

## Perbedaan Besar Gaya Terhadap Perubahan Jarak dan Waktu Peregangan Dari Beberapa Produk NiTi(Nickel Titanium) Closed Coil Spring (Penelitian Laboratorik) = Comparison Of Force toward distance and time within various NiTi closed coil spring product

Ian Fleming Tungka, author

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### Abstrak

**Pendahuluan:** NiTi closed coil spring merupakan salah satu alat ortodonti yang digunakan untuk retraksi gigi pada perawatan ortodonti. Gaya yang dihasilkan oleh NiTi closed coil spring pada beberapa penelitian telah terbukti lebih baik dibandingkan rantai elastomerik maupun SS (Stainless steel) closed coil spring. , karena degradasi gayanya paling rendah. **Tujuan:** Penelitian ini bertujuan untuk membandingkan besar penurunan gaya beberapa merk NiTi closed coil spring setelah diregangkan pada jarak dan dalam kurun waktu tertentu. **Bahan dan cara:** Pada penelitian ini digunakan 60 NiTi closed coil spring yang dibagi menjadi 3 kelompok dengan jarak peregangan 18 mm dan 27 mm. Kelompok merk 3M, Ortho One dan Versaden masing-masing 10 buah pada masing-masing jarak peregangan. Peregangan dilakukan selama 4 minggu, gaya awal diukur pada saat insersi dan gaya akhir diukur setelah 4 minggu. **Hasil:** Penelitian memperlihatkan terdapat perbedaan signifikan pada gaya awal dan gaya akhir antar kelompok baik pada kedua jarak peregangan dan juga perbedaan signifikan pada gaya awal dengan gaya akhir pada masing-masing dan antar kelompok. **Kesimpulan:** Terdapat perbedaan nilai gaya awal dan gaya akhir pada semua merk NiTi closed coil spring yang diregangkan pada jarak dan waktu tertentu.

..... **Introduction:** NiTi closed coil spring is an orthodontic appliance which applied to performed tooth retraction in orthodontic treatment. The forces produces by NiTi closed coil spring in many studies has been proven to be superior compared to elastomeric chain and stainless steel closed coil spring. **Objective:** The purpose of this study was to compare the force degradation within few NiTi closed coil brand toward different distance and time. **Materials and method:** There were 60 NiTi closed coil spring used in this study, which devide into 3 grups toward distance of 18 mm dan 27 mm. There are 3 group consist of 3M, Ortho One and Versaden each consist 10 piece within different distance. The object is soaked within 4 weeks period. Initial force is measure during insertion and final force is measure after 4 weeks. **Results:** This study showed that there are significance different in initial force and final force within groups in both streching distance. There are also significance different between initial force and final force within groups. **Conclusions:** There are difference in initial and final force within all brand of NiTi closed coil spring that stretch toward certain distance and time.