

NON-TECHNICAL ABSTRACT

Autologous bone marrow transplant is often used to allow higher doses of chemotherapy to be given to patients with pediatric cancer. One of the risks of this treatment is that patients are at risk of infection and bleeding until the new marrow has grown back. One approach to improving the results of such transplants is to preincubate the marrow with growth factors so that the infused marrow takes more quickly. If treated marrow takes more quickly we may also be able to harvest smaller amounts of marrow in the future. To determine if treatment of marrow with growth factors does lead to faster take and also to see if these cells persist long term, we plan to compare recovery of two portions of marrow cells; one treated with growth factors and one untreated.

To do this we will mark these two portions of marrow with the neomycin resistance gene in two distinguishable vectors. This will allow us to learn how quickly each portion engrafts and how long each portion survives in the patient. This information will allow us to learn if this approach may be beneficial in shortening aplasia following autologous BMT and thereby reduce the risks of the procedure.