

# The Calgary and Paris (CAP) Adult Tic Registry: Project description and initial analyses of sex differences in tic phenomenology

Christelle Nilles,<sup>1</sup> Yulia Worbe,<sup>2,3</sup> Andreas Hartmann,<sup>1,2</sup> Davide Martino,<sup>4</sup> Julian Fletcher,<sup>4</sup> Naoual Serrari,<sup>1</sup> Natalia Szejko,<sup>4</sup> David Bendetowicz,<sup>1</sup> Emmanuel Roze,<sup>1,3</sup> Tamara Pringsheim<sup>4</sup><sup>1</sup> Département de Neurologie, Hôpital de la Pitié-Salpêtrière, 75013, Paris, France<sup>2</sup> Centre de Référence Syndrome Gilles de la Tourette, Hôpital de la Pitié-Salpêtrière, Paris, France<sup>3</sup> Faculté de Médecine, INSERM U 1127, CNRS UMR 7225, UM 75, ICM, Sorbonne Université, Paris 75013, France.<sup>4</sup> Department of Clinical Neurosciences, Psychiatry, Pediatrics and Community Health Sciences, University of Calgary, Calgary, Alberta, Canada.

## BACKGROUND

- Tic disorders are less common in adults than children, and sex distribution may be more even.<sup>1,2</sup>
- There is comparatively less research on Tourette syndrome (TS) in adults.

## AIMS

- To assess tic frequency and tic phenomenology in adults with TS.
- To investigate how sex influences tic phenomenology and comorbidity profile in adults.
- To present the objectives, design & methodology of the CAP Adult Tic Registry.

## RESULTS

< 18 yr  
Sex ratio  
3-4M:1F<sup>3</sup>

> 18 yr  
Sex ratio  
2M:1F

### N=164 adults with tic disorders

Sex	Women (n=57, 35%) Men (n=107, 65%)
Gender	100% cisgender
Nationality	87/164 (53%) Canadian 77/164 (47%) French
Diagnosis	145/164 (88%): TS 17/164 (10%): Persistent motor tics 1/164 (1%): Persistent vocal tics 1/164 (1%): Adult-onset tics
Mean age at assessment, y	Canadian: 32.9 (95%CI=29.7-36.1) French: 31.7 (95%CI=29.1-34.4) No difference between sexes.
Mean age at tic onset, y	Canadian: 9.9 (95%CI=8.2-11.5) French: 8.0 (95%CI=7.0-9.0) No difference between sexes.
ADHD	49/164 (30%)
OCD	34/164 (21%)
Depression	59/164 (36%)
Anxiety disorder	83/164 (51%)

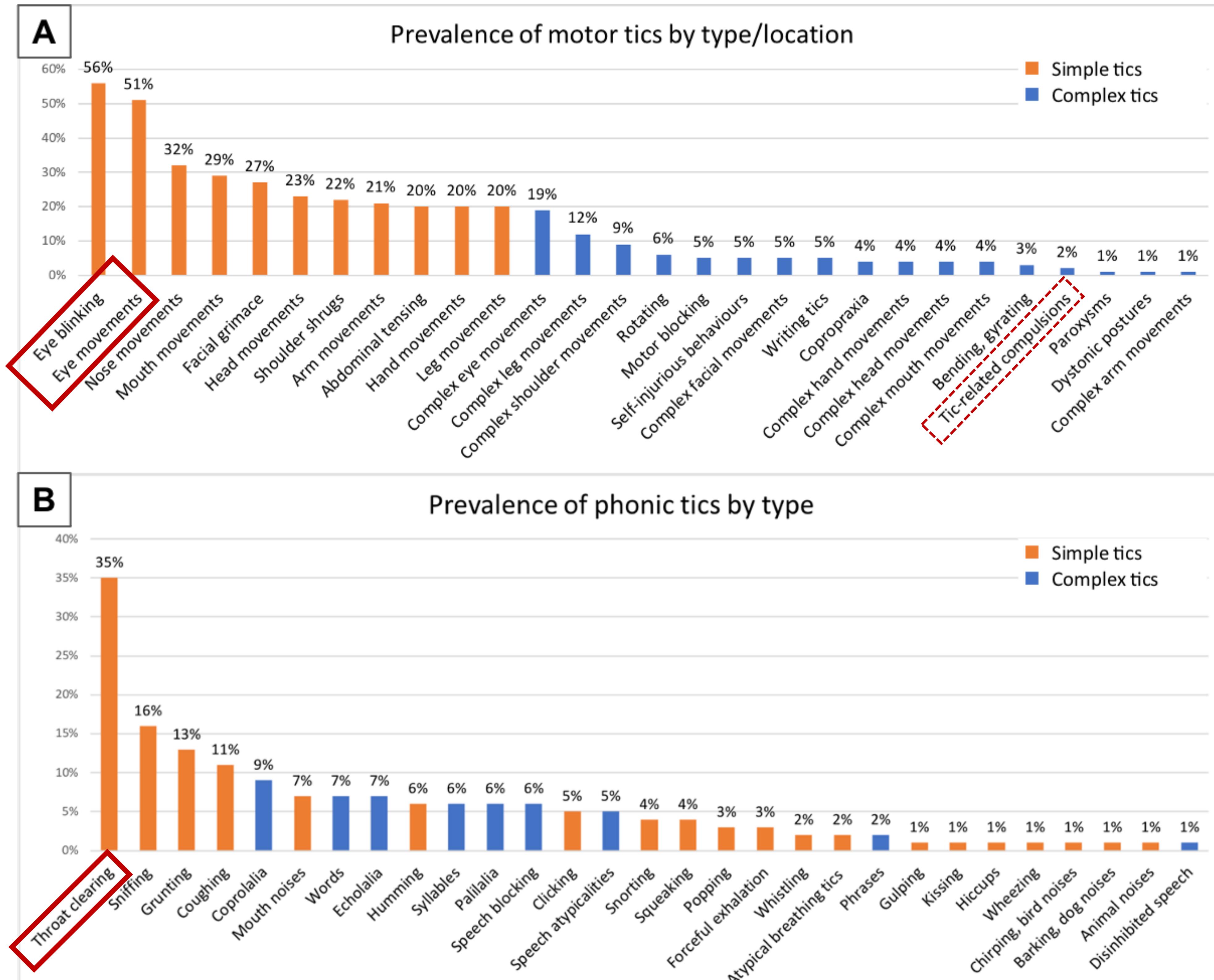
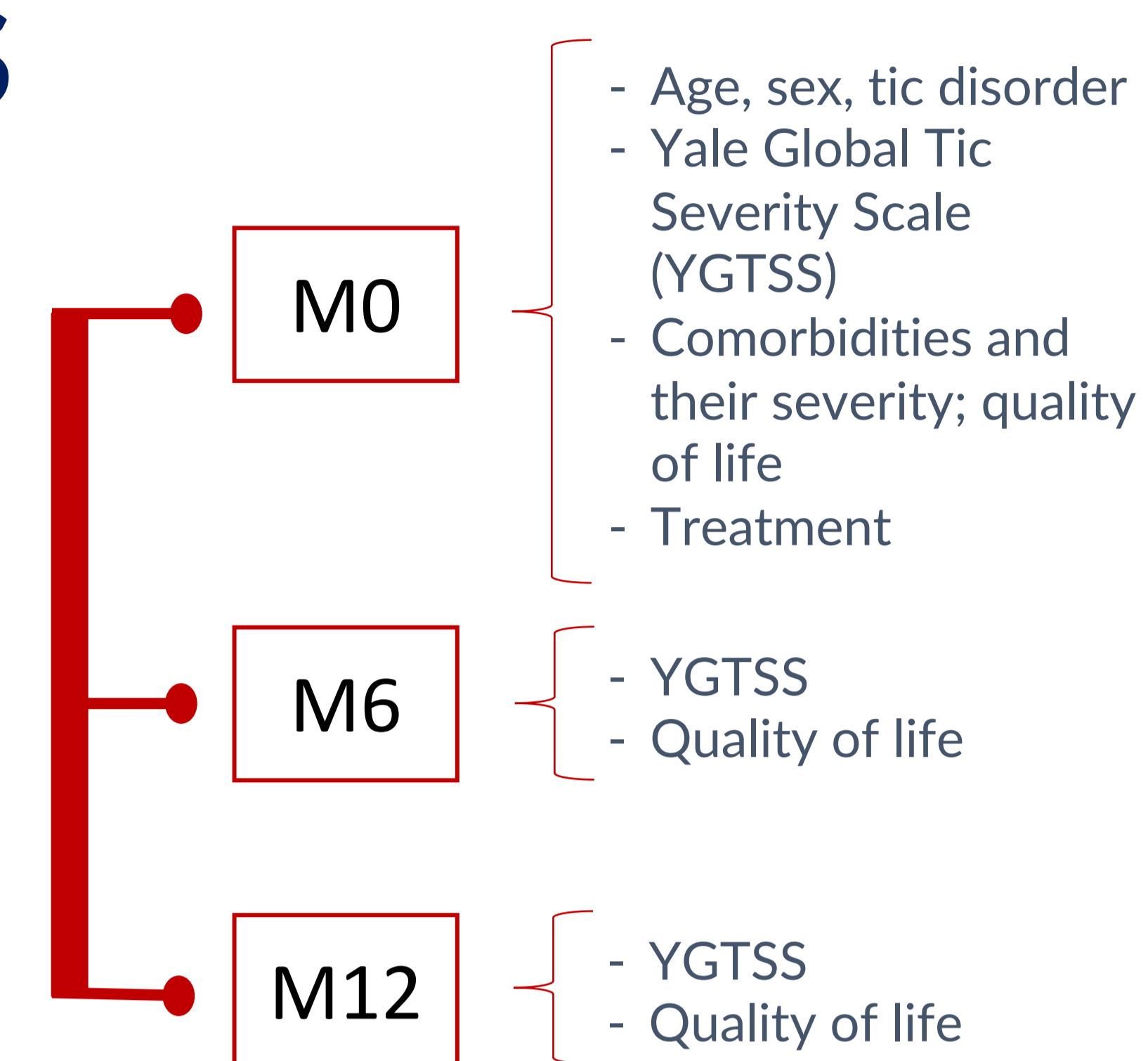
## Sex differences?



- Canadian women had slightly more simple hand tics than men (OR=3.0, 95%CI=1.2-7.6, p=0.03)
- Canadian women had a greater complexity of motor tics (p=0.048), a greater motor tic score (p=0.03), and a greater tic-related impairment (p=0.003) than men. There was no difference in the French subgroup.
- Canadian women had more anxiety disorders than men (OR=3.2, 95%CI=1.3-8.0, p=0.01). French women had more OCD than men (OR=4.8, 95%CI=1.3-18.0, p=0.02). There was no sex difference in ADHD and depression.

## METHODS

Inclusion of adults with tic disorders from Calgary, Canada and Paris, France into the CAP Adult Tic Registry.



## TAKE-HOME MESSAGES

- Simple head/face tics and throat clearing are the most common tics in adults. The distribution of simple motor tics and phonic tics appears to be similar in adults to existing data in children, except for a few complex tics (e.g. tic-related compulsions 2% in adults vs 19% in children<sup>4</sup>).
- A more even sex ratio in the adult population than in the pediatric population suggests either that TS tends to persist longer in females, or that women consult more often than males because of greater tic-related impairment<sup>5,6</sup> (linked to higher tic severity,<sup>6</sup> or higher levels of distress/depression/anxiety<sup>7</sup>).
- In the future, the CAP Registry will continue exploring the questions of sex differences in tic presentation and outcome, and:
  - Characterize the relationship between tic severity & tic-related impairment in women vs men
  - Standardize and evaluate screening methods for ADHD, OCD, depression and anxiety in adults.
  - Create a source of potential participants for research studies of adults with tic disorders.

## REFERENCES

<sup>1</sup>Schlander et al., 2011; <sup>2</sup>Yang et al., 2016; <sup>3</sup>Knight et al, 2012; <sup>4</sup>Nilles et al, 2023; <sup>5</sup>Lewin et al, 2012; <sup>6</sup>Lichter et al, 2015; <sup>7</sup>Hirschtritt et al, 2015