This presentation explores the relationship between the psychiatric disorder *schizophrenia* and the effects that it may have on genetics, or the genetic basis behind the disorder. The presentation begins with a brief overview of the disease itself and later goes onto presenting research supporting the genetic factors behind schizophrenia.

Schizophrenia is a psychiatric disorder that alters the sufferer’s sense of reality, with the most recognizable symptom being auditory and/or visual hallucinations. These hallucinations, in most cases, have a devastating effect on the daily lives of schizophrenia patients. In addition to hallucination, other symptoms of schizophrenia can be classified into *positive* or *negative* symptoms; positive symptoms are those that are present in addition to those present in non-schizophrenia persons, while negative symptoms are those that are absent when compared to healthy individuals. Positive symptoms include auditory and visual hallucinations, paranoid delusions, and disorganized speech, while negative symptoms include flat affect, alogia, anhedonia, asociality, incoherent speech (such as word salad), and avolition. In order for these symptoms to be included with a diagnosis with the DSM-IV, certain criteria must be met: at least two of the symptoms must be present for one month in a period of six months of dysfunction, along with social or occupational dysfunction (or dysfunction in caring for onself). If symptoms are present, but for a shorter duration, the diagnosis would be termed as a *schizophreniform disorder*.

There are defined subtypes of schizophrenia, further categorizing the disorder. Some include: *Paranoid type* schizophrenia patients suffer only from delusions and hallucinations. *Disorganized type* schizophrenia presents with thought disorder and flat affect simultaneously. *Catatonic type* either leaves the patient immobile (negative symptom) or causes them to have purposeless movements (positive symptom). There are also others that are related, such as undifferentiated and residual types, as well as post-schizophrenic depression and simple schizophrenia.

Individuals who are at highest risk for schizophrenia are those with a family history of the disorder, or a family history of any psychotic disorder. Prenatal problems and drug and alcohol issues also play a role. Twin studies have shown that individuals with a monozygotic twin who has the disorder is most likely to develop it. The age of onset is usually late adolescence and early adulthood.

Schizophrenia is said to be caused by a few main factors: dopamine imbalance, genetics, prenatal and early environment, and neurobiology. Genetics, our focus, must be considered in conjunction with environmental factors, and is usually multifactorial, meaning that it is caused by interactions of several genes.

In a series of studies published in the July 2009 issue of *Nature* show that there is a chromosome “hot spot” on the extended MHC region on the short arm of chromosome 6, otherwise known as chromosome 6p22.1. The studies showed that there was significant association between single nucleotide polymormorphisms in the MHC region on chromosome 6. Another study further discussed the hot spot with relation to copy number variations and their inheritance; this showed that risk alleles for schizophrenia existed on chromosome 6.

Only a fraction of the information that is yet to be explored were given in this presentation, and was meant to be a primer on the genetic factors of schizophrenia. However, at the same time, this presentation allowed us to apply some of the basic information learned within lectures to real-life issues.