

HOW DO I TAKE THEM?

The types of ACE inhibitors used most commonly in our clinic are Lisinopril or Enalapril. Both are tablets and given once daily.

WHAT ARE THE SIDE EFFECTS?

There are normally very few side effects. The most important are:

- Dizziness due to low blood pressure
- Increase in creatinine, which needs to be monitored. A small increase is acceptable for the long term benefit of the kidney.
- Increase in blood potassium, which needs to be monitored.
- Dry cough is sometimes seen in adults but very seldom in children
- ACE inhibitors may harm an unborn baby

OTHER IMPORTANT INFORMATION

- Keep tablets in a safe place where young children cannot see or reach them
- Medicines may be prescribed for a child outside of the age range recommended by the manufacturer. Medicines are often used "off-license" in children because trials are not available for specific use, for example, age. Please discuss this with your doctor.

- While your child is taking ACE inhibitors, tell your doctor, nurse or pharmacist about any other medications your child is taking. This includes prescribed medicines, medicines bought over the counter at a pharmacy or any homeopathic or herbal medicines.
- Non-steroidal anti-inflammatory drugs (NSAID's) such as Ibuprofen should not be taken alongside ACE inhibitors. Certain types of diuretics (water tablets) should be taken with care.
- If your doctor decides to stop treatment with ACE inhibitors, return any disused tablets to the pharmacy.
- If your child vomits within a short time of taking a dose and you can see the tablet in the vomit then give the dose again. If you cannot see the tablet in the vomit, do not give it again
- If you forget a dose, give the next dose as scheduled and try and keep a regular routine.

This Pamphlet is compiled from the following sources

*Great Ormond Street Hospital for Children NHS Trust: Information for Families. ACE Inhibitors. October 2006.
http://www.ich.ucl.ac.uk/gosh_families/information_sheets/medicines_ace_inhibitors/medicines_ace_inhibitors_families.html*

*Diabetes UK Guide to Diabetes Information Sheets.
<http://www.diabetes.org.uk/>*



HIGH BLOOD PRESSURE & PERSISTENT PROTEINURIA

Information for Adolescents and Families

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WHAT IS HIGH BLOOD PRESSURE?

High blood pressure (Hypertension) raises your risk for heart attack, stroke, eye problems and kidney disease. Having your blood pressure checked regularly and taking action to reach your target for blood pressure can prevent or delay diabetes complications.

Blood pressure is the force of blood flow inside your vessels. When we take your blood pressure you will see that two numbers are recorded such as 120/80 mmHg. Both of these numbers are important. The first number is the pressure as your heart beats and pushes blood through the blood vessels. This is called the systolic pressure. The second number is the pressure when the vessels relax between heart beats. This is called the diastolic pressure. When your blood moves through your vessels with too much force, you have high blood pressure. Your heart has to work harder when the pressure is high. High blood pressure will not go away without treatment.

How will I know if I have high blood pressure?

You won't know you have it unless your health care provider checks your blood pressure. At Adolescent Transition Clinic we check your blood pressure every 3 months. At clinic the doctor will talk to you about what is an appropriate target range for your blood pressure.

My target BP is / **mmHg**

TREATMENT FOR HIGH BLOOD PRESSURE

Both lifestyle and medication help to control blood pressure. Treatment is individualised. The following lifestyle changes will help to control your blood pressure as well as your blood glucose levels and your blood lipids (cholesterol).

- Make wise food choices
- Lose weight or take steps to prevent weight gain
- Be physically Active
- Be careful with alcohol
- Quit Smoking

PERSISTENT PROTEINURIA

Leakage of microscopic amounts of protein called microalbuminuria is a sign of kidney damage associated with diabetes. ACE inhibitors are a group of medicines that treat high blood pressure and reduce protein in the urine. ACE stands for "angiotensin-converting enzyme".

WHEN DO WE DECIDE TO USE AN ACE INHIBITOR FOR PERSISTENT PROTEINURIA?

There is no good evidence about the best time to start but we tend to start as early as possible to stop the bad effects of protein. We would start with a small dose and then recheck the urine protein and build up on the dose depending on the effect.

HOW DO THEY WORK?

ACE inhibitors work in two ways:

Keeping Blood Pressure Normal. As well as removing waste products from the body, the kidneys also play a part in keeping blood pressure within normal limits. They release a series of chemical messengers called hormones that act on the walls of small arteries, making them narrow which in turn increases blood pressure. ACE inhibitors block (or inhibit) these messengers keeping blood pressure at a more normal level.

Reducing Protein in the Urine. This is a very important part of their use. We know that the presence of protein in the urine is very bad for the kidneys. Many studies show that using an ACE inhibitor can slow the risk of progression of chronic renal failure (CRF) and may even be able to stabilise it by reducing protein in the urine. The ACE inhibitor does this by opening up the blood vessel leaving the glomerulus (efferent arteriole, see diagram). This reduces pressure within the glomerulus so that less protein is forced across the blood vessel and into the urine.



