

## **FORCE TIME MEASURES OF BEGINNING AND SKILLED SKATEBOARDERS PERFORMING AN OLLIE**

**Mark Walsh, Ceith Creekmur, Jeff Wojcik**

**Physical Education and Health Studies Department, Miami University, Oxford, Ohio. USA**

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**INTRODUCTION:** It was reported (US today) that in 2001 more American youth participated in skateboarding than baseball. The growing popularity of the urban skating in recent years has been a factor in the transformation of the sport and the tricks that are performed. In the early days of skateboarding aials and various vertical manoeuvres made up the majority of the tricks performed. With the increase in urban skating, Ollie based tricks have become an integral part of many competitions. An Ollie is a manoeuvre in which the skater jumps up in the air and as a result of torques applied to the skateboard the skateboard rises up in the air under the feet of the skater. Although a large number of people participate in skateboarding there is little research outlining the mechanics of basic skateboarding tricks.

**METHODS:** Beginning and intermediate skateboarders participated voluntarily in this study. All of the skaters performed a series of Ollies on a Bertec force plate in our biomechanics lab. The instructions given were to perform an Ollie as high as possible. The Force plate measured vertical ground reaction force (VGRF). Of the skaters who participated one was considered skilled and the other 5 were considered beginners. After the initial measurements the beginners were given instructions on how to perform an Ollie. They all agreed to follow a training schedule which consisted of practicing Ollies 3x a week for 20 minutes for 4 weeks. After the training phase the subjects performed another series of Ollies on the force plate.

**RESULTS:** Comparison of the force time curves of the skilled vs. non skilled skaters and the non skilled skaters before and after 4 weeks of practice showed marked differences. The most obvious of those were the development of a countermovement. The force time curve of the non skilled skaters showed a very gradual counter movement with a pause before the jump. The force curves of the skilled participant and the non skilled participants after the training session showed a marked drop in the force just before the jump that resembled a typical force time curve of a counter movement jump. As reported earlier (Fredrick et al. 2006) landing force was markedly higher than take off force in all subjects.

**DISCUSSION:** Because the Ollie is basically a vertical jump on a skateboard it is not surprising that the counter movement seems to be more evident in skaters who perform better. Apparently the non skilled skaters lacked the coordination to perform a counter movement while balancing on a skateboard. As in other literature on jumping, the landing forces were higher than take off forces in all measured skaters.

**CONCLUSION:** This study identified a basic parameter that seems to change while learning Ollies. The application of these results may be difficult because skateboarders don't typically have coaches, but with the increasing number of skaters it is of interest to identify parameters that affect both performance and injury.

### **REFERENCES:**

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