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ASSESSING THE IMPACT OF AN AERIAL CHRONIC URBAN POLLUTION ON SOME SIGNS OF DIFFERENTLY-AGED MEN FROM CHINA

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1 INTRODUCTION

The face of human subjects is progressively altered by the confluence of many factors, covered by the generic endo- and exogenous factors that superimposes to the dictatorial chronological aging.[1] These factors include different lifestyles habits (food, alcohol ingestion, smoking, sun-exposures, fatigue etc.). or a regular and long-time exposure to other environmental factors include such as an aerial chronic urban pollution (UP).
In recent studies, facial appearance of women from a polluted city in China was considered less radiant, duller, less healthy and perceived as older than in a less polluted city.[2, 3] Investigations on from Chinese men remain facial skin remain scarce.
To better design cosmetic solutions adapted to consumers in their diversity, investigating endo-and exogenous factor related impacts differences among genders is essential.
This study assessed the impact of an aerial chronic urban pollution (UP) on the severities of some facial signs of Chinese men living in two close but differently polluted Chinese cities.

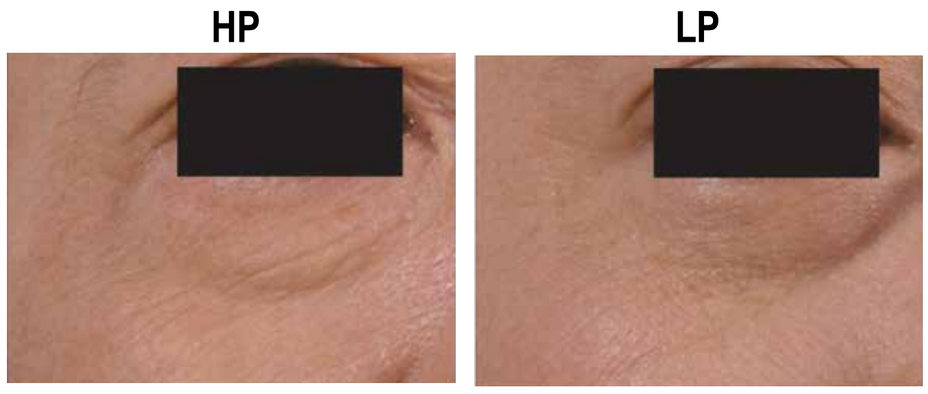
2 METHODS

- Standardized digital photographs were taken on 201 subjects from two cohorts of Chinese men (100 inhabitants of Baoding/very polluted (HP) and 101 inhabitants of Dalian/less polluted; LP) aged from 20 to 60 years allowing a focus on 17 different facial signs.
- Images were graded by 15 experts, using a clinical referential skin atlas.
- A questionnaire was completed by all subjects collecting their habits and uses regarding sun-exposures and skincare products.
- A naïve panel of 80 Chinese women of comparable ages, attributed a perceived age to each subject under blind conditions.

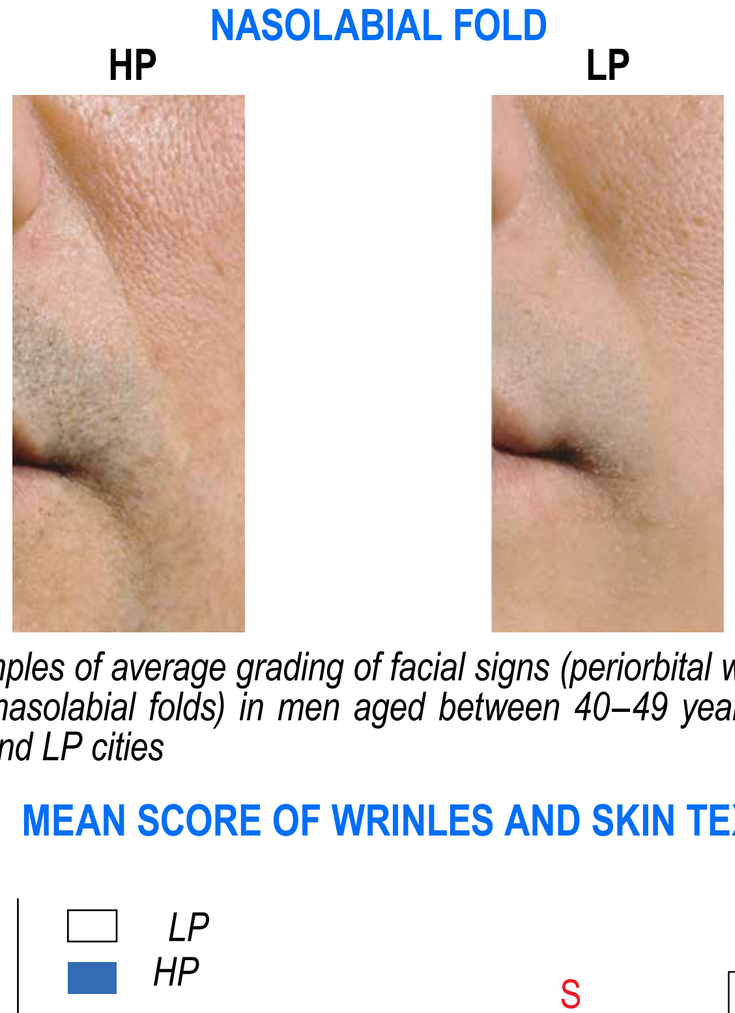
3 RESULTS

- Results confirm previous data obtained on Chinese women that a certain number of facial signs show an increased severity in the more polluted city. (Figure 1)
- Changes in facial signs results indifferent patterns according to gender and to age. In men, most signs show early onsets with low age-related changes compared to those observed in women, at the exception of vascular disorders.
- Signs related to skin texture (wrinkles, folds, skin pores, ptosis etc.) and/or pigmentary elements are early and significantly intensified (20–29 years group) in the HP subjects as compared to those from LP.
- In older age-groups, signs show weak or erratic changes. Some others (wrinkles, vascular disorders) appear significantly more pronounced between 40–60 years (Figures 2 to 4). In subjects aged above. 30 years, no pigmentary-related signs are clearly observed.
- Habits of sun-exposures and use of skincare products were similar in both cohorts, reinforcing the role of UP in the progressive changes of facial signs. Similar to the results previously obtained on Chinese women, men living in more polluted environments were considered older than those living in a less polluted environment.

Figure 1 **PERIORBITAL WRINKLES**

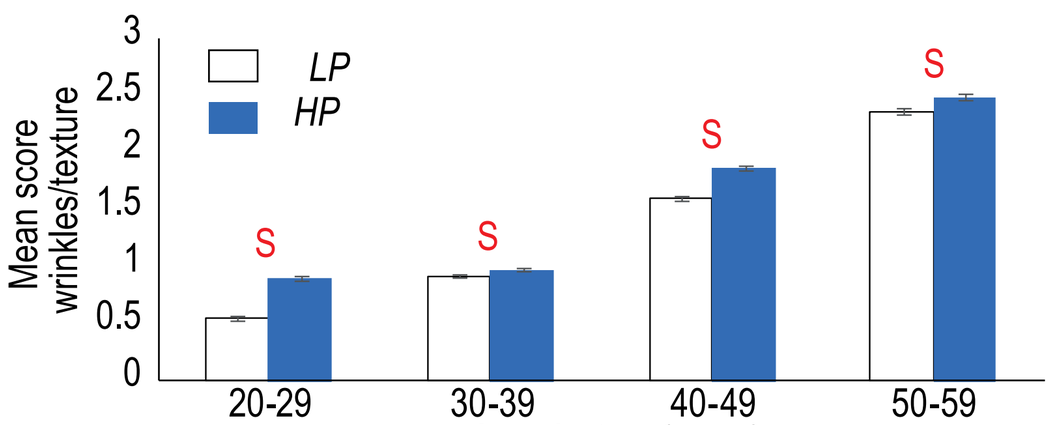


NASOLABIAL FOLD



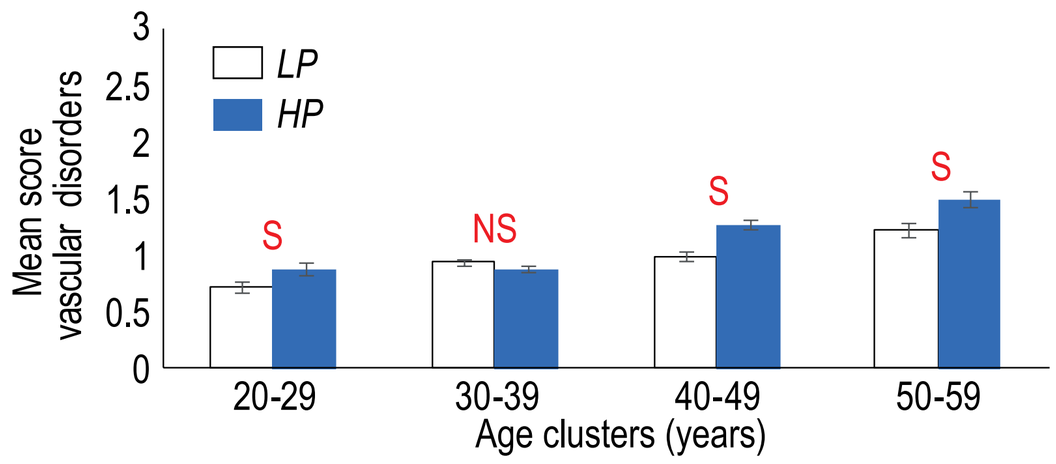
Examples of average grading of facial signs (periorbital wrinkles and nasolabial folds) in men aged between 40–49 years from HP and LP cities

Figure 2 **MEAN SCORE OF WRINLES AND SKIN TEXTURE**



S: Statistically significant difference (p<0.001).

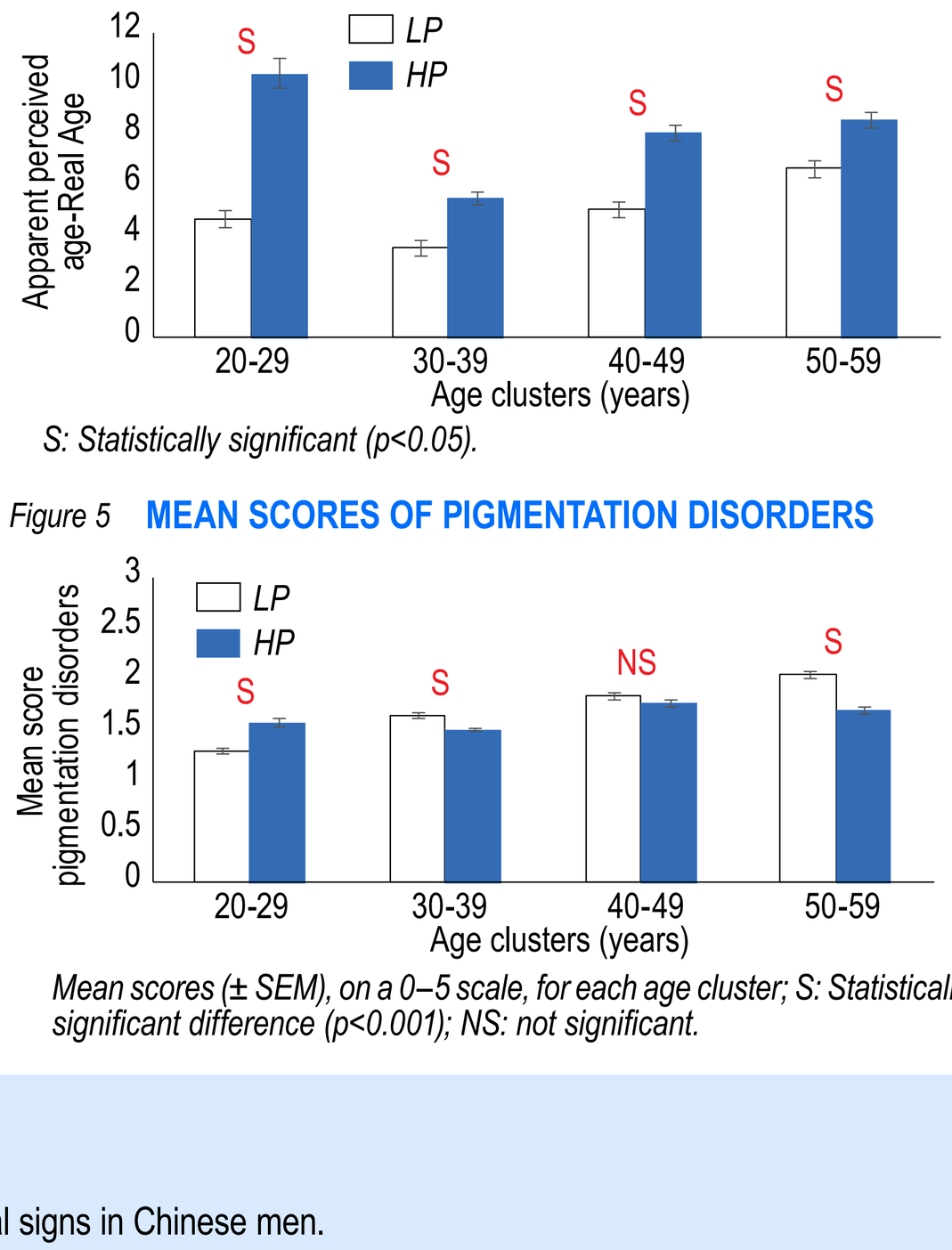
Figure 3 **MEAN SCORES OF VASCULAR DISORDERS**



S: Statistically significant difference (p<0.005), NS, not significant.

DIFFERENCES PERCEIVED BETWEEN APPARENT AND REAL/CHRONOLOGICAL AGES

Figure 4



S: Statistically significant (p<0.05).

Figure 5 **MEAN SCORES OF PIGMENTATION DISORDERS**

Mean scores (± SEM), on a 0–5 scale, for each age cluster; S: Statistically significant difference (p<0.001); NS: not significant.

4 CONCLUSIONS

The present work confirms that urban pollution increases the severity of facial signs in Chinese men.

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KEY WORDS

Urban pollution, facial signs, wrinkles, pigmentation disorders