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**"Determinants of change in airway reactivity over 11-years in the SAPALDIA population study"**

**For each statement, mark appropriately in every box with a (+) for true or (–) for false.**

**1. It is important to study the longitudinal course of bronchial reactivity in men and women from the general population including older ages because:**
❏ The sex-specific course of bronchial reactivity in older age is not well known. ❏ Differences in bronchial reactivity might underlie differing clinical manifestations of major pulmonary diseases between sexes. ❏ Bronchial reactivity is mitigating with age with a different pattern in women and men. ❏ Preclinical disease stages and associated risk factors can be studied in population studies.

**2. A significant increase in bronchial reactivity slope was detected with older age in this study. At the same time, while the cohort was aging 11 yrs, the overall prevalence of bronchial hyper-reactivity fell during follow-up time. Which is the best explanation for these apparently opposing observations?**
❏ Bronchial hyperreactivity is defined by surpassing a threshold of 20% decline in $FEV_1$ from the baseline value while reactivity slope is assessed on a continuous scale. ❏ The study population comprised a larger proportion of people below age 50 yrs which experienced a decline in bronchial reactivity. This resulted in an overall mean decrease in bronchial reactivity. ❏ While bronchial reactivity slope was on average increasing over time, there was a high proportion of non-persistent bronchial hyper-reactivity, resulting in a decreased prevalence at follow-up. ❏ Loss to follow-up and test exclusion criteria have led to a selection of hyper-reactive participants with non-persistence and normoreactive participants with increasing slope at follow-up. ❏ The decreased bronchial reactivity associated with non-persistent hyperreactivity was on average larger than the mean increase associated with older age.

**3. Based on the study findings, which of the following statements about the effects of smoking behavior on the longitudinal course of bronchial reactivity are correct?**
❏ Smoking was the strongest predictor for increasing bronchial reactivity over time. ❏ When compared with persistent smokers, quitters presented a reduction in bronchial reactivity similar to never-smokers. ❏ The age-dependent turning point to increasing bronchial reactivity occurred earlier in ever-smokers compared to never-smokers. ❏ The effect of smoking on bronchial reactivity appeared to be stronger in women than in men.

**4. Which could be possible explanations for the observed increase in bronchial reactivity associated with older age?**
❏ Older participants with lower health status and increased bronchial reactivity were more likely to participate at the follow-up examination. ❏ The cumulative tobacco smoke exposure in older smokers might increase average reactivity in the older part of the study population. ❏ Loss of lung tissue elasticity in older age might favor airway collapse and air trapping and increase reactivity. ❏ Airway remodelling and ventilation perfusion disturbances accentuate with age and might increase reactivity.

**5. Based on the study data, what could explain the different longitudinal dynamic of bronchial reactivity in women compared to men?**
❏ Enhanced susceptibility to tobacco smoke exposure. ❏ The higher prevalence of atopy in women. ❏ The lower mean body mass index in women. ❏ Smaller airway sizes of women.