

# Bone Marrow “Failure”

The bone marrow produces all of our blood cells: red blood cells, white blood cells, and platelets. Sometimes, the bone marrow can "shut down" and stop producing the cells. This is not the same as leukemia, in which malignant cells fill up the bone marrow and stop it from working. Instead, under the microscope, the bone marrow simply looks "empty."

Bone marrow failure is rare, but there are two most common causes for bone marrow failure in children, in addition to some other conditions, which are quite rare.

Autoimmune “**aplastic anemia**” is an acquired condition, in which part of the body's immune system is attacking the bone marrow and trying to destroy it. This disease can be treated with medications that suppress the immune system and stop it from attacking the bone marrow. Another option, however, is bone marrow transplantation if the patient has a brother or sister who is a good bone marrow "match." Each brother or sister (same parents) has a 1-in-4 chance of being a match.

“**Fanconi anemia**” is an inherited condition: Individuals with this disease have inherited an abnormal gene from both the mother and the father, each of whom is a "carrier" for the condition. Sometimes, there are signs of Fanconi anemia that are obvious when the child is first born but, in many cases, the children appear healthy until some point in childhood when their bone marrow stops working normally. The only effective treatment for marrow failure caused by Fanconi anemia is a bone marrow transplantation. With this condition, if a brother or sister donor is not available, we try to identify a volunteer bone marrow donor using a large computer-based registry of such volunteers.

We do not perform bone marrow transplantation here in Reno. Our children are referred out to transplantation programs, most often in either Salt Lake City, Utah or San Francisco, California (the Bay Area).

A marrow transplant is not a surgical procedure. Rather, the recipient's bone marrow is "cleaned out," using a combination of medications, after which the donor's marrow cells are given as a transfusion. Depending on the details, bone marrow transplantation may require a hospital stay of a month or more.

**For more information, call 775-982-3892.**