

Treatment of Glottal Replacement

In this example, we are treating glottal replacement of a fricative /k/.

In the steps below, the superscripted ^h refers to aspiration, or forced airflow. When the aspiration precedes vowel in the first 8 steps, it means that an /h/ is produced to encourage continuous airflow before the vowel. When it occurs after the vowel in the first 5 steps, it means that additional airflow is required after production of the target /k/.

- 1. Produce fully whispered /a/:** [ʰʰʰʰʰaaaaaa]
[The ^{ʰʰʰʰ} before the vowel indicates a whisper. This is referred to as *carrier aspiration*. Similar to a carrier phrase, occurs before the target so here it refers to the aspiration prior to production of the vowel].
- 2. Fully whispered, overlaid velar:** [ʰʰʰʰʰaaakʰʰʰʰʰaaaaaa]
[The ^{ʰʰʰʰ} after the /k/ is added aspiration].
- 3. Voicing introduced after the vowel onset:** [ʰʰʰʰʰaakʰʰʰʰʰaaaaaa]
[Voicing is indicated by the underscore]. Here the /a/ that is not underlined represents whispered production. In this step, the /a/ produced after the aspirated /k/ is first whispered and then the voice is turned on without inserting a pause.
- 4. Now voicing is introduce at the vowel onset:** [ʰʰʰʰʰaakʰʰʰʰʰaaaaaa]
[The 1st /a/ is whispered. The 2nd is voiced].
- 5. Duration of /k/ aspiration is decreased:** [ʰʰʰʰʰaakʰʰʰaaaaaa]
- 6. Normal duration of /k/ release for medial position:** [ʰʰʰʰʰaak^haaaaaa]
[The /k^h/ is a normal production]. Very slight aspiration must follow a voiceless plosive or it will be produced as a voiced phoneme].
- 7. Normal duration of /k/ release with normal vowel duration:** [ʰʰʰʰʰaak^ha]
- 8. Decreased duration of carrier aspiration:** [ʰʰaak^ha]
- 9. Normal production of /k/ in initial position:** [k^ha]

See example of treating Glottal Replacement of /s/ on next page.

In this example, we are treating glottal replacement of a fricative /s/.

As in the example above with /s/, the superscripted ^h refers to the carrier aspiration, but there is no aspiration following the /s/ because it is a fricative and there is already continuous airflow after the vowel.

1. **Produce fully whispered /a/:** [ʰʰʰʰʰaɑɑɑɑɑ]
[Carrier aspiration before the whispered vowel].
2. **Fully whispered, overlaid /s/:** [ʰʰʰʰʰaasɑɑɑɑɑ]
3. **Voicing introduced after the vowel onset:** [ʰʰʰʰʰaasɑɑɑɑɑ]
[Voicing is indicated by the underscore]. Here the /a/ that is not underlined represents whispered production. In this step, the /a/ produced after the /s/ is first whispered and then the voice is turned on without inserting a pause.
4. **Now voicing is introduced at the vowel onset:** [ʰʰʰʰʰaasɑɑɑɑɑ]
[The 1st /a/ is whispered. The 2nd is voiced].
5. **Decreased duration of vowel after /s/:** [ʰʰʰʰʰaasɑɑɑɑ]
6. **Normal duration of /s/ with normal vowel duration:** [ʰʰʰʰʰaasa]
7. **Decreased duration of carrier aspiration:** [ʰʰaasa]
8. **Normal production of /s/ in initial position:** [sa]