# Optic Neuritis Treatment Trial (ONTT)

THE LENS

## Objective

To evaluate the benefit of corticosteroids as a treatment for optic neuritis. Do oral or IV corticosteroids improve visual outcomes and/or speed recovery? Are there complications?

## Methods

**Design:** RCT

**Sample Size:** 457
- N = 319 at 10 year follow up
- N = 389 at 15 year follow up

**Treatment Groups:**
- 150 to placebo
- 151 to IV methylprednisolone
- 156 to oral prednisone

**Outcome Measures:**
- Primary: Visual Field & Contrast Sensitivity
- Secondary: Visual Acuity (VA) & Color Vision
- Long term: development of MS

## Results

Point 1: IV methylprednisolone group had quicker recovery of vision versus placebo
- P = 0.0001 for visual field, P = 0.02 for contrast sensitivity, P = 0.09 for VA
- Oral prednisone group did not have statistically significant quicker recovery

Point 2: No difference in visual acuity at 6 months between groups
- Though IV methylpred group had slightly better visual field, contrast sensitivity, and color vision

Point 3: Oral prednisone group had higher incidence repeat optic neuritis
- Relative risk of optic neuritis was 1.79 for oral pred group compared to placebo (0.81 for IV methylpred group)

Point 4: Development of MS diagnosis at 15 years was 50% overall
- Only 25% if no baseline MRI lesions, increased to 72% if 1 or more lesions

Point 5: Long-term VA (10-year) was good (69% had 20/20 in both eyes)
- Patients with MS were more likely to have repeat events and worse vision

**TLDR: Treatment of acute optic neuritis with IV methylprednisolone accelerated visual recovery, whereas oral prednisone led to increased episodes of repeat optic neuritis.**


Beck RW, Cleary PA, Anderson MM Jr, et al. A randomized, controlled trial of corticosteroids in the treatment of acute optic neuritis. The Optic Neuritis Study Group. *N Engl J Med*. 1992 Feb 27;326(9):581-8. doi: 10.1056/NEJM199202273260901. PMID: 1734247.

Beck RW, Gal RL, Bhatti MT, et al.; Optic Neuritis Study Group. Visual function more than 10 years after optic neuritis: experience of the optic neuritis treatment trial. *Am J Ophthalmol*. 2004 Jan;137(1):77-83. doi: 10.1016/s0002-9394(03)00862-6. PMID: 14700647.

Optic Neuritis Study Group. Multiple sclerosis risk after optic neuritis: final optic neuritis treatment trial follow-up. Arch Neurol. 2008 Jun;65(6):727-32. doi: 10.1001/archneur.65.6.727. PMID: 18541792; PMCID: PMC2440583.