

Presentation of the interdisciplinary early treatment concept mykie® - Five case reports

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Aim

The aim was to develop an interdisciplinary, practical early treatment concept integrating myofunctional therapy (MFT) and orthodontics together. This concept should consider the relationship between form and function (Roux, 1902) as well as the duration of muscle force exertion as a central factor in jaw growth (Proffit, 1986), while simultaneously correcting myofunctional dysfunctions in those patients.

Material & Methods

In five cases (Angle Class II/1, II/2, III, anterior/lateral crossbite, open bite) that underwent the early treatment concept mykie® (Figures 1 & 2), the pre- (T₀, Figures 3a-e) and post-therapeutic (T₁, Figures 3f-j) values after 1.5 years (mean ± SD) were collected using the digital PAR index (OnyxCeph™, Image Instruments GmbH, Chemnitz).

Results

On average, a reduction of 22.17 ± 8.43 PAR points was achieved, implying an improvement of 85.33%.

Tab. 1: Pre- (T₀) and post-therapeutic (T₁) PAR values after 1.5 years.

| | PAR T ₀ | PAR T ₁ | PAR T ₀ - T ₁ | PAR red. (%) |
|---------------------|--------------------|--------------------|-------------------------------------|--------------|
| Case 1 (Class II/1) | 42 | 5 | 37 | 88 |
| Case 2 (Class II/2) | 32 | 2 | 30 | 94 |
| Case 3 (Class III) | 20 | 2 | 18 | 90 |
| Case 4 (crossbite) | 23 | 6 | 17 | 74 |
| Case 5 (open bite) | 17 | 4 | 13 | 76 |

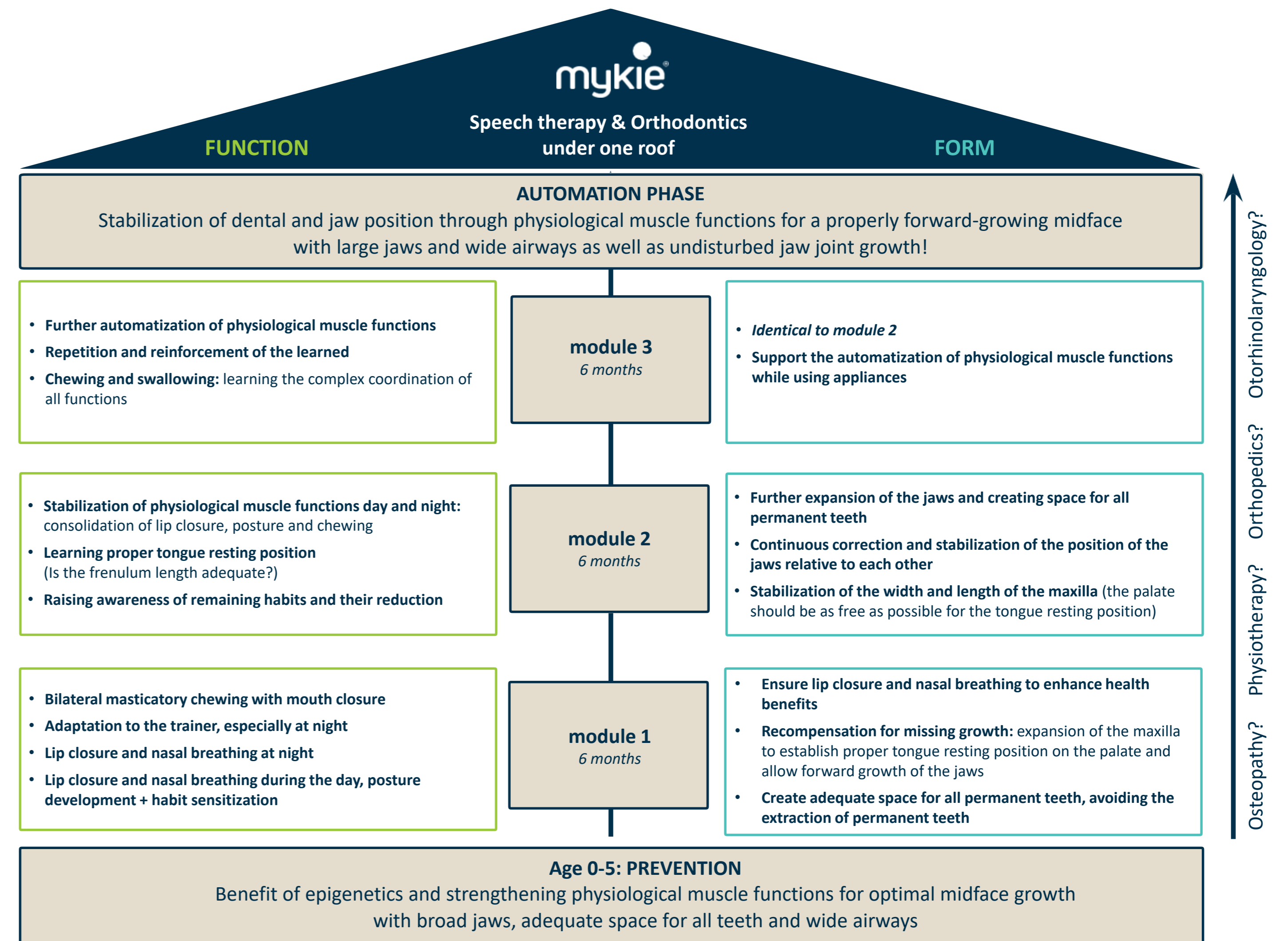


Fig. 1: Flow chart and key aspects of the combined myofunctional-orthodontic concept mykie®.

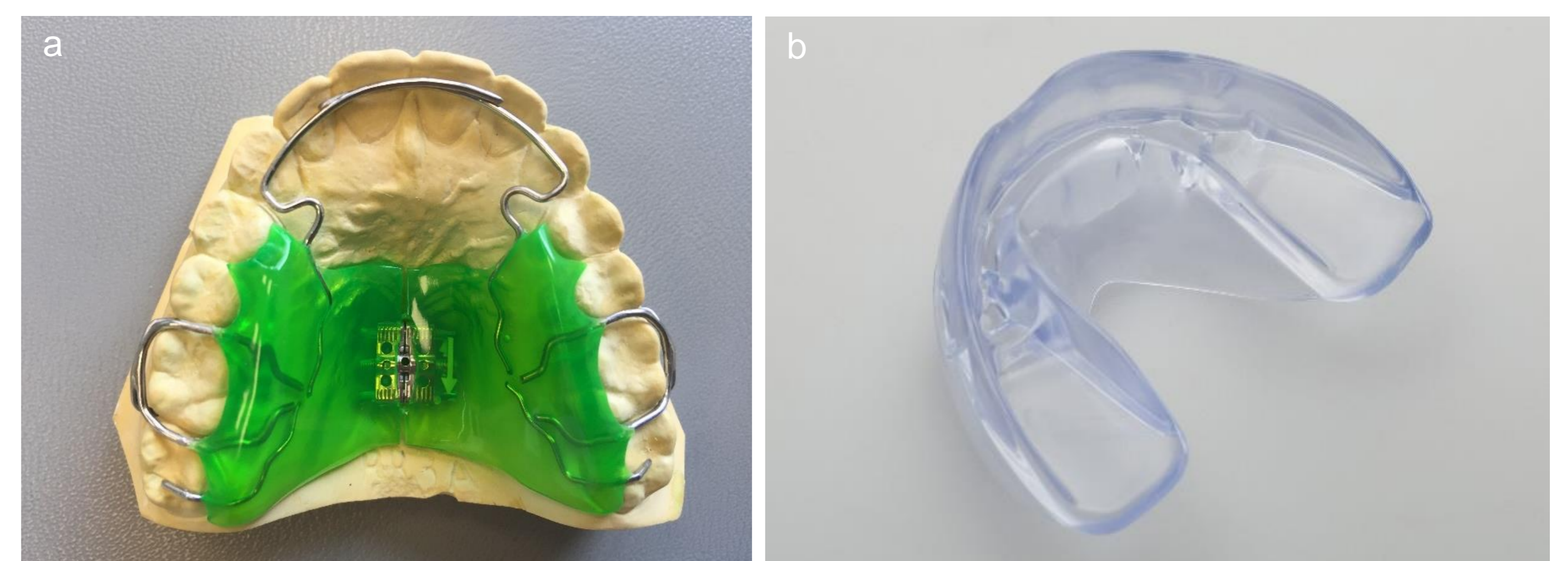


Fig. 2: Used orthodontic appliances in Case 2 (Class II/2): Bioplate (a), prefabricated trainer (b, orthoplus® EFT slim).



Fig. 3a-j: Case 2 (Class II/2) with the greatest PAR reduction. Pre- (T₀, a - e) and post-therapeutic (T₁, f - j) intraoral situation: right occlusion (a, f), frontal view (b, g), left occlusion (c, h), upper (d, i) and lower jaw (e, j).

Limitation & Conclusion

The results of using the PAR index to assess the success of early orthodontic treatment indicate that it has limited applicability in the mixed dentition. Therefore in future research, there is a need for the development of new indices specifying on the measurement in the mixed dentition. Implementing a combined orthodontic-myofunctional approach during the early developmental phase shows a promising idea for successful therapy. However, the mykie® concept for these indications present a potentially valuable model for establishing interdisciplinary collaboration between myofunctional therapy and orthodontics.

References:

Proffit, WR (1986). On the aetiology of malocclusion. Br J Orthod. 1986

Roux, W (1902). Über die Selbstregulation der Lebewesen. Archiv für Entwicklungsmechanik der Organismen, Band VIII, Heft 4, Wilhelm Engelmann, Leipzig