

Disease context and gene editing

Gyngnell¹ and Stamell² respectively recently argued for and against therapeutic gene editing. In some instances gene editing might be prudent after very careful consideration. However, behind some of the arguments lurks a misunderstanding about complex chronic diseases. A 'disease' is a human value judgment concerning the outcome of the particular operating characteristics of that physiological system (originally specified by its genetics) in an environment. That is, a complex disease is both subjective and is context dependent. Chronic disease is simply an 'undesirable' genes(s) by environment interaction. It is not a 'fault' to necessarily be cured as such. In one context these operating characteristics may be denoted as a 'weakness' (e.g. poor O₂ carrying ability/predisposition to coagulation in sickle cell anaemia) versus being denoted as a 'strength' in another context (e.g. increased resistance to trypanosome infiltration). Many other 'karmic' examples like this could be suggested. Adjusting the context of someone's complex chronic disease (e.g. life-style changes etc) is surely both a more benign and a reversible strategy than running to a permanent technological fix with CRISP-Caspase9 (even under strict regulatory control). Human diversity is an advantage to our planet - to be fostered by sensible environmental adjustments - not something to be accidentally canalized by inappropriate selective breeding.

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Declarations

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References

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