Laryngograph

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The vocal tract
The glottis is positioned in the larynx
The vocal folds vibrate during voiced speech.
Vocal fold vibrations

Source: YouTube http://www.youtube.com/watch?v=v9Wdf-RwLcs

Sound generation

Stroboscopic recordings of the vocal folds during voicing
Air flow

Glottal flow during phonation

Figure 13. Schematic description of a glottal waveform $U_g$ and its time derivative (after: Hanson, 1996:11; Sluijter, 1995: 97). The following abbreviations are used: $T_0$ - duration of the pitch period, $t_1$-begin of the airflow, $t_2$- instant of the maximum glottal flow of the amplitude $AV$ through the glottis, $t_3$- moment of the glottal closure and maximum change of glottal flow, $t_4$ - instant of complete glottal closure.

Source: EGG & voice quality http://www.ims.uni-stuttgart.de/phonetik/EGG/page13.htm
Measuring vocal fold vibrations

During phonation, the vocal folds open and close.

The air in the wind-pipe does not conduct electricity. Closed focal folds conduct electricity. This change in resistance can be measured with contacts on the throat.
Using the Laryngograph

Laryngograph and placement of the contacts

The metal contacts are placed on the sides of the larynx (wind-pipe) at the height of the glottis.
Laryngograph signal (bottom) for a sustained /a/ (top)

The indicated segment corresponds to one open-closed cycle of the vocal folds. Note the position of the start and end of the cycle in the sound.
EGG of running speech

Story reading: fragment of “The North wind and the Sun”

Larynx movements are visible as non periodic signals. E.g., to the left: sound of opening of the mouth and inhaling, possibly larynx lowering.