

Letters to the Editor

Sir,

A recent article by Richardson (1995) evaluated changes in mandibular tooth alignment during adulthood from 18 to 50 years. Fourteen of her 16 subjects showed increased lower-arch crowding during this interval. A rigorous discussion failed to identify any measurable factors closely associated with the between-subjects variation in the lower arch changes she reported.

We propose a possible causal association, after inspecting the article's mandibular occlusal photographs for the presence of approximal restorations at 50 years that were not in place at 18 years. Our Table 1 shows the results of this photographic examination along side the Richardson data regarding increases in lower arch crowding for the five illustrated subjects. On the basis of these observations, increase in the number of restored approximal tooth surfaces and increase in lower crowding appear to have a statistically significant causal relationship (Spearman's rank correlation = 0.90, $P < 0.025$).

The significance of approximal dental restorations in the genesis of crowding was discussed in an earlier paper (Peck and Peck, 1973):

'The cumulative effect of the questionable practice in operative dentistry of overcontouring approximal restorations in the adolescent [and adult] dentition no doubt contributes to vanishing arch length and intensified crowding.'

The power of this iatrogenic factor in the

crowding equation today may well be diminished, given the precipitous decline in caries prevalence as a result of fluorides. Nonetheless, we encourage Mrs. Richardson to investigate a relationship between approximal restorations and intensified dental crowding in her rare, adult longitudinal records. Any insights that may bear upon the dental crowding conundrum are worth exploring.

Sheldon Peck, and Leena Peck,
Department of Orthodontics
Harvard School of Dental Medicine
188 Longwood Avenue
Boston, Massachusetts 02115, USA

References

- Richardson M E 1995 A preliminary report on lower arch crowding in the mature adult. *European Journal of Orthodontics* 17: 251–257
- Peck S, Peck H 1973 Dental anthropology for the clinical orthodontist. *Transactions of the European Orthodontic Society* pp. 127–136

Sir,

I thank Drs Peck and Peck for their letter in response to my paper Richardson (1995) and for their interesting observations on the relationship between the increase in the number of approximal restorations and the increase in crowding.

I have counted the new interproximal restorations at age 50 years, insofar as it is possible to detect them on models (Table 1), and correlated the number with the increase in crowding. A non-significant correlation coefficient ($r = 0.21$) was found.

Not all interproximal restorations will be over extended, indeed some were obviously deficient so it is not surprising that no relationship between restorations and increased crowding was demonstrated. In any case the sample is too small to attach much importance to the results of statistical tests.

Table 1 Changes in the Mandibular dentition between the ages of 18 and 50 years

Subjects*	Increase in number of restored approximal tooth surfaces	Increase in crowding* mm
Figure 1 (Subject 8)	0	0.00
Figure 2 (Subject 15)	≥ 3	0.17
Figure 3 (Subject 12)	≥ 5	1.81
Figure 4 (Subject 4)	≥ 6	2.38
Figure 5 (Subject 16)	≥ 2	1.40

* From: Richardson 1995

Table 1 Increase in crowding and in the number of approximal restorations in the lower arch between 18 and 50 years.

Subjects	Increase in crowding (mm)	Increase in number of approximal restorations
1	2.50	6
2	0.50	4
3	0.62	5
4	2.38	6
5	1.50	10
6	0.80	5
7	1.26	7
8	0.00	0
9	0.50	11
10	0.00	8
11	1.90	5
12	1.81	4
13	0.30	2
14	0.90	3
15	0.17	4
16	1.40	4

It may be worth pointing out that in subject 16 (Figure 5) the new restorations are on the left side and the crowding increase on the right side of the lower arch.

Margaret E. Richardson
 Department of Orthodontics
 The Royal Hospitals
 School of Dentistry
 Grosvenor Road
 Belfast BT12 6BP
 N. Ireland

Reference

Richardson M E A preliminary report on lower arch crowding in the mature adult. *European Journal of Orthodontics* 17: 251-257