

Background

- Skeletal craniofacial operations to treat different **syndromic craniosynostoses** are frequently discussed in the literature.
- However, **soft-tissue procedures** required to **normalize facial appearance** along these patients' care timelines are **less well described**.
- This study **evaluates** and **compares** the secondary **soft tissue surgeries** necessary for patients with various craniosynostosis syndromes.

Methods

- Retrospective review of patients with syndromic craniosynostosis treated at a tertiary children's hospital from 2004–2023.
- **Soft tissue surgeries included:**
 - ❖ Lateral and medial canthopexy
 - ❖ Ptosis reconstruction
 - ❖ Eyebrow elevation
 - ❖ Septorhinoplasty
 - ❖ Otoplasty
 - ❖ Scar revision
 - ❖ Scalp reconstruction
 - ❖ Fat Grafting
- **Statistics:**
 - Descriptive statistics, chi-squared, and independent t-tests analyzed differences in soft tissue procedures between craniofacial syndromes

Results

- **n=103** (Figure 1; Syndromic Diagnoses)
- Mean follow-up: 7.7 ± 5.7 years
- 93 patients (**90.3%**) underwent ≥ 1 soft tissue procedure (mean = 3.6 ± 3.3)
- Significant differences in rates of:
 - ❖ **Brow elevation:**
 - **Saethre-Chotzen** (63.6%) > Crouzon (25.8%, $p=0.034$).
 - ❖ **Scalp reconstruction:**
 - **Pfeiffer** (50.0%) > Apert (32.5%, $p=0.039$), Crouzon (22.6%, $p=0.007$), and Muenke (0.0%, $p=0.015$).
 - ❖ **Septorhinoplasty:**
 - **Crouzon** (29.0%) > Apert (0.0%, $p<0.001$) and Saethre-Chotzen (0.0%, $p=0.044$).
- No differences in other soft tissue procedures
- **Figure 2** displays soft tissue procedures timelines

Conclusion

- Soft tissue procedures were **very common** among patients with syndromic craniosynostosis.
- Rates of **brow elevation**, **scalp reconstruction**, and **septorhinoplasty** varied significantly by syndrome.
- These results may help surgeons **counsel patients** on **anticipated surgical procedures** necessary for comprehensive craniofacial reconstruction.
- **Continued research** is encouraged, and treatment should remain **tailored to each patient's reconstructive needs**.

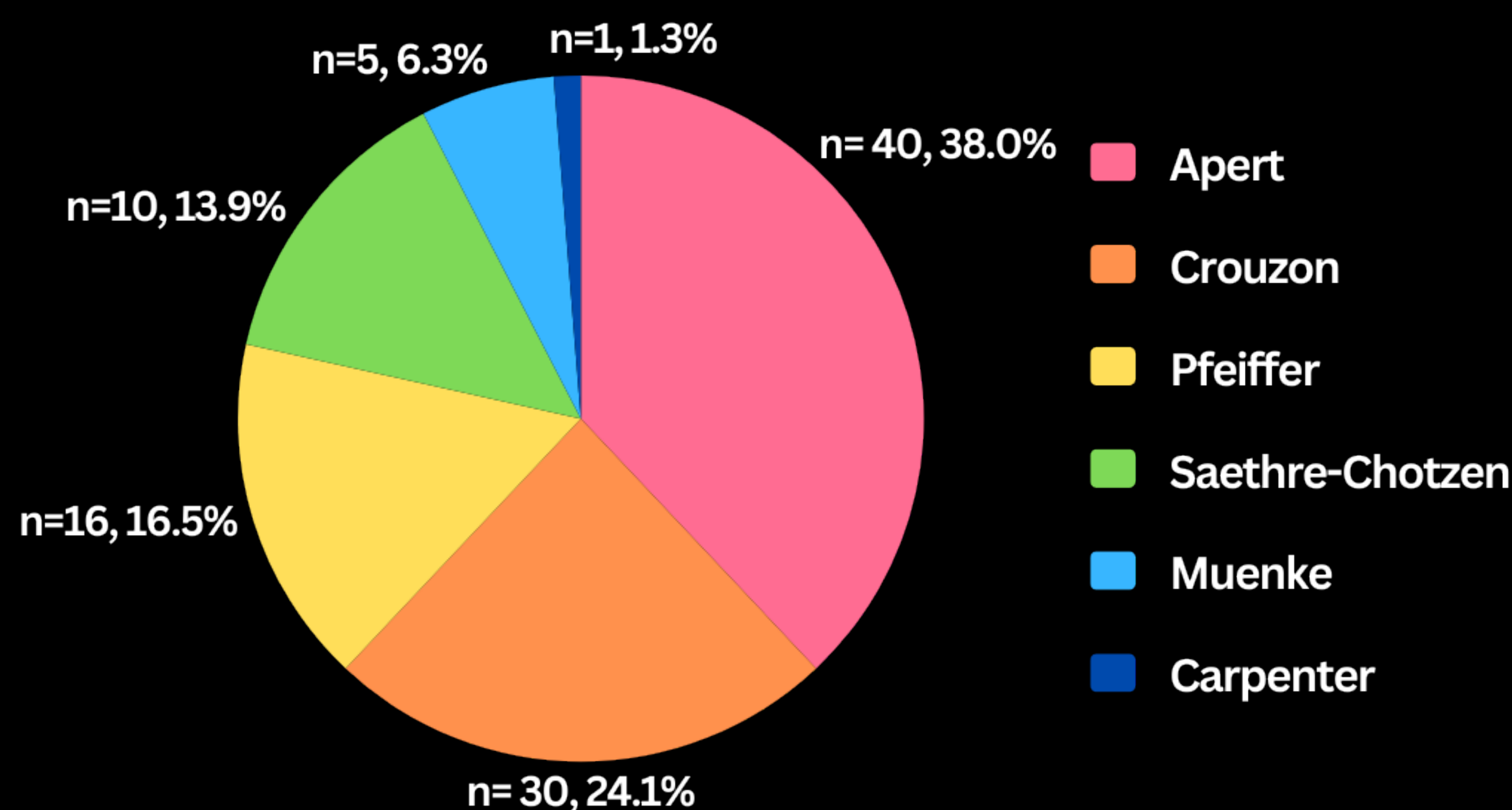


Figure 1. Syndromic Craniosynostosis Diagnoses

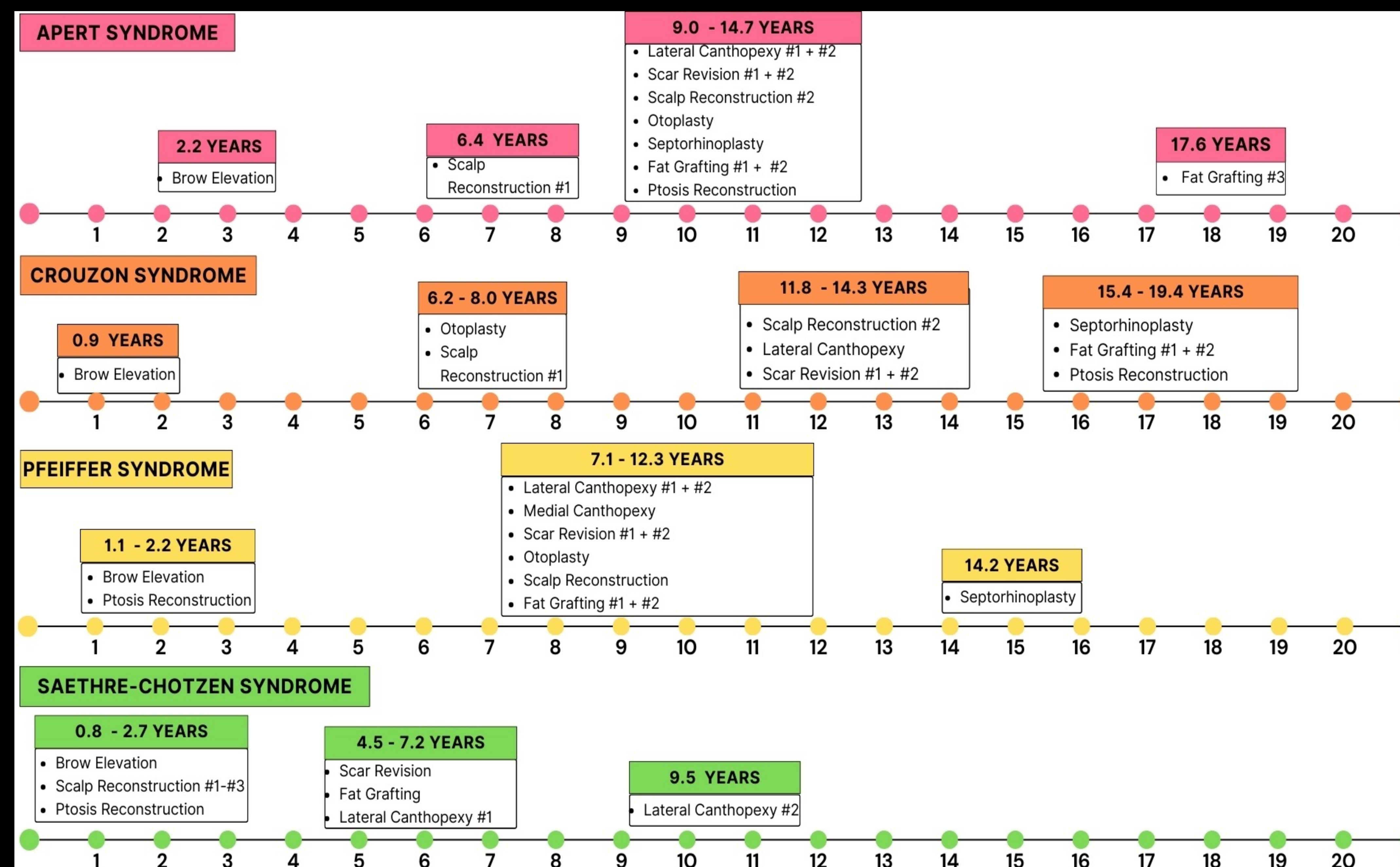


Figure 2. Timeline of Soft-Tissue Procedures in Syndromic Craniosynostosis