



# VALIDATION OF THE DUTCH VERSION OF THE SINO-NASAL OUTCOME TEST-22 (SNOT-22) QUESTIONNAIRE

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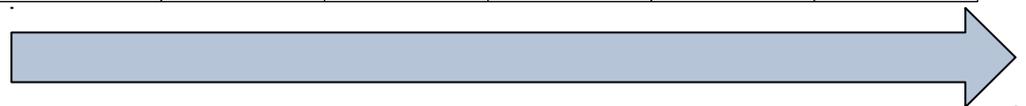
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Considering how severe the problem is when you experience it and how frequently it happens, please rate each item below on how 'bad' it is by **circling** the number that corresponds with how you feel using this scale  
→

|   | No problem | Very mild problem | Mild or slight problem | Moderate problem | Severe problem | Problem as bad as it can be |
|---|------------|-------------------|------------------------|------------------|----------------|-----------------------------|
| 1. Need to blow nose  | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 2. Sneezing   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 3. Runny nose   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 4. Cough  | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 5. Post nasal discharge (dripping at the back of your nose) | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 6. Thick nasal discharge                                    | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 7. Ear fullness   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 8. Dizziness  | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 9. Ear pain/pressure  | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 10. Facial pain/pressure                                    | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 11. Difficulty falling asleep                               | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 12. Waking up at night                                      | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 13. Lack of a good night's sleep                            | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 14. Waking up tired   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 15. Fatigue during the day                                  | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 16. Reduced productivity                                    | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 17. Reduced concentration                                   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 18. Frustrated/restless/irritable                           | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 19. Sad   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 20. Embarrassed   | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 21. Sense of taste/smell                                    | 0          | 1                 | 2                      | 3                | 4              | 5                           |
| 22. Blockage/congestion of nose                             | 0          | 1                 | 2                      | 3                | 4              | 5                           |





# SNOT-22

- Tool to assess quality-of-life
- Tool to assess the effectiveness of procedures to improve sinonasal complaints



# SNOT-22

- Tool to assess quality-of-life
- Tool to assess the effectiveness of procedures to improve sinonasal complaints
- Validated in the English, Portuguese, Chinese, Czech, Danish, Lithuanian and Swedish language
- Proven to be the most suitable sinonasal outcome scoring system



# SNOT-22

- A validated disease-specific quality-of-life questionnaire for sinonasal disease
- Contains both nose specific questions and generic QoL questions
- Total score vary between 0 and 110 (22x5)



# Study Design:

- Aim:

To cross-cultural adapt and validate the SNOT-22 Questionnaire into the Dutch language

- Material and Methods:

- December 2013 – March 2014
- Antwerp University Hospital
- Distribution: 104 consecutive patients at the ENT outpatient clinic



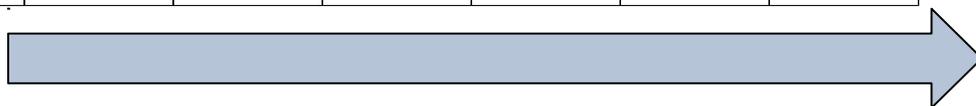
# Validation

- Translation and cross cultural adaptation:
  - The original questionnaire was translated into Dutch by staff members of the ENT department
  - Then back-translated by 2 independent English native-speakers who also have excellent knowledge of Dutch
  - Translations compared to select the most appropriate translation
- Cronbach's  $\alpha$  value:
  - Internal consistency and reliability
  - Scores  $\geq 0,80$ : defined as good
  - The way in which each question is associated with the others in the questionnaire
    - the aim is to obtain a high homogeneity among the items

Geef een nummer aan elk van de onderstaande klachten.



|   | <b>Geen probleem</b> | <b>Zeer licht probleem</b> | <b>Licht of weinig probleem</b> | <b>Matig probleem</b> | <b>Ernstig probleem</b> | <b>Kan niet slechter</b> |
|---|----------------------|----------------------------|---------------------------------|-----------------------|-------------------------|--------------------------|
| 1. Nood tot het snuiten van de neus                 | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 2. Niezen   | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 3. Loopneus/neusloop                                | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 4. Hoest  | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 5. Postnasale drip (neusloop achteraan in de keel)) | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 6. Taaie neusloop                                   | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 7. Volheidsgevoel in oren                           | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 8. Duizeligheid                                     | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 9. Oorpijn/druk in het oor                          | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 10. Gelaatspijn/druk                                | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 11. Moeilijkheid in slaap vallen                    | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 12. 's nachts wakker worden                         | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 13. Gebrek aan goede nachtrust                      | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 14. Vermoeid wakker worden                          | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 15. Vermoeidheid overdag                            | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 16. Verminderde productiviteit                      | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 17. Verminderde concentratie                        | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 18. Frustratie/rusteloos/prikkelbaar                | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 19. Neerslachtig                                    | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 20. Beschaamdheid                                   | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 21. Smaakzin/reukzin                                | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |
| 22. Verstopte neus                                  | 0                    | 1                          | 2                               | 3                     | 4                       | 5                        |



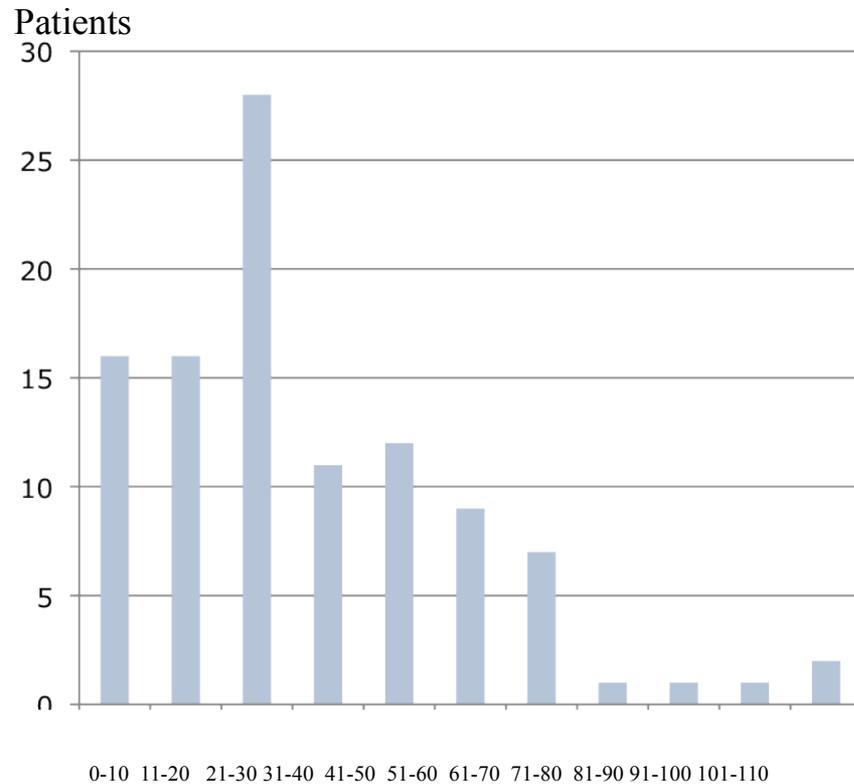


# Results

- 104 patients
  - Gender:
    - Male: 64% (67/104)
    - Female: 36% (37/104)
  - Age : mean 46 years



# Results



SNOT-22 scores

| Pathology          | % population |
|--------------------|--------------|
| No pathology       | 37,1%        |
| Septal deviation   | 43,6%        |
| Allergic rhinitis  | 6,5%         |
| Sinusitis          | 3,2%         |
| Combined pathology | 9,6%         |



# Results

- No difficulties were encountered by filling out the questionnaire
- The original SNOT-22 questionnaire translated into the Dutch language resulted to be well in accordance with the back translation
- Cronbach's  $\alpha$  value: 0,94: high



# Conclusion

- The SNOT-22 was successfully translated into Dutch, using state of the art forward translation and back-translation
- The Dutch version of the SNOT-22:
  - Valid and reliable instrument
  - Can be self-administered to Dutch speaking patients with sinonasal complaints
  - Can be used to be compared with data in international publications



# Future aims

- Comparing the questionnaire score with:
  - objective measures of disease severity such as rhinomanometry and CT scan
  - subjectives scores such as specific visual analogue scores
- Using the Dutch version of the SNOT-22 as an instrument to evaluate the quality of life pre and post nasal surgery in Dutch speaking patients
- Using factor analysis to divide the Dutch version of the SNOT-22 in subscales to improve clinical use



Thank you for your attention

