The rehabilitation of upper limb in stroke is not easy. When the patient have little or no activity to the upper limb may be impossible to practice meaningful tasks. Therefore we can highlight some recent developed approach.

Regarding the exercises based therapy, two recent reviews address the results focussing that the extensive practice is beneficial in improving the upper limb function (Duncan1997, Richards 1999). However the methodology of these reviews does not specify the quality of the studies included. More recently a systematic review of randomised controlled trials concluded that " … Insufficient evidence made it impossible to draw definitive conclusions about the effectiveness of exercise therapy on arm function in stroke patients. The difference in results between studies with and without contrast in the amount or duration of exercise therapy between groups suggests that more exercise therapy may be beneficial " (van der Lee, Snels et al. 2001).

The precocity of intervention is a discussed point. A metanalysis shown that the early intervention could improve performance in some group of patient experienced stroke (Ottenbacher and Jannell 1993). Recent papers confirm in part this metanalysis. An intervention in the early phase focused to move the proximal part of upper limb, sitting in the rocking chair, improves the recovery in severely impairment patients (Feys, De Weerdt et al. 1998). Negative results about this effect could be due to the low dose of therapy, inadequate patient selection or content of therapy [Lincoln, 1999 #17].

The effect of the intensity of treatment are well documented for lower limb but the data are uncertain for upper limb [Lincoln, 1999 #17], (Kwakkel, Wagenaar et al. 1999). As well as for the early intervention, the insufficient evidences could be due to "… insufficient contrast in the amount of rehabilitation between experimental and control conditions, organizational setting of rehabilitation management, lack of blinding procedures, and heterogeneity of patient characteristics were major confounding factors." (Kwakkel, Wagenaar et al. 1997).

According to recent concepts about the motor control and neuroplasticity new approaches have been developed. One of these is task-oriented rehabilitation. The treatment consists of two parts. The first part is to "constrain" the patient's unaffected arm, by having the patient keep the arm in a sling or padded mitten to

prevent use of the arm. This encourages the person to use the paralyzed arm as much as possible. The second part is the "shaping" part, in which the person performs certain movements over and over for lengthy periods of time (Carr and Sheperd 1998).
The Constraint-Induced Movement Therapy or CI Therapy, in controlled experiments has shown its effect in producing large improvements in limb use in the real-world environment after cerebrovascular accident.

This has been shown in both acute (Dromerick, Edwards et al. 2000) and chronic stroke (Miltner, Bauder et al. 1999), (van der Lee, Wagenaar et al. 1999). On the other hand, techniques that promote non-use may inhibit recovery.
It is possible to visualize the cortical map with magnetic stimulation. After treatment, the muscle output area size in the affected hemisphere was significantly enlarged (Liepert, Bauder et al. 2000).
Another issue is represented by the exercise assisted by technical devices to improve the upper limb function. Adding to the normal multidisciplinary rehabilitation a Robot-delivered sensorimotor training enhanced the motor performance of the exercised shoulder and elbow. The treated group also shows an improvement of functional outcome (Volpe, Krebs et al. 2000).
Electrical stimulation has been used in different ways to improve functional activity in upper limb. A metanalysis enphasizes the effect of functional electrical stimulation in emiparetic arms showing a significant difference in the treated groups (Glanz, Klawansky et al. 1996). Electrical stimulation of the wrist shows an improvement in a paretic arm, although it is not clear how long the effect lasts (Powell, Pandyan et al. 1999). A new hybrid functional electrical stimulation orthosis system improved the upper limb function of all muscle tone/spasticity parameters measured. (Weingarden, Zeilig et al. 1998). Another approach, recently developed is represented by the EMG-triggered electrical stimulation. This method shows an improvement of motor function of paretic hand (Cauraugh, Light et al. 2000). The sensory stimulation throght a mash glove improve the function in wrist in chronic patients. (Dimitrijevic, Stokic et al. 1996).