

# BASIC FLUENCY SYSTEM

Updated: 2010 June 13

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## WHAT IT'S FOR

The Basic Fluency System treats stuttering and cluttering. A special version treats hypokinetic dysarthria, the speech disorder associated with Parkinson's disease.

## How It Works

The Basic Fluency System alters the user's voice in his or her ears to correct two neurological abnormalities associated with stuttering. When adjusted to correct stutterers' *auditory processing underactivity*, the device immediately reduces stuttering about 70%, without speech therapy, mental effort, or abnormal-sounding speech. The device can also be adjusted to slow down and relax *speech motor activity*, reducing stuttering 50% after removing the device, even without speech therapy. With training from a speech-language pathologist, the Basic Fluency System can nearly eliminate even severe stuttering, and train the user to no longer need the device.



## Hearing Safety Warning

Your Basic Fluency System should reduce stuttering at comfortable listening volumes, about 85 dB or less. If the device doesn't reduce stuttering at a comfortable volume, don't adjust the volume higher. Discontinue use of the device if you experience pain or ringing in your ears. We recommend getting your hearing tested regularly.

## FDA Childhood Warning

FDA regulations require that this device can be used by children under 18 only with the approval of a speech-language pathologist.

## Packing List

It is the customer's responsibility to report items missing from invoice or packing list.

- Basic Fluency System
- Sennheiser PC131 headset
- Plantronics MX100S earset (*not shipped to some state programs*)
- 120V AC adapter (*not shipped to Europe*)
- Telephone cable
- No Miracle Cures* book (*not shipped to Parkinson's patients*)

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## THERAPY PRACTICE

Use the Sennheiser PC131 headset (pictured at right, \$50) for therapy practice. The red (or pink) plug goes into the MIC (microphone) jack. The black (or green) plug goes into the EAR (earphone) jack. Adjust the microphone about one inch from your mouth. Note the *inline volume control* and microphone switch on the headset cord. We have hygiene kits (\$10) with alcohol wipes for cleaning the headset microphone, and washable earphone covers.



## Delayed Auditory Feedback (DAF)

If you want to speak at a normal speaking rate, adjust the DELAY control (front panel) to 50 or 70 milliseconds (ms).

If your speech-language pathologist has trained you to slow your speaking rate by stretching vowels and joining words together (*continuous phonation*), adjust the DELAY to 70, 90, or 100 milliseconds (ms). Use a 70 ms delay for a “slow-normal” speaking rate. Use a 100 ms or longer for very slow speaking rates.



Don't use delays longer than 70 ms while speaking at a normal speaking rate. Longer delays don't improve fluency at normal speaking rates. Attempting to talk at a normal speaking rate with the DELAY set longer than 70 ms could cause headaches and/or cause the device to become ineffective (“wear off”) over time.

## Frequency-Shifted Auditory Feedback (FAF)

Adjust the PITCH control (side of case) to a lower (deeper) pitch for stuttering, or a higher pitch for Parkinson's. (Devices are preset at the factory for either stuttering or Parkinson's.)

For stuttering, use this deep bass sound to relax your breathing and relax your vocal folds. The extreme pitch shift should make your speech more relaxed; however, some individuals can't tolerate the extreme pitch shift and should use the moderate pitch shift. Adjust the PITCH control as you wish. The settings are MODERATE= -0.4 octaves and EXTREME = -0.8 octaves.

For Parkinson's, use the higher pitch to induce increased speech motor activity. The result should be clearer speech but not louder speech. If the device helps the patient the result will be clear but whisper-quiet speech. Use the EXTREME (+1.0 octaves) setting. If the patient can't tolerate the extreme setting, use the MODERATE (+0.4 octaves) setting.

## Silent Blocks and Sine-Wave Masking Auditory Feedback (MAF)

DAF and FAF have no effect on silent blocks. If you can't make any sound you'll need masking auditory feedback (MAF). We have an older model Basic Fluency System with a masking manual button option (\$100 additional). You push a button and the device produces a humming sound that unlocks your vocal folds.

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## TELEPHONE USE

Your Basic Fluency System plugs into telephones that have a standard 2.5mm headset jack. Use the provided 2.5mm cable. Plug into the jack labeled TELEPHONE (side panel). Adjust the caller's voice with the volume controls on your telephone. If the caller says that your voice is too quiet, move your microphone closer to your mouth or adjust your Basic Fluency System's MIC GAIN control (inside of case) higher.



If your telephone lacks a 2.5mm headset jack or your Basic Fluency System doesn't work with your telephone, you have several options:

- Buy a new telephone. We recommend the Panasonic KX-TS105W (about \$45).
- Call us for a modified Plantronics Vista M22 amplifier. The new price is \$120 but sometimes we have used amplifiers at a lower price. This will work with any telephone that has an RJ-22 modular handset jack (i.e., landlines).

- Nokia cell phone 2.5mm headset jacks aren't standard. See the next item.
- With cell phones, google *cell phone headset adapters 2.5mm* and the type of phone you have, e.g., *cell phone headset adapters 2.5mm motorola razr*. You should find an adapter to connect your phone to a standard 2.5mm jack. Try Amazon or this website:  
<http://www.factorydirectcellular.com/home/universal/hf-adapter.htm>

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## FACE-TO-FACE CONVERSATIONS

Your Basic Fluency System can be used with a variety of microphones and earphones. Different microphones and earphones work better in different situations. *Note:* Different microphones are more or less sensitive. When changing microphones you may have to adjust the microphone MIC GAIN control (inside the case).

In a noisy environment use a noise-canceling microphone; such as the full-size headset, or a cell phone earset designed to reject background noise, or a throat microphone.

Binaural (two-ear) anti-stuttering devices are about 25% more effective than monaural (one-ear) devices.

### Bluetooth Wireless Cell Phone Earsets

The Basic Fluency System can be used with a Jabra A210 Bluetooth adapter and any Bluetooth wireless cell phone earset. The best quality Bluetooth cell phone earset is the Plantronics Voyager Pro (right). We sell this with the Jabra A210 Bluetooth adapter, charged and paired for you, for \$200.



### Wired Cell Phone Earsets



A wide variety of wired cell phone earsets (left) are available. The microphone and earphone are one unit, with one small wire to the Basic Fluency System. Cell phone earsets plug into the small jack labeled CELL (front panel). We sell the Plantronics MX100S binaural cell phone earset (\$50). Many other cell phone earsets are also available.

### Throat Microphones and Earphones

In a noisy environment nothing can beat a throat microphone. A throat microphone picks up your vocal fold vibrations (phonation) clearly, without distortion. This sounds different from the sound picked up by a headset or other air-transmission microphone. Sounds produced by your lips, jaw, and tongue (your articulators) are muffled and weak. Your vocal fold vibrations are loud and clear. This is of great value if your speech-language pathologist has trained you to use gentle onsets or to relax your vocal folds when speaking. We recommend the Iasus Noise Terminator NT3 Throat Microphone with PC Cable (about \$85, includes monaural clear plastic acoustic eartube earset, call us for binaural acoustic eartubes). The microphone is usually worn in the hollow at the base of the throat and is hidden if you wear a shirt with a collar.



## Wireless FM Hearing Aid Receivers



You can use a credit card-size FM transmitter and hearing aids with FM receivers (right). Expect to pay \$2000 or more. Or use a telecoil transmitter (about \$100) with telecoil hearing aids.

### Battery and AC Adapter

The following batteries are recommended:

- An alkaline battery (Radio Shack 23-875, \$3.29) should last about 25 hours.
- A NiMH rechargeable battery (Radio Shack 23-526, \$10.99, requires charger 23-335, \$12.99) should last about 12 hours.
- A lithium battery (Radio Shack 960-2088, \$8.99) should last about 100 hours.
- Don't use "heavy duty" zinc-chloride or carbon-zinc batteries.

The AC adapter does *not* recharge the battery. The AC adapter is a Class 2 power source rated between 5 and 12 volts DC, center-positive, with a 5.5mm/2.5mm plug, 50mA or greater.

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## STUTTERING THERAPY

### Fluency Shaping

Your Basic Fluency System is best used with the following speech motor targets:

- Relaxed breathing. Place one hand on your stomach. When you *inhale* your hand should move *out*; when you *exhale* your hand should move *in*. Take smaller breaths; don't take big breaths and hold the air in. Pause for relaxed inhalation; don't gulp in a big breath.
- Relaxed vocal folds. Place your fingers on your throat. Hum or say "ah." Feel your vocal folds vibrate. Notice that your vocal folds vibrate on after you take a breath, release a little air, then slowly and gently tense your vocal folds. Practice gently vibrating your vocal folds vs. tightly tensing your vocal folds. Speak with your vocal folds gently vibrating.
- Relaxed articulation. Relax your lips, tongue, and jaw as you talk.
- Slow speech with stretched vowels. Slow down your speaking rate by stretching your vowels. Listen for each vowel before you go on to the next syllable. Each syllable should be equal length. E.g., "American" should take twice as long to say as "bread truck." Join your words together; don't pause between words. This style of speech is called *continuous phonation* because your vocal chords never stop vibrating. Stutterers have difficulty switching their vocal chords on and off at the right times; continuous phonation keeps your vocal chords vibrating.
- "Sexy voice." As you relax your breathing and relax your vocal chords, your vocal pitch deepens. You'll sound relaxed, confident, and authoritative.

### Changing Self-Perceptions of Stuttering

Stutterers often have incorrect perceptions of their speech. A severe stutterer may use denial to think that his stuttering is "no big deal" when it actually makes people avoid him. In contrast, a mild stutterer may fear listeners discovering that she stutters, when listeners don't mind that she stutters. Talk to people about your speech.

Or join a stuttering support group. Find a local stuttering support group by calling the National Stuttering Association at (800) WE STUTTER or <http://www.nsastutter.org/>.

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## **TRIAL PERIOD & WARRANTY**

Consumers may return devices purchased from a speech clinic within 60 days from the date of sale, or three months from the date Casa Futura Technologies shipped the device, whichever is sooner, for a full (100%) refund.

Speech clinics may return devices to Casa Futura Technologies with three months from the date Casa Futura Technologies shipped the device, for a full refund, minus shipping costs.

Consumers may return devices purchased directly from Casa Futura Technologies within 30 days from date of delivery, or three months from the date Casa Futura Technologies shipped the device, whichever is sooner, for a 90% refund, minus shipping charges.

Wireless accessories are not returnable.

It is the customer's responsibility to report items missing from invoice or packing list. Accessories covered by the manufacturers' warranties are not covered by this warranty. If your Sennheiser headset or Jabra earset breaks, return it to Sennheiser (860/434-9190, 1 Enterprise Drive, Old Lyme, CT 06371, <http://www.sennheisercommunications.com/>) or Jabra (858/622-9955, 9171 Towne Centre Drive, Suite 500, San Diego, CA 92122, <http://www.jabra.com/>).

TERMS: Net 30. All accounts past due will be assessed a finance charge of 1.5% + \$5 per month. \$20 or 10% charge on bounced checks (whichever is greater).

SHIPPING F.O.B. Boulder, Colorado

LIMITED WARRANTY: Seller warrants all merchandise against defects in material or workmanship for a period of one year from the date of invoice unless otherwise stated. Your only remedy under this limited warranty is repair or replacement of any item at no charge if seller determines that such item is in fact defective. This warranty does not cover damage to any item if, in our opinion, damage has been caused by improper customer assembly or modification, negligence, improper operation, misuse or abuse. Seller is not responsible for incidental or consequential damages, including, without limitation, lost profits and lost use of other goods even if advised of the possibility of such damage or if such damage could have been reasonably foreseen, except only in case of personal injury where applicable law requires such liability.

**Prices and features subject to change without notice.**

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