



The Department of Internal Medicine
Division of Nephrology

INFORMATION SHEET

GLOMERULAR DISEASES CLINIC



Minimal Change Disease

Minimal change disease (MCD) is the most common form of glomerular disease in children, but it is also seen in adults. It gets its name from the way the kidney appears when examined under a regular light microscope. At the lower powers of this type of microscope, the kidney tissue looks normal. Only when examined under a very powerful electron microscope are abnormal areas seen. The main finding on laboratory tests is a large amount of protein in the urine. Sometimes there is a little bit of blood found as well, but to the naked eye, the urine itself usually looks normal.

MCD almost always shows up as “nephrotic syndrome”. This is a condition where there is “edema”, or swelling in the body (caused in part by loss of protein in the urine). Puffy eyes and swollen legs are often the parts of the body where edema is first seen, but it may show up in some people with a swollen abdomen. Sometimes, especially in adults, there can be severe failure of the kidneys at the beginning of the disease. But this is not common, and usually the blood-cleaning function of the kidneys is normal.

The cause of MCD is not known, but appears to be an immune problem. MCD is sometimes associated with other internal diseases, especially in adults, and doctors look for these other diseases with physical exams and laboratory tests.

MCD is usually treated with corticosteroids. Children and adults who have nephrotic syndrome often respond well to this therapy, and usually the protein clears from their urine and the edema goes away within a few weeks. In children, because this treatment is effective over 85% of the time, kidney biopsies usually are not needed when MCD is suspected. In adults, because MCD is not the most common cause of nephrotic syndrome, and because it responds less reliably to steroid therapy, a [biopsy](#) usually is done.

Overall, about 30% of people with MCD who respond to steroids never have another bout of disease. Unfortunately, even after successful treatment, most people have relapses, which means the disease comes back. Virus infections like the common cold can cause relapses, but often it is not clear what triggers them. Usually these relapses will respond to another course of steroid treatment, but sometimes they do not. When a child or adult does not respond to steroid therapy, a kidney biopsy (sometimes a repeat biopsy, in adults) is usually performed to help make sure the diagnosis is correct and to help guide further treatment.

Even when a person has many episodes of MCD, the underlying function of the kidney usually remains normal. It is very unusual for there to be long term damage to the kidneys with MCD. Less than 5% of people with MCD develop kidney failure. With the initial episode, as well as during the relapses, and from side effects of therapy, infection and blood clots can cause additional problems. Sometimes, other specific treatments are needed for these complications.