1. A method for screening a human subject for susceptibility to ~~PD~~[1]Parkinson's Disease (PD)[2], the method comprising: obtaining a nucleic acid sample from the human subject; ~~and~~ [3]determining which allele is present in the sample at ~~one or more of~~ [4]the polymorphic nucleotide ~~positions selected from a~~[5] ~~group of SNPs consisting of~~[6] ~~rs10513789 (SEQ ID NO: 1~~[7]~~),~~[8] ~~rs6599389 (SEQ ID NO: 2), rs873785 (SEQ ID NO: 3), rs11248060 (SEQ ID NO: 4), rs6812193 (SEQ ID NO: 5), rs4130047 (SEQ ID NO: 6), rs7451962 (SEQ ID NO: 7) and~~[9] ~~rs439714 (SEQ ID NO: 8~~[10]position of SNP[11] rs10513789 (SEQ ID NO: 1[12]); and identifying the human subject as having an increased risk of developing PD if the subject has ~~any of the following:~~[13]a[14] T at the polymorphic nucleotide position of rs10513789 (SEQ ID NO: 1)~~; A at~~[15] ~~the polymorphic nucleotide~~ [16]~~position of rs6599389 (SEQ ID NO: 2); A at the polymorphic nucleotide position of rs8737585 (SEQ ID NO: 3); T at the polymorphic nucleotide position of rs11248060 (SEQ ID NO: 4); C at the polymorphic nucleotide position of rs6812193 (SEQ ID NO: 5); C at the polymorphic nucleotide position of rs4130047 (SEQ ID NO: 6); A at the polymorphic nucleotide position of rs7451962 (SEQ ID NO: 7); or C at the polymorphic nucleotide position of~~[17] ~~rs4397141 (SEQ ID NO: 8)~~[18]~~.~~

~~2. A method for screening a human subject with a LRKK2 G2019S mutation for susceptibility to PD, the method comprising: obtaining a nucleic acid sample from the human subject; and~~[19] ~~determining which allele is present in~~[20] ~~the sample at the polymorphic nucleotide position of SNP rs11755699 (SEQ ID NO: 9), wherein presence of C at the polymorphic nucleotide position is indicative of a lower risk of developing PD.~~

~~3. The method of claim 1 or 2,~~[21].

2. The method of claim 1[22] wherein determining the identity of the polymorphic allele(s) is by a process that includes one or more of: sequencing the polymorphic allele(s) in a genomic DNA isolated from the nucleic acid sample, hybridizing the polymorphic allele(s) or an amplicon thereof to an array, digesting the polymorphic allele(s) or an amplicon thereof with a restriction enzyme, or amplification of the polymorphic allele(s).

~~4.~~[23]3.[24] The method of claim ~~3,~~[25]2,[26] wherein the amplification comprises performing a polymerase chain reaction (PCR), reverse transcriptase PCR (RT-PCR), or ligase chain reaction (LCR) using a nucleic acid isolated from the biological sample as a template in the PCR, RT-PCR, or LCR.

4. The method of claim 1[27] wherein the sample is obtained from blood or saliva.

5. The method of claim ~~1 or 2~~[29] ~~wherein the sample is obtained from blood or saliva.~~[30]

~~6. A purified nucleic acid molecule that specifically hybridizes to a PD-related nucleic acid, for use in diagnostics, prognostics, prevention, treatment or study of PD, wherein said PD-related nucleic acid contains a base at one or more of the polymorphic nucleotide positions identified in Tables 1-2 (SEQ ID NO: 1-8) or 2-2 (SEQ ID NO: 9).~~

~~7. A purified nucleic acid molecule of claim 6 that specifically hybridizes to at least 16 contiguous nucleotides of said PD-related nucleic acid.~~

~~8. A purified nucleic acid molecule of claim 6 further comprising a detectable label.~~

~~9. A kit for diagnosis or prognosis of PD, the kit comprising detection reagents for identifying a base at one or more of the polymorphic nucleotide positions identified in Tables 1-2 (SEQ ID NO: 1-8) or 2-2 (SEQ ID NO: 9), and instructions for employing the detection reagents.~~

~~10. A method for treating or preventing the development of PD, comprising administering to a subject suffering from or identified at risk for PD an agent that modulates expression or activity of a protein further modulated by a PD-related nucleic acid containing a base at one or more of the polymorphic nucleotide positions identified in Tables 1-2 (SEQ ID NO: 1-8) or 2-2 (SEQ ID NO: 9).~~

~~11. A method of identifying a modulator of a PD phenotype, the method comprising contacting a potential modulator to a gene or gene product, wherein the gene or gene product comprises or is associated with or regulated by a PD-related nucleic acid containing a base at one or more of the polymorphic nucleotide positions identified in Tables 1-2 (SEQ ID NO: 1-8) or 2-2 (SEQ ID NO: 9) and, detecting an effect of the potential modulator on the gene or gene product, thereby identifying whether the potential modulator modulates the PD phenotype.~~

~~12. The method of claim 11, wherein the effect is selected from: (a) increased or decreased expression of the gene or gene product in the presence of the modulator; (b) increased or decreased activity of the gene product in the presence of the modulator; and (c) an altered expression pattern of the gene or~~

~~gene product in the presence of the modulator.~~

~~13. A system~~[31]1, further comprising[32] determining which allele is present in[33] the sample at one or more of[34] the polymorphic nucleotide [35]positions selected from the[36] group of SNPs consisting of[37] rs6599389 (SEQ ID NO: 2), rs873785 (SEQ ID NO: 3), rs11248060 (SEQ ID NO: 4), rs6812193 (SEQ ID NO: 5), rs4130047 (SEQ ID NO: 6), rs7451962 (SEQ ID NO: 7) and[38] rs4397141 (SEQ ID NO: 8)[39].

6. A method[40] for generating a prognosis of a human subject's ~~likelihood of developing~~[41]susceptibility to[42] Parkinson's ~~disease~~[43]Disease (PD)[44], comprising: obtaining a genomic sample from said human[45] subject; analyzing the genomic sample to determine ~~genotypes~~[46]which allele is present in the sample[47] at the polymorphic nucleotide ~~positions listed in Tables 1-2 (SEQ ID NO: 1-8) or 2-2 (SEQ ID NO: 9); storing said genotypes in a database; correlating the genotypes to~~[48]position of SNP rs10513789 (SEQ ID NO: 1); storing the determined allele of the sample in a database that includes[49] a set of information related to said subject ~~stored~~[50]; correlating the determined allele with an association between the alleles of rs10513789 (SEQ ID NO: 1) and susceptibility to PD[51] in the database; generating a prognosis of the subject's susceptibility to PD[52] based on the correlation; and communicating the prognosis of susceptibility [53]to a medical practitioner.

~~14.~~[54]

7. [55]The system of claim ~~13~~[56]6[57] wherein the set of information related to said subject comprises family medical history, diet, exercise and medical history of said subject.