

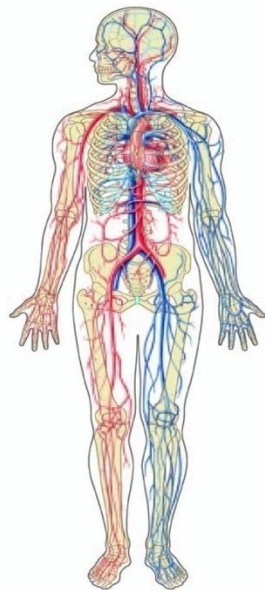
KPP *Klinical Update*

February 28th, 2012

ACE Inhibitors

An Effective Blood Pressure Lowering Drug Class

The network of arteries, veins, and capillaries in the human body is called the circulatory system. Essential to delivering nutrients to all living cells of the body, the 10 pints of blood (approximation) flows through the 60,000 miles of blood vessels many times each day. The human circulatory system is closed which means blood stays within the walls of the blood vessels while the nutrients are allowed to pass through. Via the pumping action of the heart, pressure changes cause the blood to circulate throughout the body allowing it to be oxygenated, transported to



Blue indicates arteries
Red indicates veins

all parts of the body, cleaned, and returned to the heart where the process starts over again. Two distinct actions cause a rise and fall of the pressure on the walls of blood vessels. The beating of the heart causes a spike in pressure called systolic blood pressure. Conversely the relaxation of the heart causes a drop in pressure called diastolic blood pressure. Several factors influence how high and low these pressures go. Most importantly is the amount of fluid that is pumping around in the system. Also, the elasticity or stretchiness of the blood vessels and how constricted or dilated they are both play a part. When blood pressure is too low, the body has a hard time forcing blood into all parts of the body. Symptoms of this are light headedness especially upon standing up from a seated or prone position. High blood pressure, a much more common occurrence, causes the heart to work too hard and places strain on other organ systems like the eyes and kidneys. Studies have shown that maintaining a well controlled blood pressure is vital for the body to remain healthy and disease free.

Kroger Prescription
Plans

1014 Vine Street
Cincinnati, OH 45202

1-800-917-4926

www.kpp-rx.com



Systolic and diastolic blood pressure guidelines as published by the American Heart Association



Category	Systolic (mm Hg)		Diastolic (mm Hg)
Normal	less than 120	and	less than 80
Prehypertension	120–139	or	80–89
Hypertension			
Stage 1	140–159	or	90–99
Stage 2	160 or higher	or	100 or higher

*Your physician may set a goal higher or lower than these guidelines

The Pharmacological Solution to High Blood Pressure (Hypertension)

Enzymes are chemicals in the body which either cause a reaction to occur or make an occurring reaction progress faster. "ACE" stands for Angiotensin Converting Enzyme. Hence, ACE inhibitors inhibit the ACE enzyme and stop the progression of angiotensin I to angiotensin II which, through several pathways, makes the body retain water and causes vasoconstriction. In simple terms, an ACE inhibitor reduces the production of a chemical which the body uses to elevate blood pressure. The first orally active ACE inhibitor was captopril which was discovered in 1975 and approved by the American Food and Drug Administration in 1981. There are many FDA approved ACE inhibitors. The chart below contains the most commonly prescribed.

Generic/Proprietary Name	Brand Name	Average Monthly Cost
Benazepril	Lotensin	\$4
Captopril	Capoten	\$4
Enalapril	Vasotec	\$4
Lisinopril	Prinivil/Zestril	\$4 (except 40mg)
Fosinopril	Monopril	\$35
Moexipril	Univasc	\$36
Perindopril	Aceon	\$93
Quinapril	Accupril	\$26
Ramipril	Altace	\$73
Trandolapril	Mavik	\$4

- Generically available medications are in **bold**
- Pricing accurate as of 2/28/2012 @ a Kroger pharmacy in the Cincinnati division

Side Effects, Precautions, and Recommendations

- Some patients develop a nagging persistent cough while taking ACE inhibitors. If you develop this side effect, let your physician know.
- Lightheadedness is common when initiating any blood pressure lowering medication. Be careful when standing up from a seated or prone position.
- Home blood pressure testing is easy and affordable. Ask your Kroger pharmacist about purchasing a blood pressure monitor.
- When testing your blood pressure it is important to be seated, motionless, and relaxed.

Did You Know?

The original research leading up to the discovery of ACE inhibitors was centered on a study of bothrops jararaca venom, a South American pit viper. Researchers were studying the physiological effects of the venom on the snake's prey. It took from 1956 to 1975 for scientists to synthesize the first safe, effective, orally administered drug based on the principles learned from the snake venom.

Which ACE Inhibitor is Right For Me?

Only your doctor is qualified to choose the right ACE inhibitor for you. However, as with all medical decisions, Kroger Prescription Plans recommends you have a discussion with your physician regarding the desired outcome, interactions, any supplements you might be taking, and the monthly price of the medication. Here are several things to keep in mind:

- Each ACE inhibitor has slightly different properties which might make one be more effective than another based on concurrent disease states.
- Very few situations would warrant a patient to be on a high priced ACE inhibitor versus an inexpensive alternative.
- Often it is necessary for an individual to be on more than one anti-hypertensive medication to get the desired blood pressure control.

- Five different ACE inhibitors are on the Kroger \$4/\$10 list making the drug class very affordable.

Save Even More with a 90 Day Supply!

\$4 Generic Prescriptions 30-Day Supply* **or** **\$10** 90-Day Supply*

Over 300 Generic Prescriptions!

- It's easy to transfer your prescriptions
- No membership fee required
- In most cases, less than insurance co-pays or mail order

*Special savings only. Higher dosages will be more.

Ask your pharmacist for details. For complete list visit kroger.com or call 1.877.495.0101