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Interpreting Research for the Kidney Patient - February, 2006

¹ Owen WF Jr, Lew NL, Liu Y, Lowrie EG, Lazarus JM. The urea reduction ratio and serum albumin concentration as predictors of mortality in patients undergoing hemodialysis. *N Engl J Med.* 1993 Sep 30;329(14):1001-6.

² Kaysen GA, Muller HG, Young BS, Leng X, Chertow GM. The influence of patient- and facility-specific factors on nutritional status and survival in hemodialysis. *J Ren Nutr.* 2004 Apr;14(2):72-81.

³ Rasmussen BB, Tipton KD, Miller SL, Wolf SE, Wolfe RR. An oral essential amino acid-carbohydrate supplement enhances muscle protein anabolism after resistance exercise. *J Appl Physiol.* 2000 Feb;88(2):386-92.

Paddon-Jones D, Sheffield-Moore M, Zhang XJ, Volpi E, Wolf SE, Aarsland A, Ferrando AA, Wolfe RR. Amino acid ingestion improves muscle protein synthesis in the young and elderly. *Am J Physiol Endocrinol Metab.* 2004 Mar;286(3):E321-8. Epub 2003 Oct 28.

I know that most of you receiving this newsletter are avoiding dialysis but to encourage you in that effort, I believe that you need to have a knowledge of what you are facing if you decide not to make the effort to avoid dialysis as Dr. Walser encourages in his book. For those of you on dialysis, your nutrition is vital to your health and the essential amino acids will provide the materials needed for you to maintain your health.

For all kidney disease patients, it is obvious that to maintain health and to prepare for a possible transplantation, the most important number next to your creatinine is your serum albumin.¹ For patients on dialysis, a serum albumin level of 3.5 to 3.9 gave a 50% greater likelihood of death. But if that level dropped to between 3.0 and 3.4, the likelihood of death increased by 313%. Between 2.5 and 2.9 the likelihood increased by 708% and for values less than 2.5, the likelihood was 1280% greater. That says that a dialysis patient who keeps their serum albumin at a level below 2.5 is 12 times more likely to die than the patient who maintains a 4.0 or better. And 24% of the patients on dialysis die each year.

More recently, Dr. Kaysen's group² looked at the things which influence survival for dialysis patients. They found that there was nothing about the facility in which the patient took their dialysis that affected the outcome. The most important factor was the serum albumin followed by their creatinine level and the level of obesity.

According to Dr. Walser, the main reasons most of patients came to see him initially were fatigue and nausea. These can be overwhelming in the kidney patient. The biggest change in most people who start taking the essential amino acid (EAA) supplements is renewed vigor. Physicians recognize that exercise results in muscle breakdown with release of wastes into the bloodstream (your BUN). Dr. Robert Wolfe continues his incredible research on the use of the essential amino acids to increase protein synthesis.

Exercise while taking the essential amino acids does not result in production of BUN in either the old or the young and it improves muscle synthesis.³

That means that even if you want to exercise vigorously while taking the EAA, it will not affect your creatinine level, regardless of your age. Starting a small exercise program can help you tremendously, both psychologically and physically. You will want to build up to it slowly since the fatigue you may have experienced in the past may have caused your strength to decline. The essential amino acids normally bring back that strength. Remember, you can't take too much of the essential amino acids and, in fact, if your serum albumin is below 3.5, you really ought to increase your dosage. If you go for a walk, take along some Nutrasential drink since muscle synthesis is at its highest if you take the EAA while you are exercising.