

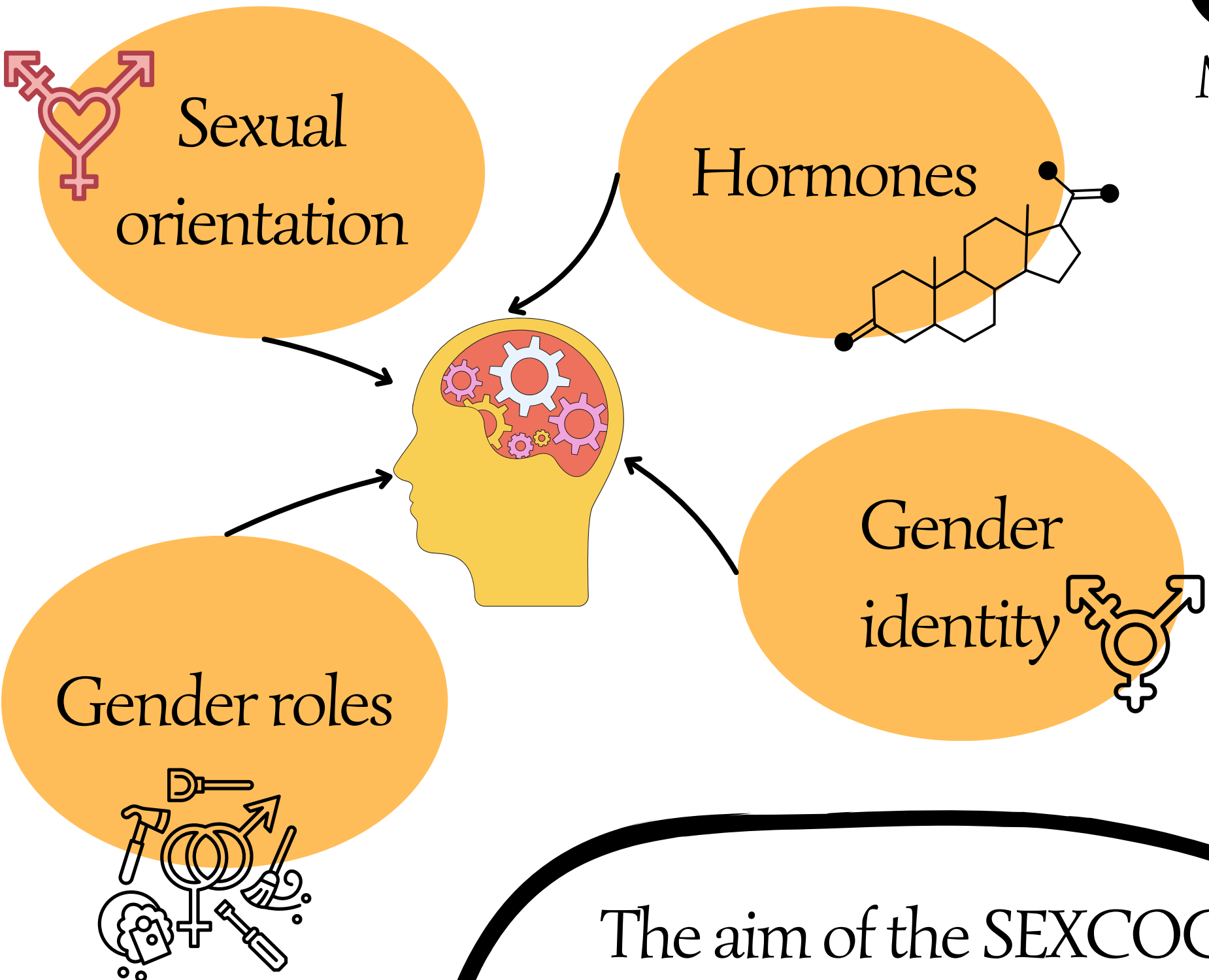
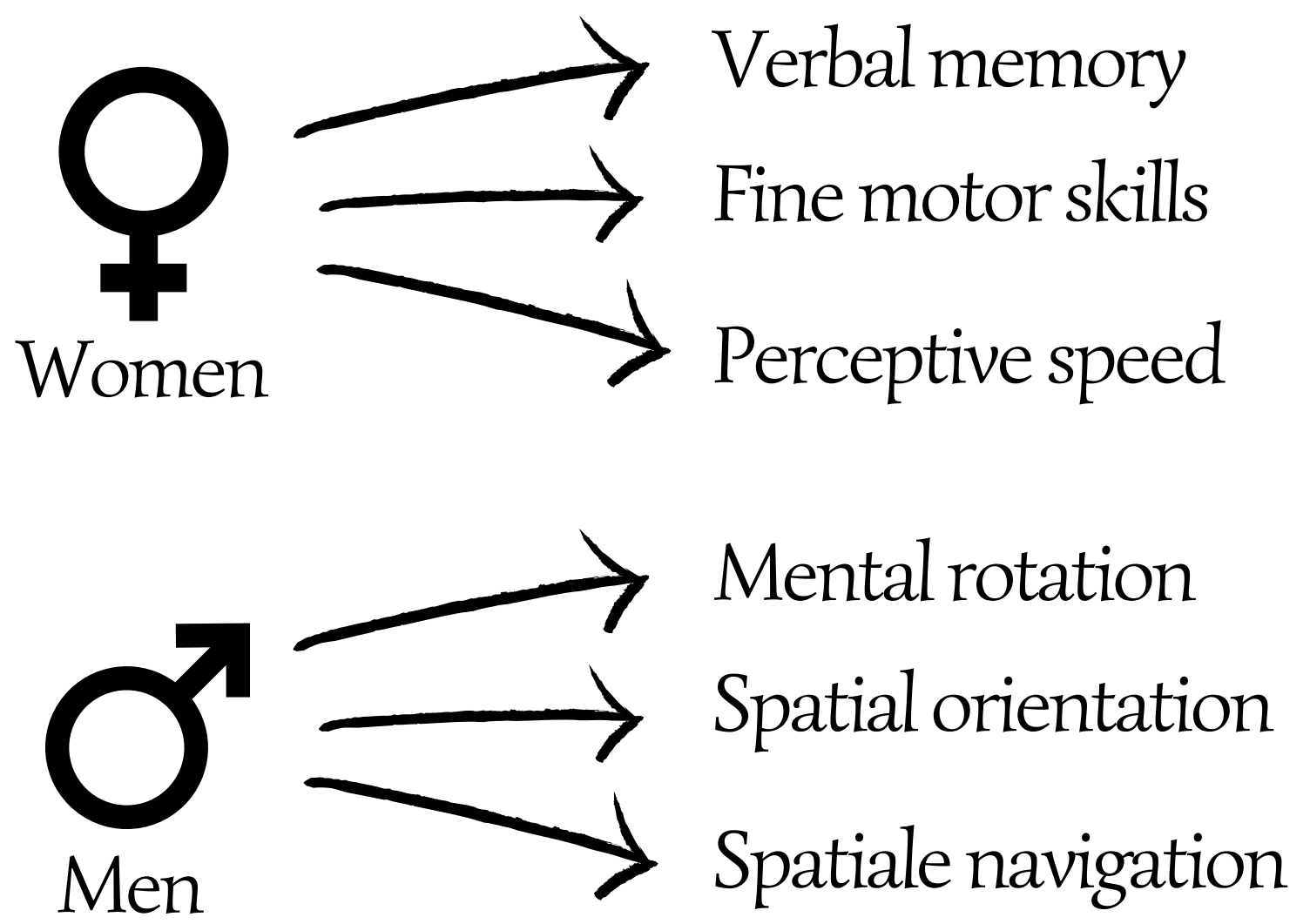


Introduction

The literature indicates sex*gender differences in cognitive performance.

Women perform better on some cognitive tasks, while men perform better on others.

Best performance according to sex assigned at birth



Besides the sex assigned to us at birth, there are other factors that influence our cognitive performance. However, no study has yet taken all these factors into account.

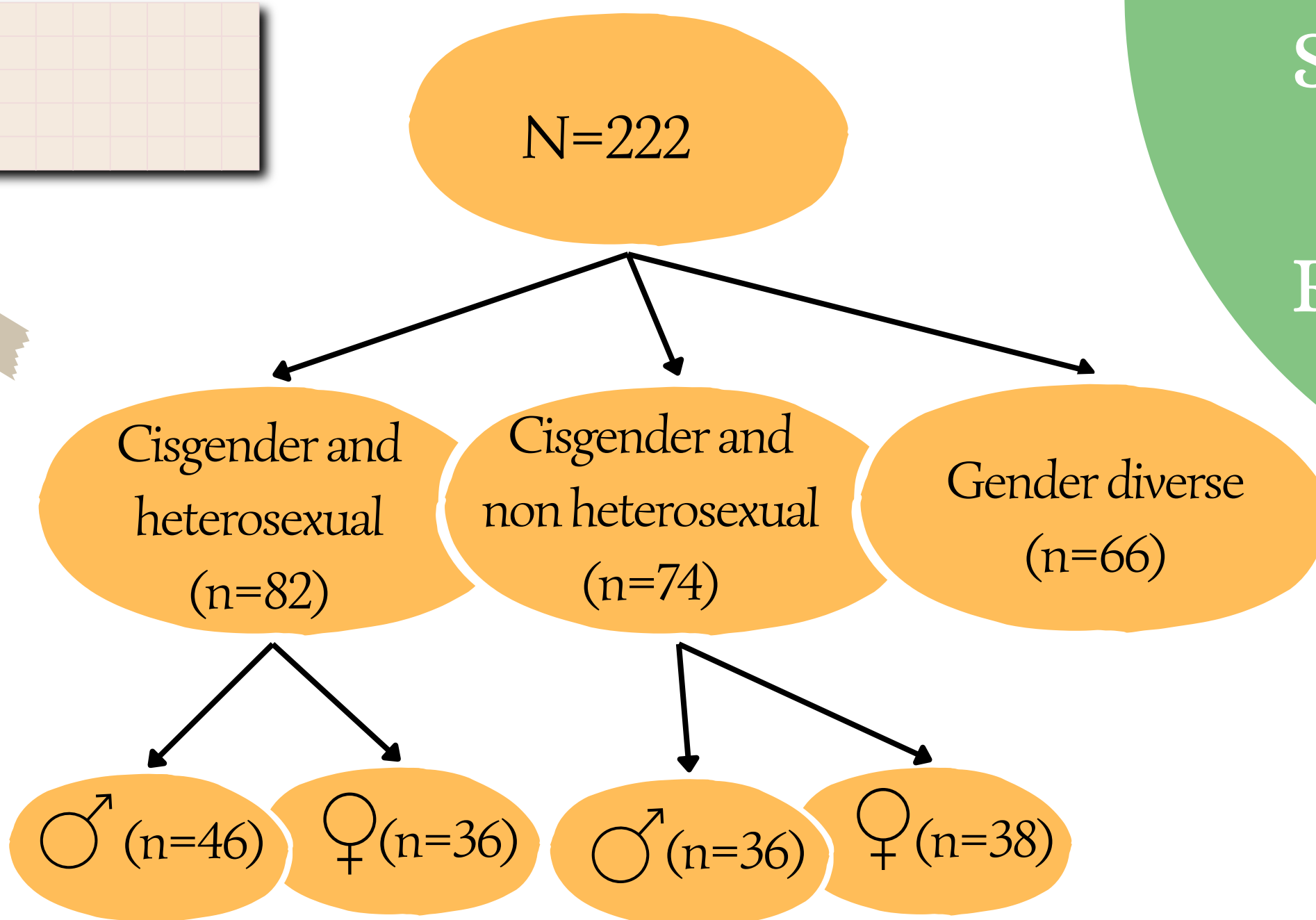
The aim of the SEXCOG study was to assess the influence of sex*gender factors on performance at cognitive tasks.



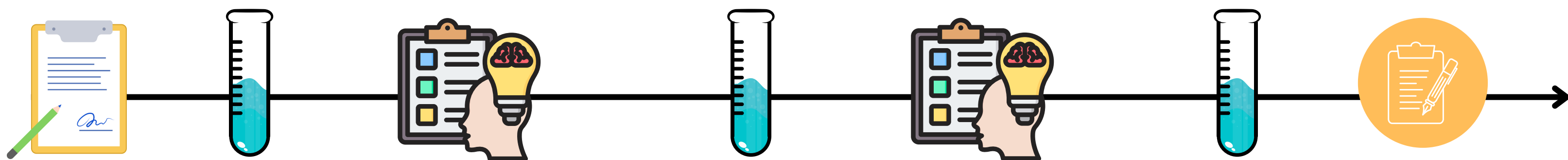
Method

Demography

Participants were divided into groups according to their gender identity and sexual orientation.



Protocol



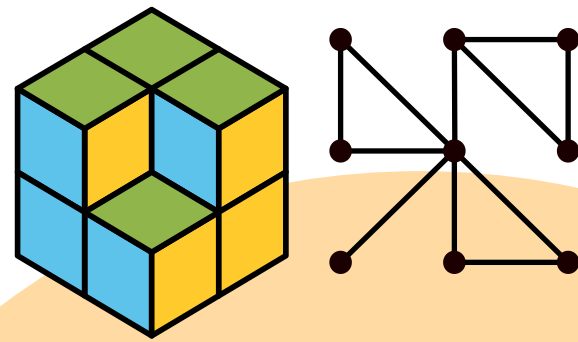
Participants were asked to provide a saliva sample on three occasions: at the beginning, in the middle and at the end of the experiment. These samples are used to measure sex hormones (testosterone, estradiol, progesterone) and stress hormones (cortisol, DHEA), in order to analyze their impact on cognitive performance.

At the start of the experiment, the consent form was explained to participants. They were subsequently invited to sign it.

A total of 8 cognitive tasks were administered. They tested various functions such as visuospatial skills, verbal memory, verbal fluency, memory span and so on.

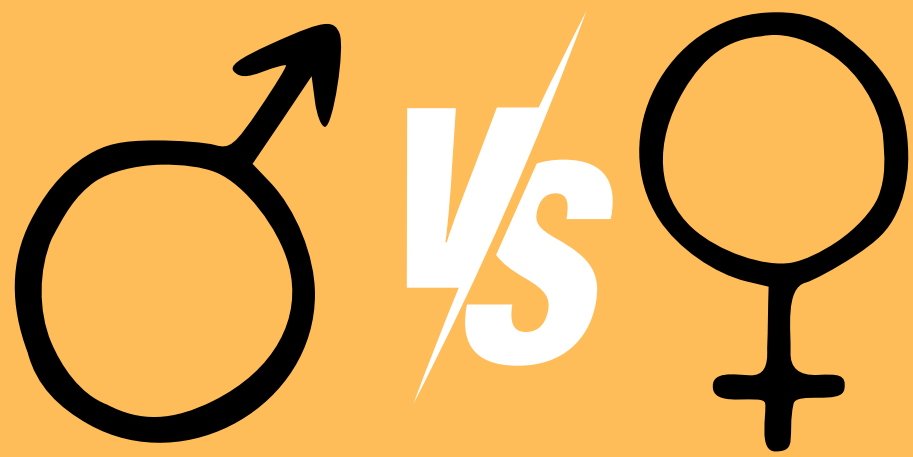
At the end of the experiment, participants completed questionnaires. These enabled us to gather socio-demographic information.

Results

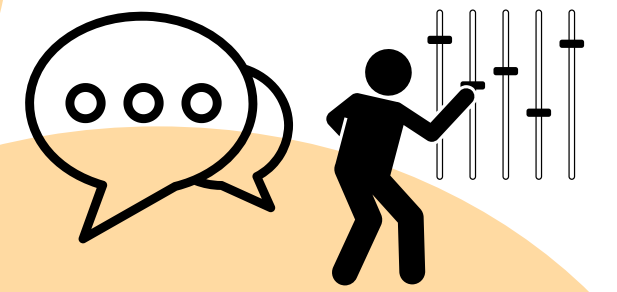


1

Concerning differences in cognitive performance according to sex assigned at birth, our results are similar to those of recent studies.



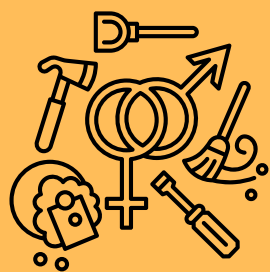
People whose sex assigned at birth is **male** perform better on tasks involving **mental rotation** and **visuospatial judgment**.



People whose sex assigned at birth is **female** perform better on **verbal memory** and **fine motor tasks**.

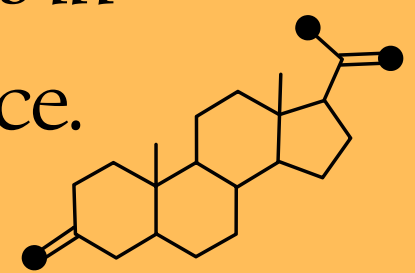
3

For cognitive tasks better performed by **women**, **gender-related socio-cultural** factors and **sexual orientation** seem to best explain differences in cognitive performance.



2

For cognitive tasks performed better by **men**, **biological factors** (hormones and sex assigned at birth) seem to best explain the differences in cognitive performance.



Conclusion

Our results provide a better understanding of sex and gender differences in cognition beyond the effects of sex assigned at birth as a binary variable.

We emphasize the importance of jointly treating sex as a biological factor and gender as a socio-cultural factor, as they collectively influence cognition.



We invite you to consult the article for more information:

Cartier, L., Guérin, M., Saulnier, F., Cotocea, I., Mohammedi, A., Moussaoui, F., Kheloui, S. & Juster, R.P. (2024). Sex and gender correlates of sexually polymorphic cognition. *Biology of Sex Differences*, 15, 3. <https://doi.org/10.1186/s13293-023-00579-8>

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For further information, please contact :

Robert-Paul Juster ; Director of the Center for Studies on Sex*Gender,
Allostasis and Resilience (CESAR) ; robert-paul.juster@umontreal.ca

Fanny Saulnier ; Master's student in psychiatry and addictology, SexCog
project coordinator ; fanny.saulnier@umontreal.ca

Mina Guérin ; PhD student in neuropsychology, SexCog project coordinator ;
mina.guerin@umontreal.ca

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