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Title of the article: Rhinoplasty: French validation of the MiRa scale

Titre: Rhinoplastie: Validation française de l'échelle MiRa

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## **ABSTRACT**

### **Aims**

The aim of this study was to translate the MiRa scale into French and validate its use for French-speaking surgeons.

### **Material and methods**

ISPOR and WHO recommendations were used to carry out the translation process from English to French in five steps. The MiRa scale is a validated analysis scale of nasal dysmorphoses. Few tools are available in French for French-speaking surgeons. ISPOR and WHO recommendations were used to complete the translation process from English into French in five steps. To assess the reliability of MiRa scale – French version, we statistically compared intra-observer repeatability (comparison of scores obtained when one observer assessed each patient twice at a one-month interval) and inter-observer repeatability (comparison of scores obtained when 2 observers assessed the same patient) using the Wilcoxon test and the intraclass correlation coefficient (ICC) ( $\alpha = 5\%$ ).

### **Objectives**

Our goal was to obtain a translation of the idea or concept rather than a literal translation with good intra and inter-observer repeatability.

### **Results**

Each step enabled us to make changes to work towards a conceptual translation equivalent to the original version.

### **Conclusion**

The MiRa scale is the only aesthetic analysis scale validated in the literature for nasal dysmorphoses. The combined use of two sets of translation recommendations, with a five-step translation-back-translation process, made it possible to obtain a French version perfectly in line with the original. This version is usable by French-speakers.

**Keywords:** questionnaire; rhinoplasty; aesthetic analysis; linguistic adaptation ; French

## **TEXT**

### **1. INTRODUCTION**

The analysis of nasal dysmorphoses is a key point for practitioners seeking to determine their surgical strategy and analyze the esthetic consequences of the surgical techniques used. The differences in interpretation between surgeon and patient have already been discussed in the literature [1]. The French-speaking surgeons uses few questionnaires due to the lack of translated instruments. Consequently, systematic evaluation by French-speaking practitioners of post-rhinoplasty esthetic results is problematic. Available translated questionnaires mainly concern functional assessment [2, 3, 4]. Validated translation processes make it possible to provide a questionnaire for use by French-speakers.

The MiRa scale is a validated tool enabling practitioners to perform detailed analysis of nasal dysmorphoses in patients before and after cosmetic surgery of the nasal pyramid. The MiRa scale has been rigorously developed to validate its reliability [1]. Our translation seeks to be more conceptual than strictly literal [5, 6, 7, 8]. We have translated this analysis scale in accordance with international translation recommendations [9, 10].

The purpose of this study was to translate the MiRa scale into French and validate its use for speakers of French.

### **2. METHODS**

#### *2.1. Ethical considerations*

All patients who contributed to the development of this study gave their consent before participating. The study was carried out in accordance with the Declaration of Helsinki.

#### *2.2. Translation process*

The MiRa scale in its English version served as a source document for translation [1]. Patients were allocated an initial score of 40 points. One or two points were then deducted for each item depending on the esthetic severity of the deformity. Professional photographs were taken from 3 angles (full face, right profile, lower face) and were used to complete the scale. The ISPOR (International Society for Pharmacoeconomics and Outcomes Research) and WHO (World Health Organization) recommendations were implemented throughout the translation process [9, 10]. We already used this validated translation process [11]. An expert panel of 3 French-speaking rhinoplastician surgeons modified the scale after analysis of 40 patient records.

The translation process (Table 1) was performed in 5 steps:

**Step 1:** Two independent translations were made of the original scale from English into French: one by a surgeon specialized in the management of rhinoplasties and the second by a professional translator. Both were native French-speakers and both spoke English fluently. A consensus between the two translations was established, leading to *French version 1*.

**Step 2:** A back-translation was made into English of *French version 1* by an English native language professional translator. This version was compared with the original MiRa scale. The items revealing discrepancies were re-translated and modifications were made, leading to *French version 2*.

**Step 3:** *French version 2* was submitted to a panel of specialist surgeons to determine whether it was understandable and easy to use. Further corrections were made resulting in *French version 3*.

**Step 4:** The instructions were added in the *French version 3*. This version was then tested on 40 photographic records of patients to determine whether the instructions, the method for completing the evaluation grid and the scoring method and the different

items were understandable and unambiguous. Based on these findings, we modified the scale and obtained *French version 4*.

**Step 5:** *French version 4* was examined by a panel of surgeons and validated to produce the final version (Table 2).

### *2.3. Reliability of MiRa scale – French version*

To assess the reliability of MiRa scale – French version, two senior surgeons examined each photographic record twice, at a minimum 4-week interval. We statistically compared intra-observer repeatability (comparison of scores obtained when one observer assessed each patient twice at a one-month interval) and inter-observer repeatability (comparison of scores obtained when two observers assessed each patient once) using the Wilcoxon test and the intraclass correlation coefficient (ICC) ( $\alpha = 5\%$ ) as defined by Fleiss and Shrout [12].

## **3. RESULTS**

Following the recommendations for translation, we were able to obtain a French version of the MiRa scale usable by French-speaking practitioners and equivalent to the original English version.

Regarding Step 1, we chose to have two independent translations made by two people from different professional backgrounds with a view to establishing an exchange between them and obtaining a consensus. Some terms chosen by the practitioner (e.g. "cyphose" and "ensellure") were deemed too technical by the translator, who preferred "concavity" and "convexity". Comparison and adjustment of the two translations resulted in *French version 1*. In the English back-translation of *French version 1*, we identified no difference except for the above-mentioned items. In Step 2, it was decided to keep some terms in English in the French version, e.g. "pinched nose", "double break" and "supratip", as they are in everyday use among French rhinoplasticians.

Also, in *French version 3*, we integrated more detailed instructions for completing the evaluation. In fact, in the original article, instructions are not presented in the scale itself. Step 3 was fundamental and provided many modifications: eg. "déviation" and "bifidité" were replaced by "déviée" and "bifide" to ensure grammatical coherence. "Portion cartilagineuse" and "Portion osseuse" were also changed to "Nez osseux" and "Nez cartilagineux". The item concerning nostril orientation was also adapted. The test on photographic records was satisfactory with the various practitioners in agreement with the proposed translation. No changes were made during the last step.

#### *Assessment of the reliability of the MiRa scale – French version*

Intra-observer repeatability of MiRa scale – French version was 97.9% ( $p=0.56$ ). Inter-observer repeatability was 95.9 % ( $p=0.21$ ). There were no statistical significant differences between the observations.

#### **4. DISCUSSION**

Other teams have already used the same methodology [13]. Our translation process was simplified as the MiRa scale is intended for practitioners and not for patients. Actually, we did not need patient feedback. Moreover, most terms in the scale cannot be mistranslated since an international consensus already exists for anatomical terms. Possible differences of interpretation due to cultural variations were not an obstacle in our translation procedure [14]. As Lacasse points out, the translation - backtranslation process helps reveal imperfect translations and harmonizes understanding of a document by different populations [15]. This process is more constraining than a straight-forward, one-way translation and ensures that the translated evaluation grid is identical to the initial document. This point is very important methodologically, since we must be certain to measure what we are supposed to.

ISPOR and WHO recommendations were chosen for the translation process, which made it possible to obtain a culturally-adapted version in French of the MiRa scale equivalent to the English version [9, 10]. Although these two sets of guidelines for translation are not strictly identical, they complement each other, thus allowing us to blend the two. Two translators each submitted a version before agreeing on a joint first French version, backtranslated into English for comparison with the initial scale. The combined use of both methodologies minimizes biases in the translation process.

The use of an expert panel (3 rhinoplasticians) to test the scale is essential and makes it possible to overcome errors due to the non-consensual nature of translation. Finally, it was decided to keep certain English terms such as "pinched nose", "double break" or "supratip" in the final French text as these terms are commonly used in English by French professionals, much more than their French translation.

## **5. CONCLUSION**

The MiRa scale is the only validated esthetic analysis scale for nasal dysmorphoses in the literature. Using two sets of international translation recommendations, we were able to obtain a French version of this scale identical to the original English version. This version is usable by French-speaking surgeons.

We have no conflicts of interest.



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**All authors have viewed and agreed to the submission**

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## **TABLES**

	ISPOR	WHO	Notre étude
1	Preparation: Before the translation process begins permission is obtained, developers are invited to participate, explanations are found for concepts in the instrument, and key persons are recruited.		The translators and the expert panel were recruited.
2	Forward translation: Development of at least two independent forward translations and provision of explanation of concepts in the instrument to the key in-country persons and forward translators.	Forward Translation: By a translator, preferably a health professional, familiar with the terminology. The translator must be fluent in English but have a French mother tongue. Translation must be more conceptual than literal.	We obtained two French translations: the first by a surgeon, the second by a professional translator. French was the mother tongue of both translators.

3	Reconciliation: Reconciliation of the forward translations into a single forward translation.		These two versions were merged into <i>French version 1</i> .
4	Back translation: Back translation of the reconciled translation into the source language.	Back translation into English: The scale is retranslated into English with the help of a professional translator (mother tongue: English). Differences are discussed with the developer of the questionnaire until full satisfaction is achieved.	A native English-speaking professional translator fluent in French retranslated the questionnaire into English.
5	Back translation review: Review of the back translations against the source document.		Comparison with the original MiRa version of the previously-obtained English version.  Discussion with the development

			team regarding differences. The process was repeated until satisfaction was obtained, leading to French version 2
6	Harmonization: Harmonization of all new translations with each other and the source document.	An expert panel must identify and resolve inappropriate expressions and concepts. This panel of experts is bilingual, including translators, health professionals and experts used to working with questionnaires.	The expert panel met the translators (specialists in rhinoplasty) to validate <i>French version 3</i> before testing it on photographic records.
7	Cognitive debriefing: Cognitive debriefing of the new translation, usually with patients drawn from the target population.	Pre-test and cognitive interviews: Pre-test candidates must correspond to the target patients. A minimum of 10 patients is recommended. Each patient must be questioned individually regarding his/her understanding of the items.	Test on 40 photographic records of patients leading to <i>French version 4</i> .



8	Proofreading: The finalized translation is proofread.	Final version: The final version of the instrument (in the target language) must be the result of all previous translations.	Finalization and proof-reading leading to the definitive French version.
9	Final report: Report is written on the development of the translation.	Documentation: All steps must be traceable with appropriate documents, including the different translations and a description of the changes made following the panel meeting.	Final report on the translation process. The final report summarizes all the translation steps.

Table 1. ISPOR, WHO recommendations and translation process used in our study.

VUE FRONTALE				VUE BASALE				VUE LATÉRALE						
		Points	Pré	Post			Points	Pré	Post			Points	Pré	Post
<b>Dorsum nasal</b>					<b>Lobule</b>					<b>Angle nasofrontal (choisir 1 réponse)</b>				
Déviation frontale	Nez osseux	2			Excès de hauteur		1			Creusé		2		
	Nez cartilagineux	2			Asymétrie des dômes		1			Comblé		2		
Déviation en "C"	Nez osseux	2			<b>Narines</b>					<b>Dorsum nasal (choisir 2 items maximum)</b>				
	Nez cartilagineux	2			Orientation (choisir 1 réponse)	Verticale	1			Cyphose	Nez osseux	2		
				Horizontale										
Excès de largeur du dorsum nasal	Nez osseux	1			Asymétriques		1			Ensellure	Nez cartilagineux	2		
	Nez cartilagineux	1			Rebord épais		1				Nez osseux	2		
<b>Base nasale</b>					<b>Columelle</b>						Nez cartilagineux	2		
Excès de largeur des narines		1			Déviée		1			<b>Projection de la pointe (choisir 1 réponse)</b>				
<b>Murs latéraux nasaux</b>					Bifide		1			Hyperprojetée		2		

Excès de largeur aux angles nasaux faciaux	Tiers supérieur (ANF)	1			Cicatrice visible	1			Hypoprojetée	2		
	Tiers moyen	1							Absence de supratip	1		
Présence d'un V inversé		1						<b>Columelle (choisir <u>1</u> réponse)</b>				
<b>Pointe</b>								Pendante	1			
Hypertrophie alaire		2						Rétractée	1			
Autre anomalie de la pointe (bifidité, pinched nose...)		2						<b>Contour caudal du nez</b>				
								Absence de double break		1		
								Angle nasolabial (choisir <u>une</u> réponse)	Fermé	2		
									Ouvert	2		
								Rétraction narinaire	1			

Table 2. French version of the MiRa scale. In the “points” column, the maximum score that can be subtracted per item (1 or 2 points): 1 point for a slight deformation, 2 points for severe deformation (ANF = Angle nasofrontal).