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Torsional properties of N-Ti and Copper Ni-Ti wires: the effect of temperature on physical properties

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The stress-strain behaviour of two-Ni-Ti and two Copper Ni-Ti orthodontic wires was examined in induced torsion under controlled conditions of moment and temperature. The tests clearly demonstrate the diversity of behaviour of these wires. The loading and unloading curves and plateau regions were found to be closely related to temperature with stiffness varying dramatically over mouth temperature range under identical stress. Diversity of reaction to stress is linked to the crystalline structure of the alloys.

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