

From the National Kidney Foundation's Kidney Learning System™

**NKF**  
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*Making Lives Better*

# KIDNEY CARE

2005 • Vol. 1 • No. 1

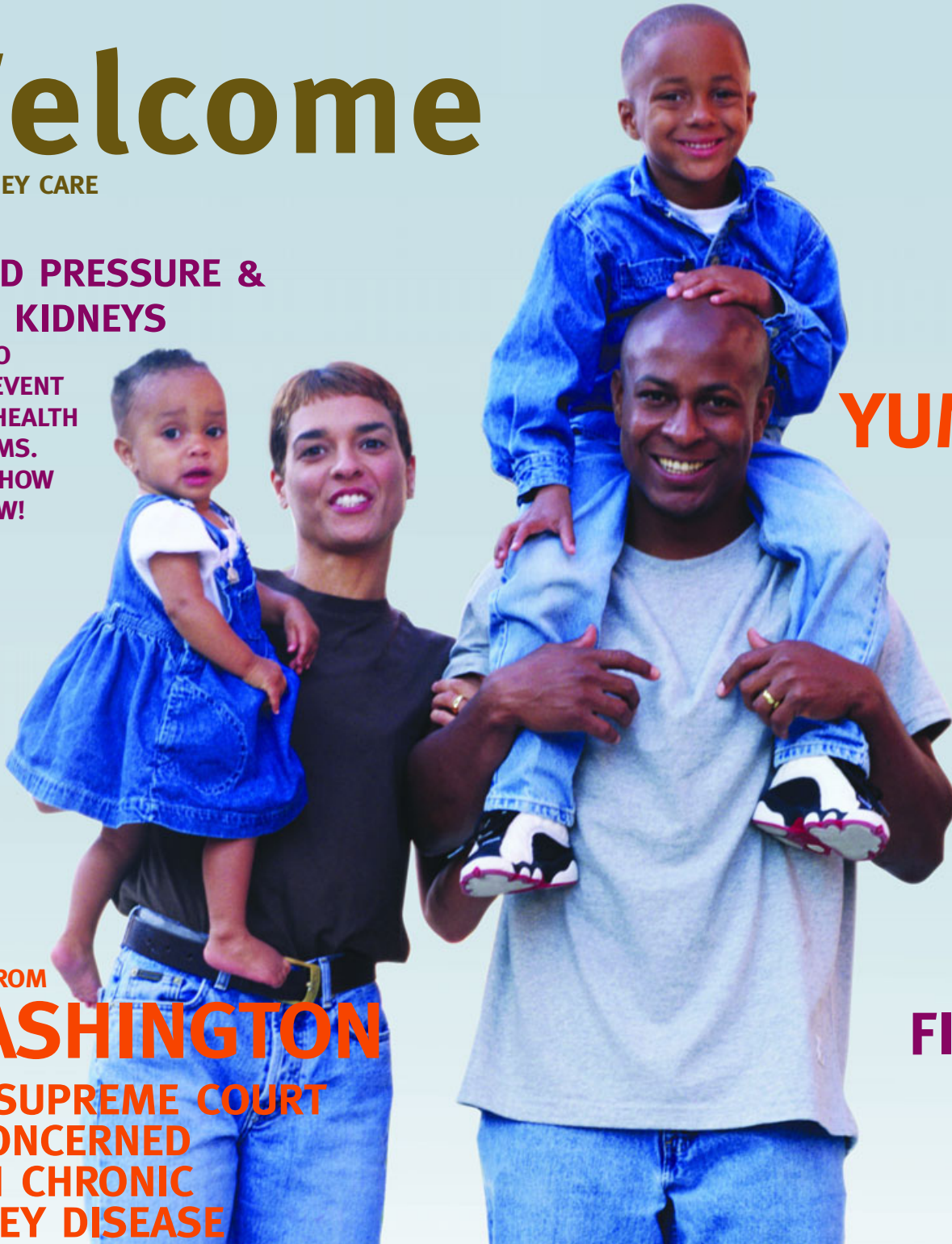
A Newsletter About CHRONIC KIDNEY DISEASE

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## BLOOD PRESSURE & YOUR KIDNEYS

YOU TOO  
CAN PREVENT  
MAJOR HEALTH  
PROBLEMS.  
WE'LL SHOW  
YOU HOW!



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**More than 20 million Americans—**

one in nine adults—have chronic kidney disease, and most don't even know it. More than 20 million others are at increased risk. The National Kidney Foundation, a major voluntary health organization, seeks to prevent kidney and urinary tract diseases, improve the health and well-being of individuals and families affected by these diseases, and increase the availability of all organs for transplantation. Through its 50 affiliates nationwide, the foundation conducts programs in research, professional education, patient and community services, public education and organ donation. The work of the National Kidney Foundation is funded by public donations.

## — Kidney Care —

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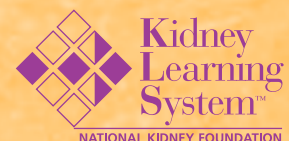
Kidney Care is published by the National Kidney Foundation, Inc., as part of its Kidney Learning System™.

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# — Welcome

Welcome to **Kidney Care**, the National Kidney Foundation's newsletter about chronic kidney disease. If you have chronic kidney disease, we would like to give you the knowledge you need, to make important choices and take control of your health care.

If you are at risk of getting kidney disease, we hope this newsletter increases your awareness and helps you to understand how you can take charge of your kidney health.





# Doug's Story

**A** truck driver for nearly 20 years, Doug Stewart spends eight hours a day on the road, seven days a week. Used to relying on his sharp vision and quick reflexes to keep himself and other drivers safe, Doug knew he had to act when he noticed his vision deteriorating. Around the same time, he began experiencing constant pain in his back.

When he saw an advertisement for a free Kidney Early Evaluation Program (**KEEP**) screening sponsored by the National Kidney Foundation (NKF), Doug decided to get himself checked out.

Medical professionals took Doug's blood pressure and tested his blood and urine. Their findings were shocking. Doug's blood sugar was just under 500, or to quote Doug, "off the charts." The NKF staff immediately rushed Doug to the emergency room where doctors administered insulin to bring his blood sugar back into the normal range (60-126 mg/dl—normal fasting, 60-139 mg/dl—normal not fasting). Doug was sent home a few hours later with strict instructions to see his primary care physician as soon as possible.

"Finding out from the KEEP screening that I was a diabetic has turned my life around," Doug says. "I have completely changed my diet and cut out all fried foods and sweets. I also make sure I exercise and take my insulin regularly."

Thanks to his new regimen, Doug has lost a total of 10 pounds and says he feels better and healthier than he has in a long time.

Diabetes is the leading cause of kidney disease in the United States. By discovering his problem at the KEEP screening, Doug is now able to control his blood sugar, and therefore slow down or stop the damage to his kidneys that high blood sugar can cause.

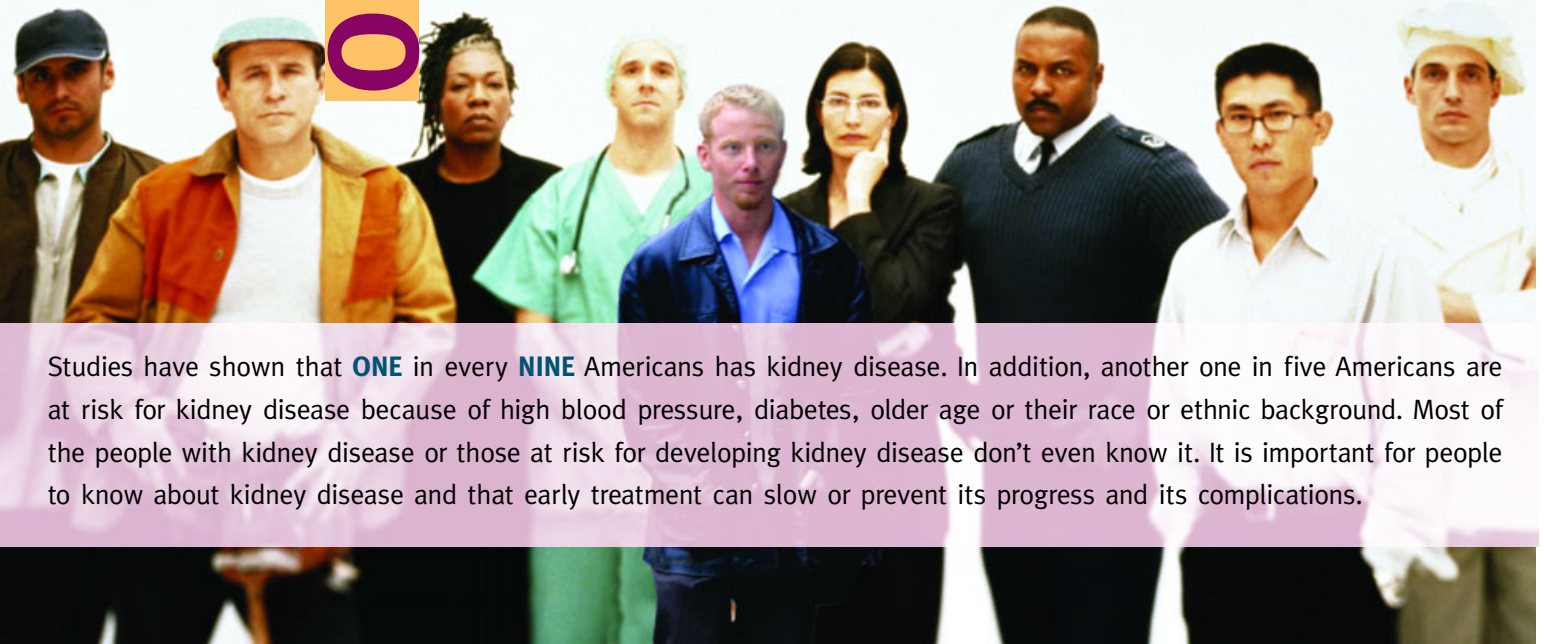
It is never easy to make the lifestyle changes that



*"Finding out from the KEEP screening that I was a diabetic has turned my life around."*

Doug has made. When we've eaten a certain way for many years, it's hard to break the habit and begin new eating habits. However, Doug realized that the lifestyle changes will not only make him feel better, they will also keep him from heading down the path to a much greater disruption in his lifestyle: kidney failure, which must be treated with dialysis (which may take anywhere from 12 to 20 hours per week) or a kidney transplant. To find out about free KEEP screenings in your area, visit the NKF Web site at [www.keeponline.org](http://www.keeponline.org), or call the NKF at 1-800-622-9010.

# ONE IN NINE



Studies have shown that **ONE** in every **NINE** Americans has kidney disease. In addition, another one in five Americans are at risk for kidney disease because of high blood pressure, diabetes, older age or their race or ethnic background. Most of the people with kidney disease or those at risk for developing kidney disease don't even know it. It is important for people to know about kidney disease and that early treatment can slow or prevent its progress and its complications.

By Dr. Theodore Steinman

## DIAGNOSIS OF KIDNEY DISEASE

About 10 to 14 percent of family members of people with chronic kidney disease (CKD) are at risk for kidney disease. Therefore, if your family members are at risk, they should know their:

1) **Blood creatinine level**—a routine test of kidney function that is done using a blood sample. Creatinine is a chemical in the blood that comes from the normal functioning of muscle in the body. The kidney is the only organ that gets rid of this chemical. As kidney function gets worse, the amount of creatinine excreted in the urine goes down and the levels in the blood go up. Ask your doctor what yours is and what percent of normal kidney function you have.

2) **Urine protein**—normal is negative, meaning that there is no protein in the urine. A positive test is abnormal and further testing (such as additional blood studies, collection of a 24-hour urine and maybe a kidney biopsy) is needed because this can be a sign of CKD.

3) **Blood pressure**—According to the NKF-K/DOQI guidelines,<sup>1</sup> the recommended levels for people with CKD at all stages is 130/80. High blood pressure (hypertension) is a level higher than 140/90. People with kidney disease and even those with normal kidney function should have blood pressure as close to normal as possible because high blood pressure makes kidney function worse.

## TREATMENT OF EARLY KIDNEY DISEASE

Early treatment is better. Studies have shown that lowering high blood pressure, lowering the amount of protein in the urine and lowering high cholesterol levels in the blood can slow the decrease in kidney function in those people who have abnormal kidney function. People who are treated

early do better than those who are treated late in the course of their disease. You also have to take part in your care to do well. Below are some things that you can do to improve your overall health and, hopefully, your quality of life.

1) Change how you do things:

**Weight loss:** Consider talking with a dietitian about a plan to lose weight if you weigh more than you should for your sex, age and height. Your doctor can tell you what your ideal weight should be.

**Regular exercise:** Plan to do an exercise program at least three times a week for 20 to 45 minutes a session. Your exercise routine can range from such things as walking, using a

## MAKE CHANGES



Get your feet moving



Limit your alcohol intake



Talk to your doctor about meds

## What is your stage of Kidney Disease?

Stage	Description	Glomerular Filtration Rate
At increased risk	Risk factors for kidney disease (e.g., diabetes, high blood pressure, family history, older age, etc.)	(GFR)* More than 90
1	Kidney damage (protein in the urine) and normal filtration rate	More than 90
2	Kidney damage and mild decrease in filtration rate	60 to 89
3	Moderate decrease in filtration rate	30 to 59
4	Severe decrease in filtration rate	15 to 29
5	Kidney failure (dialysis or kidney transplant needed)	Less than 15

*The key to stopping chronic kidney disease is early detection!*

**\*Glomerular Filtration Rate (GFR):** GFR is the best way to measure kidney function and determine your stage of kidney disease. Your doctor can calculate it from the results of your blood creatinine test, your age, body size and gender. Your GFR tells your doctor your stage of kidney disease and helps the doctor plan your treatment.

Adapted from K/DOQI CKD Guidelines, Table 33.

treadmill or working out with weights to playing basketball.

**Diet:** Your blood pressure can get lower just by eating a diet that is low in salt. Some people have blood pressure that goes up more than others due to foods high in salt. Work with a dietitian to plan a low salt diet.

**Alcohol:** Drinking alcoholic beverages can make your blood pressure high. Men should have no more than two small drinks a day and women no more than one.

**Smoking:** Cutting down is not okay. You must stop completely. Smoking causes your blood vessels to narrow which will raise blood pressure and lower blood flow to the kidneys. People who smoke have a much greater chance of getting heart and lung disease, and these diseases make treating kidney disease much more difficult.

2) Medications: Discuss blood pressure medicines with your doctor and find out what works best for you. If you have side effects such as dizziness, nausea, leg swelling, headaches or fatigue from your high blood pressure medicine, it is important that you don't simply stop taking it. Talk with your

doctor about an alternative treatment.

3) Check your blood pressure regularly: Ask your doctor or nurse to teach you how to take your blood pressure. Then take it at home, write it down and discuss it with your doctor. Many blood pressure readings over time, including some taken outside of the doctor's office, will tell your doctor what medicines you need in what dose to control your blood pressure.

4) Protein in the urine in addition to being a sign of CKD, can cause kidney disease to get worse. Ask your doctor to check your urine for protein. Some medicines, angiotensin converting enzyme inhibitors (ACEI) and angiotensin receptor blockers (ARB), have been shown to reduce protein in the urine and slow the progress of kidney disease in some people.

5) Blood cholesterol and other lipids (fats) in the blood may make kidney disease worse and cause heart disease. These should be treated with a low fat diet and medication for cholesterol. The goal for total cholesterol should be under 200 and for triglycerides it should be under 150. You should know your numbers for "good" cholesterol (HDL cholesterol, which should be greater than

60) and "bad" cholesterol (LDL cholesterol, which should be less than 120), and what they mean.

6) Blood sugar—If you have diabetes (also known as sugar diabetes), it is important for your blood sugar to be as close to normal as possible. This usually means sticking to a strict diet, controlling your weight and taking pills or using insulin. You need to work closely with your health care team to help make sure your blood sugar is not too low or too high. Diabetes is the most common cause of kidney failure and early treatment can slow down the progress of kidney disease.

In summary, treatment of CKD may stop or slow the speed at which kidneys get worse. You should know what treatment is possible and talk with your doctor. A nephrologist (kidney doctor) can help your regular doctor take care of your special needs.

*Dr. Steinman is a professor of medicine at Harvard Medical School and the director of the dialysis unit at Beth Israel Deaconess Medical Center in Boston.*

1. National Kidney Foundation. K/DOQI Clinical Practice Guidelines on Hypertension and Antihypertensive Agents in Chronic Kidney Disease. *Am J Kidney Dis* 43:5159, 2004 (suppl 1)



# Heart of the Matter

BLOOD PRESSURE

AND YOUR KIDNEYS

By Katrin Uhlig, MD, and Andrew S. Levey, MD

## What does high blood pressure mean to you?

High blood pressure and kidney disease are two common conditions, each affecting the other. High blood pressure causes kidney disease and chronic kidney disease (CKD) causes high blood pressure. More important, both conditions increase the risk of heart disease and stroke. Treatment of high blood pressure and kidney disease can reduce your chance of having a heart attack or stroke.

## The epidemic of high blood pressure

Approximately 50 million adult Americans have high blood pressure. The level of blood pressure increases with age. About 60 percent of the population over the age of 60 has high blood pressure. High blood pressure (also known as hypertension) is a silent condition: that means that there are not usually any signs or symptoms. Many people with high blood pressure do not know that they have it. Sometimes, by the time they are found to

have high blood pressure they already have heart disease

or kidney disease or may have had a stroke. Although

the diagnosis and treatment of high blood pressure have

improved in the past few years, more than 70 percent of people with hypertension

still have blood pressure levels above the recommended treatment goal. In

May 2003, new guidelines for high blood pressure were reported. The report

describes a new classification for people with blood pressure between 120-139 systolic

(the top number in a blood pressure reading) or 80-89 diastolic (bottom number). People with blood

pressure readings in these ranges are considered now to have “prehypertension”. Those in the prehypertension range are at a higher risk than those with lower blood pressures and are more likely to get high blood pressure where medication is needed.<sup>1</sup>

## The epidemic of chronic kidney disease

In this country, 300,000 people have kidney failure and have to be treated with dialysis or kidney transplantation; approximately 19 million more people have chronic kidney disease (CKD) with decreased kidney function or other signs of kidney damage. More than 50 percent of people with CKD and more than 90 percent of those with kidney failure have high blood pressure. High blood pressure caused the kidney disease in over 20 percent of people with kidney failure. In adults, kidney function decreases with age. High blood pressure speeds the loss of kidney function with age.

By age 60 to 69, seven percent of people have lost half their kidney function. After age 70, 25 percent of people have lost half their kidney function. Unfortunately, like people with high blood pressure without kidney disease, more than half of those with CKD and high blood pressure have blood pressure levels above the treatment goal. This means that their blood pressure is higher than it should be, even with treatment. If this is so, this would indicate that your current treatment should be evaluated. According to the NKF-K/DOQI guidelines, the recommended blood pressure levels for people with CKD at all stages is 130/80<sup>2</sup>.

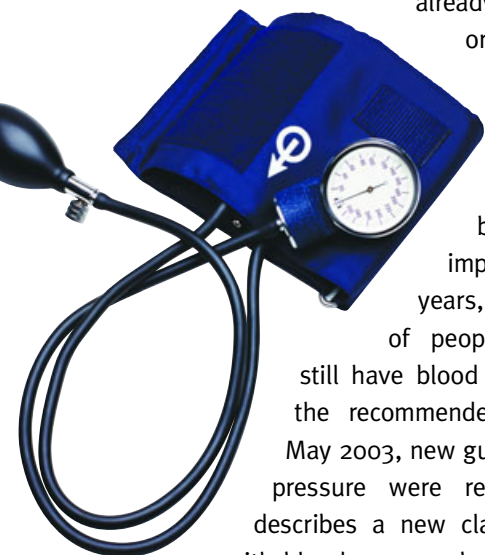
## The heart of the matter

Heart disease and stroke are the first and third most common causes of death in the United States. People with high blood pressure and CKD have a greater chance of having heart disease or a stroke than those without kidney disease or high blood pressure. In fact, having

*continued, p.14*

1. Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure –JNC VII.

2. National Kidney Foundation. K/DOQI Clinical Practice Guidelines on Hypertension and Antihypertensive Agents in Chronic Kidney Disease. *Am J Kidney Dis* 43:S159, 2004 (suppl 1).





## Knowing the basics



# Anemia

ANEMIA IS A SERIOUS CONDITION. MILLIONS OF AMERICANS SUFFER FROM THIS DISORDER. ANEMIA OCCURS WHEN YOUR RED BLOOD CELLS ARE IN SHORT SUPPLY. RED BLOOD CELLS CARRY OXYGEN FROM YOUR LUNGS TO ALL YOUR ORGANS AND TISSUES, PROVIDING ENERGY FOR YOUR DAILY ACTIVITIES.

### What are the symptoms of anemia?

The symptoms of anemia vary. In many cases, anemia is not detected because it is hidden by other chronic conditions. If you have anemia, you may:

- look pale
- feel more tired
- feel short of breath
- have little energy for your daily activities
- have a poor appetite
- have trouble sleeping
- have trouble thinking clearly
- feel dizzy or have headaches
- have a rapid heartbeat
- feel depressed or “down in the dumps.”

### Speak to Your Doctor

Many people with chronic kidney disease have anemia. If you think you might have anemia, talk to your doctor. Here are some tips to help you get the most from your visit:

- Write down your symptoms, allergies, medications and previous medical procedures. Show this to your doctor.
- Tell your doctor about any health problems you may have, how your treatments are working and how you are feeling.
- Ask your doctor what your hemoglobin is and keep a record of it.
- During your doctor’s visit bring up all issues that concern you.
- Make sure you understand what your doctor has said and the decisions he or she has made about your treatment plan.
- Take notes to help you remember what your doctor said.

### Words to Know

**erythropoietin (EPO)** – A hormone produced by the kidneys that helps create new red blood cells. If your kidneys are not producing enough EPO, you can take artificial hormones such as epoetin alfa or darbepoetin alfa in order to help your body produce more red blood cells.

**ferritin (ferry-tin)** – A test to show if your blood has enough iron. If your ferritin level is below 100, you may need dietary supplements or injections of iron.

**hematocrit (Hct or “crit”)** – tells how much of your blood is made up of red blood cells. Normal hematocrits are from 38 to 47 percent for women and from 42 to 50 percent for men.

**hemoglobin (Hgb)** – The part of red blood cells that carries oxygen throughout the body. Normal hemoglobin levels are from 12.5 to 15 g/dL for women and from 14 to 16 g/dL for men. Measuring your hemoglobin is the preferred test to check for anemia as it is considered the most accurate.

**TSAT (tee-sat)** – A test to show the level of iron in your blood. If your TSAT is less than 20 percent, you may need dietary supplements or injections of iron.







## Congress and the Supreme Court

# CONCERNED WITH CHRONIC DISEASE PROTECTION

*by Dolph Chianchiano, JD, MPA*

On May 17, 2004, the Supreme Court decided the case of *Tennessee v. Lane*. The court ruled that individuals with disabilities could sue a state for violation of the Americans with Disabilities Act. The plaintiffs, paraplegics confined to wheelchairs, sued the State of Tennessee for damages because they were unable to use Tennessee courthouses that were not equipped with elevators.

People with chronic kidney disease and their family members should know that recent decisions by the United States Supreme Court have expanded the legal protections for individuals with chronic disease and the members of their families made possible by the Americans with Disabilities Act (ADA) and the Family and Medical Leave Act (FMLA). In addition, the U.S. Senate (although not the U.S. House of Representatives) has passed legislation that would prohibit insurance companies and employers from discrimination on the basis of genetic information.

The Senate bill, S. 1053, the "Genetic Information Nondiscrimination Act of 2003," was designed to ease the public's fears about the potential for genetic discrimination. This bill would allow people to take advantage of genetic testing and research projects and new treatments developed through genetic research without the fear of losing access to health insurance or hurting career opportunities. If this bill becomes law, health insurers, including those providing either group or individual coverage, could not request or require an individual (or a family member who

would be covered by the insurance) to have a genetic test. Similarly, once S. 1053 is enacted, health insurance premiums or contributions could not be adjusted on the basis of genetic information. The bill would also make it illegal for an employer not to hire, to terminate or to discriminate in hiring (discrimination in hiring includes hiring people for less than appropriate pay) because of genetic information. It would also outlaw any attempt by an employer to classify employees based on genetic information if that practice might deprive any employee of opportunities available to other workers. A similar bill in the U. S. House of Representatives, HR 1910, has been co-sponsored by 240 members of that chamber. However, it has not been placed on the calendar for a vote.

The Family and Medical Leave Act (FMLA) entitles employees who have been on the payroll for at least 12 months to take up to 12 weeks of unpaid leave annually, when needed, to care for their own health or to provide care for a child, spouse or parent who has a serious medical condition. The employer must also keep the same group health plan coverage during the entire leave.

However, an employer can require that the employee use any accrued paid vacation time, personal leave or family leave before granting FMLA leave. When the need for the leave is foreseeable, the employee must provide 30 days advance notice. When the need is not foreseeable, the employee must provide notice as soon as practical.

In the case of *Nevada Department of Human Resources v. Hibbs*, decided May 27, 2003, the U.S. Supreme Court made it clear that the protections provided by FMLA, including the right to sue for damages for violation of the statute, are also available to employees of state governments. In this case, Mr. Hibbs was discharged from employment by the Nevada Department of Human Resources after the agency informed him that he had used all of his FMLA leave to care for his ailing wife and that no further leave would be granted. He went to court to get reinstated in his job and to sue for monetary damages. The state of Nevada challenged his right to sue, but the Supreme Court decided that the case should go to trial.

*continued on p. 14*

Following a special diet doesn't mean you can't enjoy delicious meals! Try foods, such as this Jamaican curried chicken, that use herbs and spices in place of salt.

# This issue's featured Recipes



**Jamaican Curried Chicken**

Recipe makes 12 servings. Each serving of chicken contains\*:

Calories: 482 • Sodium: 67 mg • Carbohydrates: 4 gms  
Potassium: 217 mg • Calcium: 24 mg • Protein: 21 gms  
Fat: 42 gms • Phosphorus: 140 mg

*\*does not include rice or other side dishes*

## Jamaican Curried Chicken

- 1 whole chicken (2 lbs.) cut up into 8 or more pieces
  - 2 tbsp curry powder (a greenish-yellow seasoning used in Indian recipes, found in most supermarkets)
  - 1 tsp black pepper
  - 1 large onion cut into rings
  - 1 small green pepper
  - 2 stalks green onion cut up small
  - 1 stalk thyme
  - 1 tbsp Mrs. Dash (renal)
  - 1 large potato
  - 1 tbsp olive oil
- 
1. Season chicken with all ingredients
  2. Rub seasonings onto chicken
  3. Marinate for 1 hour
  4. Heat oil in deep pan
  5. Sauté chicken in oil for 5-10 minutes
  6. Fill pan with enough water to cover chicken
  7. Cover pot with tight lid
  8. Bring to boil, then reduce to medium heat
  9. Cook on medium heat for 30 minutes
  10. Cut potato into small wedges and add to pot. Cook over medium low heat for another 15 to 20 minutes.
  11. Stir and serve over bed of rice with green salad or mixed vegetables.



**Stew Beef**

Recipe makes 12 servings. Each serving of stew beef contains\*:

Calories: 253 • Carbohydrates: 7 gms • Protein: 15 gms  
Fat: 17 gms • Sodium: 74 mg • Potassium: 348 mg  
Calcium: 33 mg • Phosphorus: 176 mg

*\*does not include rice or other side dishes*

## Stew Beef (Guyana)

- 2 lbs beef stew (cut in small pieces)  
season and marinate for one hour
  - 1 large onion (chopped in small pieces)
  - 1 tsp cinnamon
  - black pepper to taste
  - 3 small peppers
  - 5 large cloves garlic
  - 2 tbsp tomato paste, low sodium
- 
1. Place 1 tbsp oil to heat
  2. Fry garlic, pepper and onions in oil until golden brown
  3. Add beef to pot
  4. Add 2 tbsp tomato paste
  5. Let meat boil then simmer
  6. Add 1 cup hot water to make gravy until it thickens
  7. Add 1 tsp ground cinnamon
  8. Add a touch of black pepper
  9. Simmer until meat is tender
- Eat over rice, roti (Guyanese pita bread) or just plain bread.

# Good Nutrition

By Joan Brookhyser, RD, CSR

Hypertension is one of many factors in the control and treatment of kidney disease. Whether your blood pressure is controlled by medication or not, lifestyle habits, including diet, remain important. The following guidelines may improve your blood pressure or in some instances change the amount of medication you need to control your blood pressure.

**SODIUM** Sodium intake can result in thirst, therefore increasing the amount of fluid you drink. This extra fluid can cause blood pressure problems.

One of the most obvious ways you get too much sodium is by using table salt. However, less obvious sources of salt can be found in many foods that do not even taste salty.

## High salt foods include:

- Seasonings and condiments: soy sauce, garlic salt, onion salt, bouillon, olives, pickles, relishes
- Dairy products: Processed cheese, cheese spreads, buttermilk
- Soups: Bouillon cubes, regular, canned, dried or frozen soup mixes, canned broths
- Vegetables: Frozen vegetables with prepared sauces, sauerkraut
- Meat and fish: Canned, cured, dried, salted or smoked meats and fish, bacon, hotdogs, ham, corned beef, luncheon meats, sausage, tuna fish
- Fast Foods: pizza, Chinese, deluxe-type hamburger
- Cereals and breads: Instant mixes such as biscuits, muffins, quick breads
- Convenience items: Packaged sauces, e.g., spaghetti sauce, au jus or gravies, boxed noodles, rice, stuffing mix
- Snacks foods: corn chips, potato chips or pretzels, party dips and spreads

*Note from the editor:* Anytime *Kidney Care* prints lists of foods it is recommended that you check with your own dietitian or doctor for what works for you, as every diet is individualized for that specific person.

**ALCOHOL** Ten percent of hypertension is due to excessive alcohol use. The exact reason is not known but it seems to directly affect the systolic blood pressure rather than the diastolic pressure. Alcohol may also interfere with the effectiveness of your medications. Keeping your alcohol to a minimum or not using alcohol at all would most likely be of benefit to you.<sup>1</sup>

**PROTEIN** As someone with kidney disease, the type of protein you choose may also have an impact on your blood pressure. Research shows that plant-based proteins cause high blood pressure less often than do animal-based proteins.<sup>2</sup> This does not mean you need to become a vegetarian. However, consider adding some plant-based proteins, such as tofu, gardenburgers, seitan (a high protein food made from wheat gluten) or soymilk, to your diet. Firm tofu and seitan can be easily substituted for meat in recipes like stir-fry dishes or soups, or it can be grilled by itself. Soft tofu can be mashed and used in place of ricotta cheese or cottage cheese in recipes like lasagna. Tofu is low in phosphorus, too!

The most important factor to remember is that eating a well-balanced diet and maintaining a healthy weight will be the best way to start you on the road to improving your blood pressure control. If you have any questions about what you should be eating, ask your doctor to refer you to a dietitian who can help you plan an eating program especially for you.

**HERBS AND OTHER NUTRITIONAL SUPPLEMENTS** Several herbal products can be dangerous when you have kidney disease, especially when you also have



**CAUTION!** Coffee is an herb and may affect your high blood pressure when consumed in large quantities.

high blood pressure. Since some of these herbs stimulate the central nervous system, they can affect your blood pressure, while others will work against your blood pressure medication. Herbs of particular concern are ginseng, guarana and ephedra.<sup>3</sup> Keep in mind coffee is also an herb and may affect your high blood pressure when consumed in large quantities. When controlling your blood pressure, balance and moderation in your overall diet are the key. These guidelines not only help improve your blood pressure but also improve other aspects of your health. You are paving the way for a better quality of life with kidney disease by making changes in any of these areas.

1. Campese VM, Bianchi S: Nutritional factors in hypertension, in Kopple JD, Massry SG (eds): *Nutritional Management of Renal Disease*. Baltimore, MD, Williams & Williams, 1997, p 85-88.

2. *Ibid*

3. Skidmore-Roth L (ed): *Mosby's Handbook Herbs and Natural Supplements*, St. Louis, MO, Mosby's, Inc., 2001.

*Joan Brookhyser, RD, CSR, is a dietitian in nephrology services at St. Joseph Medical Center in Tacoma, Washington.*



# The **HIGHS** & **LOWS** of Blood Pressure

## *How Exercise Can Help!*

By Pedro T. Recalde, MS, ACSM

Do you feel like your doctors and nurses are obsessed with blood pressure? Whenever you go to your doctor you have your blood pressure checked. Why is it so important?

Blood pressure is an easy way to tell how hard your heart is working, and how well blood is moving through your body from the top of your head down to your toes. Two numbers, systolic and diastolic, make up blood pressure. Systolic measures how hard your heart is working to pump blood through your body. Diastolic measures how hard your arteries are working to keep blood flowing to all your tissues. High blood pressure means that your heart muscle and your arteries are working hard to move blood through your body.

### **What creates all of this pressure?**

When your heart is pumping, it pushes blood into your arteries, and your arteries, not sure if they want to be stretched, will push back. Imagine your arteries are the roadway your blood uses to travel around

## How important is *exercise* for

your body. This roadway can expand or contract to keep traffic moving. High blood pressure is like gridlock; the traffic and roadblocks make it hard for blood to get to eyes, kidneys and small vessels in your fingers and toes.

Having very low blood pressure can also cause problems. People often feel dizzy and lightheaded when their blood pressure is too low. When that happens, you may be told to put your feet up because gravity helps pull your blood from your legs towards your heart, brain and lungs. You can help control your blood pressure with regular exercise, a healthy diet and proper medications. A regular exercise routine means moving your body and getting your heart rate up for 20-45 minutes at least three times a week. When you

***“Another benefit of regular exercise is that your blood vessels are constantly stretching and shrinking while directing blood flow to the right body parts.”***

exercise, your blood vessels will open to give blood a clear path to your muscles, and they stay open even after exercise. This opening of the vessels results in less resistance, so your heart and vessels don't work so hard. Studies of people with high blood pressure have shown slightly lowered blood pressure for up to nine hours after only 45-minutes of exercise. People with already low blood pressure also experience benefits when exercising. Moving big muscles when walking, dancing, biking or swimming keeps the blood moving and your pressure increases slightly during exercise. People with low blood pressure should look into exercising in a sitting position, like using a cycle or a recumbent bike. For both types of blood pressure, people should be sure to take a minimum of 10 minutes of cool down time after exercising to slow down the heart and lungs, to avoid any quick changes in pressure.

Another benefit of regular exercise is that your blood vessels are constantly stretching and shrinking while directing blood flow to the right body parts. If your vessels sit still for too long, they can become very stiff. Exercise keeps your vessels elastic and bendable, which makes them less likely to experience damage during “high pressure moments” caused by stress or too much fluid.

So now that you realize that 20-45 minutes of exercise can help control your blood pressure, you are probably wondering about how hard you have to work. Exercising at easy to medium difficulty will lower resting blood pressure (blood pressure while inactive) as much as, if not more than, exercise at higher intensities. An easy way to monitor how hard you're working is by talking. If you have trouble singing your favorite tune or chatting with your exercise partner, slow

***“You need to talk to your doctor or nurse about different options before you start exercising.”***

# those with high blood pressure?

down to the point where you can speak comfortably again. You need to talk to your doctor or nurse about different options before you start exercising. You may be referred to a physical therapist or an exercise physiologist who can teach you how to safely start an exercise program, monitor your symptoms and your intensity by teaching you about heart rate and breathing while exercising. They will also identify any individual precautions you should take while exercising.

Remember, the most important part of exercising is picking an activity that you enjoy doing. You are in control!



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## CONGRESS AND THE SUPREME COURT, *continued from page 9*

Since 1990, the ADA has prohibited discrimination against disabled individuals in the areas of employment, public services, public accommodations, transportation and communication (especially for those with hearing or visual impairments). Removal of architectural barriers (e.g., by building ramps and elevators) is, perhaps, the most visible impact of this legislation in the last 14 years. The case of *PGA Tour, Inc., v. Martin*, decided on May 29, 2001 by the U.S. Supreme Court, concerned the part of the ADA statute governing public accommodations. Title III of ADA requires an organization operating a “public” accommodation to make reasonable modifications when necessary to accommodate individuals with disabilities. Mr. Martin, a professional golfer

with a degenerative circulatory disorder, requested permission to use a golf cart, rather than walk from hole to hole, during the third stage of a qualifying Professional Golf Association (PGA) tournament. The PGA argued that the play areas of its tour competitions are not places of public accommodation with the scope of Title III. The Supreme Court, however, found that the PGA golf tours and their qualifying rounds fit within Title III’s coverage of public accommodations, even though the PGA required a \$3,000 entry fee to play in these events.

It is not necessary to go to court to claim your rights under FMLA or ADA. ADA complaints can be made to the Equal Employment Opportunity Commission. Employees who believe

their FMLA rights have been violated may file a complaint with the Department of Labor.

Similarly, *Kidney Care* readers can play an active role in fostering genetic nondiscrimination by encouraging members of the U.S. House of Representatives to support passage of H.R. 1910. To identify your representative, check the Government Relations page at the National Kidney Foundation Web site, [www.kidney.org](http://www.kidney.org)

### About the Author



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## HEART OF THE MATTER, *continued from page 6*

heart disease or a stroke is more threatening to their lives than kidney failure. At higher levels of blood pressure and lower levels of kidney function, the chance of heart disease or stroke is worse. People who go on to have kidney failure are 10 to 100 times more likely to die from heart disease or stroke than people without kidney failure. Because of this, it is clear that the treatment of high blood pressure and CKD are very important. Fortunately, good blood pressure drugs are available that often help control it.

### Treatment of high blood pressure in people with CKD

People with kidney disease at all stages should see a doctor or other health worker regularly, have their blood pressure taken frequently and take the right medications. The treatment of high blood pressure slows the worsening of CKD. Treatment of high blood pressure and CKD also prevents heart disease and stroke.

Two kinds of drugs are particularly good for the treatment of people with high blood pressure and kidney disease. One type of medicine, “angiotensin converting enzyme inhibitors” (ACE inhibitors), decreases the body’s ability to make angiotensin, a substance that increases blood pressure. Another type of medicine, “angiotensin receptor blockers” (ARBs), stops the angiotensin from working so that it can’t

increase blood pressure. These medicines work because of the following reasons: 1. They are good at lowering blood pressure. 2. They are better than other blood pressure medicines in slowing the loss of kidney function. 3. They protect against heart attacks and strokes and are the medicines that should be used first for the treatment of heart failure. Therefore, these two types of medicines are the best medicines for the treatment of most people with high blood pressure and CKD.

### Prevention of high blood pressure and kidney disease in high risk individuals

Screening studies have shown that first degree relatives of people with kidney disease (parents, brothers and sisters) are more likely to develop high blood pressure and kidney disease than those without a close relative with kidney disease or high blood pressure. People with a family history of kidney disease should have regular blood pressure checks so that high blood pressure can be found early, and treated. With early and effective treatment, people with high blood pressure can have fewer problems such as heart disease, kidney disease and stroke, and live longer and better lives.

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# It is Not Just the Sugar

By Kelly Evarts Chambers, MS, RD, CDE

Preventing or Delaying  
Type 2 Diabetes

**The increase** in the number of people in the United States diagnosed with type 2 diabetes is alarming. Since 1991, diabetes has increased by 60 percent in the U.S. Fortunately, the health conditions that are believed to cause type 2 diabetes are

able to be controlled through lifestyle changes. These health conditions are referred to as Syndrome X. This syndrome, or group of health conditions, was defined in 1988 by Dr. Gerald Raven. If you have Syndrome X, you may be at risk for developing type 2 diabetes and/or having a heart attack. The following are the health conditions that make up Syndrome X:

- Prediabetes, which is a fasting blood sugar level between 110-125 mg/dL
- High insulin levels in your blood due to insulin resistance. Insulin resistance means that your cells are resistant or insensitive to the insulin, so your body has to make even more insulin in order to keep your blood sugar normal.
- Being overweight, especially around the midsection.
- Low level of good cholesterol or HDL (high density lipoprotein)
- High triglyceride level (triglycerides are the most common form of fat in your diet and body)
- High blood pressure (the recommended levels for people with CKD at all stages is 130/80)

So how do you control Syndrome X and lower your risk for getting type 2 diabetes? The two most important things you can do are to increase your physical activity and lose weight if you are overweight. A recent study showed that people who do moderate exercise (such as walking) 20-45 minutes at least three times a week and lower their body weight by 10 percent had a 58 percent lower chance of developing type 2 diabetes. So if you weigh 200 pounds and have been told you are overweight, you should try to lose 10 to 20 pounds. Exercise will also help increase your good cholesterol (HDL) and lower your triglyceride level, blood pressure and blood sugar. Little changes, like parking farther away from the store

or doctor's office and taking the stairs instead of the elevator, are a good start to increasing physical activity. Be sure to talk with your doctor before starting an exercise program.

Since obesity and high triglyceride levels are risk factors for Syndrome X, it helps to lower the amount of fat in your diet. There are different types of dietary fat: saturated, polyunsaturated and monounsaturated. Saturated fat (found in whole milk, butter, fatty red meats, poultry with skin and products made with shortening, lard, palm, palm kernel or coconut oils) will raise your cholesterol level more than anything else in your diet. The healthier types of fat, called polyunsaturated and monounsaturated fat, can help lower your bad cholesterol. Polyunsaturated fat is found in tub margarine and most vegetable oils (corn, safflower or soybean). Monounsaturated fat is found in olive, canola and peanut oils. Other healthy food choices include lean ground meat, skinless poultry breast, low fat condiments such as salad dressings and mayonnaise, and low fat dairy products (i.e., nonfat or 1 percent milk, low fat cottage cheese, low fat sour cream).

## Defining Diabetes

Diabetes is a condition in which the body cannot properly use the sugar in food for energy. There are two major types of diabetes.

### Type 1

Type 1 diabetes is a disease, usually appearing during childhood, in which an organ called the pancreas is damaged. The pancreas normally produces insulin to help us get energy from food. With Type 1 diabetes, the body has a problem making insulin. People with Type 1 diabetes need to take insulin shots in order to live.

### Type 2

Type 2 diabetes is a problem using the insulin that is made by the pancreas. This problem can be caused, or made worse, by lifestyle, especially by obesity and inactivity. Type 2 diabetes used to be a problem mainly for people over 40, but now it is also affecting younger people.

1. National Kidney Foundation. *K/DOQI Clinical Practice Guidelines on Hypertension and Antihypertensive Agents in Chronic Kidney Disease*. *Am J Kidney Dis* 43:5159, 2004 (suppl 1)

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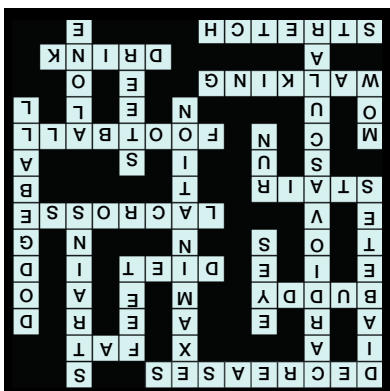
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Crossword Answers from p. 8



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