



National Kidney
Foundation™



SELF-MANAGEMENT, DIABETES AND CHRONIC KIDNEY DISEASE

A Teaching Tool for Diabetes Educators

Based on the 2007 KDOQI Clinical Practice Guidelines and Clinical Practice Recommendations for Diabetes and Chronic Kidney Disease

Background

- The success of strategies to promote glycemic control, prevent cardiovascular disease (CVD) and development or progression of chronic kidney disease (CKD) depends upon patient self-management.
- The ability and willingness of the patient to establish and maintain appropriate behavior regarding diet, physical activity, medicines, self-monitoring and medical follow-up visits is essential.
- A single regimen is not suitable for all patients and developing an individualized plan requires creativity, sensitivity and flexibility on the part of the health care provider.
- Adherence to complex regimens often is poor.
- Problem solving skills are important for safety and confidence-building. Day-to-day events (a high or low blood glucose, illness, travel) will require rapid, informed decisions about food, activity and medications.

Self-management strategies should be key components of a multifaceted treatment plan with attention to multiple behaviors:

- **Glycemic control**
- **Blood pressure**
- **Nutrition**
- **Smoking cessation**
- **Exercise**
- **Adherence to drug therapies**
- **Healthy coping**

Glycemic control

- Self-Monitoring of blood glucose provides the needed information for assessing how food, physical activity and medications affect blood glucose levels
- **Target HbA_{1c} should be <7.0 %, irrespective of the presence or absence of CKD**

Quick Facts:

- ✓ Hyperglycemia, the defining feature of diabetes, is the fundamental cause of vascular organ complications, including kidney disease.
- ✓ Intensive treatment of hyperglycemia prevents diabetic kidney disease (DKD) and may slow the progression of established kidney disease.
- ✓ Lowering HbA_{1c} levels to approximately 7.0 % reduces the development of microalbuminuria and possibly macroalbuminuria.
- ✓ Achieving and maintaining target HbA_{1c} will improve survival and slow and/or prevent complications in patients with diabetes and kidney failure who are on dialysis.

Blood pressure

- **Target blood pressure for people with diabetes and CKD in stages 1-4 should be <130/80 mm Hg**

Quick Facts:

- ✓ Most people with diabetes and CKD have hypertension.
- ✓ Treatment of hypertension slows the progression of CKD.

Nutrition

- Healthy eating (food choices, portion size and timing of meals) is essential for control of diabetes.
- **Target dietary protein intake for people with diabetes and CKD stages 1-4 should be the RDA of 0.8 g/kg body weight per day.**
- **Target LDL-C in people with diabetes and CKD stages 1-4 should be <100 mg/dL; <70 mg/dL is a therapeutic option.**

Quick Facts:

- ✓ Nutritional management of people with diabetes has traditionally focused on blood glucose control.
- ✓ Dietary protein intake at all stages of CKD appears to have an important impact on this population.
- ✓ Competing needs for nutritional management of hyperglycemia, hypertension and dyslipidemia can make determination of appropriate protein intake challenging.
- ✓ Reduction in albuminuria and stabilization of kidney function are achieved by maintaining dietary protein intake at the RDA level.
- ✓ Most people eat in excess of the RDA for dietary protein.

Target dietary protein intake for people with kidney failure (CKD stage 5) who are not on dialysis is 0.60 g /kg body weight per day. For individuals who will not accept such a diet, or for whom such a diet is contraindicated, an intake of up to 0.75 g/kg/ body weight per day may be prescribed.

Quick Facts:

- ✓ Low protein diets may slow the progression of kidney failure or delay the need for dialysis.
- ✓ When patients with kidney failure consume uncontrolled diets, a decline in nutritional status is often observed.
- ✓ Most patients with diabetes and CKD have dyslipidemia.
- ✓ Elevated LDL-C can effectively be treated with statins in diabetes and CKD.
- ✓ Most patients with diabetes and CKD are at very high risk to develop macrovascular complications.

Smoking cessation

Risk reduction behaviors, such as smoking cessation, can reduce risk for complications and maximize health and quality of life. Understanding, seeking and regularly obtaining an array of preventive services is an important part of self-care.

Exercise

Regular activity is important for overall fitness, blood pressure management, weight management and glucose control. Regular and appropriate exercise can reduce the risk of type 2 diabetes, improve body mass index, enhance weight loss, help control lipids and blood pressure and reduce stress.

Note: BMI may be an inappropriate measure of body composition in patients with kidney failure, since it is complicated by excess fluid weight and muscle wasting and may be related to malnutrition. Paradoxically, higher BMI is associated with better outcomes in dialysis patients, even when overall health status is considered.

Adherence to drug therapies

Effective drug therapy in combination with healthy lifestyle choices, can lower blood glucose levels, reduce the risk for diabetes complications and produce other clinical benefits. Clear instructions on how to take insulin injections and how diabetes medications work and when to take them are crucial to maximum patient adherence to drug therapies.

Healthy coping

Psychosocial factors have a big impact on health and may indirectly influence a person's motivation to keep his or her diabetes in control. When motivation is compromised, coping becomes difficult and a person's ability to self-manage his or her diabetes declines.



Self-Management Tips:

Glycemic Control

- Instruct patients about equipment choice and selection, timing and frequency of glucose testing, target values and interpretation and use of results.

Blood Pressure

- Teach patients how and when to measure, track and report blood pressure readings.
- Teach patients about strategies for blood pressure control (eg., exercise, weight control, smoking cessation).

Nutrition

- Teach people with diabetes how to read labels, plan and prepare meals and measure food for portion and nutrient control.
- Barriers to learning may include environmental factors, language, literacy and emotional, financial and cultural issues.

Smoking Cessation

- Teach skills including smoking cessation, foot inspections, blood pressure monitoring, self-monitoring of blood glucose, aspirin use and maintenance of personal care records.

Exercise

- Work with patients to develop an activity plan that balances food and medication with their activity level. Collaborate to address barriers, such as physical, environmental, psychological and time limitations.
- Teach patients the value of body mass index (BMI) as the favored measure of excess weight, since it is a simple, rapid and inexpensive measure that can be applied generally to adults.

Drug Therapies

- Outline potential strategies for simplifying medication regimen (discussions with physician and pharmacist may be helpful).
- Introduce dosage box to clarify regimen and help avoid mistakes.
- Teach about medications including food/drug interactions.

Healthy Coping

- Help patients to identify and overcome obstacles to coping and set achievable behavioral goals.
- Encourage patients to talk about their concerns and fears.

SECTION I: Use of the Clinical Practice Guidelines and Clinical Practice Recommendations

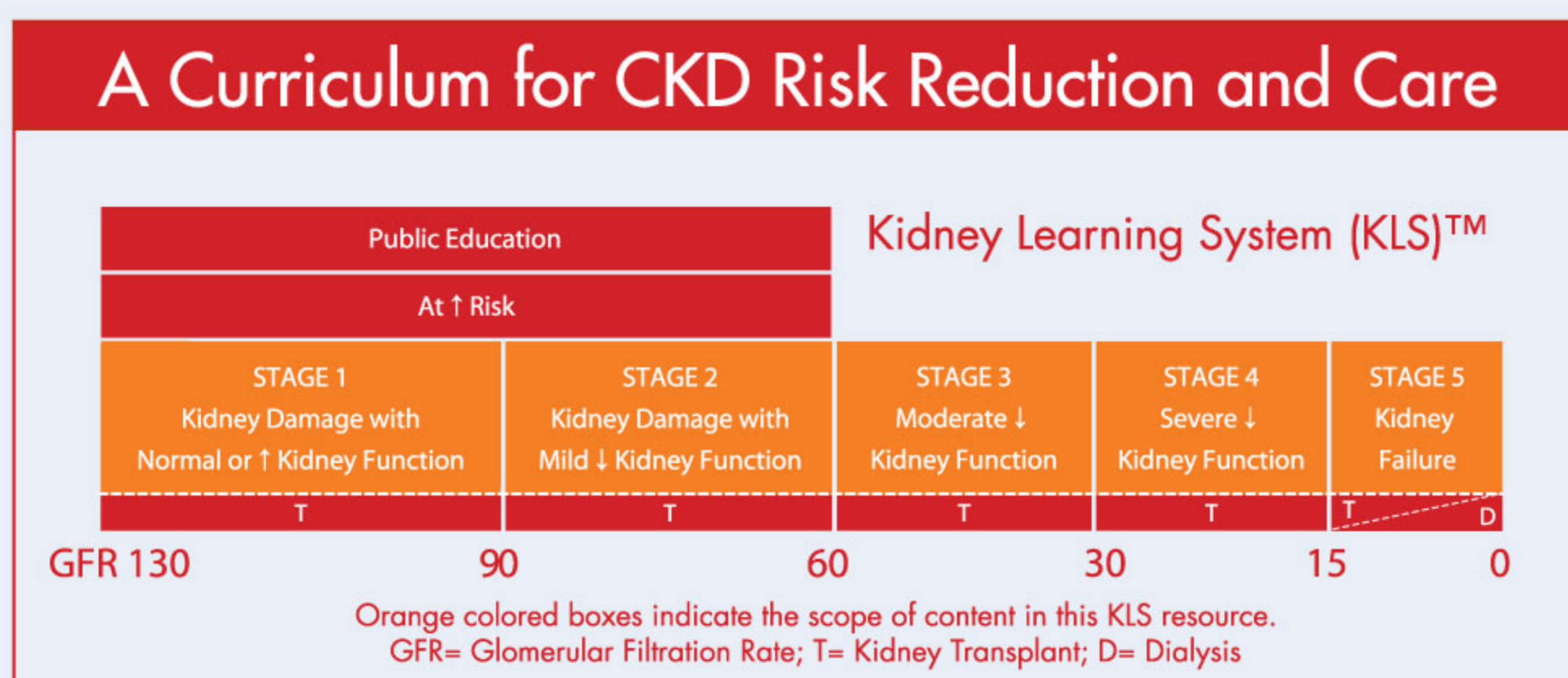
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Variations in practice will inevitably and appropriately occur when clinicians take into account the needs of individual patients, available resources, and limitations unique to an institution or type of practice. Every health care professional making use of these CPGs and CPRs is responsible for evaluating the appropriateness of applying them in the setting of any particular clinical situation.

SECTION II: Disclosure

The National Kidney Foundation (NKF) makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the Work Group.

Specifically, all members of the Work Group are required to complete, sign, and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.



References

1. American Association of Diabetes Educators. AADE 7TM Self-Care Behaviors. www.diabeteseducator.org/AADE7/index.
2. National Kidney Foundation. KDOQI *Clinical Practice Guidelines and Clinical Practice Recommendations for Diabetes and Chronic Kidney Disease*. Am J Kidney Dis 49:2, 2007 (suppl 2) www.kdoqi.org



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