Management in the pre-hospital setting
SKELETOMUSCULAR CONDITIONS
Inflammation of the joints

Two main types:
- Osteoarthritis - cartilage loss from wear and tear
- Rheumatoid arthritis - autoimmune disorder

Affects all age groups, not just the elderly

Considerations for EMS:
- May be on multiple medications for pain, etc. that need to be considered in assessment and tx
- Limited mobility or flexibility will affect immobilization, assessment
CONGENITAL NEUROMUSCULAR CONDITIONS
CEREBRAL PALSY

- Set of non-progressive neurological disorders involving brain damage, usually congenital in nature (many due to anoxia during pregnancy or childbirth)
- Characterized by abnormal muscle tone
- Development delays are very common in CP but do not occur in all patients
- Spastic cerebral palsy is the most common
- Considerations for EMS:
  - Many require specialized equipment to get around, which may be needed to accompany the patient
  - High incidence of seizure disorders
  - Succinylcholine in RSI may be contraindicated
**SPINA BIFIDA**

- Incomplete closing of neuronal tube, resulting in part of spinal cord extending past vertebrae
- Severe cases have abnormal development of lower extremities or paralysis

**Considerations for EMS:**
- Will need extra care and time to conduct assessment and movement of patient
- Most have severe latex allergy
- Most have hydrocephalus and as a result, a ventricular shunt
PROGRESSIVE DEGENERATIVE CONDITIONS
Muscular Dystrophy

- Genetically inherited set of diseases related to abnormal protein dystrophin, which stabilizes muscle cells
- Leads to progressive skeletal muscle weakness and muscle cell death
- Duchenne’s is most common - affects males only

Considerations for EMS:
- Will need extra care and time to conduct assessment and movement of patient
- Severe cases may need respiratory support - succinylcholine in RSI is contraindicated
MULTIPLE SCLEROSIS

- Destruction of the myelin sheath of nerve cells, most likely by autoimmune means
- Repeated damage and repair leads to plaques (sclera) on the nerve tissue (permanent damage)
- Widespread CNS symptoms

Considerations for EMS:
- Will need extra care and time to conduct assessment and movement of patient
- Severe cases may need respiratory support - succinylcholine in RSI is contraindicated
Amyotrophic lateral sclerosis (Lou Gehrig’s)
- Protein degradation and death of upper and lower motor neurons in cortex

Guillain-Barre’ syndrome
- Similar pathophysiology to MS but restricted to peripheral nervous system
**POLIO (POLIOMYELITIS)**

- Caused by fecal-oral transmission virus
- In 1% of cases, virus infects CNS and can lead to destruction of ganglia
- Result can be muscular atrophy and paralysis
- Considerations for EMS:
  - Similar to those of Multiple Sclerosis
PARKINSON’S DISEASE

- Progressive death of dopamine producing cells in substantia negra of the brain
- Leads to movement-related effects, esp. tremors, gait changes, slow movement (including speech)
- Later some psychiatric developments

Considerations for EMS:
- Will need extra care and time to conduct assessment and movement of patient
ALZHEIMER’S DISEASE

- Loss of neurons in cerebral cortex and buildup of protein deposits - exact cause not known
- Progresses from mild memory loss to severe language difficulties, aggression, long-term memory loss, and confusion and eventually loss of bodily functions

Considerations for EMS:
- Behavioral changes may result in unsafe scene
- May be difficult to assess and
Creutzfeldt-Jakob disease
- Caused by prions (similar to Mad Cow Disease)

Huntington’s disease
- Autosomal dominant genetic disease
- Also accompanied by involuntary jerking movements
Myasthenia Gravis

- Autoimmune disorder in which normal nicotinic acetylcholine receptors are disrupted
- Leads to quickly tiring muscles, especially in certain muscles, which improve with rest
- Considerations for EMS:
  - Extreme myasthenia crisis can involve the tiring of respiratory muscles and poor oral secretion control, requiring airway mgmt and ventilatory support
  - RSI drug succinylcholine may not work normally
  - Usually are on cholinesterase inhibitors, so potentially prone to cholinergic overdose
SYSTEMIC AUTOIMMUNE CONDITIONS
LUPUS

- Systemic autoimmune disease
- Leads to inflammation in multiple tissues, esp. dermatological, neurological

Considerations for EMS:
- Higher risk for myocarditis, pericarditis, pleural effusion, atherosclerosis, psychosis, seizures, strokes
- Immunosuppressed, steroids, pain meds
SCLERODERMA

- Systemic autoimmune disease
- Leads to buildup of collagen and damage in multiple organs, especially skin and small blood vessels

Considerations for EMS:
- Higher risk for renal failure, pulmonary hypertension, and heart failure
- Immunosuppressed, steroids, pain meds
OTHER CONDITIONS
Cystic Fibrosis

- Genetic disease (autosomal recessive)
- Mutation affects function of channel proteins that allow passage of chlorine ions, leads to abnormal amounts of water and sodium in secreted substances
Cystic Fibrosis

- Whole system effects on all exocrine glands: lungs and GI tract are the worst affected
- Thick mucus secretions in lungs
- Chronic infections (resistant), often on antibiotics
- Often need heart and lung transplants

Considerations for EMS:
- Patients and families will probably be (appropriately) adamant about your level of infection control
CANCER

- Unrestrained cell growth in one or more organs
- Signs and symptoms vary by the organ systems effected
- Metastasis: spread of cancer cells to other tissues

Considerations for EMS:
- May be on medications for pain, etc. that need to be considered in assessment (transdermal patches)
- Many will have surgically implanted ports when under treatment