

## 1 RVSharing Examples

### 1.1 Siblings

```
> test.ped
```

```
Pedigree object with 4 subjects
Bit size= 2
```

```
> 2 * kinship(test.ped)
```

	sub1	sub2	sub3	sub4
sub1	1.0	0.0	0.5	0.5
sub2	0.0	1.0	0.5	0.5
sub3	0.5	0.5	1.0	0.5
sub4	0.5	0.5	0.5	1.0

Now apply the RVsharing method which calls the function defined in “rare\_variant\_sharing\_v3.R.”

```
> RVsharing(test.ped)
```

```
$pshare  
[1] 0.3333333
```

```
$iancestors  
[1] "sub1"
```

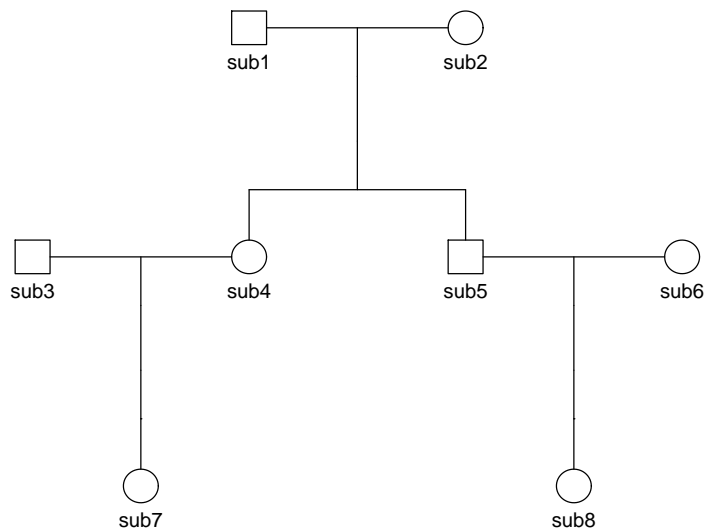
```
$desfounders  
$desfounders$sub3  
sub2 sub1  
1 1
```

```
$desfounders$sub4  
sub2 sub1  
1 1
```

```
$id  
[1] "sub1" "sub2" "sub3" "sub4"
```

```
$dad.id  
[1] NA NA "sub1" "sub1"
```

```
$mom.id  
[1] NA NA "sub2" "sub2"
```



## 1.2 Cousins

```
> test.ped
```

```
Pedigree object with 8 subjects
Bit size= 4
```

```
> 2 * kinship(test.ped)
```

	sub1	sub2	sub3	sub4	sub5	sub6	sub7	sub8
sub1	1.00	0.00	0.0	0.50	0.50	0.0	0.250	0.250
sub2	0.00	1.00	0.0	0.50	0.50	0.0	0.250	0.250
sub3	0.00	0.00	1.0	0.00	0.00	0.0	0.500	0.000
sub4	0.50	0.50	0.0	1.00	0.50	0.0	0.500	0.250
sub5	0.50	0.50	0.0	0.50	1.00	0.0	0.250	0.500
sub6	0.00	0.00	0.0	0.00	0.00	1.0	0.000	0.500
sub7	0.25	0.25	0.5	0.50	0.25	0.0	1.000	0.125
sub8	0.25	0.25	0.0	0.25	0.50	0.5	0.125	1.000

Now apply the RVsharing method which calls the function defined in “rare\_variant\_sharing\_v3.R.”

```

> RVsharing(test.ped)

$pscore
[1] 0.04347826

$ancestors
[1] "sub1"

$desfounders
$desfounders$sub7
$desfounders$sub7$<NA>
[1] 1

$desfounders$sub7$sub2
[1] 2

$desfounders$sub7$sub1
[1] 2

$desfounders$sub8
$desfounders$sub8$sub6
[1] 1

$desfounders$sub8$sub2
[1] 2

$desfounders$sub8$sub1
[1] 2

$id
[1] "sub1" "sub2" "sub3" "sub4" "sub5" "sub6" "sub7" "sub8"

$dad.id
[1] NA      NA      NA      "sub1" "sub1" NA      "sub3" "sub5"

$mom.id
[1] NA      NA      NA      "sub2" "sub2" NA      "sub4" "sub6"

```