

# The smile and emotional expression: practical application of a lip and perioral assessment scale

## Abstract

**Background:** Lip enhancement continues to be one of the most frequently requested minimally invasive cosmetic treatments. Balancing anatomical considerations and objective measurements with individuals' differences in aesthetics preferences can present unique challenges.

**Objectives:** Identify key characteristics that contribute to lip and perioral aesthetics and providing practical insights into the real-world use of the recently published Lip and Perioral Assessment Scale.

**Methods:** This work comprised four stages. The establishment of an International multidisciplinary collaborative group of eight experts to discuss current clinical practices with respect to lip and perioral enhancement. A practitioner survey to assess the experiences, perceptions, and opinions of a wider group of clinicians (N=40). A hybrid focus group, chaired by two of the experts, to establish considerations best practice approaches to patient assessment in the Asia-Pacific Region. Practical application of a Lip and Perioral Assessment Scale.

**Results:** Consensus opinion from experienced injectors in the Asia Pacific Region supports the need to consider a wide variety of factors contributing to smile anatomy and aesthetics. Best practices approaches encompass (1) accounting for underlying structures, soft tissues and the impact of aging on smile anatomy, (2) understanding the relative contributions of the teeth and gingiva, lip proportions and skin quality to smile aesthetics and (3) the value of a systematic approach to patient assessment.

**Conclusions:** Clear communication between patients and injectors is vital to establish achievable goals and realistic expectations. Systematic assessment that accounts for a wider array of variables than lip volume may facilitate a more individually tailored approach.

**Keywords:** hyaluronic acid, lip augmentation, perioral aging, perioral assessment, real world experience

Volume 7 Issue 1 - 2023

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**Received:** February 04, 2023 | **Published:** February 14, 2023

## Introduction

The appearance of the lips is a major contribution to aesthetic appearance. Lip shape, contour and projection are perceived as signifying youthfulness and health and are linked to positive self-perception and self-esteem.<sup>1-3</sup> However, the importance of a smile goes beyond its physical characteristics. In social interactions the smile is the most commonly used facial expression,<sup>4</sup> where it is used to convey emotions such as the expression of joy or happiness.<sup>5</sup>

Facial attractiveness is rapidly assessed, often subconsciously and with minimal amounts of visual information.<sup>6,7</sup> The importance placed on perceived facial attractiveness is heightened in our modern society, which relies increasingly on on-line communication and posted photographic material. Youthful smiles portrayed in the media may be a motivating factor behind patients seeking treatment.<sup>8</sup> This undeniable significance of the lips in facial aesthetic perception underscores the increasing popularity of lip augmentation procedures in cosmetic practice.<sup>9</sup> Reports show a 43% increase in requests for female lip augmentation procedures between 2000 and 2016,<sup>10</sup> such that currently they are ranked the third most popular treatment and making up 10.6% of all filler treatments.<sup>11</sup> Whilst the use of hyaluronic acid fillers achieves quick results with minimal downtime, it can be challenging.<sup>12</sup> Whether the patient is motivated primarily by rejuvenation or beautification,<sup>13</sup> the goal of lip augmentation is to provide aesthetic improvement with natural results.<sup>14</sup> When considering a treatment plan, it is important therefore to be cognisant

of the different aspects of the smile that contribute to attractiveness, while accounting for dynamic movement, aging and emotional expressions.

An assessment tool specifically for this purpose has recently been developed. The intent of the Lip and Perioral Assessment Scale is to simplify cosmetic treatments and help injectors identify what needs to be addressed in each individual patient.<sup>15</sup> This paper builds on that work, reviewing the key principles that support this tool, discussing insights from its practical application and providing consensus as to its utility in clinical practice.

## Material and methods

The focus of this work was on identifying key characteristics that contribute to lip and perioral aesthetics and providing practical insights into the real-world use of the recently published Lip and Perioral Assessment Scale.<sup>15</sup> It was conducted in multiple stages and included multidisciplinary collaboration, a practitioner survey and focus group and real-world experience.

Initially, a *Scientific Exchange Working Group*, comprising eight clinicians specialising in Dermatology, Cosmetic Medicine, Plastic Surgery and Maxillofacial Surgery, convened to discuss their current clinical practices with respect to lip and perioral enhancement. The outputs from this multi-disciplinary discussion were then used to develop a practitioner survey to assess the experience, perceptions, and opinions of a wider group of clinicians. The survey enabled

practitioners to rank the importance of key characteristics that contribute to smile aesthetics and perioral aging using an 11-point visual analogue scale (0 = no contribution, 10 = most contribution). Invited practitioners completed the survey in February 2022.

In March 2022 a hybrid (in-person/on-line) focus group meeting was held during which the authors discussed best practice approaches to patient assessment and developed relevant recommendation statements. During the final stage of this work, practitioners applied the Lip and Perioral Assessment Scale<sup>15</sup> in their own practices, and provided insights into its use in a real-world setting. Selected case studies are used to highlight this experience.

## Results

### Practitioner Survey Responses

The response rate to the practitioner survey was 98% (39/40 surveys returned). Respondents were from 18 countries (predominantly Australia 46%; Table 1). The majority were Cosmetic Physicians (61%), 21% were Dermatologists and 18% were Surgeons; almost all respondents (95%) had been practicing aesthetic medicine for more than 10 years. Serial photography was the most frequently used means of patient assessments (82% of respondents).

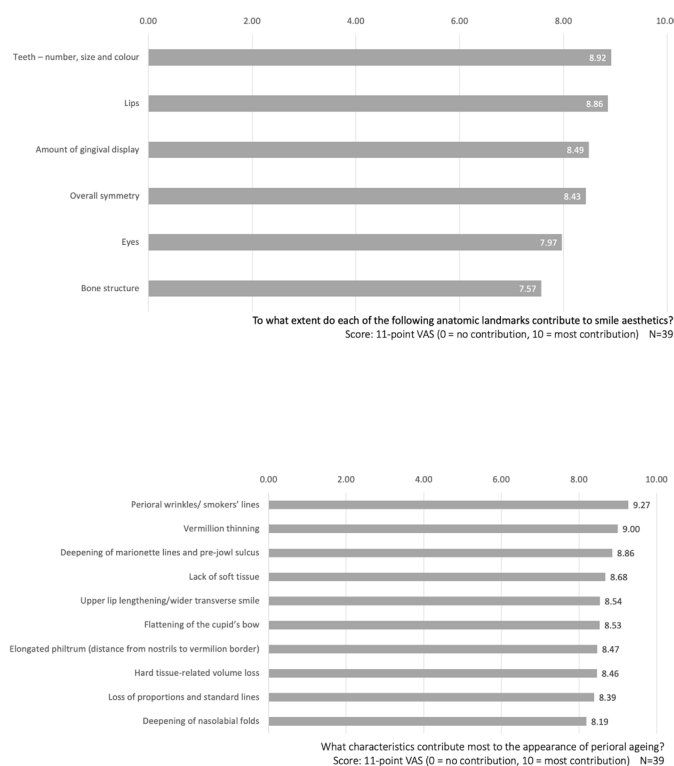
When considering key anatomical landmarks of smile aesthetics all items were deemed important with a small difference in the order of importance (Figure 1A), with teeth (size, number, and colour), lips, the amount of gingival display and overall symmetry placed slightly

**Table 1** Practitioner Profile: Demographics

Country of residence	N (%)
Mexico	1 (2.5%)
Brazil	1 (2.5%)
Portugal	1 (2.5%)
Indonesia	1 (2.5%)
Philippines	1 (2.5%)
New Zealand	2 (5.0%)
Hong Kong	2 (5.0%)
Korea	2 (5.0%)
China	2 (5.0%)
Singapore	3 (7.7%)
Thailand	3 (7.7%)
Taiwan	3 (7.7%)
Australia	18 (46.0%)

\*39/40 surveys returned. Not all surveys were fully completed, no imputation for missing data.

higher than the involvement of the eyes and the underlying bone structure. Important contributors of perioral aging were multifactorial, with wrinkles/smokers' lines and vermilion thinning regarded as the most important (Figure 1B).



**Figure 1** Practitioner assessment of the most important contributors to (A) smile aesthetics and (B) perioral aging.

*Best practice approaches to patient assessment and management*

The focus group considered multiple aspects of the smile and agreed on best practices approaches in three areas – key characteristics

of smile anatomy (Table 2) and smile aesthetics (Table 3), and the value of systematic assessment and treatment planning (Table 4). The text discusses the rationale behind these concepts.

**Table 2** Key characteristics of smile anatomy

When considering the anatomy of the smile, it is important to account for underlying structures, soft tissues and the impact of aging:
<ul style="list-style-type: none"> <li>• <b>Structural tissues:</b> <ul style="list-style-type: none"> <li>◦ Bone structure</li> <li>◦ Underlying dental issues (malocclusion, chin projection)</li> </ul> </li> <li>• <b>Soft tissues:</b> <ul style="list-style-type: none"> <li>◦ Muscles used in a full smile</li> <li>◦ Lip topography</li> <li>◦ The position of the vascular supply</li> <li>◦ Ethnicity and cultural variability (shape, size and symmetry)</li> </ul> </li> <li>• <b>Age-related structural and soft tissue changes:</b> <ul style="list-style-type: none"> <li>◦ Bone resorption: Loss of the maxillary and mandibular bony support</li> <li>◦ Lipoatrophy: loss of adipose tissue and formation of jowls</li> <li>◦ Loss of upper lip projection</li> <li>◦ Labial entropion (philtrum depth/elongation)</li> <li>◦ Altered proportions (white upper lip, vermillion, red upper lip)</li> <li>◦ Loss of definition in vermillion border</li> <li>◦ Changes to neutral lip line (downward turn)</li> <li>◦ External factors: smoking, sun exposure</li> </ul> </li> </ul>

**Table 3** Key characteristics of smile aesthetics

When considering overall smile aesthetics, the following three key characteristics should be accounted for:
<ul style="list-style-type: none"> <li>• <b>Teeth and gingival display:</b> <ul style="list-style-type: none"> <li>◦ Hyperactivity of the lip elevators</li> <li>◦ Gingival hyperplasia</li> <li>◦ Vertical skeletal excess</li> <li>◦ Size and position of teeth</li> </ul> </li> <li>• <b>Proportions:</b> <ul style="list-style-type: none"> <li>◦ Balance/ratio of lips to lower facial third and upper and lower lip</li> <li>◦ Anterior projection; vertical line, Ricketts line</li> <li>◦ Shape, contour, fullness and symmetry</li> </ul> </li> <li>• <b>Perioral aging and the quality of surrounding skin:</b> <ul style="list-style-type: none"> <li>◦ Wrinkles and smoker's lines</li> <li>◦ Laxity and deepening of marionette lines</li> </ul> </li> </ul>

**Table 4** Key considerations for systematic assessment and treatment planning

When assessing and planning treatment of the perioral area, the following should be considered:
<ul style="list-style-type: none"> <li>• First emotional expression</li> <li>• Use of a comprehensive assessment checklist:             <ul style="list-style-type: none"> <li>◦ Shape (projection, volume, contour)</li> <li>◦ Proportions (Lips-lower face, upper/lower lips)</li> <li>◦ Symmetry</li> <li>◦ Skin quality</li> <li>◦ Dynamic evaluation</li> </ul> </li> <li>• Suitability of product choice</li> <li>• Injection technique</li> </ul>

*Anatomy of the smile*

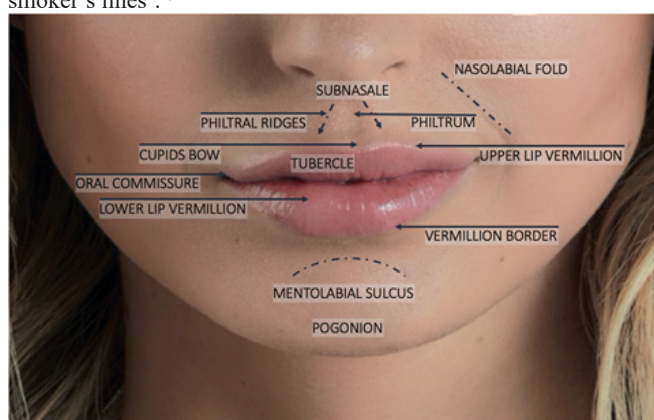
When considering the anatomy of the smile (Table 2) it is important to account not only for what we see on the surface, but also for the underlying structural and soft tissues. The maxillary and mandibular anatomy forms the framework of the mouth and determines how well the teeth fit together. The relative size and position of the jaws and teeth affect the smile.<sup>16</sup> Dental issues, such as the presence of malocclusion, impact the patient's soft tissue profile including the

position of the lips and their smile.<sup>17-19</sup> Research has also established a strong correlation between dentoskeletal patterns and different nose-lip-chin profiles.<sup>20</sup>

Facial expressions are produced by the synergistic or co-operative action of many different facial muscles. Duchenne, or natural/spontaneous, smiles involve simultaneous contraction of two muscles, the *zygomaticus major* pulls the corners of the mouth up and towards the ear and the *orbicularis oculi* raises the top of the cheek and

wrinkles the outer corner of the eye, and are an involuntary facial expression in response to an emotional stimulus.<sup>21</sup> By contrast, posed smiles can be generated on demand and for this reason are often used when evaluating smile aesthetics.<sup>22</sup>

When considering lip and perioral augmentation, the anatomy of the lips needs also to be properly understood and as does the function of the *orbicularis oris* muscle. Anatomically the boundaries of the lips extend horizontally from commissure to commissure and vertically from the subnasale to the pogonion (Figure 2).<sup>23</sup> The *orbicularis oris* is a complex, multi-layered muscle, it serves as an attachment site for many other facial muscles and is attached to the dermis of the upper and lower lip through the superficial musculoaponeurotic system.<sup>24</sup> A key feature of this region is that there are no bony or tendinous origins. *Orbicularis oris* comprises two distinct parts, the *pars marginalis* is closely associated with speech while the *pars peripheralis*, located in the cutaneous lip, has a dilatory function and its contraction is involved in the development of vertical fine perioral wrinkles or ‘smoker’s lines’.<sup>25</sup>



**Figure 2** Anatomic landmarks of the lips and perioral region.

Retraction of the skin in the perioral area reveals a very rich vascular network with very strong septal branches and very strong lateral labial branches. These vessels connect superiorly to the region of the nose. It is important to understand differences in the distribution patterns of the superior and inferior labial arteries. A cadaver study has demonstrated that whilst the artery is almost always submucosal (78.1% of cases), it can also be intramuscular (17.5%) or subcutaneous (2.1%); it may also switch between planes.<sup>26</sup> More recently, ultrasound imaging of healthy volunteers demonstrated the submucosal plane (58.5%) to be the most frequent location of both the superior and inferior labial arteries, followed by intramuscular (36.2%) and subcutaneous (5.3%) planes.<sup>27</sup> These results highlight that there is no way on knowing which pattern a patient will have, meticulous technique is therefore required to prevent sequelae such as bruising caused by hitting a vessel.

Whilst the ideal vertical height ratio of upper to lower lip in Caucasians is well-documented 1:1.6, ethnic differences need to be accounted for. Not only do lip measurements differ between Asians, Hispanics, and Caucasians, ethnic background also influences preferences regarding lip size.<sup>28</sup> Further research supports that multiple factors – age, country of residence, gender, annual income and ethnic background – can all impact on aesthetic perceptions of lip attractiveness and ideal proportions.<sup>29</sup>

The aging process affects the smile, and it is important to understand this process in order to correct it. Age-related bone loss results in retraction of the maxilla and a thinning of the mandibulae,

which causes the midface to begin to collapse in on itself, creating a change in projection and elongating the upper lip.<sup>30</sup> Loss of teeth causes alveolar ridge resorption and cortical bone loss, with a subsequent reduction in anterior lip projection and downward turn to the commissures. The Cupid's bow, philtral columns and philtrum progressively flatten and splay, and the lips widen, giving the appearance of thinner, longer lips.<sup>31</sup> Epidermal thinning, collagen loss with resultant laxity and reduced elasticity, and repeated perioral muscle activity lead to the appearance of marionette lines and perioral rhytids. Multiple factors are involved in the development of vertical smoker's lines, including genetics, intrinsic aging, sun exposure, smoking and repetitive pursing of the lips.<sup>32</sup> The proportions of the lip become altered, the white roll declines and dynamic movements change such that the upper teeth become less visible during smiling.<sup>33,34</sup> Cadaver studies have demonstrated lipodystrophy and ptosis in the perioral fat compartments,<sup>35</sup> adding to the development of folds and rhytids.<sup>36</sup> Ethnicity and gender can also impact lip and perioral aging.<sup>32</sup>

### Smile aesthetics

Considerations for smile aesthetics can be generally divided into three areas – teeth and gingiva, lip proportions and skin quality (Table 3). In our pre-meeting practitioner survey, the size, number and colour of teeth were identified as the most important contributors to overall smile aesthetics. This is underpinned by research that has identified dentogingival characteristics to be key in determining smile aesthetics while the lips have a secondary role in determining facial beauty.<sup>37</sup> Higher smile lines that fully display the teeth are associated with youth.<sup>38</sup> Aesthetically pleasing smiles have therefore been defined as those that reveal symmetry between anterior and posterior teeth, teeth with correct form, position, colour, and shade and display at least the second premolars, with only a small amount (<3mm) of upper gingiva, and an absence of gingival recession.<sup>39</sup> Exposure of 1-2mm of gingiva when smiling is considered normal and can be cosmetically appealing,<sup>40</sup> but excessive gingival display as is the case in a gummy smile negatively affects smile aesthetics.<sup>41</sup>

Anthropometric data show that wider, fuller lips in relation to facial width contribute to attractiveness.<sup>42</sup> However, lip projection and the relative sizes of the upper and lower lip are equally as important. One of the greatest challenges injectors face when undertaking lip augmentation is the ability to achieve natural results. This challenge is heightened by the need to account for two opposing influences – objective measurements that define the “ideal” lip and ethnic, cultural and geographic differences in the perception of beauty. The long-established concepts of horizontal thirds and the Golden Ratio (phi,  $F, 1.618$ ) are frequently used to help quantify beauty.<sup>32,43</sup> The ratio of the height of the upper and lower vermillion in young Caucasian lips conforms to this ideal (1:1.6).<sup>32</sup> But this is not always the case, population studies suggest considerable divergence from the Caucasian norms depending on ethnic background.<sup>44</sup> Black American populations generally have a 1:1 ratio with more lateral volume, and there is wide variation amongst Asian populations (with ratios ranging from 1:1.08 to 1:1.25) who also tend to have a slightly thicker lower lip and more volume compared with Caucasians.<sup>28</sup> Lip size preferences are significantly influenced by cultural background, for example a preference for larger lips amongst women living in Latin America, followed by those living in North America, Europe and then a preference for smaller lips amongst those living in Asia, but are not impacted by gender, age or income.<sup>29</sup> In practice, the application of objective measurements should also account for ethnic differences and social preferences.<sup>45</sup>

In younger patients perioral skin quality is rarely an issue, however as patients age atrophy of the perioral soft tissues causes wrinkles

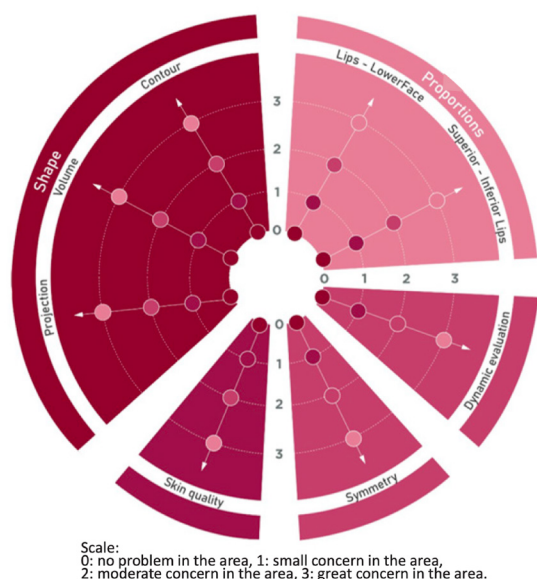


and, eventually, a downward turn to the neutral lip line. Older patients may therefore present for lip augmentation while requiring concurrent correction of established perioral rhytids and melomental folds evident even at rest that may not be amenable to correction with neurotoxins.<sup>34</sup> Recent data supports the use of a hyaluronic acid gel filler produced with XPRESHAAn/Optimal Balance technology (Restylane Kysse; Galderma, Sweden) in the management of upper perioral rhytids, with durability of response evident out to 48 weeks.<sup>46</sup> Other issues relating to lip skin quality, such as dryness and flaking, can occur at any age and may be more related to physical (high transepidermal water loss) and environmental (cold, wind) factors than aging.<sup>47</sup>

#### Assessment and treatment planning

Systematic assessment and treatment planning (Table 4) encompasses patient perceptions, formal evaluation and application of knowledge of products and injection techniques. Anatomical facial features, such as downturned corners of the mouth, flat elongated lips and prominent marionette lines, can make a person look sad, discontent or grumpy even when they are not, creating a negative first emotional expression.

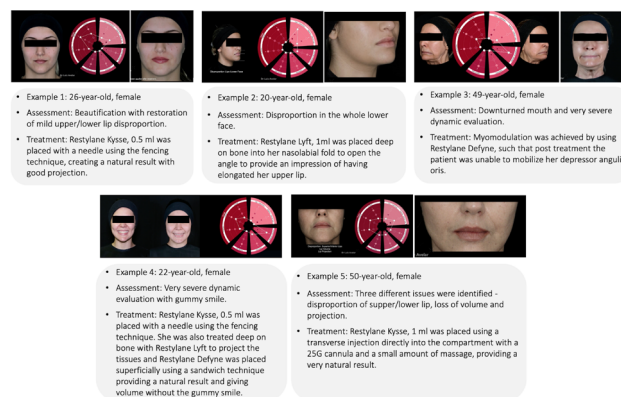
The Lip and Perioral Assessment Scale recognizes that assessment and treatment planning of patients presenting for lip enhancement should ideally take the whole perioral region into account.<sup>15</sup> The scale takes a systematic approach to assessment, ensuring that lip shape (projection, volume and contour), facial proportions (ratio of lips to lower face and upper to lower lips), symmetry, skin quality and changes observed with dynamic movement are all accounted for. The Lip and Perioral Assessment Scale (Figure 3) is presented in a circular format, enabling eight different aspects of the smile to be graded on a scale of 0-3 (where 0 is closest to the center and denotes no concerns, and 3 is closest to the periphery and denotes significant concern), to determine their severity. The grading for each of these areas can then be connected using a line, providing a visual presentation of the areas of most concern.



**Figure 3** Lip and Perioral Assessment Scale, Reproduced from: Avelar et al, 2021.<sup>15</sup>

The goal of perioral augmentation is to enhance shape while ensuring a natural appearance both at rest and during movement. This can be a challenge.<sup>3,48</sup> Simplifying the overall assessment into these functional areas is intended to help guide injectors to prioritize where

treatment is most needed to optimize the results while also identifying those areas that should be maintained. Importantly, because product selection and technique are dependent upon the end goal of the treatment, the Lip and Perioral Assessment Scale can help to inform overall treatment planning (Figure 4).



**Figure 4** Product choice: Practical application of Lip and Perioral Assessment Scale.

#### Practical considerations: real world use of the lip and perioral assessment scale

The original development of the Lip and Perioral Assessment Scale<sup>15</sup> was pilot tested on patients in a large teaching hospital in Brazil, each with different needs and resultant treatment plans (examples in Figure 4). We build on these results with four additional case studies, conducted in private aesthetics clinics, showing the utility of the scale outside of the setting in which it was developed.

**Case 1:** For this 63-year-old female (Figure 5), the Lip and Perioral Assessment Scale shows mostly issues with global skin laxity, despite having good skin quality for her age, and asymmetry of the upper and lower lip, which was scored a 3 (most severe). The patient was treated using 1ml of hyaluronic acid, with the focus on perioral support, volume correction and lift without creating over projection. This practitioner rated the ease of use of the scale and their satisfaction with the overall results as being 8/10 and commented that the assessment scale was generally easy to employ for training purposes and to systematically illustrate to the patient the areas of concern and the rationale for the treatment plan.



**Figure 5** Case 1; Practitioner assessment and treatment outcome.

**Case 2:** For this 56-year-old patient (Figure 6), the Lip and Perioral Assessment Scale shows mostly issues with overall shape (projection and volume) and disproportion of the upper and lower lip. A total of 0.8ml hyaluronic acid (Restylane Kysse; Galderma, Sweden) was injected into the lips, starting with the top using vertical tenting

technique. To retain a natural look, without over volumization or creating a ridge, needle entry was just inferior to the vermilion border. A fanning approach was used to apply lateral horizontal threads to the lateral aspect on each side of the top lip. The patient also received treatment to the lower perioral region using the “Happy Face” technique,<sup>49</sup> incorporating excision of the labiomandibular ligament and using a fanning approach to inject 0.5ml Restylane Defyne (Galderma, Sweden) to each side using a cannula. This practitioner rated the ease of use of the scale as 4/10 and their satisfaction with the overall results as 9/10. This practitioner commented that whilst the assessment scale was not difficult to use, there was some potential for practitioner bias and inconsistency with regards to reproducibility. However, given that the objective of the assessment tool is to guide patient-physician communication rather than a validated assessment of treatment outcomes,<sup>15,50</sup> the effect of any such bias is unlikely to be of clinical significance. Wider assessment of other areas is important when assessing the lower third, but the scale may be overly complex as a practical tool for the novice injector.



**Figure 6** Case 2; Practitioner assessment and treatment outcome.

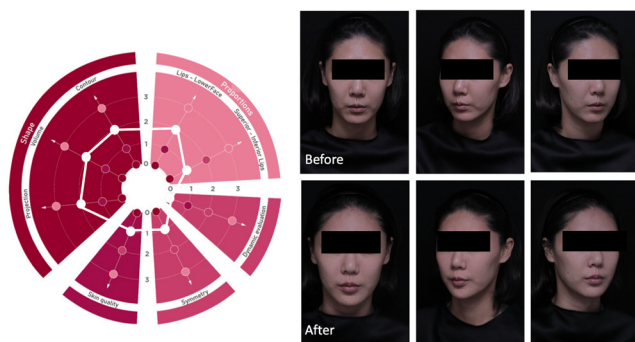
**Case 3:** For this 60-year-old female (Figure 7), the Lip and Perioral Assessment Scale showed this patient to have a thinner upper lip with reduced eversion and vermilion border definition. Her lower lip was relatively adequate in volume but was dry with wrinkles and she had very severe dynamic perioral wrinkles. Measurements showed that the ratio of her upper vermilion to the cutaneous lip to be 1:3.4 (versus an ideal of 1.1.2~1:2.3)<sup>51</sup> and disproportionate horizontal thirds, with the ratio of the upper vermilion and cutaneous lip to the lower vermilion and chin being 1:1.67 (versus an ideal of 1:2).<sup>52</sup> Treatment comprised 0.2ml Restylane Kysse (Galderma, Sweden) in the upper lip vermilion and vermilion border, 0.2ml Restylane Kysse (Galderma, Sweden) in the lower lip vermilion and mouth corners; 1.0ml Restylane Lyft (Galderma, Sweden) in the chin, Restylane Defyne (Galderma, Sweden) in the labio-mental sulcus and marionette lines (0.5 ml on the right side and 0.6 ml on the left) and 0.1ml Restylane Refyne (Galderma, Sweden) to the accordion lines and static perioral wrinkles. This practitioner rated the ease of use of the scale as 9/10 and their satisfaction with the overall results as 9/10. The practitioner noted conservative treatment of lip volume, in concert with cultural preferences in mature Asian patients. Treatment of the upper vermilion reduced the ergotrid ratio, improved border definition and eversion, while treatment of the chin improved the ratio of the horizontal thirds. Dynamic and static wrinkles were improved through increased support in the labio-mental sulcus and marionette lines while use of filler along the upper vermilion border reduced the appearance of dynamic vertical lines.

**Case 4:** For this 43-year-old female (Figure 8), the Lip and Perioral Assessment Scale shows relatively small lips in an oblong face that are both thin and narrow. The ratio of the upper vermilion and cutaneous lip to the lower vermilion and chin was 1:1.56 (versus an ideal of 1:2). Perioral skin quality was good, with mild lip dryness and there was mild asymmetry between the right and left. Treatment

comprised 0.5ml Restylane Kysse (Galderma, Sweden) in the upper and lower lip; 1.0ml Restylane Lyft (Galderma, Sweden) in the chin and Restylane Defyne (Galderma, Sweden) in the labio-mental sulcus and marionette lines (0.45 ml on the right side and 0.7 ml on the left). This practitioner rated both the ease of use of the scale and their satisfaction with the overall results as 9/10. The practitioner noted that after treatment the patient's lips had more volume, projection, and vermilion border definition, all of which contributed to her looking younger and more feminine. The use of hyaluronic acid to elongate the chin rectified the ratio, bringing it closer to the ideal ratio of 1:2.



**Figure 7** Case 3; Practitioner assessment and treatment outcome.



**Figure 8** Case 4; Practitioner assessment and treatment outcome.

## Conclusion

The smile is a central aspect of how an individual is perceived, often creating the first emotional expression, and is a key driver of the increasing popularity of lip augmentation procedures. However, balancing anatomical considerations and objective measurements while also accounting for individuals' differences in aesthetics preferences presents unique challenges. Despite the availability of established formulaic ratios, ethnicity, culture, and age-related anatomic changes all influence aesthetic norms and impact treatment outcomes. While it may be comforting to rely on “ideal ratios”, they are not always universally applicable and should be considered in context. Consensus opinion from experienced injectors in the Asia Pacific Region supports the need to consider a wide variety of factors contributing to smile anatomy and aesthetics when assessing patients' suitability for minimally invasive lip and perioral cosmetic treatments. Ultimately clear communication between patients and injectors is vital to establish achievable goals and realistic expectations. The Lip and Perioral Assessment Scale presents a novel, systematic approach to perioral assessment.<sup>15</sup> By combining the concepts of assessing lips-to-lower facial third ratio, upper-to-lower lip ratio, and overall shape (projection, volume and contour) it may facilitate a more individually tailored treatment approach.<sup>15</sup>

## Acknowledgments

The authors thank the co-chairs of the *Scientific Exchange Working Group* for their input into the early stages of this work, including the

development and analysis of the practitioner survey. The authors would like to acknowledge the contributions of the late Dr Neville Lee to the preliminary survey and the focus group discussion. The authors thank Hazel Palmer MSc, ISMPP CMPP™ of Scriptix Pty Ltd, for providing administrative support, professional writing assistance and editorial support in the preparation of this manuscript, which, in accordance with Good Publication Practice guidelines, was funded through an educational grant provided by Galderma Australia Pty Ltd.

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## Conflicts of interest

CM has received honoraria and consultant fees for lectures and support for conference attendance from Galderma outside of the current work. VP has received honoraria and consultant fees for lectures and support for conference attendance from Galderma Australia Pty Ltd outside of the current work. FWT has received honoraria and consultant fees for lectures and support for conference attendance from Galderma outside of the current work. NF has received honoraria and consultant fees for lectures from Galderma Pty Ltd, Healthcert Pty Ltd and Facecoach and support for conference attendance from Galderma Pty Ltd outside of the current work. TT is an employee of Galderma Australia Pty Ltd. LA, EM, DCZL and CYH declare no conflicts of interest. This work was funded through an educational grant provided by Galderma Australia Pty Ltd. The sponsor reviewed the final draft before submission. The authors were responsible for all content, interpretation of the data and the decision to publish the results; they received no honoraria related to the development of this manuscript.

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