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Discussion of Volleyball Knee Pad

—From a Biomechanical Standpoint—

*By Yasuhiko Takanashi**

To investigate the biomechanical features of volleyball knee pad, two experiments were performed.

1) To study the impact-reducing effects of the knee pad, we dropped a cannon ball on the force plate covered with the knee pad, and recorded the force.

2) No investigation has been published whether jumping performances are restricted wearing the knee pad. So the jump performances with the knee pad were compared with those with free legs by some parameters concerning the performances.

The results are as follows ;

1) The knee pad reduces significantly ($p < 0.05$) the impact force, especially when the pad made of sponge was covered with the impact-absorbing materials.

2) When the subject wears the pad, the angular velocity of knee extension is significantly ($p < 0.05$) faster. But in other parameters measured in this experiments, no significant change is observed.

These results indicate that the knee pad is effective for protecting the impact force in knee joint, that the pad increases the angular velocity of knee extension.

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