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### Poster Presentation

## The Effect of Reducing CCL<sub>11</sub> on Multiple Sclerosis Treatment by Using Heterochronic Parabiosis Techniques

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#### **Abstract**

Introduction: Multiple sclerosis is a chronic neuroinflammatory disease that leads to distribute neurodegeneration in the grey and white matter of the brain. In MS, age-related iron accumulation, chronic oxidative injury and activation of microglia are key factors to create neurodegeneration. Also concentration of  $CCL_{11}$  is increased in multiple sclerosis.  $CCL_{11}$  can amplify glutamate mediated neurotoxicity and inhibit neurogenesis. **Materials and Methods:** A model of Heterochronic Parabiosis is created with joining a sick animal to healthy young animal. **Results:** It is expected by reducing  $CCl_{11}$ , healthy young blood could be effective in slowing and improving disease. **Conclusion:** Other studies suggest that multiple sclerosis treatment should be based on a combination of anti-inflammatory, regenerative, and neuroprotective strategies. By using heterochronic parabiosis has been shown that, young blood can rejuvenate and improve the regenerative capacity of peripheral tissues and central nervous system in aged animals.  $GDF_{11}$  is a systemic 'pro-youthful' factor in young parabiont, that promote neurogenesis and rejuvenate regeneration capacity of CNS and promote tissue regeneration. So it seems high concentration of  $GDF_{11}$  and low concentration of  $CCl_{11}$  in healthy young parabiont may be effective on regenerative capacity of central nervous system in MS animals.

**Keyword:** Multiple sclerosis, Neurodegeneration, Heterochronic parabiosis, CCL<sub>11</sub>, GDF<sub>11</sub>

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