



### Evaluation and comparison of month of birth in Multiple Sclerosis and Neuromyelitis Optica Spectrum Disorders

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**Background:** Multiple Sclerosis (MS) and Neuromyelitis optica (NMO) are two of the most important diseases of central nervous system (CNS) that are associated with neuro disabilities. Recently, it has been reported that the birth of month can be related to MS. The purpose of the present study was to investigate the months of birth in MS and NMO patients compared to the control group.

**Methods:** In this case-control study, 2698 patients with MS, 220 NMO patients and 2174 healthy subjects were enrolled. Demographic information such as age, sex, birth of month and education in three groups were carefully evaluated and recorded. Data analysis was performed using SPSS software.

**Results:** In the NMO group, 75.9 % of the patients were female. This percentage was 80 in the MS group and 75.8 in the healthy subjects. Percentage of births in March, April and May were significantly higher in the NMO and MS patients than in the control group. The numbers of March births in the MS, NMO and healthy subjects were 364, 31, and 185, respectively. These amounts were 217, 17 and 165 for April, and 247, 16 and 143 for May.

**Conclusion:** Based on the findings of the present study, the risk of MS and NMO diseases in the spring's months is more than in the autumn's, which can be due to the important role of vitamin D in the pregnancy and the immunopathogenesis of MS and NMO diseases.