

# **Neuroplasticity**

**Ian Weinberg – 2012**

Research into the neuropsychological consequences of nurture deprivation reveals the damaging and far reaching implications of this dynamic occurring at such a pivotal time in life. In a recent publication, the authors reveal how early deprivation disrupts the myelination of fibres in the pre-frontal cortex. This results in profound negative effects on working memory thus impacting upon core IQ potential. The mediator may well be the raised cortisol levels that are noted in deprivation. In support of this is the finding that sheep which are exposed to high cortisol levels in utero (a situation which also occurs naturally in maternal stress in the pregnant human) also have delayed myelination in the early nurture period.

In mitigation of this negative situation are the encouraging observations in the field of neuroplasticity. Neuroplasticity refers to the ability of the brain to sprout new neuronal processes and thereby enhance, repair or compensate for damaged or deficient circuitry. One of the fundamental findings is that the combination of the triad of purposefulness-achievement-autonomy is critical for generating the required neurochemical milieu for neuroplasticity, thereby leading to successful neuropsychological intervention as well as neuro-rehabilitation. In other words a goal or purpose-orientated approach which emphasizes achievement and provides the appropriate environment to support this process, will bring about an optimal outcome.

## **References**

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