Of places and faces – cortical visual disorders
Monday 28 October 2019
14:45 to 15:15
Session SST16
T7B Neuro-ophthalmology

Jason J S Barton MD PhD FRCPC
Professor, Canada Research Chair
Marianne Koerner Chair in Brain Diseases
University of British Columbia
Vancouver, Canada

Disclosures: none
Learning objectives

• to review the various disorders that can lead to topographic disorientation:
  - Place agnosia
  - Impaired cognitive map formation and use
• to discuss the new disorder of developmental topographic disorientation.

• to discuss models of face recognition
• to review the various variants of prosopagnosia, including:
  - Apperceptive
  - Associative
  - Amnestic
  - Developmental
• to discuss object specificity and the relation of visual word to face recognition
Key messages 1. **Topographagnosia**

- Topographic orientation is a complex task that can be solved through a number of routes, and draws on a number of cognitive operations.

- Correspondingly topographic disorientation can occur for a number of reasons, including failure to recognize landmarks, inability to situate those landmarks in a mental map, and inability to orient oneself in an environment.

- Subjects can be born with poor navigational skills, and often this developmental variant is due to impaired ability to form and use a cognitive map.

- Acquired topographagnosia occurs with both occipitotemporal and anterior temporal lesions, mainly of the right hemisphere, and is a common accompaniment of prosopagnosia.
Key messages 2. **Prosopagnosia**

- Face recognition is an equally complex task that also draws on a number of cognitive operations.

- Models of face recognition include a series of sequential stages. Failure can occur at any stage, resulting in one of several variants of acquired prosopagnosia. These include:
  a) Apperceptive form, in which the face is not perceived in sufficient detail
  b) Associative form, in which an accurate percept cannot be linked to intact facial memories
  c) Amnestic form, in which facial memories are degraded.

- A developmental variant may affect as many as 2% of the population.

- Whether non-face object recognition can be completely spared in prosopagnosia is a contentious issue. Several conceptual and practical issues stand in the way of a definitive answer.

- Face and visual word processing have interesting parallels. The two hemispheres participate in processing both, but show a degree of specialization so that right and left sided damage differ in what sort of deficits are found.