

GENDER-RELATED DIFFERENCES IN THE FACIAL AGING OF CHINESE SUBJECTS AND THEIR RELATIONS WITH PERCEIVED AGES

F. Flament¹, S. Belkebla¹, A.S. Adam¹, A. Abric², D. Amar³, A.L. Demessant⁴, C. Le Floc'h⁴

¹L'Oréal Research and Innovation, Clichy, France, ²Eurosyn, Villebon-sur-Yvette, France, ³L'Oréal Research and Innovation, Shanghai, China, ⁴La Roche-Posay Laboratoire Dermatologique, Levallois-Perret, France



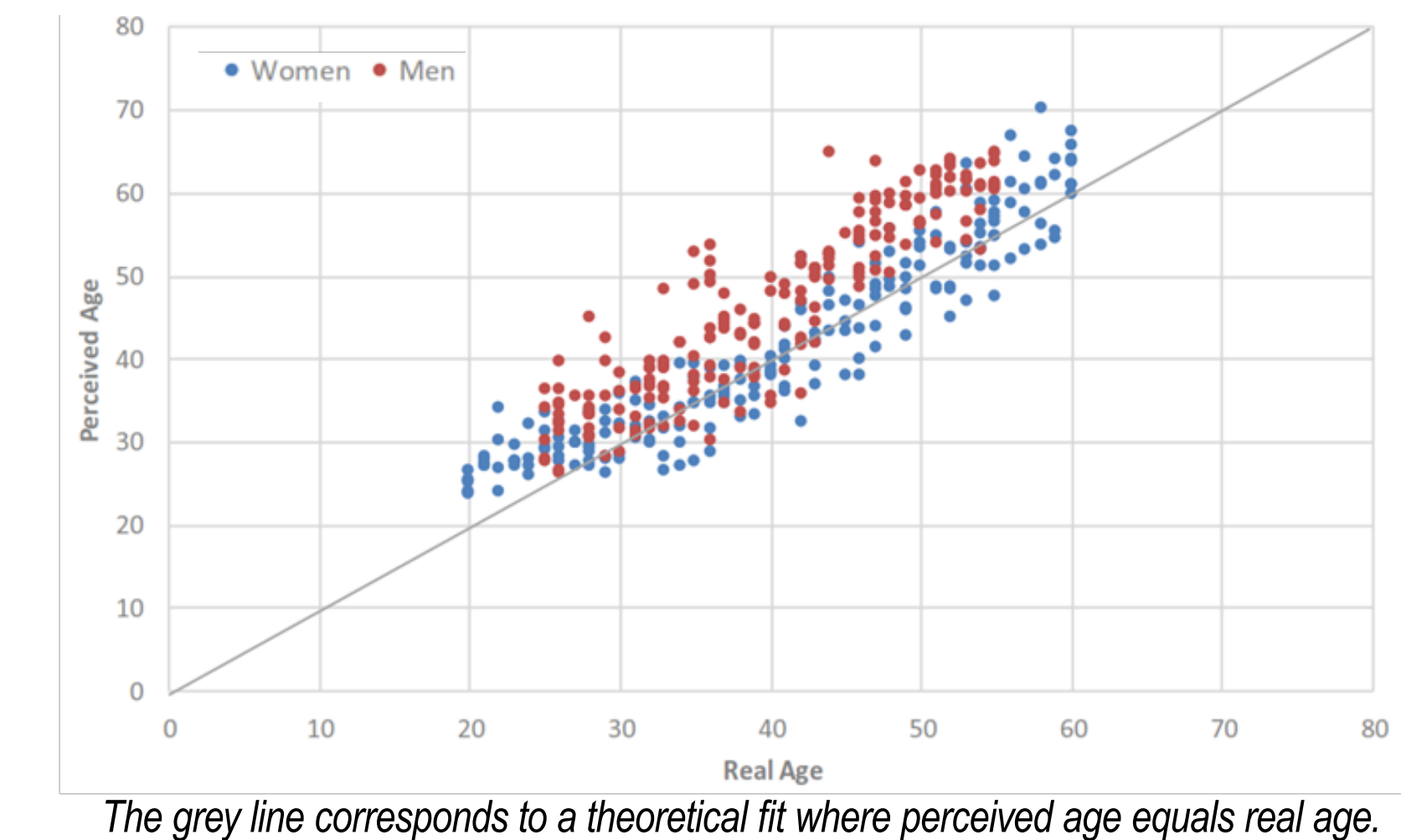
1 INTRODUCTION

The unavoidable process of skin ageing results from the interplay of endo- and exogenous factors. When combined, these elements create a complex mosaic that makes skin ageing evolving differently in each individual.¹⁻⁷ To better design cosmetic solution adapted to consumers in their diversity, investigating clinical age-related differences among genders is essential. This work assessed and compared the progressing severity of facial signs and their links with perceived age in women and men from China.

3 RESULTS

- Despite minor differences in severity between genders, men and women share a rather regular progression rate, correlated with perceived ages; 15 % of men were judged older of more than 10 years, and all 5 signs were more severe than the means of the other 85% (Figure 1).
- Forehead (Figure 2) and Crow's feet wrinkles (Figure 3) appear more pronounced in men.
- Global changes in ptosis is somewhat more pronounced in women than in men (Figure 4).
- Global changes in nasolabial folds in women and men do not differ (Figure 5).
- Marionette lines (Figure 6) show distinct changes. Marionette lines in men are less severe and a slower rate of progression than those in women.
- Compared with changes in facial signs in real age, the upper face seems privileged in the perception of ages in women whereas in men the latter seems more focusing on the lower part of the face.

Figure 1 **CORRELATION BETWEEN PERCEIVED AGE AND REAL AGE OF ALL SUBJECTS, ASSESSED BY THE NAÏVE PANEL**



The grey line corresponds to a theoretical fit where perceived age equals real age.

Figure 3 **CROWS' FEET WRINKLES: GLOBAL CHANGES IN THE SEVERITY (average grades from experts) WITH THE REAL AGES OF SUBJECTS**

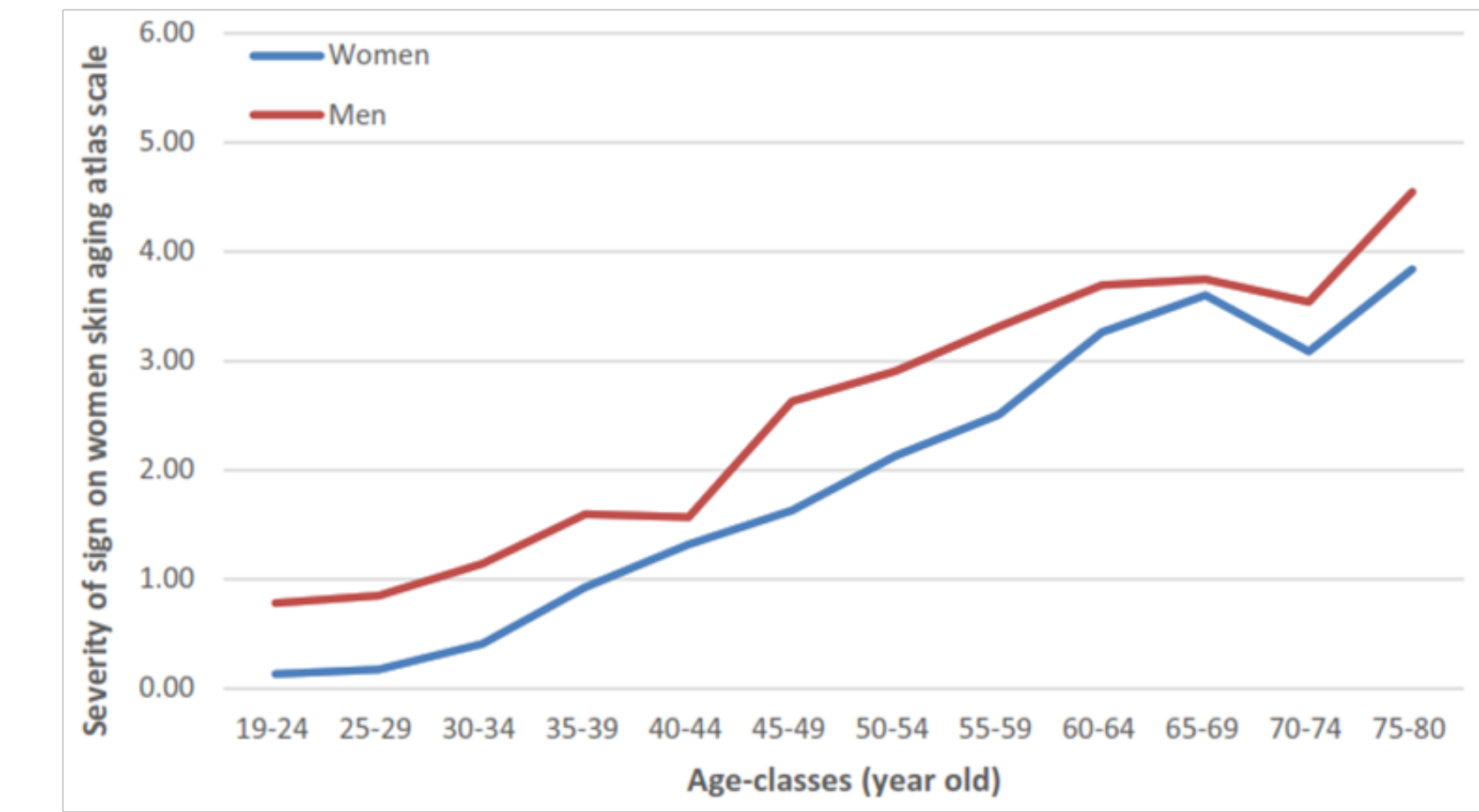
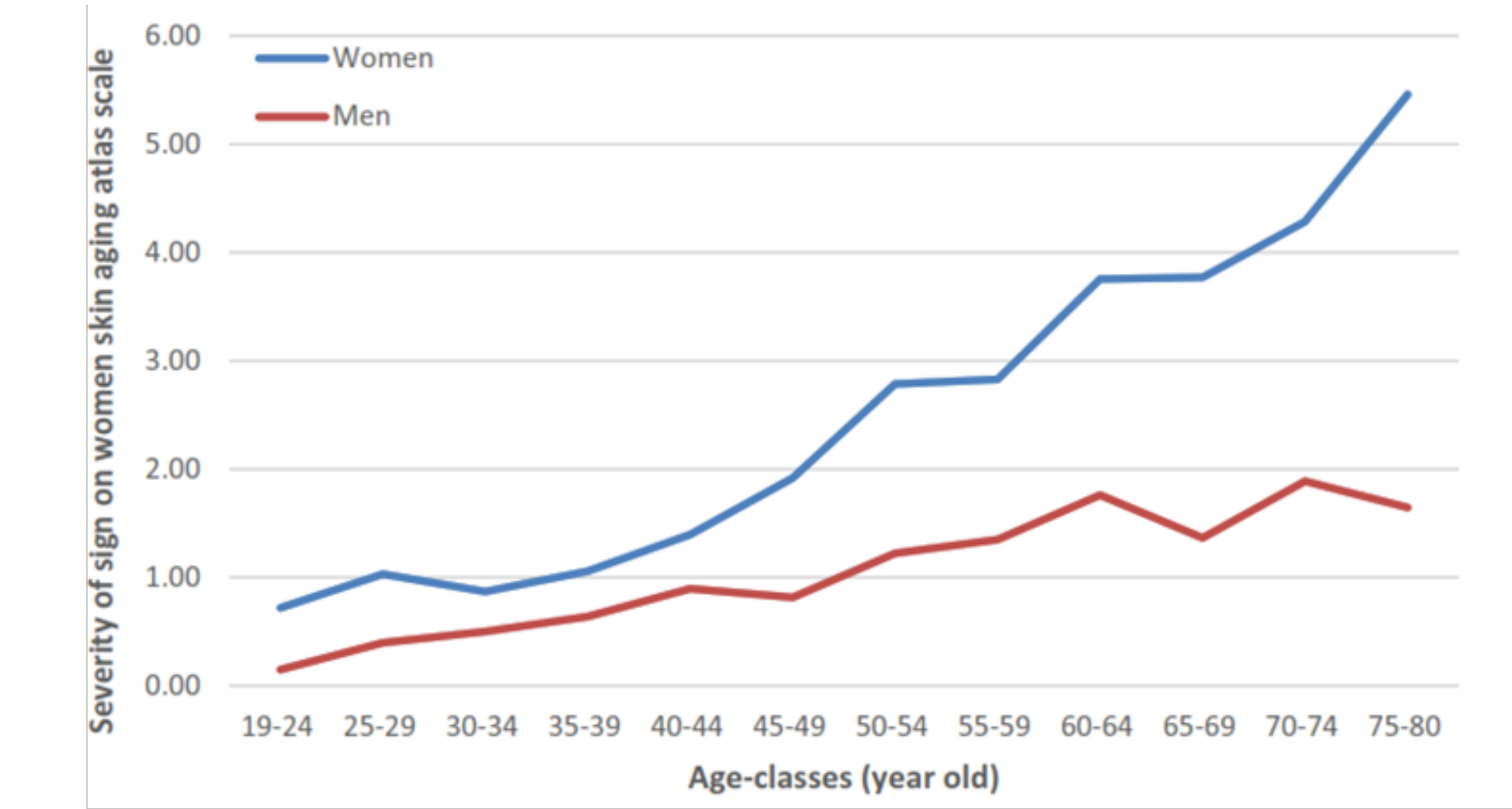


Figure 5 **MARIONETTE LINES: GLOBAL CHANGES IN THE SEVERITY (average grades from experts) WITH THE REAL AGES OF SUBJECTS**



2 MATERIAL AND METHODS

- Full-face photographs of 438 Chinese subjects (220 men, 218 women) aged between 18 and 80 years were taken.
- Photographs focused on 5 facial signs of aging: forehead and crow's feet wrinkles, nasolabial fold, marionette lines and ptosis of the lower face.
- A panel of 15 experts graded each sign, using the Asian skin aging atlas reference.
- A naïve panel of 80 Chinese women (20–60y) was asked to attribute an apparent age.

Figure 2 **FOREHEAD WRINKLES: GLOBAL CHANGES IN THE SEVERITY (average grades from experts) WITH THE REAL AGES OF SUBJECTS**

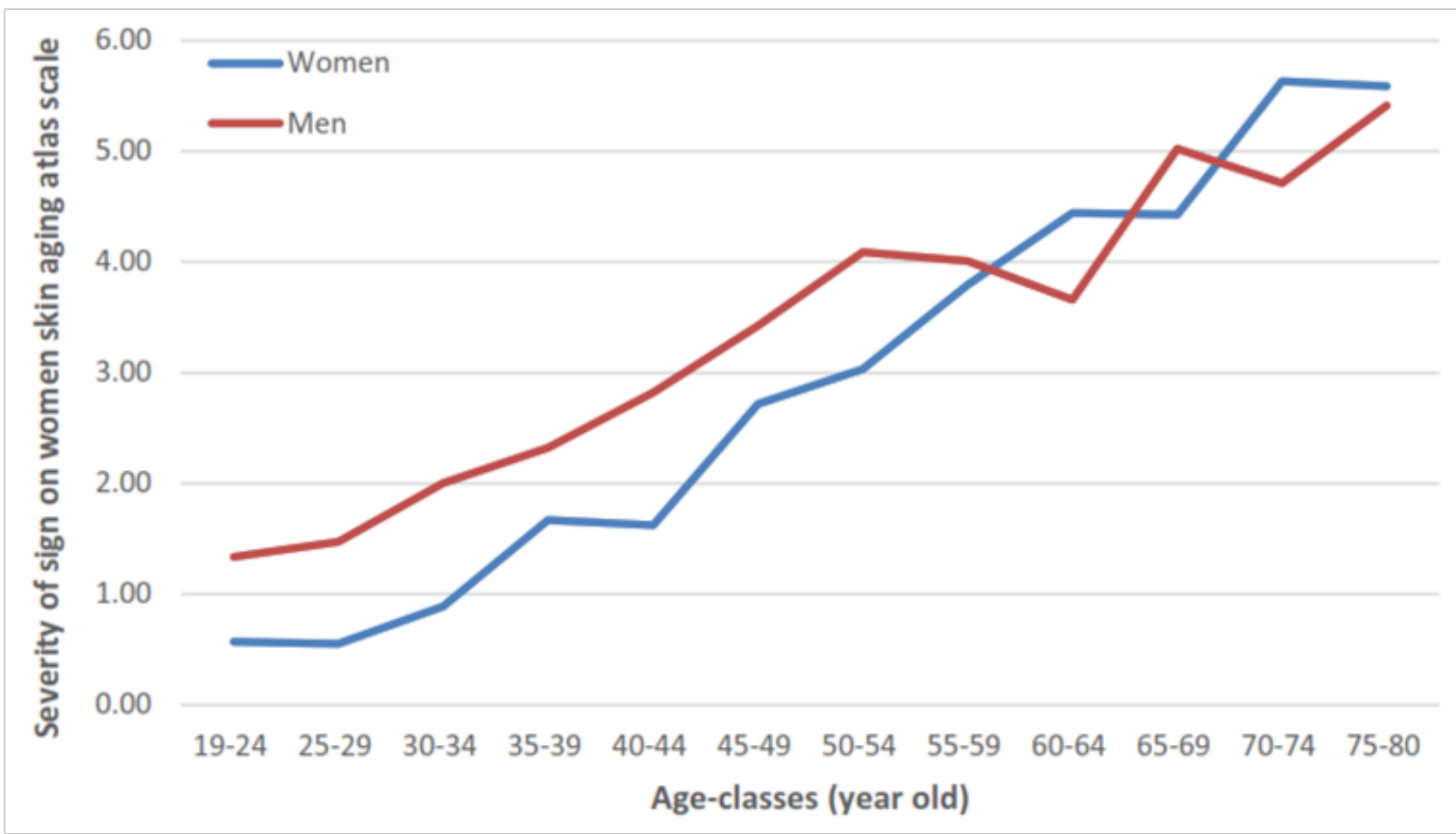


Figure 4 **NASOLABIAL FOLD: GLOBAL CHANGES IN THE SEVERITY (average grades from experts) WITH THE REAL AGES OF SUBJECTS**

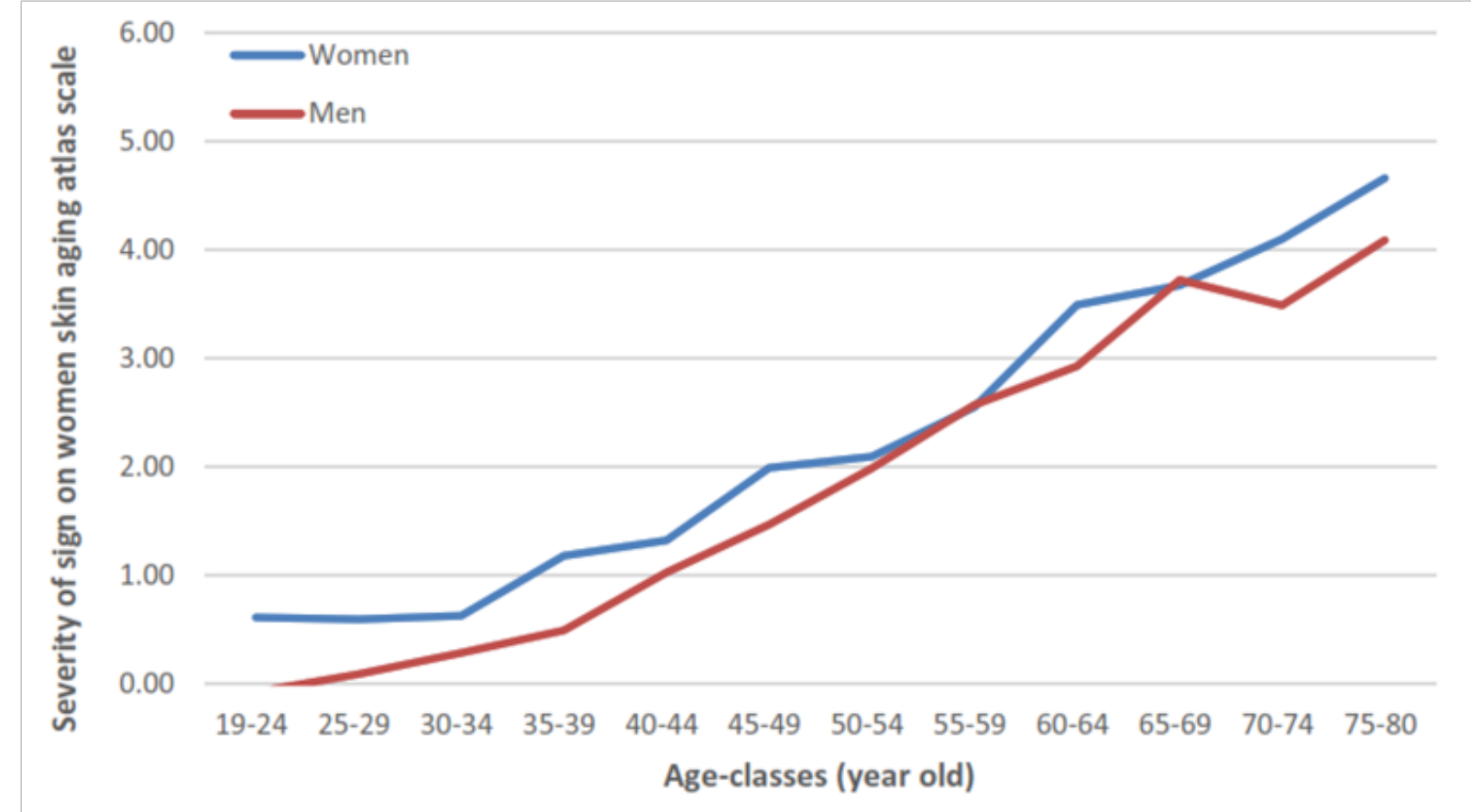
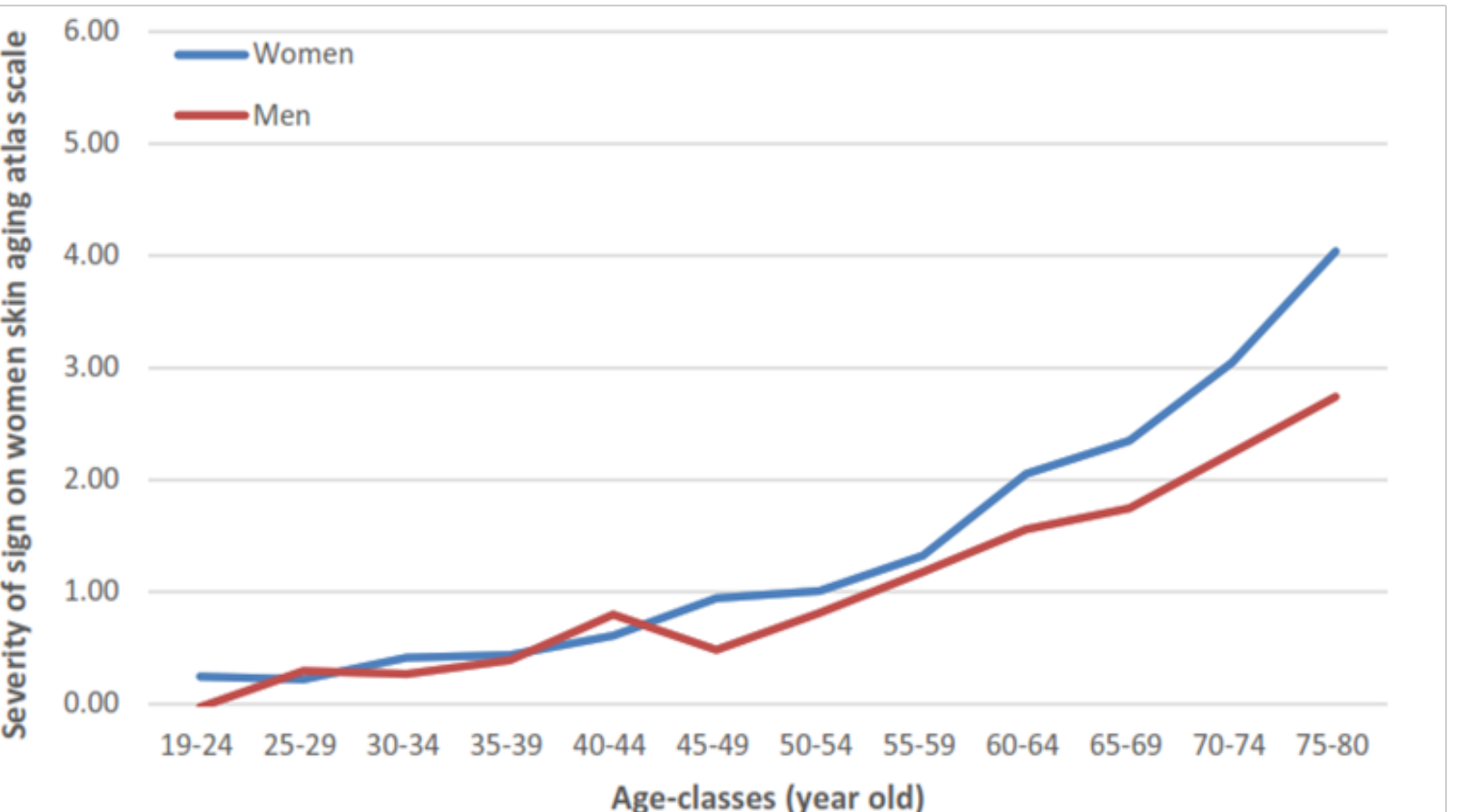


Figure 6 **PTOSIS OF THE LOWER PART OF THE FACE: GLOBAL CHANGES IN THE SEVERITY (average grades from experts) WITH THE REAL AGES OF SUBJECTS**



4 CONCLUSIONS

In Chinese subjects, facial skin ageing presents an almost linear progression with perceived ages, common to both genders, with the exception of marionette lines which are more marked and more rapidly progressing in women.

REFERENCES

1. McDuff D, Kodra E, Kaliouby RE, LaFrance M. A large-scale analysis of sex differences in facial expressions. *PLoS One*. 2017;12(4):e0173942.
2. Tsukahara K, Osanai O, Kitahara T, Takema Y. Seasonal and annual variation in the intensity of facial wrinkles. *Skin Res Tech*. 2013;19(3):279-87.
3. Flament F, Bazin R, Laquieze S, Rubert V, Simonpietri E, Piot B. Effect of the sun on visible clinical signs of aging in Caucasian skin. *Clin Cosm Inv Dermatol*. 2013;6:221-32.
4. Flament F, Bazin R, Qiu H, Ye C, Laquieze S, Rubert V, et al. Solar exposure(s) and facial clinical signs of aging in Chinese women: impacts upon age perception. *Clin Cosm Inv Dermatol*. 2015;8:75-84.
5. Flament F, Bourakba N, Nouveau S, Li J, Charbonneau A. A severe chronic outdoor urban pollution alters some facial aging signs in Chinese women. A tale of two cities. *Int J Cosm Sci*. 2018;40(5):467-81.
6. Flament F, Qiu H. Effects of seasonality and a daily photo-protection upon some facial signs of Chinese women. *Int J Cosm Sci*. 2017;39(3):256-68.
7. Flament F, Qiu H, Abric A, Charbonneau A. Assessing changes in some facial signs of fatigue in Chinese women, induced by a single working day. *Int J Cosm Sci*. 2019;41(1):21-7.

ACKNOWLEDGMENT

The authors acknowledge the writing support of Karl Patrick Göritz, SMWS, France and the art work of Dominique Poisson.

KEY WORDS

Skin ageing signs, gender, Chinese subjects, wrinkles