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## Endogenous stem cell mobilization: Its potential and therapeutic application

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A comprehensive review of the stem cell research literature indicates that BMSC constitute the natural repair system of the body and that the number of circulating stem cells appears to be a critical parameter in the effectiveness of stem cell-based tissue repair. On this basis, Endogenous Stem Cell Mobilization (ESCM) emerges as a possible approach to the treatment of a variety of degenerative conditions. Simply stimulating the mobilization of stem cells from the bone marrow, therefore increasing the number of circulating stem cells available to migrate in various tissues, has been shown to be a promising therapeutic approach tapping into the potential of adult stem cells. For example, BMSC have been shown to have the ability to migrate on their own into the pancreas and to differentiate into functional insulin-producing cells, while mobilization of BMSC has been shown to rescue streptozotocin-induced diabetes in mice. Likewise, G-SCF-induced BMSC mobilization has been shown to enhance recovery after experimental stroke and acute myocardial infarction in mice. Similar observations were made in humans. Aside from a purely therapeutic approach, the recent discoveries in the field of stem cell research points into an entirely new direction in our understanding of the aging process. The development of many diseases such as cardiomyopathy, diabetes, arthritis, kidney failure, pulmonary diseases, muscular dystrophy and even erectile dysfunction have been linked to a lower number of circulating stem cells. The number of circulating stem cells is likely to emerge as one of the most important marker for general health and ESCM should be studied as a potential anti-aging modality.

### Biography

1991 Master degree in Neurology and Neurosurgery from McGill University, Montreal, Quebec, Canada. Work performed at the Montreal Neurological Institute. Thesis on Epileptogenesis and the role of eicosanoids in long term Potentiation. 1987 Bachelor degree in Honors Neurophysiology from McGill University, Montreal, Quebec, Canada. Program Limited to 6 Students.