



## Clinical Practice Guidelines: Guidelines for Elective First Permanent Molar Extraction

Eyas Abuhijleh<sup>1\*</sup>, Amjad Al Taki<sup>2</sup> and Sudhir Varma<sup>3</sup>, Abdulhadi Warreth<sup>4</sup> and Shaikha Maryam Al Sharqi<sup>5</sup>

<sup>1</sup>Orthodontic Department Ajman University Fujairah Campus, United Arab Emirates

<sup>2</sup>Orthodontist at Private clinic Dubai, United Arab Emirates

<sup>3</sup>Periodontic Department Ajman University Fujairah Campus, United Arab Emirates

<sup>4</sup>Prosthodontic Department Ajman University Fujairah Campus, United Arab Emirates

<sup>5</sup>Pediatric Dentistry Department Ajman University Fujairah Campus, United Arab Emirates

**\*Corresponding Author:** Eyas Abuhijleh, Orthodontic Department Ajman University Fujairah Campus, United Arab Emirates.

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### Introduction

The timing of the eruption of the first permanent molars, at around six years of age, makes them vulnerable to dental caries. Heavily restored teeth will enter the restorative cycle and may need to be extracted later in life. Late extraction has future prosthodontic/orthodontic implications and may lead to unfavorable occlusal changes.

Consideration is required when elective extraction in the form of balancing and/or compensating extractions are contemplated to preserve the dental midline and prevent over-eruption.

### Definitions

Balancing extraction refers to the removal of a permanent tooth from the contra-lateral side of the same dental arch to preserve the midline.

Compensating extraction refers to the removal of an antagonistic permanent molar to prevent its over-eruption.

### Factors affecting the extractions

The principle factors either dictating whether a first permanent molar is recommended for a balancing or compensating extraction are:

- Which first molar requires elective extraction.
- Teeth present within the developing dentition, their overall condition and long-term prognosis.
- The underlying malocclusion.
- The dental age of the patient.

- Timing of first permanent molar extraction and its influence on the subsequent eruptive position of the second permanent molar, particularly in the lower arch.
- Inability to confirm the presence of the third molar at the time when extraction decisions have to be made.
- Consequences of first permanent molar extraction on the developing occlusion.
- Permanent teeth that are missing, of poor quality or in an unfavorable eruptive position.

### Ideal timing of first permanent molar extraction

Generally, whenever practical, the first permanent molar should be extracted when there is radiographic evidence of early dentine calcification within the second molar root bifurcation. This usually occurs within a chronological age range of 8 to 10 years.

### Recommendations

- Good quality radiographs are mandatory before any extraction decisions are made to show the presence, condition and developmental stage of all teeth in the dentition.
- In the absence of a definitive opinion and if the use of local anesthetic is practical, inevitable extraction should be carried out. Orthodontic opinion should be sought regarding further elective extractions.
- If a general anesthetic is the only option, orthodontic opinion on elective extractions should be obtained beforehand, if possible, to prevent the risk of multiple anesthetics.

**Guidelines for First Permanent Molar Extraction (Figure 1)**

As a general rule, if in doubt, get the patient out of pain, try and maintain/stabilize the teeth and request an orthodontic opinion.

Occlusal Conditions Teeth for Inevitable Extraction	Class I with minimal crowding <3mm & acceptable overjet	Class I with crowding >3mm & acceptable overjet	Class II with minimal crowding <3mm	Class II with crowding >3mm & increased overjet	Class III
<b>Upper First Permanent Molar(s)</b>	Do not balance or compensate if the contra-lateral and antagonistic tooth/teeth is/are healthy.	<u>Buccal crowding:</u> If the crowding is bilateral, balance at an ideal age to maintain the dental midline.  <u>Labial crowding:</u> Stabilize then extract after eruption of the second permanent molar(s) and use the space for alignment.	Stabilize then extract after eruption of the second permanent molar(s) and use the space for alignment.	Stabilize then extract after eruption of the second permanent molar(s) and use the space for alignment and overjet reduction.  Balance to maintain dental midline.	Opinion of an Orthodontist should be sought, but as a general rule, extractions of upper permanent molars should be avoided, if at all possible.
<b>Lower First Permanent Molar(s)</b>	Do not balance if the contra-lateral tooth is healthy.  Compensate only if the antagonistic tooth over-erupts.	<u>Buccal crowding:</u> If the crowding is bilateral, balance at an ideal age to maintain the dental midline.  Compensate only to relieve the crowding and prevent over-eruption.  <u>Labial crowding:</u> Stabilize then extract after eruption of the second permanent molar(s) and use the space for alignment.	Extract at an ideal age for successful alignment of the second permanent molar(s).  Do not balance if the contra-lateral tooth is healthy.  Compensate only to relieve the crowding and prevent over-eruption.	Extract at an ideal age for successful alignment of the second permanent molar(s).  Use maxillary holding appliance to prevent over-eruption of the first permanent molar(s), otherwise compensate.  Later distalization can be used or extraction of upper premolars for alignment and overjet reduction.  Balance to maintain dental midline.	Opinion of an Orthodontist should be sought, but as a general rule, extractions of upper permanent molars should be avoided, if at all possible.

**Figure 1**

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