Introduction and objective:
Many diseases with great prevalence in the population occur with disorders of smell, such as rhinitis, Alzheimer’s disease, major depression, hepatitis, arterial hypertension or diabetes mellitus. However, assessment of olfactory function in patients with disorders of smell is frequently neglected in the routine otolaryngology consultation.
One of the effects of tobacco consumption is the change in the nasal mucosa. It has been hypothesized that tobacco smoke consumption modifies olfactory levels of these people.

Material and methods:
Prospective clinical study with 56 consecutive healthy volunteers. Previously validated protocol of olfactometry composed of a quantitative and a threshold test.

Supraliminar Test (odor identification test)
- 8 bottles with 8 different odorants: coffee, chocolate, cinnamon, soap, talc, naphthalene, menthol, peanut.
- Patient can smell the bottle as many times as he/she wants, but it’s a forced odor identification task.

Butanol Test (olfactory detection threshold test)
- Serial dilutions of butanol stock solution 4% (by 1/3) are inserted in bottles of 250ml with a volume dilution of 60ml.
- The bottle with stock solution is bottle number zero and the most diluted is number seven.
- Patient should identify the bottle with the weakest concentration of n-butanol without needing to identify the substance.

Brinkman index: 11.48±8.14; strongly correlated with butanol test (r=0.56, p<0.001) and composed punctuation (r=-0.35, p<0.01).

Results and Discussion:

<table>
<thead>
<tr>
<th>Smoking group</th>
<th>Controls</th>
<th>P value</th>
<th>Correlation (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butanol test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composed punctuation</td>
<td>5.12±0.64</td>
<td>p&lt;0.01</td>
<td>-0.35</td>
</tr>
<tr>
<td>Butanol test</td>
<td>3.75±0.50</td>
<td>p&lt;0.01</td>
<td>-0.60</td>
</tr>
<tr>
<td>Supraliminar test</td>
<td>6.49±1.24</td>
<td>p&lt;0.05</td>
<td>-0.37</td>
</tr>
</tbody>
</table>

The substance most frequently identified was naphthalene (94%), followed by menthol (89%), while the least frequently correctly identified were cinnamon and talc (57 and 50%).

Conclusions:
We obtained a significant statistical correlation between the tobacco smoking and the butanol test in a dose dependent way.
Our study suggests that tobacco smoking reduces the threshold level of olfaction. Smokers presented lower olfaction levels than non smokers, keeping however a similar discriminative ability in the dependence of olfactory and trigeminal nerves.

References: