73) | 0.005 |
| Preference | 244 | 1.34 | (0.59, 3.03) | 0.483 | 0.32 | (0.14, 0.74) | 0.008 |
| Second Year | | | | | | | |
| Primary analysis model | 221 | | | | 0.13 | (0.06, 0.30) | <0.0001 |
| Age | 221 | 1.02 | (0.97, 1.06) | 0.525 | 0.13 | (0.06, 0.30) | <0.0001 |
| Age group | | | | | 0.13 | (0.05, 0.29) | <0.0001 |
| < 65 years | 121 | 1 | - | - | | | |

| | | | | | | | |
|-----------------------------|-----|------|---------------|-------|------|--------------|---------|
| ≥ 65 years | 100 | 1.39 | (0.70, 2.79) | 0.350 | | | |
| Race | | | | | 0.13 | (0.06, 0.30) | <0.0001 |
| Caucasian | 209 | 0.53 | (0.14, 2.04) | 0.352 | | | |
| Non-Caucasian | 12 | 1 | - | - | | | |
| Total hip BMD at baseline | 220 | 1.08 | (0.02, 47.97) | 0.968 | 0.13 | (0.06, 0.30) | <0.0001 |
| Prior bone loss therapy | | | | | 0.13 | (0.06, 0.30) | <0.0001 |
| Yes | 32 | 1.01 | (0.37, 2.76) | 0.990 | | | |
| No | 189 | 1 | - | - | | | |
| Parental hip fracture | | | | | 0.14 | (0.06, 0.33) | <0.0001 |
| Yes | 42 | 0.62 | (0.25, 1.58) | 0.320 | | | |
| No | 172 | 1 | - | - | | | |
| Smoking history | | | | | 0.13 | (0.06, 0.30) | <0.0001 |
| Yes | 107 | 1.15 | (0.58, 2.30) | 0.687 | | | |
| No | 114 | 1 | - | - | | | |
| Alcohol intake | | | | | 0.13 | (0.06, 0.30) | <0.0001 |
| Yes | 133 | 1.19 | (0.59, 2.41) | 0.622 | | | |
| No | 88 | 1 | - | - | | | |
| Time since menopause, years | 221 | 1.01 | (0.98, 1.04) | 0.646 | 0.13 | (0.06, 0.30) | <0.0001 |
| BMQ score at baseline | | | | | | | |
| Necessity | 215 | 0.33 | (0.15, 0.72) | 0.006 | 0.12 | (0.05, 0.28) | <0.0001 |
| Concern | 215 | 2.40 | (1.12, 5.14) | 0.025 | 0.12 | (0.05, 0.29) | <0.0001 |
| Preference | 215 | 2.32 | (1.12, 4.83) | 0.024 | 0.06 | (0.02, 0.18) | <0.0001 |

* Odds ratios <1 favor denosumab.