

# THE INTERNATIONAL PHONETIC ALPHABET (2005)

## CONSONANTS (PULMONIC)

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Epi-glottal	Glottal
Nasal	m	ɱ	n			ɳ	ɲ	ŋ	ɴ			
Plosive	p b	ɸ β	t d			ʈ ɖ	c ɟ	k ɡ	q ɢ			ʔ
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	ħ ʕ	h ɦ
Approximant			ɹ			ɻ	j	ɰ				
Trill	ʙ			r					ʀ			
Tap, Flap			ɾ			ɽ						
Lateral fricative			ɬ ɮ			ɬ̺ ɮ̺	ɬ̺̹ ɮ̺̹	ɬ̺̹̹̹ ɮ̺̹̹̹				
Lateral approximant			l			ɭ	ʎ	ʟ				
Lateral flap			ɺ			ɺ̥						

Where symbols appear in pairs, the one to the right represents a modally voiced consonant, except for murmured *h*. Shaded areas denote articulations judged to be impossible. Light grey letters are unofficial extensions of the IPA.

Figure 1: IPA symbols [wikipedia].

Unvoiced Consonants			Voiced Consonants			Vowels			
Example	Dbet	IPA	Example	Dbet	IPA	Example	Dbet	IPA	L/T
/ch/urch	C	tʃ	/th/is	D	ð	h/a/t	@	æ	
/sh/e	S	ʃ	/b/ee	b	b	h/u/t	A	ʌ	T
/th/ink	T	θ	/d/og	d	d	b/e/t	E	ɛ	L
/f/ish	f	f	/g/ab	g	g	h/i/t	I	ɪ	L
/h/e	h	h	/j/udge	J	dʒ	b/oy/	O	ɔɪ	
/c/at	k	k	/l/ook	l	l	b/ir/d	R	ɜ̃	
/p/en	p	p	/m/an	m	m	p/u/t	U	ʊ	L
/s/ee	s	s	/n/ap	n	n	h/ow/	W	aʊ	
ca/t/	t	t	/r/eal	r	r	wh/y/	Y	aɪ	
/wh/at	H	ɸ	plea/s/ure	Z	ʒ	c/au/ght	c	ɔ	T
			si/ng/	G	ŋ	f/a/ther	a	ɑ	
			/v/ow	v	v	b/ai/t	e	e / eɪ	T
			/w/in	w	w	b/ee/	i	i	T
			/y/ou	y	j	b/oa/t	o	o / oʊ	T
			/z/oo	z	z	b/oo/	u	u	T
						th/e/		ə	L

Table 1: LDC unvoiced consonants, voiced consonants and vowels.

[http://en.wikipedia.org/wiki/Wikipedia:IPA\\_for\\_English#Key](http://en.wikipedia.org/wiki/Wikipedia:IPA_for_English#Key)

Table 2: Latex (tipa) symbols for all the LDC CVs:  $\text{\texttipa\{A\}} \rightarrow \alpha$ .

Example	Darpabet	LDCbet	IPAbet	tipa symbol
/a/ hat	@	Q (e.g., xq)	æ	\ae
/u <sub>1</sub> / away	A	A (e.g., xa)	ə	@
/u <sub>2</sub> / hut	A	A	ʌ	2
/ch/ church	C	C	ʧ	\texttshlig
/th/ this	D	D	ð	D
/e/ bet	E	E	ɛ	E
/ng/ sing	G	G	ŋ	N
/i/ hit	I	I	ɪ	I
/j/ judge	J	J	ʤ	\textdyoghlig
/oy/ boy	O	O	ɔɪ	OI
/ir/ bird	R	R	ɜ̄	\textrhookrepsilon
/sh/ she	S	S	ʃ	S
/th/ think	T	T	θ	T
/u/ put	U	U	ʊ	U
/ow/ how	W	W	aʊ	aU
/y/ why	Y	Y	aɪ	aI
/s/ pleasure	Z	Z	ʒ	Z
/b/ bee	b	b	b	
/o/ cot	a	a	ɑ	A
/au/ caught	c	c	ɔ	O
/d/ dog	d	d	d	
/ai/ way, bait	e	e	e/eɪ	e/eI
/f/ fish	f	f	f	
/g/ dog	g	g	g	
/h/ he	h	h	h	
/ee/ bee	i	i	i	
/c/ cat	k	k	k	
/l/ look	l	l	l	
/m/ man	m	m	m	
/n/ man	n	n	n	
/oa/ boat	o	o	o/ou	oU
/p/ pen	p	p	p	
/r/ real	r	r	r	
/s/ see	s	s	s	
/t/ cat	t	t	t	
/oo/ boo	u	u	u	
/v/ vow	v	v	v	
/w/ win	w	w	w	
/y/ you	y	y	j	
/z/ zoo	z	z	z	

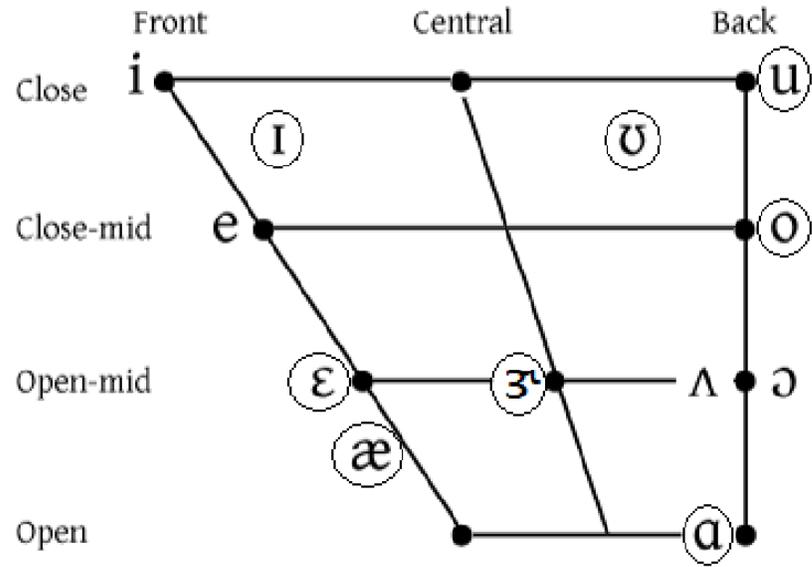


Figure 2: Vowel “triangle.” Circles indicate those used in CV06.

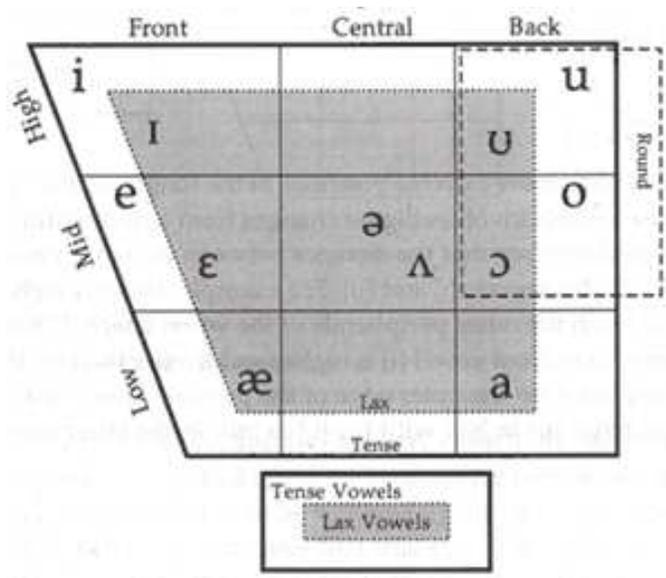


Figure 3: Tense vs. Lax vowels.

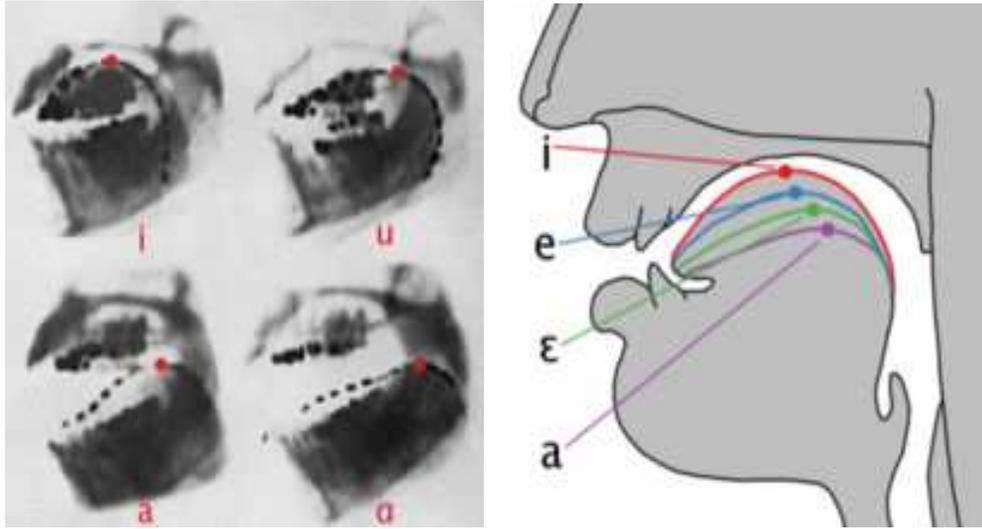


Figure 4: Cardinal vowels of the human vocal tract, xray images. [wikipedia]

Table 3: LDC Consonants

Example	Dbet	IPA
/ch/urch	C	tʃ
/th/is	D	ð
/j/udge	J	dʒ
/sh/e	S	ʃ
/th/ink	T	θ
plea/s/ure	Z	z
/b/ee	b	b
/d/og	d	d
/f/ish	f	f
/g/ab	g	g
/h/e	h	h
/c/at	k	k
/l/ook	l	l
/m/an	m	m
/n/ap	n	n
/p/en	p	p
/r/eal	r	r
/s/ee	s	s
ca/t/	t	t
/v/ow	v	v
/w/in	w	w
/y/ou	y	j
/z/oo	z	z