

## **73 CURRENT HUMAN CLINICAL APPLICATIONS USING ADULT STEM CELLS\***

### **ANEMIAS & OTHER BLOOD CONDITIONS:**

- Sickle cell anemia
- Sideroblastic anemia
- Aplastic anemia
- Red cell aplasia (failure of red blood cell development)
- Amegakaryocytic thrombocytopenia
- Thalassemia (genetic [inherited] disorders all of which involve underproduction of hemoglobin)
- Primary amyloidosis (A disorder of plasma cells)
- Diamond blackfan anemia
- Fanconi's anemia
- Chronic Epstein-Barr infection (similar to Mono)

### **AUTO-IMMUNE DISEASES:**

- Systemic lupus (auto-immune condition that can affect skin, heart, lungs, kidneys, joints, and nervous system)
- Sjogren's syndrome (autoimmune disease w/ symptoms similar to arthritis)
- Myasthenia (An autoimmune neuromuscular disorder)
- Autoimmune cytopenia
- Scleromyxedema (skin condition)
- Scleroderma (skin disorder)
- Crohn's disease (chronic inflammatory disease of the intestines)
- Behcet's disease
- Rheumatoid arthritis
- Juvenile arthritis
- Multiple sclerosis
- Polychondritis (chronic disorder of the cartilage)
- Systemic vasculitis (inflammation of the blood vessels)
- Alopecia universalis
- Buerger's disease (limb vessel constriction, inflammation)
- Juvenile (Type-I) Diabetes ‡

### **BLADDER DISEASE:**

- End-stage bladder disease

### **CANCERS:**

- Brain tumors—medulloblastoma and glioma
- Retinoblastoma (cancer)
- Ovarian cancer
- Skin cancer: Merkel cell carcinoma
- Testicular cancer
- Lymphoma
- Non-Hodgkin's lymphoma
- Hodgkin's lymphoma
- Acute lymphoblastic leukemia
- Acute myelogenous leukemia
- Chronic myelogenous leukemia
- Chronic myelomonocytic leukemia
- Juvenile myelomonocytic leukemia

*(List Updated October 2007) ‡ New to List*

### **\* There are no current clinical trials in humans with embryonic stem cells:**

*"It is nearly certain that the [human] clinical benefits of the [embryonic stem cell] research are years or decades away. This is a message that desperate families and patients will not want to hear."*

*— Science, June 17, 2005*

- Cancer of the lymph nodes: Angioimmunoblastic lymphadenopathy
- Multiple myeloma (cancer affecting white blood cells of the immune system)
- Myelodysplasia (bone marrow disorder)
- Breast cancer
- Neuroblastoma (childhood cancer of the nervous system)
- Renal cell carcinoma (cancer of the kidney)
- Soft tissue sarcoma (malignant tumor that begins in the muscle, fat, fibrous tissue, blood vessels)
- Ewing's sarcoma
- Various solid tumors
- Waldenstrom's macroglobulinemia (type of lymphoma)
- Hemophagocytic lymphohistiocytosis
- POEMS syndrome (osteosclerotic myeloma)
- Myelofibrosis

### **CARDIOVASCULAR:**

- Acute Heart damage
- Chronic coronary artery disease

### **IMMUNODEFICIENCIES:**

- Severe combined immunodeficiency syndrome
- X-linked lymphoproliferative syndrome
- X-linked hyper immunoglobulin M syndrome

### **LIVER DISEASE:**

- Chronic liver failure
- Liver cirrhosis

### **NEURAL DEGENERATIVE DISEASES & INJURIES:**

- Parkinson's disease
- Spinal cord injury
- Stroke damage

### **OCULAR:**

- Corneal regeneration

### **WOUNDS & INJURIES:**

- Limb gangrene
- Surface wound healing
- Jawbone replacement
- Skull bone repair

### **OTHER METABOLIC DISORDERS:**

- Hurler's syndrome (hereditary genetic disorder)
- Osteogenesis imperfecta (bone/cartilage disorder)
- Krabbe Leukodystrophy (hereditary genetic disorder)
- Osteopetrosis (genetic bone disorder)
- Cerebral X-linked adrenoleukodystroph