* Strong genetic component
* Goal is to understand the mechanism of the disease – need to understand the function of the genes
  + Can introduce the genes into human or animal cells
  + Genes can be used as diagnostic tests
  + See if we can prevent the onset or cure the disease
* Prognosis – see the genetic background and see if someone is likely to have the disease
* Search for gene mutation that cause familial MND
* Generally thought that MND is due to collected steps – genetic risk factor or environmental risk factor
  + 3 known MND genes
* Single gene mutation that has strong effect – eg. not colour blind see 74, if have gene mutation see other numbers
* Eg. rolling tongue has a large genetic component – but not 1 to 1 effect
* We carry autosomes and sex chromosomes
* Reduced penetrance – inherit the mutation but not develop the disease
* Eg. box 8 always segregate – that gene likely lies very close to the mutation that causes the disease
* Identify genetic risk factor
* Adjacent markers are often inherited together
* GWAS – get large number of cases and controls are the challenges