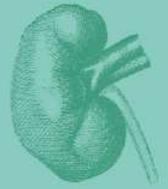


# Movement Therapy during Hemodialysis Research



1. Nine weeks of leg-cycling during hemodialysis in MHD patients improves not only cardiopulmonary fitness and endurance but also muscle strength, power, fatigability and physical function. These data underscore the value of endurance training in MHD.  
(C.P. STORER, et al., Los Angeles, USA: *Endurance exercise training during haemodialysis improves strength, power, fatigability and physical performance in maintenance haemodialysis patients. Nephrology Dialysis Transplantation* 2005; 20(7): 1429-1437)
2. The study shows, movement therapy of short duration during dialysis treatment can improve physical performance partly as well as general well-being and quality of life.  
(C.P. BORREGAARD, et al., Germany: *Bewegungstherapie während einer Dialyse. Eine experimentelle Studie zum Kraft- und Ausdauerverhalten und zur Lebensqualität, 2003.*)
3. As dialysis is very time-consuming, patients often don't get the possibility to do sports in their free time. In this case, training can be integrated into the procedure of the dialysis treatment.  
(C.P. KRAUSE, Germany: *Fit trotz Dialyse. Der Dialysepatient. Sonderheft November 2002: 15-18*)
4. A low-intensity training program during dialysis treatment presents a valuable additional therapy for dialysis patients to improve their dialysis effectiveness as well as their mental condition.  
(C.P. PARSONS, et al, Queen's University, Canada: *Exercise training during hemodialysis improves dialysis efficacy and physical performance. Archives of Physical Medicine and Rehabilitation* 2006; 87: 680-687)
5. Movement during dialysis increases effectiveness. The urea Kt/V increased by 14 % and creatinine reduction ratio plasma concentrations was 6 % higher when dialysis was performed with exercise compared with controls. These results are equivalent to increasing the dialysis time by 20 min. For these reasons, it is most likely that exercise is increasing the rate of transfer of solute between body compartments. This increases the area of exchange between the intravascular and intracellular compartments.  
(C.P. KONG et al., Lister Hospital, Great Britain: *The effect of exercise during haemodialysis on solute removal. Nephrology Dialysis Transplantations* 1999; 14: 2927-2931)
6. 44% of death in patients on dialysis is caused by cardiovascular diseases. This makes regular cardiovascular movement training even more important for this patient group.  
(C.P. HARNETT et al.: *Cardiac function and hematocrit level. American Journal of Kidney Diseases* 1995; 4(1): 3-7.)
7. "We conclude that exercise training during the hemodialysis treatment is technically feasible and safe for appropriately screened patients and will increase capacity, and in some patients improve blood pressure control."  
(C.P. PAINTER, et al., University of San Francisco: *Effects of exercise training during hemodialysis. Nephron* 1986; 43(2): 87-92.)
8. There are first indications that adequate intensive endurance training (for example with a bed-bicycle ergometer) can improve dialysis effectiveness by activating the muscle, tissue and cellulose metabolism.  
(C.P. KRAUSE, KfH-Dialysezentrum Berlin-Moabit, Germany, 2002)