A Guideline for First Permanent Molar Extraction in Children.

Balancing extraction is removal of the first molar on the other side of the same arch.

Compensating extraction is removal of the first molar on the same side in the opposing arch.

Extraction of the first permanent molar is rarely the orthodontic extraction of choice.
"It doubles the treatment time and halves the prognosis" Mills (1968)
As a general rule first permanent molars should be restored.

This quote from Mills was made at a time when most orthodontic treatment was undertaken using removable appliances. It is now possible to achieve good results following removal of 6s using fixed appliances, although there is some evidence that the overbite may deepen in some cases and treatment times tend to be increased. It is not advisable to extract a healthy premolar for orthodontic purposes if the first permanent molar in the same quadrant is heavily restored.

[SIGN Grade B]

Ideally an orthodontic opinion should be obtained before extraction of any permanent tooth, preferably from the orthodontist who will be responsible for future treatment.
Temporise or restore and refer

This is not always possible if there is sepsis or pain or practical if the patient is unlikely to attend an orthodontist. If use of LA is practical, then extract only the tooth affected and refer. If GA is only option, try to obtain advice beforehand to prevent multiple anaesthetics. Before any decision is made, an orthopantomogram of good quality is needed to show that all teeth are present, in good condition i.e. not hypoplastic, and are well placed for eruption. If any of the permanent dentition is missing or in a poor eruptive position, then temporise/restore the tooth and seek an orthodontic opinion.

[SIGN Grade C]

Class 1 case with no crowding, extraction may be unavoidable but will lead to spacing.
Do not balance the extraction with one from the other side of the mouth either in the upper or the lower arch. If the first molar on the lower is to be lost and the upper first molar has a poor prognosis, consider extraction of the opposing upper 6. If the first molar on the lower is to be lost and the upper first molar is healthy, extract the opposing upper 6 to avoid overeruption unless the lower second molar has already erupted and the upper 6 is in occlusal contact with it. If the upper first molar is to be lost, do not compensate with extraction of the lower first molar if it is healthy.

[SIGN Grade C]

Class 1 case with crowding.
This is the classical case for balancing and opposing extractions. First permanent molars with a poor prognosis, dental age 9-11, all teeth present on radiograph with no hypoplasia, and well placed for eruption. Works best if there is premolar crowding. Do not balance unless the 6 on other side has poor prognosis or premolars are impacted due to early loss of deciduous molars and 8s are present.
Beware if there is incisor crowding, temporise or restore and refer.

[SIGN Grade B]
In Class 11 case, with no crowding.
Extraction of the first permanent molar in the lower will lead to spacing, uncontrolled eruption of teeth and may compromise future orthodontic treatment. Temporise or restore if possible, refer and do not carry out any balancing extractions.
In the upper temporise/restore and refer. It is sensible to delay extraction of 6s until 7s have erupted sufficiently to be controlled orthodontically, and the extraction space can be used to treat the malocclusion\(^2,11\). If the upper first molar is unopposed and at risk of over-erupting and third molars are present radiographically, then extraction of the upper first molar may be indicated\(^10,11\). The patient should be counselled however, that additional premolar extractions in the upper arch might be required in the future to create sufficient space for overjet correction.

[SIGN Grade C]

Class 11 case with crowding.
Consider balancing\(^9\) extraction in the lower only if the first molar is of poor prognosis or premolars are impacted due to early loss of deciduous molars and 8s are present\(^12\). Temporise or restore the upper and refer\(^2,11\). If the upper first molar is unopposed and at risk of over-erupting and third molars are present radiographically, then extraction of the upper first molar may be indicated\(^10,11\). The patient should be counselled however, that additional premolar extractions in the upper arch might be required in the future to create sufficient space for overjet correction and treatment of crowding.

[SIGN Grade C]

Class 111 case
Temporise or restore and refer\(^2,11\)

[SIGN Grade C]

IF IN DOUBT, GET PATIENT OUT OF PAIN, TRY AND MAINTAIN TEETH AND REFER\(^2,9,10\).

[SIGN Grade C]

References

SIGN Classification
The Scottish Intercollegiate Guideline Network (SIGN) classification system indicates whether a guideline’s recommendations are based on proven scientific evidence or currently accepted good clinical practice with limited scientific evidence.

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<thead>
<tr>
<th>Level</th>
<th>Type of evidence</th>
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<tbody>
<tr>
<td>Ia</td>
<td>Evidence obtained from meta-analysis or randomised control trials.</td>
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<tr>
<td>Ib</td>
<td>Evidence from at least one randomised control trial.</td>
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<tr>
<td>IIa</td>
<td>Evidence obtained from at least one well-designed control study without randomisation.</td>
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<tr>
<td>IIb</td>
<td>Evidence obtained from at least one other type of well-designed quasi-experimental study without randomisation.</td>
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<tr>
<td>III</td>
<td>Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case control studies.</td>
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<td>IV</td>
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<tr>
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<th>Recommendations</th>
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<tbody>
<tr>
<td>A&gt; (Evidence levels Ia, Ib)</td>
<td>Requires at least one randomised controlled trial as part of the body of literature of overall good quality and consistency addressing the specific recommendations</td>
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<tr>
<td>B&gt; (Evidence levels IIa, IIb, III)</td>
<td>Requires availability of well conducted trials but no randomised clinical trials on the topic of recommendation</td>
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<td>C&gt; (Evidence level IV)</td>
<td>Requires evidence from expert committee reports or opinions and/or clinical experience of respected authorities. Indicates absence of directly applicable studies of good quality.</td>
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