

Department of Orthopaedic Surgery

Division of Sports Medicine

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General Summary

Since the Division of Sports Medicine was established as the Sports Clinic in October 1985, we have performed research on sports medicine in the following subjects: 1. elite amateur and professional athletes; 2. middle-aged and elderly people who regularly do sports; 3. children and adolescents who participate in sports at school or in clubs; and 4. other areas of general sports medicine.

Research Activities

1. A series of research studies on hyperthermia were done. Results of general research into hyperthermia therapy for sport injuries of muscles and tendons were reported. The response of human skeletal muscle heat-shock protein 72 to microwave therapy was examined. The difference in the therapeutic effect of microwave therapy between 434 MHz and 2,450 MHz was studied.
2. We reported on medical support for a road racing team. Domestic and international stage races were examined. We reported on the medical support concerning advance preparations and emergencies during one season. The methods and problems of doping control were also examined.
3. Research regarding football was continued. The main aspects of the medical environment and medical support for an amateur football club that aims to become professional were reported. We discussed how to achieve an earlier return to action for athletes for whom the outcome of rehabilitation was poor.
4. We reported on a case of 1st rib stress fracture in a competitive dancer and examined the characteristics of dance injuries.
5. We reported on the treatment of shoulder muscle injuries.

Publications

Ichinoseki-Sekine N¹, Naito H¹, Saga N¹, Ogura Y¹, Shiraishi M, Giombini A (Italian Natl Olympic Committee), Giovannini V (Restek Med Device), Katamoto S¹ (¹Juntendo Univ). Effects of microwave hyperthermia at two different frequencies (434 and 2450 MHz) on human muscle temperature. *J Sports Sci Med* 2008; **7**: 191-3.

Sekine N¹, Naito H¹, Ogura Y¹, Shiraishi M, Sugiura T (Yamaguchi Univ), Katamono S¹ (¹Juntendo Univ). Changes in human muscle HSP72 induces by 434 MHz microwave hyperthermia (in Japanese). *Tairyoku Kagaku* 2007;

55: 602.

Shiraishi M, Ushijima F. Medical support in a football club aiming professional (in Japanese). *Tairyoku Kagaku* 2007; **56**: 840.

Ushijima F, Shiraishi M, Sato M, Nakajima Y, Nakamura Y. Medical support for the road racing team in an overseas stage race (in Japanese). *Tairyoku Kagaku* 2007; **56**: 849.

Review and Books

Giombini A (Inst Sport Med and Sci), Giovannini

V (Rome Univ), Di Cesare A, Pacetti P (Tor Vergata Univ), Ichinoseki-Sekine N¹, Shiraishi M, Naito H¹ (¹Juntendo Univ), Mufulli (Keele Univ). Hyperthermia induced by microwave diathermy in the management of muscle and tendon injuries. *Br Med Bull* 2007: **83**: 379-96.

Ide J¹, Ushijima F, Mizuta H¹ (¹Kumamoto Univ). Treatment of stiff neck (in Japanese). *Rinsho Seikeigeka* 2007: **42**: 419-23.

Ide J¹, Ushijima F, Mizuta H¹ (¹Kumamoto Univ). Stiff neck (in Japanese). *Pain Clinic* 2007: **28**: 573-8.