

**Arterial Stiffness Differences between Aerobically and Resistance Trained Turkish Elite Athletes**Tolga Saka<sup>1</sup>, Ufuk Sekir<sup>2</sup>, Ali Dogan<sup>3</sup>, Soner Akkurt<sup>4</sup>, Mehmet Karakus<sup>5</sup>, Mehmet Mesut Celebi<sup>6</sup>, Bahadir Sarli<sup>7</sup> and Abdurrahman Oguzhan<sup>8</sup><sup>1</sup>*Bezmialem Vakif University Medical Faculty Department of Sports Medicine Istanbul, Turkey**Telephone: +905333358683, E-mail: tolgasakamd@gmail.com*<sup>2</sup>*Uludag University Medical Faculty Department of Sports Medicine Bursa, Turkey**Telephone: +905324227451, E-mail: ufuksek@gmail.com*<sup>3</sup>*Erciyes University Medical Faculty Department of Cardiology Kayseri, Turkey**Telephone: +905533458350, E-mail: dralidogan@yahoo.com*<sup>4</sup>*Erciyes University Medical Faculty Department of Sports Medicine Kayseri, Turkey**Telephone: +905053572277, E-mail: drsonerakkurt@hotmail.com*<sup>5</sup>*Erciyes University Medical Faculty Department of Sports Medicine Kayseri, Turkey**Telephone: +905319931767, E-mail: memkar77@hotmail.com*<sup>6</sup>*Ankara University Medical Faculty Department of Sports Medicine Ankara, Turkey**Telephone: +905053916119, E-mail: drmesutcelebi@hotmail.com*<sup>7</sup>*Erciyes University Medical Faculty Department of Cardiology Kayseri, Turkey**Telephone: +905059942732, E-mail: sarli@erciyes.edu.tr*<sup>8</sup>*Erciyes University Medical Faculty Department of Cardiology Kayseri, Turkey**Telephone: +905324563423, E-mail: oguzhan@erciyes.edu.tr***KEYWORDS** Arterial Stiffness. Basketball. Exercise. Pulse Wave Velocity. Strength Training. Weightlifting

**ABSTRACT** The purpose of this study was to evaluate whether arterial stiffness was different in aerobically trained elite athletes than in anaerobically or resistance trained elite athletes. The cohort comprised 36 healthy male volunteers, aged between 17 and 32 years. All subjects were basketball players (n=10), weightlifters (n=11) or sedentary controls (n=15). The Pulse Trace System (Micro Medical Ltd., Rochester, UK) was employed to record central and peripheral arterial stiffness. Echocardiographic images were taken by the use of a commercially available machine (Vivid 7 GE-Vingmed, Horten, Norway) with a 2.5 MHz transducer. Aortic elastic properties derived from echocardiographic measurements did not differ between the groups (p<0.05). Pulse wave velocity measurements reflected significantly lower values in both the basketball players and weightlifters compared to controls (p<0.001-0.05). No significant difference was seen between the basketball players and weightlifters (p<0.05). Contrary to existing knowledge, arterial stiffness of athletes that perform more resistance exercise such as weightlifters improved significantly and did not get worse. This result implies that in the long-term arterial stiffness improves with sports activities that are predominantly comprised of resistance exercises despite increased arterial stiffness in the acute phase.