

Creative Use of Copper Ni-Ti



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Copper Ni-Ti™ is a new quaternary alloy (nickel, titanium, copper and chromium) with distinct advantages:

1. Constant force over long activation spans
2. Near constant force guaranteed
3. Resistant to deformation

4. Less drop in unloading force
5. A thermal treatment process that produces three different transformation temperatures: 27°C, 35°C and 40°C.

The low load-deflection characteristics in conjunction with resistance to permanent deformation provide a large range of activation. These properties allow creative use of Copper Ni-Ti. The illustrations show how Copper Ni-Ti can be placed above and below orthodontic brackets to institute intrusion or extrusion of teeth.

The most common use is to level the mandibular plane of occlusion by placing the wire to the incisal of the mandibular anterior brackets or to the gingival of the first and second bicuspid brackets. If you are concerned with rotation of these teeth, place a sectional wire in the bypass segment. I have also used this technique to open bites by placing the Copper Ni-Ti wire to the incisal of the maxillary or mandibular anterior brackets.

An anterior open bite can be closed by placing the wire to the gingival of the maxillary anterior brackets and/or the mandibular anterior brackets. Vertical elastics may be used but are generally not necessary.

Another use is to weave this wire above or below an orthodontic bracket that could not be ideally placed initially. This technique will compensate for a bracket height discrepancy. I have found that an .016 35°C or .016 x .022 35°C wire works very efficiently over 10-12 weeks. I have used other wires, but our patients seem to prefer the gentle action and I am very pleased with the results obtained with Copper Ni-Ti.

Dr. Saul Burk received his D.D.S. from the University of Maryland and his M.S. and certificate in orthodontics from Georgetown University. He was an assistant professor of orthodontics at Georgetown University for 11 years. Dr. Burk is in private practice in Gaithersburg and Olney, Maryland.



Figure 1A. The mandibular anteriors are being intruded using an .016 x .022 35°C Copper Ni-Ti placed to the incisal of the anterior brackets.



Figure 1B. The mandibular anteriors intruded after ten weeks.



Figure 1C. An .019 x .025 Force 9® sectional is placed to level the anteriors



Figure 2A. The mandibular anteriors are being intruded with an .016 35°C Copper Ni-Ti placed to the incisal of the brackets. Notice that a bypass .016 x .022 35°C Copper Ni-Ti is leveling the anteriors.

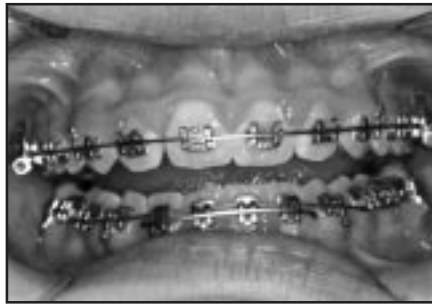


Figure 2B. Ten weeks later, notice the intrusion of the mandibular anteriors and the leveling effects of the bypass sectional.



Figure 3A. The maxillary anteriors are being intruded using an .016 x .025 35°C Copper Ni-Ti. An .017 x .025 TMA® stepped down in the mandibular anterior region has been placed after the mandibular anteriors have been intruded.

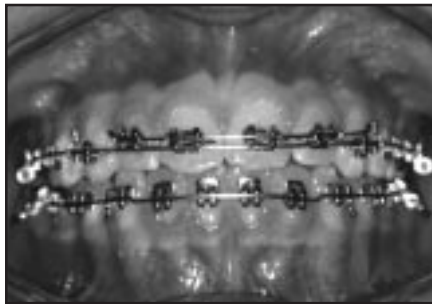


Figure 3B. Intrusion of the maxillary anteriors after ten weeks.

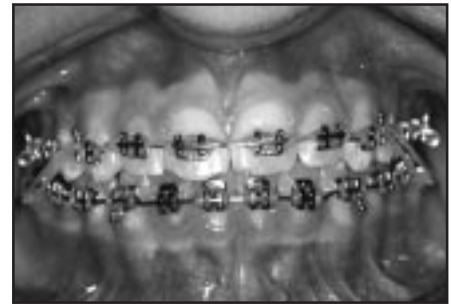


Figure 3C. Maxillary .017 x .025 TMA stepped up in the maxillary anterior region. Class II elastics (Ormco Fox) are placed.



Figure 4. Extrusion of the maxillary second bicuspid and cuspid.



Figure 5. Closing an open bite using an .016 x .025 35°C Copper Ni-Ti to the gingival of the mandibular cuspid and anterior brackets. An anterior bypass wire was placed from cuspid to cuspid.

Copper Ni-Ti™ Line Extended in Answer to Your Requests

Copper Ni-Ti is playing a leading role in the specialty's transition from cross-sectional archwire mechanics to variable modulus. The many benefits, including earlier rectangular archwire engagement, increased intervals between patient visits, reduced treatment times and increased patient comfort, all add up to increased practice efficiency and profitability. As the use of Copper Ni-Ti has grown around the world, we've been expanding the line in response to your requests. Take a look at and take advantage of our growing family of Copper Ni-Ti

archwires. Order information is provided on page D of the Center Section.

Current Copper Ni-Ti archwire availability (more recent introductions bolded):

Available in both Orthos™* and Broad Arch forms –

27° – .014,**.016,**.018, .016 x .022,**.017 x .025,**.019 x .025**
35° – .016, .018, .016 x .022, **.017 x .017**, .017 x .025, .019 x .025,
.020 x .020, .021 x .025

40° – .016 x .022, .017 x .025, .019 x .025, **.021 x .025**

Dimpled midpoint (to prevent creep) Orthos form archwires –
.018 (27°), .016 x .022 (35°), .019 x .025 (35°)

*Products identified as "Orthos" are distributed in Europe as "Orthos-CIS"

**Available in Broad Arch form only