

Scoring Matrices for Hemophilia

Justin Ang

March 27, 2017

Let:

α be Autosomal Recessive

β be X-Linked Recessive

γ be Autosomal Dominant

δ be X-Linked Dominant

ϵ be Y-Linked

Mating pairs are listed $\sigma^{\circ}\varphi$. The observed values only list the children of the parents we consider. The parents themselves are not necessarily used in our calculation, so I have omitted them.

Expected Values:

Individual	α	β	γ	δ	ϵ
I1/I2	-1/1	-1/1	0/2	0/2	0/ ∞
II-2	0	0	1	1	∞
II-3	0	1	1	2	0
II-4	0	0	1	1	∞
II-6	0	1	1	2	0
II-8	0	0	1	1	∞
II1/II2	-1/0	-1/0	0/0	0/0	0/ ∞
III-1	-0.5	0	0	0	0
II5/II4	-1/1	-1/1	0/2	0/2	0/ ∞
III-2	0	0	1	1	∞
III-3	0	1	1	2	0
III-4	0	0	1	1	∞
III-6	0	0	1	1	∞
II6/II7	1/-1	1/-1	2/0	2/0	2/0
III-8	0	0	1	1	0
II9/II8	-1/1	-1/1	0/2	0/2	0/ ∞
III-10	0	1	1	2	0
III-11	0	1	1	2	0
III-12	0	0	1	1	∞
III1/III2	-1/0	-1/0	0/0	0/0	0/ ∞
IV-1	-0.5	0	0	0	0
IV-2	-0.5	0	0	0	0
III7/III6	-1/0	-1/0	0/0	0/0	0/ ∞
IV-3	-0.5	0	0	0	0
III9/III8	-1/1	-1/1	0/2	0/2	0/ ∞
IV-4	0	1	1	2	0
III13/III12	-1/0	-1/0	0/0	0/0	0/ ∞
IV-5	-0.5	0	0	0	0
IV-6	-0.5	0	0	0	0

Observed Values:

Individual	α	β	γ	δ	ϵ
I1/I2					
II-2	0	0	0	0	∞
II-3	-1	-1	0	0	0
II-4	1	1	2	2	∞
II-6	1	1	2	2	2
II-8	1	1	2	2	∞
II1/II2					
III-1	-1	-1	0	0	0
II5/II4					
III-2	0	0	0	0	∞
III-3	1	1	2	2	2
III-4	-1	-1	0	0	0
III-6	0	0	0	0	∞
II6/II7					
III-8	1	1	2	2	∞
II9/II8					
III-10	1	1	2	2	2
III-11	1	1	2	2	2
III-12	0	0	0	0	∞
III1/III2					
IV-1	1	1	2	2	2
IV-2	1	1	2	2	2
III7/III6					
IV-3	1	1	2	2	2
III9/III8					
IV-4	1	1	2	2	2
III13/III12					
IV-5	1	1	2	2	2
IV-6	1	1	2	2	2

