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Outcomes of strabismus surgery in case of congenital and acquired esotropia and exotropia

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Summery

Background: Strabismus has a crucial impact upon the development of fully functional sight, especially in terms of stereoscopic vision.

Stereoscopic vision is achieved when images from both eyes are combined into one whole three-dimensional picture. In the case of strabismus, this process is altered.

Brain blocks the worst-seeing eye from the image formation process. As a consequence, the person looks only with one eye, the situation which has potentially detrimental ramifications in the full development of both sensory and motor functions.

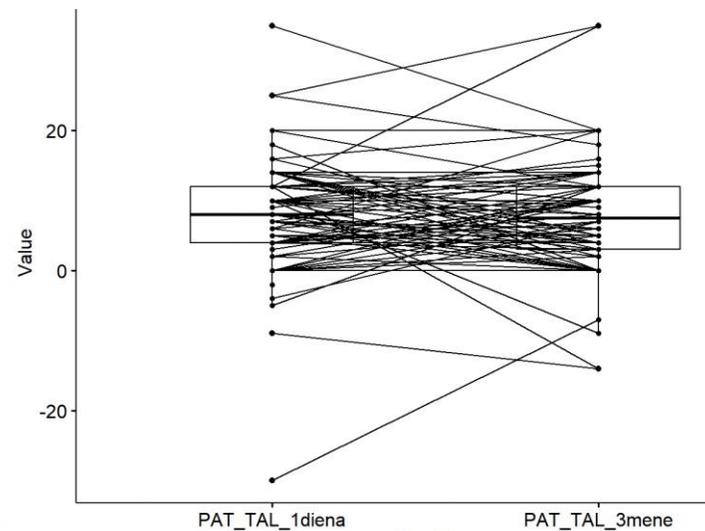
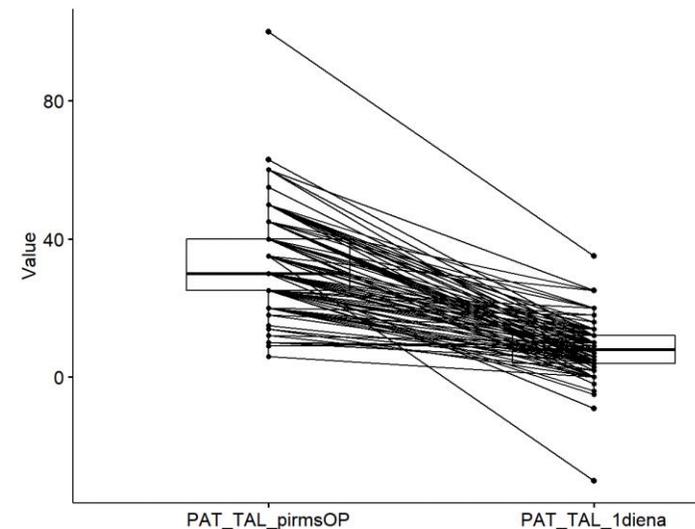
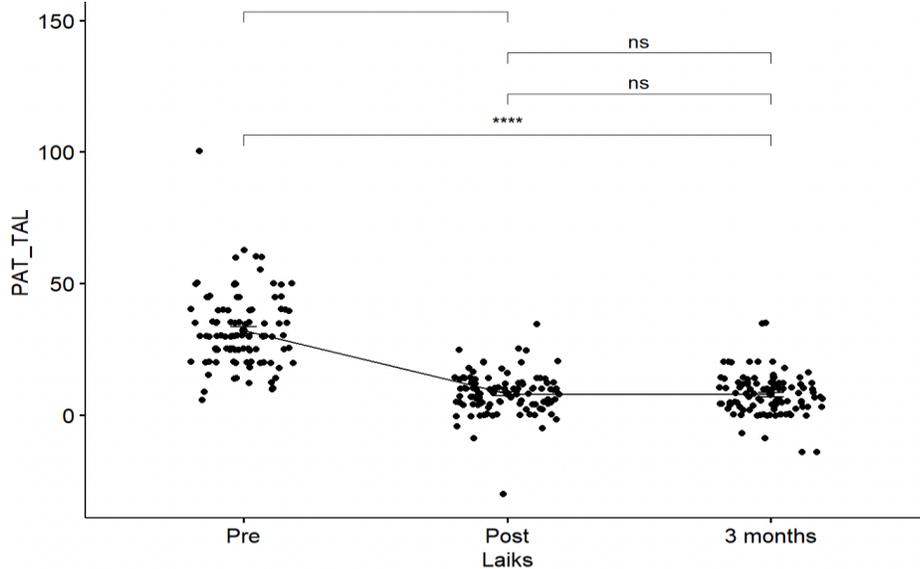
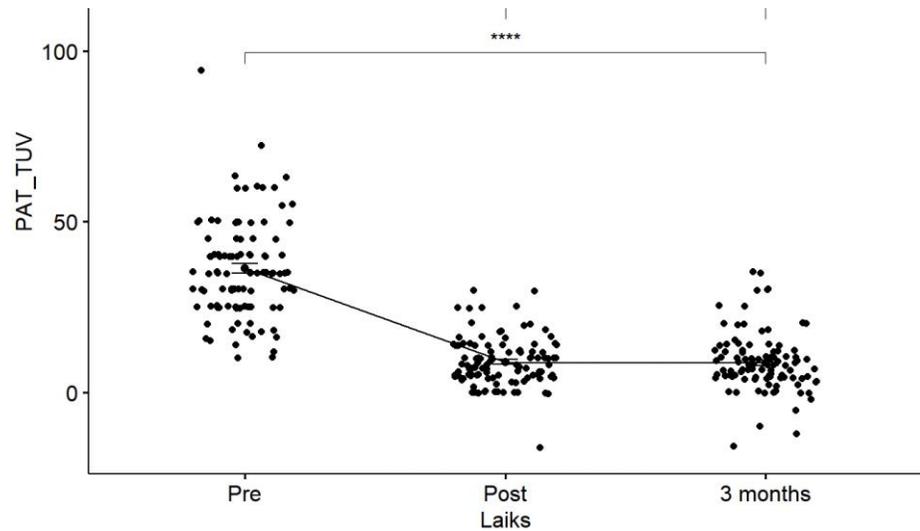
The aim of this study was to compare binocular alignment, angle of strabismus, before and after the surgery (right after the procedure and with a three-month interval). To perform a statistical analysis in order to calculate the percentage of the positive outcome.

Methods: Patients with the relevant criteria were selected. 105 subjects were divided in four groups.

Results

According to the data obtained, there is statistically significant difference ($p < 0.05$) between the first measurements before and after the surgery and between the follow-up measurements after the surgery.

Furthermore, the difference between the first post-surgical measurement and the follow-up is not statistically significant ($p > 0.05$).



Results

In all groups, monocular or alternating monocular vision was the dominant form of vision. In the first postoperative day, near binocular vision was achieved in 31% of subjects and distance in 22.9% of subjects.

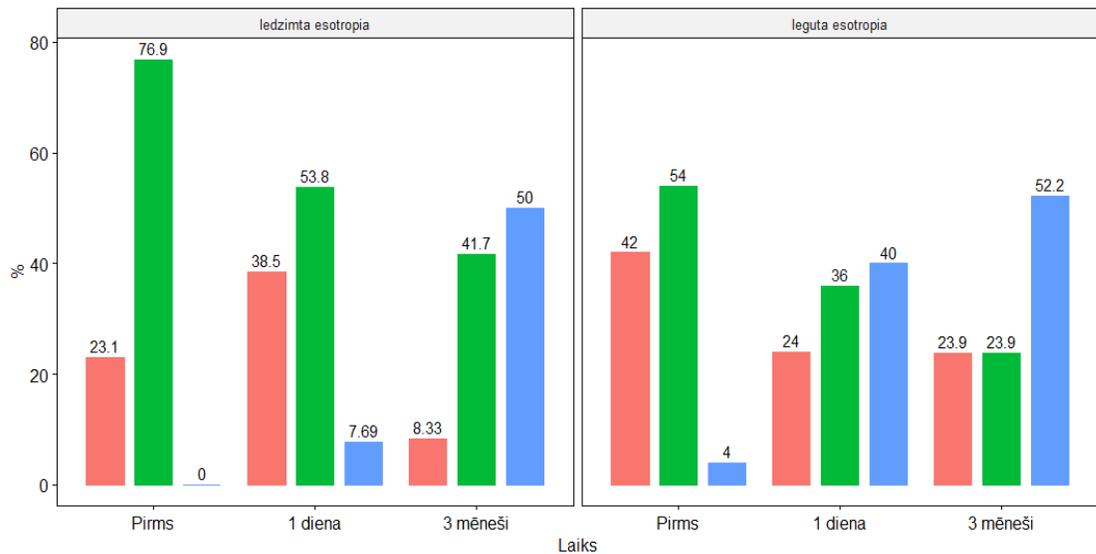
In the group:

- with congenital esotropia on a follow-up visit near binocular vision was observed in 50% and with distance binocular vision in 16.7% of patients.
- with acquired esotropia near and distant binocular vision was reported in 52% and 43.5% of patients, respectively.
- with congenital exotropia, on a follow-up visit, near and distant binocular vision was achieved in 33.3% and 50% of patients, respectively.
- with acquired exotropia, on a follow-up visit near and distant binocular vision was observed in 72% and 64% of patients, respectively.

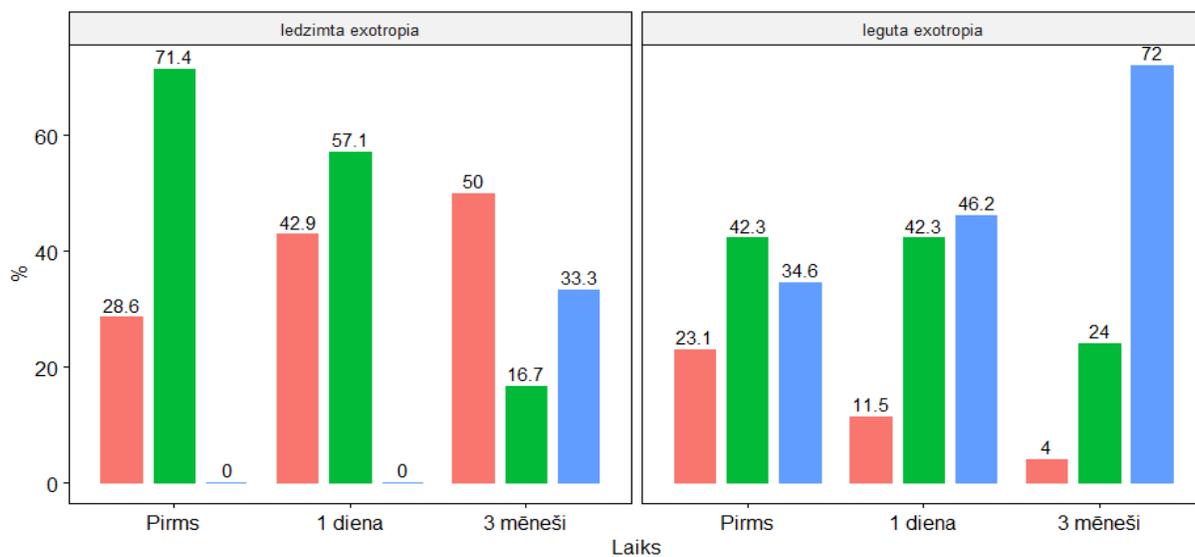
Stereoscopic vision before the surgery was observed only in patients with acquired exotropia (19.2%). On a follow-up visit, stereoscopic vision was achieved in patients with acquired esotropia (10.6%), acquired exotropia (38.5%), congenital exotropia (14.3%).

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Near vision

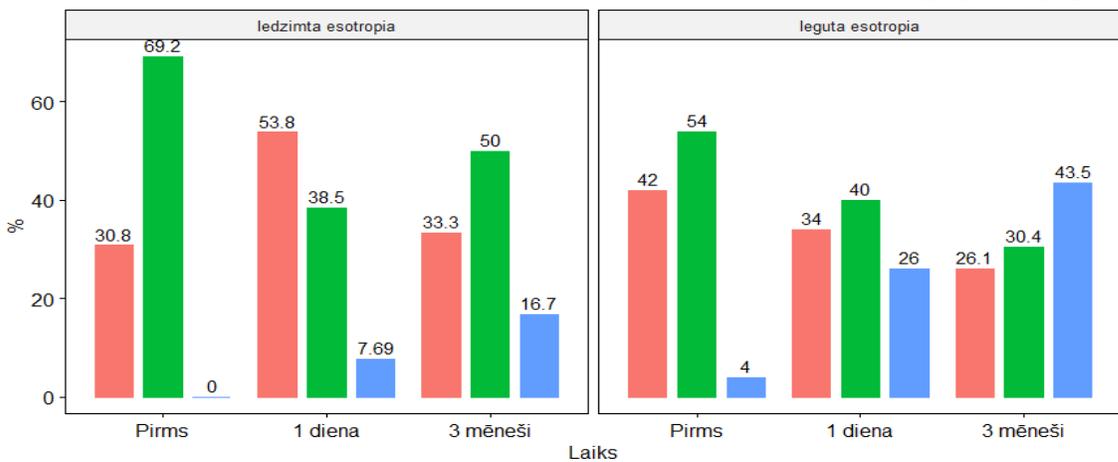


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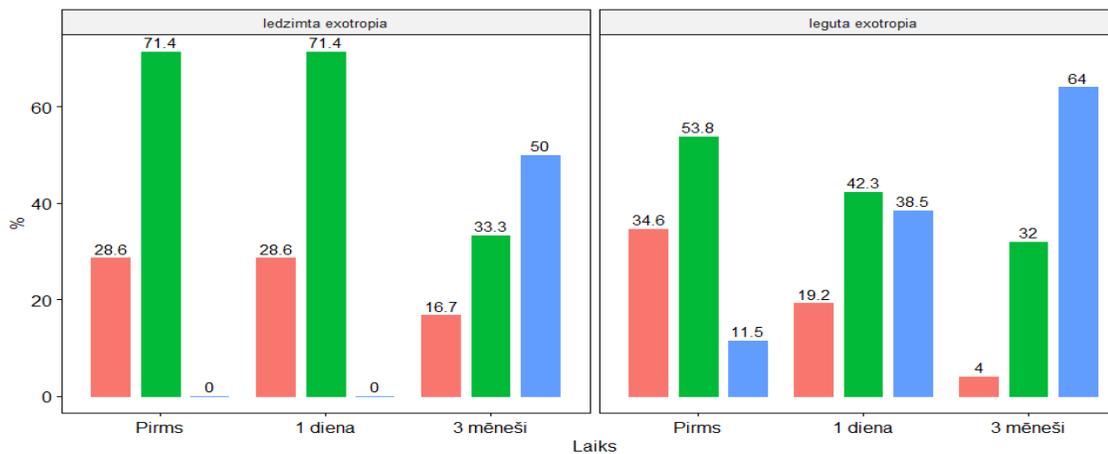


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Distance vision



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Conclusion

Firstly, it is evident that the outcome of the surgery in terms of achievement of binocular and stereoscopic vision is more beneficial for those with acquired strabismus than in subjects with congenital forms.

Secondly, the data represent that strabismus operation results in major decrease of the angle of both esotropia and exophoria.

Lastly, results showed that strabismus surgery has an overall positive outcome, improving physical appearance, thus promoting better social adaptation among the peers as well as improving the overall quality of life.



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Thank you for your attention!
