English consonant allophones - plosives

and when the plosive is followed by vowel aspiration can appear in unstressed syllables but it won't be very noticeable

1. Voiceless plosives (ptk) are aspirated (i.e. followed by an extra puff of air) when they at the beginning of a stressed syllable.
   Diacritic: [pʰ] pit [pʰɪt] top caught potato [pəˈtʰeɪtəʊ]

2. Voiceless plosives (ptk) are unaspirated after /s/. BLOCKS the ASPIRATION span stew skin

3. Voiced plosives (and all obstruents) are fully voiced when they appear in voiced contexts (between voiced sounds).
   ladder [ˈlædə] eager
   voiced context
   voiceless context [b̥ob̥] - partially devoiced bcm of the voiceless environment
   voiceless context

4. Voiced plosives (bdg) are partially devoiced if next to a voiceless obstruent or a pause. This process is obligatory both inside words and across word boundaries.
   Diacritic: [bb̥] bud big car [b̥ɪg̥kʰa:] website [web̥saɪt] this day [ðɪ s̥d̥eɪ]

5. Plosives have no plosion (are unexploded or have no audible release): Diacritic: [stʌbˀd]
   - in final position, e.g. map [mæpˀ] mat [m robe [rəʊb̥ˀ]
   - before a plosive or an affricate, e.g. stopped dubbed scripture [skrɪpˀtʃə]
     big car [b̥ɪg̥ˀkʰa:] good job [g̥ʊdˀdʒob̥]
   - in clusters of three plosives - the central one has no audible release, e.g. wept bitterly [wɛ̆ptˀb̥ɪ̆təlɪ]

   ~~when vowel is~~ nasal release (closure, compression, NASAL PLOSION)

6. Plosive have a nasal plosion before nasals.
   Diacritic: [ˈb̥ʌ̆tⁿn̩] sudden [sʌdⁿn̩] submit [səbⁿmɪ̆tˀ] a bit nicer [əbɪ̆tⁿnaɪ̆sə]

7. Plosive have a lateral plosion before /l/ tip of the tongue sharp on the alveolar ridge
   Diacritic: [ˈlɪ̆tˡl̩] subtle [sʌ̆tˡl̩] good luck [g̥ʊdˡlʌ̆kˀ]

8. In many accents of English, syllable final /p, t, k/ are accompanied by a glottal stop (are glottally reinforced).
   tip pit [pɪʔt] kick

9. In some accents /t/ is replaced by a glottal stop (usually intervocalic or followed by a nasal sound): between vowels
   beaten [bi:ʔn̩] butter [bʌʔə] better [beʔə]

10. Alveolar plosives become dental before dental consonants
    Diacritic [wɪd̥θ] eighth [eɪt̪θ] tenth wealth

11. Velar plosives /k, g/ are advanced when in the neighbourhood of a front vowel.
    Diacritic: [kʰi:] keen [kʰɔ:tˀ] [g̊i:zə]

12. Alveolar plosives /t, d/ are retracted when before post-alveolar and palato-alveolar sounds. r ʃ tch
    Diacritic: [t̠ɹaɪ] post alveolar dry [d̠rəɪ] cold rain that chair [ðæ̆t̠ˀtʃeə] can't join [kʰã:nt̠ˀdʒɔ̃ɪn]

13. Bilabial plosives /p, b/ are labiodental before labiodental sounds: obvious [obvɪ̆əs] labiolaɪsation

14. Lip rounding [tʰʷu:]

15. Lip spreading [tʰʲi:] palatalaɪsation

homorganic sounds: with the same place and manner of articulation, but different voicing,
e.g. top boy white dog big car

two similar sounds next to each other

Workbook in English Phonetics Sobkowiak, Supyra