



NHS Sickle Cell and Thalassaemia Screening Programme

Diagram to show pattern of genetic inheritance for autosomal recessive disorders such as sickle cell disease, cystic fibrosis and thalassaemia

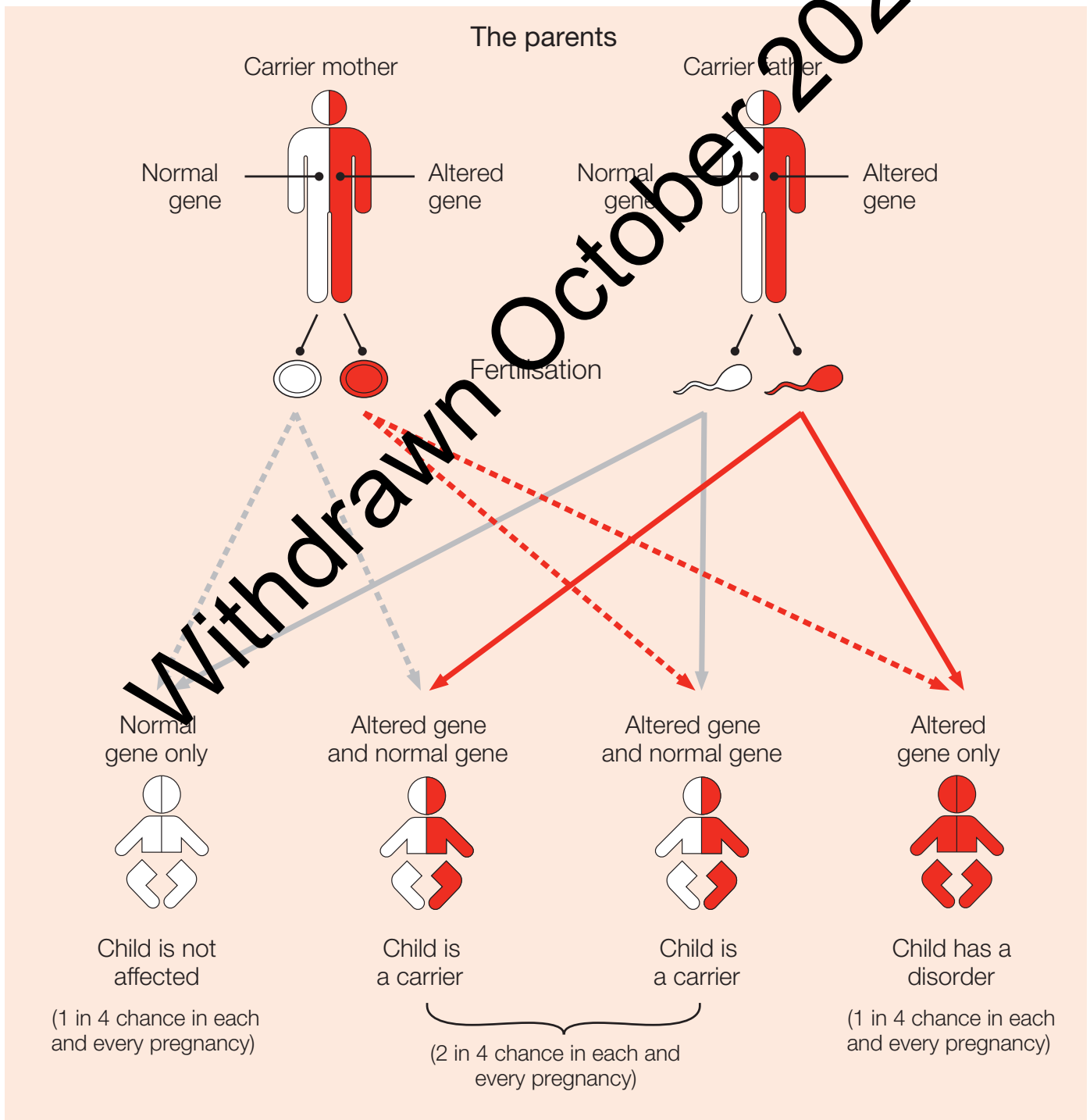


Table showing parental carrier state combinations that give rise to the risk of a fetus with significant sickle cell disease or thalassaemia condition

Carrier of:	Hb S	β -thal	$\delta\beta$ -thal	Hb Lepore	Hb E	Hb O ^{Arab}	Hb C	Hb D ^{Punjab}	HPFH	Not a carrier
Hb S	Red	Red	Light Red	Light Red	Light Red	Red	Red	Red	Light Red	White
β -thal	Red	Red	Red	Red	Red	Light Red	White	White	White	White
$\delta\beta$ -thal	Light Red	Red	Light Red	Red	Light Red	Light Red	White	White	White	White
Hb Lepore	Light Red	Red	Red	Red	Light Red	Light Red	White	White	White	White
Hb E	Light Red	Red	Light Red	Light Red	Light Red	White	White	White	White	White
Hb O ^{Arab}	Red	Light Red	Light Red	Light Red	White	White	White	White	White	White
Hb C	Red	White	White	White	White	White	White	White	White	White
Hb D ^{Punjab}	Red	White	White	White	White	White	White	White	White	White
HPFH	Light Red	White	White	White	White	White	White	White	White	White
Not a carrier	White	White	White	White	White	White	White	White	White	White

Serious risk refer couple for counselling, pre-natal diagnosis to be offered
 Less serious risk refer couple for counselling, further investigation maybe required
 No risk no further action required

Table based on the work of Prof. B. Modell.

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