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## **Understanding the motivations and side effects in healthy volunteers that donate bone marrow for mesenchymal stromal cell basic research**

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Apart from being used for Hematopoietic Stem Cell (HSC) transplantation, the Mesenchymal Stromal Cell (MSC) populations in human Bone Marrow (BM) are being harnessed actively in clinical trials given their unique regenerative potential. Several studies have been published with regards to why Healthy Volunteers (HV) donate their BM for HSC transplantation. Predominant motives include: Altruism, normative considerations, empathetic feelings for the recipient/recipient's family, weighing of the risks and benefits associated with the procedure, and social obligation. Multiple sites are accessed to aspirate large volumes of BM (maximum 1500 ml) from donors for HSC transplantation and has been correlated with serious post-donation symptoms, which restrict donors for weeks: Excessive pain at the aspiration site, fatigue, severe post-spinal headache, fever, fainting, unexpected hospitalization and difficulty/pain while walking or sitting. A paucity of published data exists on the motivations of HV for donating their marrow for MSC basic research and the experienced side effects following the procedure.

**Methodology:** HV that previously donated their BM (30 ml) and provided informed consented (n=48) were administered a questionnaire to identify the order of their motivations for donating their marrow for basic research and the side effects they experienced following the procedure.

**Results:** The considered motivations resulted in the following descending order: To advance research for the benefit of future patients, compensation for participation, the research question was interesting, and lastly to avail of a free medical check-up. Of the 35 HV that experienced any side effect, pain, fatigue, nausea, and low blood pressure were reported - which all resolved within six days on average. No case of bleeding, fainting, vomiting, skin rash, infection or hospitalization was reported.

**Conclusions:** Donating BM for MSC basic research was primarily for future benefit of patients. The aspiration procedure can be deemed relatively safer compared to that for HSC transplantation – due to lower volumes of BM aspirated from a single collection site.

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