The Food Critic Who Couldn’t Taste: Dysgeusia as a Brainstem Syndrome in Multiple Sclerosis
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Background
- Disorder of taste, or dysgeusia, is an uncommon symptom of multiple sclerosis (MS), but has been described in previous individual case reports. It is typically described by a number of terms including hypogeusia (decreased taste), ageusia (lack of taste), and parageusia (altered sense of taste). Here, we describe dysgeusia as the broadest term.
- MS patients tend not to report dysgeusia and clinicians may not inquire about its presence (1).
- We present 9 cases of dysgeusia associated with demyelinating lesions and review the anatomy of the taste path. To our knowledge, this is the first case series describing dysgeusia as a symptom of relapse in multiple sclerosis.

Neuroanatomy of Taste
- Chemical taste information is sensed by gustatory receptor cells of the taste buds.
- Central by neurons of the facial (CN VII), glossopharyngeal (CN IX), and vagus nerve (CN X).
- Chemoreceptors the basolateral and apical parts in the lateral nucleus of the solitary tract (NTN).
- Course of the NTN:
  - Medial division runs contralaterally to the inferior vestibular nucleus
  - Inferior division projects to the lateral vestibular nucleus.
- Pars Advehens to the geniculate (CN VII) and CN IX nuclei, entering the Vth second order nucleus and lateral to the NST.
- Medulla: Ascending (taste) fibers from the solitary tract terminate in the VPL nucleus of the diencephalon.
- The taste afferent project to the paratemporal and frontal opercular as well as motor and frontal opercular areas (2).

Chemical Taste Information is Sensed by Gustatory Receptor Cells of the Taste Buds
- Central by Neurons of the Facial (CN VII), Glossopharyngeal (CN IX), and Vagus Nerve (CN X).
- Chemoreceptors the Basolateral and Apical Parts in the Lateral Nuclear of the Solitary Tract (NTN).
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  - Inferior Division Projects to the Lateral Vestibular Nucleus.
- Pars Advehens to the Geniculate (CN VII) and CN IX Nuclei, Entering the Vth Second Order Nucleus and Lateral to the NST.
- The Taste Afferent Project to the Paratemporal and Frontal Opercular as Well as Motor and Frontal Opercular Areas (2).

Case Histories
- Case 35: A 63-year-old man with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and numbness during 7 months. All symptoms, including hypogeusia improved over the next month.
- Case 36: A 73-year-old man with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 37: A 59-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 38: A 62-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 39: A 65-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 40: A 55-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 41: A 70-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 42: A 67-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 43: A 71-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.
- Case 44: A 69-year-old woman with dysgeusia, with bilateral numbness, tingling with numbness, difficulty in walking, and mild anorexia. All symptoms, including hypogeusia improved over the next month.

Methods/Results
- Cases were ascertained or an outpatient multiple sclerosis center. Cases presented either on the day of a relapse or as part of their neurological history. All data were collected retrospectively from the patients’ medical records.

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Discussion
- Dysgeusia may be the initial presenting symptom of MS (Cr). In patients with typical MS, the latency for relapse is usually 10-60 days, which is much longer than that for other symptoms. In the absence of evidence for other symptoms, it is difficult to determine whether dysgeusia is an independent symptom or a manifestation of the MS.
- Patients can be reassured that recovery of taste dysfunction is likely to continue.

- The anatomy of the taste pathway is the brainstem. This pathway is poorly understood.

References