Pigmentation genes link Parkinson's disease to melanoma, opening a window on both etiologies

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Melanomas occur more frequently among subjects with Parkinson's disease (PD) and a biological explanation for this epidemiological observation is lacking. It is also well known that pigmentation genes play an important role in the development of melanomas. It is therefore suggested that the link between both diseases resides in genes that regulate pigmentation. Among these, those involved in the synthesis of dopamine and related compounds as melanin appear to be the most plausible candidates. Whilst it is known that individuals with fair phototypes have an increased risk for melanoma, this hypothesis suggests hat the same applies to Parkinson's disease.

It is therefore postulated that the accurate analysis of the phototype could be used to identify subjects at higher risk for both diseases, possibly allowing preventative interventions (photoprotective, nutritional, occupational) and prediction of risk in childhood.

Another possible implication of this hypothesis is that therapeutic strategies targeting melanogenesis could maintain or perhaps restore the physiological concentrations of neuromelanin in the *substantia nigra* and achieve protection against neuronal loss in subjects at risk of developing PD.

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[2] Full text available online: MEDICAL HYPOTHESES 2009