

# Use of the Unicam Pro 3 in Knee Rehabilitation

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The Unicam Pro 3 device allows the pedal and crank arrangement of either a bicycle or a cycle ergometer, to be adjusted. The cycle can then accommodate anomalies in range of lower limb joint motion or muscle power. This gives the opportunity of introducing cycling as a rehabilitation exercise earlier than would otherwise be possible. The following case gives an example of how the Unicam Pro 3 has been used in our Sports Injury Rehabilitation Centre.

## History

JK was a professional footballer who sustained a right ACL rupture whilst playing a game in August 1998. The right knee was reconstructed using a patella tendon autograft the following month. Post operatively JK de-



Fig 1  
Standard cycle ergometer with Ortho-Flex

veloped an infection of the wound and he was treated with antibiotics and the knee was immobilised in a brace. When we first saw JK some 3-4 weeks following surgery it was obvious that the knee was extremely stiff with a range of movement from only 5° fixed flexion deformity to 25° flexion.

## Management

JK was treated with a number of exercises and physiotherapy mobilisation techniques. He also undertook frequent sessions on the Unicam Pro 3 cycle

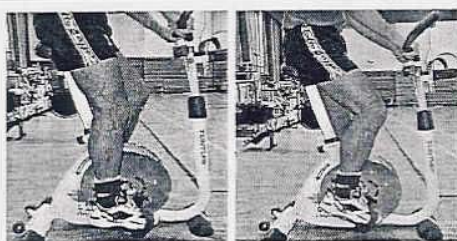


Fig 2  
Ortho-Flex set to accommodate limited flexion

(fig 1). Initially the pedal and crank arrangement were set to accommodate a limited amount of knee flexion (the maximum passive range was initially 25°). As the range of knee flexion improved the Unicam Pro 3 was adjusted to accommodate the increased

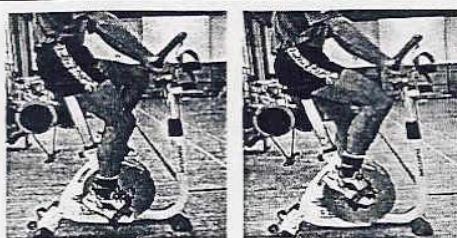


Fig 2  
Ortho-Flex adjusted to permit more flexion

range (fig 2).

The cycle was used several times a day for up to 20-30 minutes of continuous low intensity cycling as part of JK's treatment programme. In addition it was used for higher intensity exercise as part of aerobic substitute training sessions.

## Conclusion

We found the Unicam Pro 3 cycle to be an excellent adjunct to the mobilisation techniques and exercises that we prescribed at different stages during JK's rehabilitation. We believe that cases such as JK's benefit from repeated movements that are preferably active and partial weight bearing. This encourages increases in range of motion and is unlikely to aggravate the pathology. The Unicam Pro 3 cycle permits the use of such controlled exercise, which is difficult to achieve in the early stages of rehabilitation. We were also able to use the cycle at a sufficient intensity to help maintain general aerobic fitness.